HIGHWAY WORK PROPOSAL

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

Proposal Number: 001

COUNTY	STATE PROJECT	FEDERAL	PROJECT DESCRIPTION	HIGHWAY
Rock	1003-10-80	WISC 2019496	Illinois State Line - Madison; Ih 43 Interchange Core	IH 039

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

Proposal Guaranty Required: $1,000,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Date: July 9, 2019 Time (Local Time): 9:00 am	Firm Name, Address, City, State, Zip Code SAMPLE NOT FOR BIDDING PURPOSES
Contract Completion Time December 15, 2023	
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

For Department Use Only

Type of Work:
Grading, Base, Milling, Asphalt Pavement, Concrete Pavement, Bridge Construction, Bridge Deck Ovelays, Culvert Pipe, Storm Sewer, Curb and Gutter, Contrete Barrier, Guardrail, Fence, Plantings, Pavement Markings, Signs, Sign Bridges, Retaining Walls, Traffic Signals, ITS, Street Lighting

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

The contractor is responsible for reviewing this web site for general notices as well as information regarding proposals in each letting. The department will also post special notices of all addenda to each proposal through this web site no later than 4:00 PM local time on the Thursday before the letting. Check the department's web site after 5:00 PM local time on the Thursday before the letting to ensure all addenda have been accounted for before preparing the bid. When bidding using methods 1 and 2 above, check the Bid Express™ on-line bidding exchange at http://www.bidx.com/ after 5:00 PM local time on the Thursday before the letting to ensure that the latest schedule of items Expedite file (*.ebs or *.00x) is used to submit the final bid.

(4) Interested parties can subscribe to the Bid Express™ on-line bidding exchange by following the instructions provided at the www.bidx.com web site or by contacting:

Info Tech Inc.
5700 SW 34th Street, Suite 1235
Gainesville, FL 32608-5371
email: mailto:customer.support@bidx.com

(5) The department will address equipment and process failures, if the bidder can demonstrate that those failures were beyond their control.

(6) Contractors are responsible for checking on the issuance of addenda and for obtaining the addenda. Notice of issuance of addenda is posted on the department's web site at:
https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

or by calling the department at (608) 266-1631. Addenda can ONLY be obtained from the departments web site listed above or by picking up the addenda at the Bureau of Highway Construction, 4th floor, 4822 Madison Yards Way, Madison, WI, during regular business hours.

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

B Submitting Electronic Bids

B.1 On the Internet

(1) Do the following before submitting the bid:

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

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

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

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

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

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

(1) Download the latest schedule of items from the Wisconsin pages of the Bid Express™ web site reflecting the latest addenda posted on the department's web site at:
https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

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

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

Bidder Name

BN00

Proposals: 1, 12, 14, & 22

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

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

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

1. The check code printed on the bottom of the printout of the Expedite™ generated schedule of items is not the same on each page.
2. The check code printed on the printout of the Expedite™ generated schedule of items is not the same as the check code for that proposal provided on the diskette or CD ROM.

3. The diskette or CD ROM is not submitted at the time and place the department designates.

C Waiver of Electronic Submittal

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

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

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

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

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

PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

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

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

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

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

(Signature of Authorized Contractor Representative) (Date)

March 2010

LIST OF SUBCONTRACTORS

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

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

Name of Subcontractor	Class of Work	Estimated Value

DECEMBER 2000

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1003-10-80, Illinois State Line – Madison, IH 43 Interchange Core, Rock County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2019 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 (20181119)

2. Scope of Work.

The work under this contract shall consist of grading, base aggregate, concrete pavement, HMA pavement, concrete barrier, culvert pipe, storm sewer, concrete curb and gutter, permanent signing, pavement marking, traffic signals, ITS, lighting, Structures B-53-300/302/303/304/305/306/307, R-53-63/64/65/66/67/69/70, S-53-116/117/118/119/120/121/122/123/129/130/132/133, native prairie seeding, tree/shrub installation at various locations (with follow up surveillance and care) and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. Prosecution and Progress.

Begin work within ten calendar days after the engineer issues a written notice to do so.

Provide the start date to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Upon approval, the engineer will issue the notice to proceed within ten calendar days before the approved start date.

To revise the start date, submit a written request to the engineer at least two weeks before the intended start date. The engineer will approve or deny that request based on the conditions cited in the request and its effect on the department's scheduled resources.

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

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.

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

Anticipate cold weather and early spring 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.

Conform the schedule of operations to the construction staging as shown in the traffic control plans and as described herein unless modifications to the schedule are approved in writing by the engineer.

Northern Long-eared Bat (Myotis septentrionalis)

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

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

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

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

Native Prairie Seeding and Tree/Shrub Planting and Care

This contract contains native prairie seeding and tree/shrub installation outside the highway construction project limits.

The contractor is advised that there will be multiple mobilizations, at multiple sites within and outside the highway construction limits, for native prairie seeding and tree/shrub installation. The department will make no additional payment for said mobilizations.

The department will locate and mark the native seed planting beds and tree/shrub locations. The department will also locate and mark the sign locations for the native prairie seed planting areas. Notify the Corridor Vegetation Inspector 14 days in advance of any planting work or any native seed signing work to allow adequate locating time.

Notify the Corridor Vegetation Inspector at least 3 days prior to the planned delivery date of planting stock and replacement planting stock to allow for inspection scheduling.

Native prairie seed, tree/shrub, and living snow fence planting work may not be allowed at sites where there is active highway construction, or where there will be an upcoming highway construction contract. Prior to March 1 of every year, verify with the Corridor Vegetation Inspector the availability of planting sites.

Due to the multi-year duration of this project, vegetation planting may be phased for different years. Provide a schedule to the Corridor Vegetation Inspector 3 weeks prior to any planned work. Update and submit with any schedule changes.

A Schedule of Operations

The department anticipates that the schedule for each stage is as follows:

IH 39

- Stage 1 – Construct temporary pavement, including temporary ramp connections at interchange.
- Stage 2 – Reconstruct northbound and southbound IH 39.
- Stage 3 – Reconstruct southbound IH 39 and interchange ramps.
- Stage 4 – Complete reconstruct northbound IH 39 and interchange ramps.

IH 43

- Stage 1 – Construct temporary pavement, including temporary ramp connections at interchange.
- Stage 2 – Reconstruct northbound and southbound lanes.
- Stage 3 – Reconstruction of northbound and southbound lanes.
- Stage 4 – Complete reconstruction of northbound and southbound lanes.
- Stage 5- Complete construction of DDI.

STH 81

- Stage 1 – No Work on STH 81 during Stage 1.
- Stage 2 - Construct the east half of the DDI.
- Stage 3 – Construct eastbound and westbound lanes and temporary pavement.
- Stage 4 – Complete construction west of IH 39.
- Stage 5 - Complete construction of DDI.

Various Locations

- Native Prairie Seeding and Tree/Shrub Planting – Schedule to be coordinated with Corridor Vegetation Inspector.

B Contractor Coordination

The prime contractor shall have a superintendent or designated representative on the job site during all controlling work operations, including periods limited to only subcontractor work operations, to serve as a primary contact person and to coordinate all work operations.

Hold progress meetings once a week. The contractor's superintendent or designated representative and subcontractor's representatives for ongoing subcontract work or subcontractor work expected to begin within the next two weeks are to attend and provide a written schedule of the next week(s)' operations. Include begin and end dates of specific prime and subcontractor work operations including lane closures and traffic switches. Invite utilities, Town of Turtle, City of Beloit and Rock County Sheriff representatives to attend the progress meetings. Agenda items at the meeting will include review of the contractor's schedule and subcontractors' schedule, utility conflicts and relocation schedule, evaluation of progress and pay items, and making revisions if necessary. Plans and specifications for upcoming work will be reviewed to prevent potential problems or conflicts between contractors.

Coordination with projects 1003-10-76, 1003-10-81, 1003-10-79, and 1003-11-71 may be required for traffic control staging. See Other Contracts.

Based on the progress meeting, if the engineer requests a new revised schedule, submit it within seven calendar days. Failure to submit a new schedule within seven days, or if the engineer finds the schedule submittal unacceptable, shall result in the engineer holding pay requests until received.

C Work Restrictions

Stage 2A traffic shift will not be allowed prior to March 26, 2020.

Shift all traffic to their respective locations as shown in Stage 2C prior to 12:01 AM on November 1, 2020.

Both IH 39/90 SB loop ramps will be allowed to be shut down concurrently from 10:00 PM – 5:00 AM for up to 3 nights during Stage 1B. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights.

IH 39/90 SB off ramp to STH 81 will be allowed to be shut down from 10:00 PM – 5:00 AM for up to 3 nights during Stage 1B. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights. During Stage 2B, Phase 1, for splicing span #4 to #5 of B-304, NB STH 81/IH 43 starting at the IH 39/90 SB on-ramp will be allowed to be closed for up to two nights from 10:00 PM – 5:00 AM. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights.

During Stage 3A, for setting new girders of B-53-305 only, the IH 39/90 SB off-ramp will be allowed to be closed for up to two nights from 10:00 PM – 5:00 AM. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights.

During the end of Stage 3B, for setting new girders of B-53-302 and B-53-303 only, the IH 39/90 NB and SB through lanes will be allowed to be rerouted using the temporary diamond interchange ramps for up to 3 nights from 10:00 PM – 5:00 AM. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights.

During Stage 3B, for splicing span #6 to #7 of B-53-304, SB STH 81/IH 43 beginning at the CTH X Interchange and the IH 39/90 NB on ramp from STH 81 will be allowed to be closed for up to two nights from 10:00 PM – 5:00 AM. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights.

During Stage 3C, for completing the pavement gap at Station 40+00'MW' to STA 41+02'MW', the IH 39/90 NB on ramp from STH 81 will be allowed to be detoured to CTH X for up to 15 consecutive calendar days. Assessments per the Lane Rental Fee Assessment article will be charged for additional hours beyond the 15 consecutive calendar days.

During Stage 3F, the IH 39/90 NB on ramp from STH 81 may be detoured to CTH X for up to 3 consecutive calendar days. Assessments per the Lane Rental Fee Assessment article will be charged for additional hours beyond the 3 consecutive calendar days.

During Stage 4A, Phase 1 the IH 39/90 NB on ramp from STH 81 detour to CTH X and the restrictions of no WB turns from the IH 39/90 NB off ramp to STH 81 will be allowed for up to 15 consecutive calendar days. Assessments per the Lane Rental Fee Assessment article will be charged for additional hours beyond the 15 consecutive calendar days.

During Stage 4A, Phase 1, for removing existing STH 81 bridges B-53-46 and B-53-47 only, the IH 39/90 NB and SB through lanes will be allowed to be rerouted using the temporary diamond interchange ramps for up to three nights from 10:00 PM – 5:00 AM. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights.

During Stage 4A, Phases 1, 2, 3 Ford Street access to STH 81 will be allowed to be closed and detoured to Branigan for up to 21 consecutive calendar days.

During Stage 4B, Ford Street will be allowed to be maintained with flagging operations and traffic will travel on a temporary gravel surface for up to 14 consecutive calendar days.

During Stage 5, a full closure of STH 81 between the ramps and the IH 39/90 ramps will be allowed one time between Tuesday at 8:00 PM – Thursday at 5:00 AM for the DDI conversion. Assessments per the Lane Rental Fee Assessment article will be charged for lane closures outside the allowed time periods, or for additional nights.

Shift all I-39/90 and I-43 traffic to their respective locations as shown in Stage 5 prior to 12:01 AM on November 1, 2021.

Complete Stage 5, except for landscaping, with all traffic in lanes as shown in Stage 5 prior to 12:01 AM on November 20, 2021.

All contract work, with the exception of Landscape Planting Surveillance and Care Cycles and the traffic control items used during the surveillance and care cycles, shall be completed prior to 12:01 AM on November 15, 2022.

Contract work is allowed during winter shutdown as long as it does not affect the winter shutdown traffic configurations.

D Interim and Final Completion of Work

If the contractor fails to complete all work necessary to shift traffic to their respective locations as shown in Stage 2C before 12:01 AM November 1, 2020 the department will assess the contractor $12,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM November 1, 2020. An entire calendar day will be charged for any period of time within a calendar day that traffic is not shifted to their respective locations as shown in Stage 2C beyond 12:01 AM November 1, 2020.

Stage 4A: The department will assess the contractor $2,070 in liquidated damages for every calendar day over 21 calendar days the Ford Street access to STH 81 is detoured. An entire calendar day will be charged for any period of time within a calendar day that the turn restriction is not removed after 21 calendar days.

Stage 4B: The department will assess the contractor $2,070 in liquidated damages for every calendar day over 14 calendar days Ford Street surface remains as gravel. An entire calendar day will be charged for any period of time within a calendar day that the final paved surface is not in place after 14 calendar days.

Stage 5: If the contractor fails to complete all final pavement, shoulders, signing, and pavement markings along I-39/90 and I-43 with traffic in lanes as shown in Stage 5, prior to 12:01 AM on November 1, 2021, the department will assess the contractor $12,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM November 1, 2021. An entire calendar day will be charged for any period of time within a calendar day that work is not completed beyond 12:01 AM November 1, 2021.

Stage 5 Completion: If the contractor fails to complete Stage 5, except for landscape plans, with all traffic in lanes as shown in Stage 5, prior to 12:01 AM on November 20, 2021, the department will assess the contractor $12,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM November 20, 2021. An entire calendar day will be charged for any period of time within a calendar day that work is not completed beyond 12:01 AM November 20, 2021.

Project Complete: If the contractor fails to complete all contract work, with the exception of Landscape Planting Surveillance and Care Cycles and the traffic control items used during the surveillance and care cycles, prior to 12:01 AM on November 15, 2022, the department will assess the contractor $12,000 in interim liquidated damages for each calendar day the contract work, except for Landscape Planting Surveillance and Care Cycles and the associated traffic control, remains incomplete after 12:01 AM, November 15, 2022. An entire calendar day will be charged for any period of time within a calendar day that work is not completed beyond 12:01 AM, November 15, 2022.

4. Lane Rental Fee Assessment.

A General

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

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

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

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

B Lane Rental Fee Assessment

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

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

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

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

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

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

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

stp-108-065 (20161130)

5. Traffic.

A General

The following is a general overview of the traffic control and staging required throughout all stages of the project. The staging requirements are described further in the “Prosecution and Progress” article in these special provisions.

Accomplish the construction sequence, including the associated traffic control as detailed in the Construction Staging section of the plans, and as described in this Traffic article.

Do not begin or continue any work that closes traffic lanes outside the allowed time periods specified in this article.

Any revisions to the traffic control plans shall adhere to the Notice to Contractor, Revisions to Traffic Control Plans article of these special provisions.

IH 39/90/43, STH 81 and local roads shall remain open to through traffic at all times for the duration of this project except where noted below and in the Prosecution and Progress article of these special provisions.

Do not close IH 39/90/43 travel lanes, local road travel lanes, or IH 39/90/43 ramps prior to or after the specified times provided in this article. If the contractor closes lanes or ramps prior to or fails to open lanes of traffic or ramps by the specified times, then a fee based upon the Lane Rental Fee Assessment article of these special provisions will be assessed to the contractor.

B Traffic Operations During All Stages

- Maintain two lanes of traffic in each direction at all times on IH 39/90*.
- Maintain one lane of traffic in each direction at all times on IH 43* during construction activities. Maintain two lanes of traffic in each direction at all other times on IH 43.
- Maintain the existing number of lanes of traffic in each direction at all times on local roads*.
- Maintain traffic on ramps at all times**.
- Maintain mainline traffic on IH 39/90/43 and local roads on a paved concrete or hot mix asphalt surface at all times.
- Maintain a minimum lane width of 12-feet on IH 39/90/43 (16-foot minimum clear width when restricted to one lane) and ramps.
- Maintain a minimum lane width of 11-feet on local roads.

* Lane, shoulder, and rolling stop closures allowed as specified in the Lane and Shoulder Closures and Roadway, Ramp, and Rolling Stop Closures sections of this article.

**Ramp closures allowed as specified in the Lane and Shoulder Closures and Roadway, Ramp, and Rolling Stop Closures sections of this article.

C Traffic Operations

<u>STAGE 1A – Fall 2019</u>

<u>Maintenance of traffic:</u>

- IH 39 will be open to all existing NB and SB lanes at all times except for single lane night time closures within the work zone for IH 39 NB and IH 39 SB directions and a night-time rolling closure within the work zone for the SB direction for sign bridge removal.
- IH 43/STH 81 will be open to all existing NB and SB lanes at all times except for single lane closures within the work zone for IH 43/STH 81 NB and IH 43/STH 81 SB directions.

<u>STAGE 1B – Fall 2019</u>

<u>Maintenance of traffic:</u>

- IH 39 will be open to all existing NB and SB lanes at all times except for night time single lane closures within the work zone for IH 39 NB and IH 39 SB directions.

- IH 43/STH 81 will be open to all existing NB and SB lanes at all times except for single lane closures within the work zone for IH 43/STH 81 NB and IH 43/STH 81 SB directions.

SB IH 43 to SB IH 39/90 and SB IH 39/90 to NB IH 43 loop ramp closures

- IH 39 will be open to all existing NB and SB lanes at all times except for night time single lane closures within the work zone for IH 39 NB and IH 39 SB directions.
- IH 43/STH 81 will be open to all existing NB and SB lanes at all times except for single lane closures within the work zone for IH 43/STH 81 NB and IH 43/STH 81 SB directions.
- IH 43/STH 81 SB to IH 39 SB loop will be closed and detoured while constructing the temporary SB IH 39 outside widening between the loop ramps. Traffic will be detoured to the CTH S interchange and detoured back south on IH 39 SB. See additional sheets for closure and detour detail north to CTH S.
- IH 39 SB to NB IH 43/STH 81 loop will be closed and detoured while constructing the temporary SB IH 39 outside widening between the loop ramps. Traffic will be detoured south to the IL-75 interchange and detoured back north on IH 39/90 to IH 43. See additional sheets for closure and detour detail south to IL-75.

SB IH 39/90 to WB STH 81 off-ramp closure

- IH 39 will be open to all existing NB and SB lanes at all times except for night time single lane closures within the work zone for IH 39 NB and IH 39 SB directions.
- IH 43/STH 81 will be open to all existing NB and SB lanes at all times except for single lane closures within the work zone for IH 43/STH 81 NB and IH 43/STH 81 SB directions.
- IH 39 SB to WB STH 81 off-ramp will be closed and detoured while constructing the temporary widening on the off-ramp. Traffic will be detoured south to the IL-75 interchange and detoured back north on IH 39/90 to STH 81. See additional sheets for closure and detour details south to IL-75.

STAGE 1-2 WINTER SHUTDOWN

During construction shutdown for the winter of 2019-2020, starting November 1, 2019 all traffic will be on existing lanes on all roadways. The following construction activities will take place:

- Construction activities may continue on items of work away from travel lanes that are not prohibited by winter weather and do not in any way hamper the free flow of traffic. IH 39/43 and STH 81 will have two travel lanes open in both directions without any shoulder closures.

STAGE 2A PHASE 1 – Spring/Summer 2020

Maintenance of traffic:

- NB IH 39/90 shall be closed to traffic at all times.
- Two 12' wide travel lanes, 4' outside shoulder, and 2' inside shoulder will be maintained in each direction along widened IH 39/90 SB at all times, separated by temporary concrete barrier. A 2' outside shoulder will be maintained under the existing STH 81 bridges.
- SB IH 39/90 traffic will be located along widened outside SB lanes.
- NB IH 39/90 traffic will be located along widened inside SB lanes. NB traffic will cross over to existing SB using 'COB' crossover completed in 1003-11-71 and return back to existing NB via a cross over near Station 310+00.
- NB IH 43 on-ramp traffic exiting from NB IH 39/90 will exit near sta. 215+00 using the crossover connecting to existing IH 43 NB on-ramp completed in stage 1.
- NB IH 43 on-ramp traffic traveling SB on IH 39/90 will exit near Station 240+00 using existing off-ramp to STH 81.

- STH 81 and IH 43 shall be open to all existing NB and SB lanes at all times except for existing IH 39/90 NB and SB cloverleaf on and off ramps.
- IH 43/STH 81 traffic movements with IH 39/90 traffic will utilize the temporary diamond ramps.

STAGE 2A PHASE 2– Spring/Summer 2020

Maintenance of traffic:

- All traffic will be the same as stage 2A phase 1 except IH 39/90 NB off-ramp traffic to STH 81/IH 43 will be using the temporary pavement crossover 'X2A-1' and temporary ramp 'R2A-1', and STH 81/IH 43 to IH 39/90 traffic will be using temporary ramp 'R2A-2 along with a portion of the newly constructed proposed NB lanes.

STAGE 2A PHASE 3– Spring/Summer 2020

Maintenance of traffic:

- All traffic will be the same as stage 2a phase 2 except NB IH 39/90 traffic will be maintained on the new NB lanes and will also use a portion of the new SB lanes near the STH 81 bridges.

STAGE 2B PHASE 1– Summer/Fall 2020

Maintenance of traffic:

- IH 39/90 NB and SB traffic is on the new NB lanes from the south end of the project to Station 215+00. At this location traffic crosses over to the newly constructed SB lanes to Station 234+00'SB' where traffic crosses to the newly constructed NB lanes and continues to the north end of the project. SB IH 39/90 traffic will cross over to the proposed NB lanes near Station 310+00 and return to SB near Station 165+00.
- Two 12' wide travel lanes, 4' outside shoulder, and 2' inside shoulder will be maintained in each direction along IH 39/90 at all times, separated by concrete barrier. A 2' outside shoulder will be maintained under the existing STH 81 bridges.
- IH 43 NB and SB traffic is along the existing and temporary pavements of STH 81 through the interchange area. East of the interchange IH 43 is two 12-foot lanes, one in each direction, separated by temporary precast concrete barrier along the WB lanes of STH 81. IH 43 traffic crosses to IH 43 NB lanes on a temporary crossover near the Gateway Blvd. Intersection and continues along the NB lanes to the crossover east of the CTH X/Hart Road interchange.
- IH 43/STH 81 traffic movements with IH 39/90 traffic will utilize the temporary diamond ramps except that NB IH 39/90 to NB IH 43 traffic ('MA' alignment) is along a temporary free flow ramp in the SE quadrant.
- Access to and from IH 39/90 and the city of Beloit is maintained along the temporary diamond ramps. Access to and from IH 43 to the city of Beloit is maintained along the new STH 81 WB lanes.
- Access to and from the commercial property in the SE quadrant is maintained along the constructed STH 81 EB lanes.
- Temporary NB STH 81/IH 43 traffic to be closed while setting and splicing spans #4 and #5 of B-53-304. Traffic to be detoured starting at SB on-ramp down to IL-75 and back north on IH 39/90. See IH 43 on-ramp detour route detail.

STAGE 2B PHASE 2– Summer/Fall 2020

Maintenance of traffic:

- All traffic will be the same as stage 2B phase 1 except STH 81/IH 43 traffic headed for SB IH 39/90 will use part of the existing NW loop ramp and also the new temporary crossover 'X2B-1'.

STAGE 2C (WINTER SHUTDOWN)

Maintenance of traffic:

- During construction shutdown for the winter of 2020-2021, NB IH 39/90 traffic will be maintained on the new NB lanes while SB IH 39/90 traffic will be maintained on the existing SB lanes. NB traffic will use a portion of the new SB lanes near the STH 81 bridges and SB traffic will use a portion of the new SB lanes south of the interchange
- IH 43/STH 81 traffic will remain in the stage 2B phase 2 configuration.
- IH 43/STH 81 traffic movements with IH 39/90 traffic will utilize the temporary diamond ramps and part of the existing NW loop ramp.
- Construction activities may continue on items of work away from travel lanes that are not prohibited by winter weather and do not in any way hamper the free flow of traffic. IH 39/43 and STH 81 will have two travel lanes open in both directions without any shoulder closures.

STAGE 3A – Spring 2021

Maintenance of traffic:

- IH 39/90 NB traffic is on the new NB lanes from the south end of the project to Station 215+00. At this location traffic crosses over to the newly constructed SB lanes to Station 234+00'SB' where NB traffic crosses to the newly constructed NB lanes and continues to the north end of the project. SB IH 39/90 traffic will cross over to the proposed NB lanes near Station 310+00 and return to SB near Station 234+00'SB'.
- Two 12' wide travel lanes, 4' outside shoulder, and 2' inside shoulder will be maintained in each direction along IH 39/90 at all times, separated by concrete barrier. A 2' outside shoulder will be maintained under the existing STH 81 bridges.
- IH 43 is in the same configuration as stage 2B. IH 43 NB and SB traffic is along the existing and temporary pavements of STH 81 through the interchange area. East of the interchange IH 43 is two 12-foot lanes, one in each direction, separated by temporary precast concrete barrier along the WB lanes of STH 81. IH 43 traffic crosses to IH 43 NB lanes on a temporary crossover near the Gateway Blvd. Intersection and continues along the NB lanes to the crossover east of the CTH X/Hart road interchange.
- IH 43/STH 81 traffic movements with IH 39/90 traffic will utilize the temporary diamond ramps except that SB IH 43 to NB IH39/90 traffic will use the newly constructed free flow 'FA' ramp and NB IH 39/90 to NB IH 43 traffic ('MA' alignment) is along a temporary free flow ramp in the SE quadrant.
- Access to and from IH 39/90 and the city of Beloit is maintained along the temporary diamond ramps access from IH 43 and the city of Beloit to SB IH 39/90 has been moved to the east in a split diamond configuration with access being provided via the newly constructed ramp 'MC'.
- Access to and from the commercial property in the SE quadrant is maintained along the constructed STH 81 EB lanes.
- STH 81 traffic within the city of Beloit crosses over between Branigan road and Freeman Parkway to the existing EB lanes and temporary pavements to accommodate construction of the WB lanes.
- Gateway Blvd. Traffic is two lanes, one lane in each direction, along the SE side of existing roadway from sta 84+00'ME' to 91+00'ME'.
- Rolling night time closures will be required for NB and SB IH 43 in order to set span #6 for B-53-304.
- The temporary NB IH 39/90 on ramp from STH 81 will be closed while setting and splicing span #7 for B-53-304. NB IH 43 traffic will be detoured to the CTH X/Hart Road interchange and back on IH 43 SB to IH 39/90 using the 'FA' ramp.

- If contractor elects to set and splice span #2 of B-53-305, the SB IH 39/90 off ramp is to be closed during night time hours. Traffic will be detoured to IL-75. See stage 3A off ramp detour route detail.

STAGE 3B – Spring/Summer 2021

Maintenance of traffic:

- All traffic will be the same as stage 3A except SB IH 39/90 traffic to NB IH 43 will be along the newly constructed 'MD' ramp and temporary pavements to the split diamond configuration.
- Access to and from IH 39/90 and the city of Beloit is maintained along temporary diamond. Traffic accessing IH 43 and the city of Beloit from the IH 39/90 SB exit ramp will use ramp 'MD' and the temporary connection constructed in stage 3A near Station 275+00'SB'. Access from IH 43 and the city of Beloit to SB IH 39/90 has been moved to the east in a split diamond configuration with access being provided via the newly constructed ramp ‘MC’.
- Access to and from IH 43 to the city of Beloit is maintained along the new STH 81 WB lanes and along the existing and temporary lanes of STH 81.
- Access to and from the commercial property in the SE quadrant is maintained along the previously constructed STH 81 EB lanes.
- STH 81 traffic within the city of Beloit crosses over between Branigan Road and Freeman Parkway to the existing EB lanes and temporary pavements to accommodate construction of the WB lanes.
- Gateway Blvd. traffic is two lanes, one lane in each direction, along the SE side of existing roadway from Station 84+00'ME' to 91+00'ME'.
- IH 39/90 NB and SB will be rerouted during a short term full closure for girder placement for Structures B-53-302 and B-53-303 (STH 81 over IH 39/90). The temporary diamond interchange ramps will be utilized for the route during interstate shutdown. The temporary 'MD'/'MD1' ramp connection as shown in stage 3C must be open prior to rerouting IH 39/90 NB and SB traffic.
- Night time closures will be required for SB IH 43 in order to set span #6 for B-53-304. SB IH 43 traffic will be detoured starting at the CTH X/Hart road interchange and back on IH 43 SB to IH 39/90 using the 'FA' ramp. SB IH 39/90 traffic will use the CTH S interchange to head back SB on IH 39/90.
- The temporary NB IH 39/90 on ramp from STH 81 will be closed while setting and splicing span #7 for B-53-304. NB IH 43 traffic will be detoured to the CTH X/Hart Road interchange and back on IH 43 SB to IH 39/90 using the 'FA’ ramp.

STAGE 3C – Summer 2021

Maintenance of traffic:

- All IH 39/90 traffic will be the same as stage 3B except for SB IH 39/90 traffic to STH 81/IH 43 will use the newly constructed temporary MD ramp connection along with a portion of the west DDI.
- IH 43 NB and SB traffic is along the existing and temporary pavements of STH 81 through the interchange area. East of the interchange IH 43 traffic is on two 12-foot lanes separated by temporary precast concrete barrier along the WB lanes of the newly constructed STH 81. IH 43 traffic crosses to the newly constructed IH 43 NB lanes on a temporary crossover near the Gateway Blvd. intersection and continues along the NB lanes to the crossover east of the CTH X/Hart road interchange.
- IH 43/STH 81 traffic movements with IH 39/90 traffic will utilize the temporary pavements in combination with the newly constructed DDI ramp terminals in the west half of the interchange, except that NB IH 39/90 to NB IH 43 traffic is along a temporary free flow ramp in the SE quadrant, and SB IH 43 to NB IH 39/90 traffic is along the newly constructed free flow 'FA' ramp.

- The temporary diamond NB IH 39/90 entrance ramp will be closed to facilitate the construction of the "gap" in the WB STH 81 pavement between sta. 40+00'MW' and sta. 41+02'MW'. Traffic from Beloit destined for IH 39/90 NB will be directed to continue through the interchange and exit at the CTH X interchange. At CTH X, IH 39/90 traffic will be directed to the IH 43 SB entrance ramp. Once on IH 43, SB access to IH 39/90 NB will be provided via the new IH 43 SB lanes to IH 39/90 NB free flow ramp 'FA'.
- Access to and from IH 43 to the city of Beloit is maintained along the new STH 81 WB lanes east of the interchange and existing and temporary pavements west of the interchange.

STAGE 3D – Summer 2021

Maintenance of traffic:

- All traffic will be the same as stage 3C except traffic on Freeman Parkway which will divert around the work zone.

STAGE 3E – Summer 2021

Maintenance of traffic:

- All traffic will be the same as stage 3D except traffic on Freeman Parkway which will divert towards the east side of the work zone.

STAGE 3F – Summer 2021

Maintenance of traffic:

- IH 39/90 NB and SB traffic are in the same configuration as stage 3C.
- IH 43 NB and SB traffic are in the same configuration as 3C east of the DDI interchange.
- STH 81 EB traffic is in the same configuration as stage 3C.
- STH 81 WB traffic is along the newly constructed DDI interchange.
- IH 43/STH 81 traffic movements with IH 39/90 will utilize the temporary pavements in combination with the newly constructed DDI terminals.
- Ford street will not have direct access to STH 81. Ford street traffic will use the frontage road to Branigan road where traffic will access STH 81.
- The temporary diamond NB IH 39/90 entrance ramp will be closed to facilitate construction of the 'X3B-3' crossover. Traffic from Beloit destined for IH 39/90 NB will be directed to continue through the interchange and exit at the CTH X interchange. At CTH X, IH 39/90 traffic will be directed to the IH 43 SB entrance ramp. Once on IH 43, SB access to IH 39/90 NB will be provided via the new IH 43 SB lanes to the IH 39/90 NB free flow ramp 'FA'.
- The temporary ramp connection from NB IH 39/90 to STH 81 will be closed to facilitate construction of the 'X3B-3' crossover. Traffic from NB IH 39/90 destined for Beloit using WB STH 81 will be directed to continue east of the interchange and exit at the CTH X interchange. At CTH X, WB STH 81 traffic will be directed to the IH 43 SB entrance ramp. WB STH 81 traffic will continue along SB IH 43 until reaching the newly constructed DDI interchange where SB IH 43 will become WB STH 81.

STAGE 4A PHASE 1 – Summer/Fall 2021

Maintenance of traffic:

- IH 39/90 NB and SB traffic are in the same configuration as stage 3F.

- IH 43 NB lanes are along the new EB STH 81 pavements through the interchange area. IH 43 SB lanes are along the newly constructed STH 81 WB pavement through the interchange area. East of the interchange IH 43 is confined to two 12-foot lanes, one lane in each direction, separated by temporary precast concrete barrier along the WB lanes of the newly constructed STH 81. IH 43 traffic crosses to the newly constructed IH 43 NB lanes on a temporary crossover near the Gateway Blvd. Intersection and continues along the NB lanes to the crossover east of the CTH X/Hart road interchange.
- The NB IH 39/90 exit ramp to STH 81 and Beloit will have to be closed after traffic has been moved to the DDI pavement to facilitate the construction of the DDI ramp terminal in this quadrant. IH 39/90 NB traffic destined for Beloit will be directed to continue northbound on IH 43 and exit at the CTH X/Hart road interchange. Traffic will then head southbound on IH 43 and traffic destined for Beloit will continue southbound on STH 81.
- IH 43/STH 81 traffic movements with IH 39/90 traffic will utilize the temporary pavements in combination with the newly constructed DDI ramp terminals, except that NB IH 39/90 to NB IH 43 traffic is along a temporary free flow ramp in the SE quadrant, and SB IH 43 to NB IH 39/90 traffic is along a the newly constructed free flow 'FA' ramp.
- EB STH 81 traffic west of the interchange is in the same configuration as in stage 3F until crossing over to the new EB STH 81 lanes before the interchange. WB STH 81 traffic west of the interchange is in the same configuration as stage 3F.
- STH 81 traffic east of the interchange is confined to the new WB STH 81 lanes.
- Gateway Blvd. Traffic is confined to the two left lanes constructed in stage 3B.
- Ford street will not have direct access to STH 81. Ford street traffic will use the frontage road to Branigan road where traffic will access STH 81 as in stage 3F.
- IH 39/90 NB and SB will be rerouted during a short-term full closure for the removal of the existing STH 81 bridge structures over IH 39/90 and completion of the IH 39/90 NB roadway pavement gap. The temporary diamond interchange ramps will be utilized for the reroute during interstate shutdown. The work will take place during nighttime hours after the IH 39/90 NB exit ramp is reconnected and the temporary diamond is in full operation, prior to moving traffic to the new NB lanes.

STAGE 4A Phase 2– Summer/Fall 2021

Maintenance of traffic:

All traffic will be the same as stage 4A phase 1 except traffic on EB STH 81 which will use the newly constructed EB left turn lane at the intersection with Freeman Parkway and Ford Street.

STAGE 4A Phase 3– Summer/Fall 2021

Maintenance of traffic:

All traffic will be the same as stage 4A phase 2 except traffic on Freeman Parkway which will be diverted away from the work zone located on the east side of the intersection at STH 81.

STAGE 4B – Fall 2021

Maintenance of traffic:

- IH 39/90 NB and SB traffic is on the newly constructed NB lanes. NB continues in this configuration to the north end of the project. SB traffic crosses over to the NB lanes at Station 170+00 and back over to the ultimate SB configuration at Station 254+00.
- All lanes of STH 81 are in their ultimate location west of the interchange area.
- EB and WB lanes of STH 81 are on temporary and permanent through the DDI area in a standard diamond interchange configuration.

- The EB lanes of STH 81 crossover to the WB roadway near Station 39+00'ME' and remain on the WB side east of the interchange. East of the interchange, IH 43 is confined to two 12-foot lanes, one in each direction, separated by temporary precast concrete barrier along the WB lanes of the newly constructed STH 81. IH 43 traffic crosses to the newly constructed IH 43 NB lanes on a temporary crossover near the Gateway Blvd. intersection and continues along the NB lanes to the crossover east of the CTH X/Hart road interchange.
- Ford street traffic will maintain access by use of flagging and temporary base aggregate dense.

STAGE 4C – Fall 2021

Maintenance of traffic:

- All lanes of traffic are in their ultimate configuration except traffic along STH 81.
- EB and WB lanes of STH 81 are on temporary and permanent through the DDI area in a standard diamond interchange configuration.
- NB and SB lanes of IH 39/90 will use the outside lanes of IH 39/90. One inside lane in each direction will be closed for completion of barrier wall.
- EB and WB lanes of STH 81 will use the outside lanes of STH 81. Inside lanes of STH 81 will be closed.

STAGE 4D Phase 1 – Fall 2021

Maintenance of traffic:

- All lanes of traffic are in their ultimate configuration except traffic along STH 81.
- IH 39/90 NB lanes will be shifted around the work zone for the epoxy overlay of the west half of Structure B-53-301 before returning to the ultimate configuration.
- EB and WB lanes of STH 81 are on temporary and permanent through the DDI area in a standard diamond interchange configuration.

WB lanes of STH 81 will use the inside lanes of STH 81. The WB outside lane of STH 81 will be closed. All lanes are open on EB STH 81.

- Kerry driveway median curb and cul-du-sac removal will be completed using flagging operations.

STAGE 4D Phase 2 – Fall 2021

Maintenance of traffic:

- All lanes of traffic are in their ultimate configuration except traffic along STH 81.
- IH 39/90 NB lanes will be shifted around the work zone for the epoxy overlay of the east half of Structure B-53-301 before returning to the ultimate configuration.
- EB and WB lanes of STH 81 are on temporary and permanent through the DDI area in a standard diamond interchange configuration.
- WB lanes of STH 81 will use the inside lanes of STH 81. The WB outside lane of STH 81 will be closed. All lanes are open on EB STH 81.
- Kerry driveway median curb and cul-du-sac removal will be completed using flagging operations.

STAGE 5 – Fall 2021

Maintenance of traffic:

- Prior to moving IH 39/90 and IH 43/STH 81 interchange traffic from stage 4d to the ultimate configuration in stage 5, the interchange will need to be converted to DDI operations. This will be accomplished by closing the interchange within the DDI ramps and detouring traffic until the pavement markings are in place and the temporary signals are up and running. See stage 5 detour routes for each direction of travel.
- Once in stage 5 configuration, all lanes of traffic are in their ultimate configuration. Alternating lane closures are required through the DDI configuration until the remaining curb and gutter, final pavement markings, and permanent signals are in place.

D Access to sites for Native Prairie Seeding, Tree/Shrub and Living Snow Fence Planting and Care

Obtain prior approval from the engineer for access location(s) to each site identified in the plans for native prairie seeding, tree/shrub installation, and living snow fence installation. Contractor access to the sites shall be from side roads and interchange ramps and not from I-39/90/43, to the extent possible. Conduct operations in a manner that will cause the least interference to traffic.

Workers, material, and equipment should plan to access sites by traveling off-road within the highway right-of-way to the extent that the routes are navigable by vehicles.

Temporary lane closures and/or halting of traffic on live roadways is restricted to side roads only and shall be no longer than 2 hours per day for delivery of material and/or equipment. A flagging operation is required for any temporary lane closure on a side road. Temporary lane closures shall be according to SDD “Traffic Control For Lane Closure With Flagging Operation”. Flagging operations shall not delay either direction of traffic more than 15 minutes and the contractor shall allow all vehicles in the queue to clear prior to subsequent flagging operations.

Ramps shall remain open to traffic at all times. Ramp shoulder closures will not be allowed within 1000 feet of a ramp gore. Ramp shoulder closures are limited to 2 hours per day for material and/or equipment delivery.

Access to a planting site directly from I-39/90/43 will only be allowed from a closed shoulder that is 10-feet minimum width. The location of I-39/90/43 shoulder closures, if necessary for material and/or equipment delivery, must be requested and pre-approved by the department. Include written justification for the shoulder closure and the anticipated duration in the request. The shoulder closure must occur on the same side of the road as the planting work. Workers, equipment, and materials are prohibited from crossing I-39/90/43. A request for I-39/90/43 shoulder closure does not constitute approval. I-39/90/43 shoulder closures must be entered in the Wisconsin Lane Closure System (LCS) as specified in this article. I-39/90/43 shoulder closures are prohibited when traffic is in a counter-directional configuration on one side of the roadway.

Close shoulders according to the requirements of standard detail drawings ‘Traffic Control, Shoulder Closure on Divided Roadway, Speeds Greater than 40 M.P.H.’ and ‘Traffic Control, Work on Shoulder or Parking Lane, Undivided Roadway.’

All materials and equipment may be stored at the planting sites if located outside the planting boundary and inside the highway right-of-way as shown in the plans. No materials and equipment may be stored closer than 36 feet from the edge of any traveled way.

The use of temporary construction access point(s) to I-39/90/43 from private property is prohibited without the prior written approval from FHWA and the department. Follow the requirements specified in article "Notice to Contractor - New or Revised Temporary Construction Access to I-39/90/43" to request this type of access point. Cutting of access control fence must be repaired by the contractor at their expense.

Construction traffic cannot travel counter-directional adjacent to I-39/90/43 traffic except behind concrete barrier or guardrail.

U-Turns at existing maintenance crossovers or temporary crossovers between the I-39/90/43 northbound and southbound lanes will not be allowed.

Planting operations affecting the traveling public's safety on I-39/90/43 will not be allowed during snow and ice conditions, or any other adverse weather conditions, unless approved by the engineer.

If the contractor is unsure whether an individual work operation, for planting or seeding, will meet the traffic safety requirements of the department, review the proposed work operation with the engineer before proceeding with the work.

E Lane and Shoulder Closures

Single lane closures on IH 39/90 will be allowed during permitted lane closure times defined below in this article. During the times when one lane is allowed to be closed, a minimum clear width of 16 feet, including the adjacent shoulder, shall be maintained at all times. Times listed for lane and shoulder closures include setup and breakdown of any equipment and traffic control devices. There are no hourly daytime restrictions for single lane/shoulder closures on IH 43 or STH 81. Lane closures for IH 43 and WIS 81 are not allowed unless needed for safety, construction activities or traffic shifts.

Permitted IH 39/90 Lane Closure Times	
Day of the Week	Hours
Monday - Thursday	12:00 AM – 5:00 AM 9:00 PM – 11:59 PM
Friday	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM
Saturday	12:00 AM – 7:00 AM 9:00 PM – 11:59 PM
Sunday	12:00 AM – 7:00 AM 10:00 PM – 11:59 PM

Shoulders may be closed at any time if required by the work operation, but the right and left shoulder may not be closed in the same area at the same time, unless stated differently in other work-related articles.

Request approval from the engineer for all lane closures according to the requirements of the subsection titled "Wisconsin Lane Closure System Advanced Notification" of this article. Include justification for the lane closure and the anticipated duration in the request. A request does not constitute approval. Terminate single lane prior to the end of the permitted lane closure times. Failure to obtain approval or reopen closed lanes at the required time shall be subject to assessments specified in the Lane Rental Fee Assessment article of these special provisions.

Maintain two mile minimum spacing between simultaneous lane closures. The two mile spacing is measured from the end of the first lane closure to beginning of taper for the next lane closure.

Provide arrow boards for use during all single lane closures according to the MUTCD. Arrow boards for single lane closures will be paid for under the item Traffic Control Arrow Boards for each day with a single lane closure where an arrow board is in use.

F Roadway, Ramp, and Rolling Stop Closures

Maintain full access as shown in the Construction Staging section of the plans except those defined in the Prosecution and Progress article of these special provisions.

Place Traffic Control Signs PCMS for all lane, roadway and ramp closures as shown on the plans at least seven days prior to the lane, roadway or ramp closure.

Rolling Closures

Permitted IH 39/90 Rolling Stop Closure Times	
Day of the Week	Hours
Monday - Sunday	12:00 AM – 5:00 AM 11:00 PM – 11:59 PM

Ramp Closures

Permitted IH 39/90/43 Ramp Closure Times	
Day of the Week	Hours
Monday - Thursday	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM
Friday	12:00 AM – 5:00 AM

Contractor operations shall not require state patrol cars to stop IH 39/90 traffic for more than the number of nights listed in the Prosecution and Progress article of these special provisions. The necessary flag persons, advanced signing and law enforcement personnel are required to be on site prior to and during this operation. Make arrangements for implementing the rolling stops and closures on IH 39/90 through Jeff Gustafson at the Southwest Region Madison Office at (608) 516-6400, with the Southwest Region Office of the Wisconsin State Patrol, the Rock County Sheriff's Department, and the Dane County Sheriff's Department at least 10 days prior to any stoppage.

Failure to reopen the roadway at the required times shall be subject to penalties specified under the Prosecution and Progress and the assessments specified under the Lane Rental Fee Assessment articles of these special provisions.

G Local Access to Project

Maintain local traffic access during the construction of the local roads. Stage construction activities as required to maintain local traffic access.

Construct and maintain a local traffic access route on any section of roadway that will carry only local traffic conforming to the following criteria:

1. Number of Lanes: One lane in each direction
2. Lane Width: Minimum of 11-foot width OR one lane roadway with flagging
3. Driving Surface: Acceptable driving surfaces include base aggregate dense, asphaltic surface temporary, HMA pavement, concrete pavement and milled surfaces.

H Advance Notification

Notify the Town of Turtle, City of Beloit, Rock County Sheriff's Department and Highway Commissioner, Wisconsin State Patrol through Jeff Gustafson of WisDOT Southwest Region at (608) 516-6400 or jeffrey.gustafson@dot.wi.gov, 48 hours in advance of the start of work, closures of existing streets, and prior to traffic control changes. Notifications must be given by 4:00 PM on Thursday for any such work to be done on the following Monday.

The department has the authority to disallow any requested closures or width restrictions.

Advance notification as described above is considered to be included in the Traffic Control bid item.

I Clear Zone Working Restrictions

Do not leave any slopes steeper than 3:1 within the clear zone or any drop offs at the edge of the traveled way greater than 2 inches which are not protected by concrete barrier temporary precast. The construction clear zone for IH 39/90/43 is 20 feet.

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

Store materials or park equipment a minimum of 34-feet from the edge of the IH 39/90/43 traveled way. Equipment may be parked in the median 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.

J Portable Changeable Message Signs – Message Prior Approval

After coordinating with department construction field staff, notify Jeff Gustafson at the Southwest Region Madison Office, (608) 516-6400, three weeks prior to deploying or changing a message on a PCMS to obtain approval of the proposed message. The department will review the proposed message and either approve the message or make necessary changes.

K Wisconsin Lane Closure System Advance Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

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

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Notify the engineer and WisDOT Statewide Traffic Operations Center (STOC) at (414) 227-2142 if there are any changes in the schedule, early completions, or cancellations of scheduled work.

The department has the authority to disallow any requested closures or width restrictions.

Coordinate with the engineer prior to any traffic detour to allow at least ten working days for the review of the detour route marker signing. The engineer shall contact the Southwest Region Madison Office Traffic Management Coordinator, Jeff Gustafson, (608) 516-6400.

L Portable Intelligent Transportation System

The department may be supplying and operating an intelligent transportation system during the construction of this project. The ITS system may consist of a portable video surveillance system and portable changeable message signs. These portable units may be parked inside and outside the construction limits to help assist law enforcement and the department with monitoring traffic conditions during the construction activities.

The department will coordinate the placement of these devices with the contractor. The contractor will be required to accommodate the placement of these devices within the project. The general accommodations include an area to park the devices out of the clear zone but still visible to traffic and access to and from the devices. Contact the Southwest Region Traffic Section, Graham Heitz at (608) 246-5362 for specific details regarding the intelligent transportation system.

M Protection of Structures

Bridge pier columns and sign bridge bases are to remain protected at all times throughout construction.

N Construction Access

All construction access is subject to approval of the engineer.

Construction traffic cannot travel counter-directional adjacent to IH 39/90/43 traffic except behind temporary concrete barrier.

Construction vehicle access to and from live lanes of traffic will only be allowed during permitted lane closure times.

U-Turns at existing maintenance crossovers or temporary crossovers between IH 39/90 northbound and southbound will be allowed only when lane closures are in place for inside northbound and southbound lanes.

Construction operations affecting the traveling public’s safety on IH 39/90/43 will not be allowed during snow and ice conditions, or any other adverse weather conditions, unless approved by the engineer.

Delivery of equipment to IH 39/90 requiring the use of a semi-tractor and trailer shall only occur during those hours identified as IH 39/90 Permitted Lane Closure Times.

Enhanced Reference Location Signing

Maintain all existing enhanced reference location signing throughout the duration of the project as shown in the plans.

6. Holiday Work Restrictions

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying IH 39/90, IH-43, WIS 81, Gateway Blvd., Ford Street and Freeman Parkway traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Friday, August 30, 2019 to 6:00 AM Tuesday, September 3, 2019 for Labor Day;
- From 12:00 AM Monday October 14, 2019 to 11:59 PM Monday, October 14, 2019 for Columbus Day;
- From noon Friday, November 22, 2019 to 6:00 AM Monday, December 2, 2019 for Deer Hunting and Thanksgiving;
- From noon Monday, December 23, 2019 to 6:00 AM Thursday, January 2, 2020 for Christmas and New Year's Eve;
- From noon Friday, April 10, 2020 to 6:00 AM Monday, April 13, 2020 for Easter;
- From noon Friday, May 22, 2020 to 6:00 AM Tuesday, May 26, 2020 for Memorial Day;
- From noon Friday, July 3, 2020 to 6:00 AM Tuesday, July 7, 2020 for Independence Day;
- From noon Friday, September 4, 2020 to 6:00 AM Tuesday, September 8, 2020 for Labor Day;
- From 12:00 AM Monday October 12, 2020 to 11:59 PM Monday, October 12, 2020 for Columbus Day;
- From noon Friday, November 20, 2020 to 6:00 AM Monday, November 30, 2020 for Deer Hunting and Thanksgiving;
- From noon Wednesday, December 23, 2020 to 6:00 AM Monday, January 4, 2021 for Christmas and New Year's Eve;
- From noon Friday, April 2, 2021 to 6:00 AM Monday, April 5, 2021 for Easter;
- From noon Friday, May 28, 2021 to 6:00 AM Tuesday, June 1, 2021 for Memorial Day;
- From noon Friday, July 2, 2021 to 6:00 AM Tuesday, July 6, 2021 for Independence Day;
- From noon Friday, September 3, 2021 to 6:00 AM Tuesday, September 7, 2021 for Labor Day;
- From 12:00 AM Monday October 11, 2021 to 11:59 PM Monday, October 11, 2021 for Columbus Day;
- From noon Friday, November 19, 2021 to 6:00 AM Monday, November 29, 2021 for Deer Hunting and Thanksgiving.
- From noon Thursday, December 23, 2021 to 6:00 AM Monday, January 3, 2022 for Christmas and New Year's Eve;
- From noon Friday, April 15, 2022 to 6:00 AM Monday, April 18, 2022 for Easter;
- From noon Friday, May 27, 2022 to 6:00 AM Tuesday, May 31, 2022 for Memorial Day;
- From noon Friday, July 1, 2022 to 6:00 AM Tuesday, July 5, 2021 for Independence Day;
- From noon Friday, September 2, 2021 to 6:00 AM Tuesday, September 6, 2021 for Labor Day;
- From 12:00 AM Monday October 10, 2021 to 11:59 PM Monday, October 10, 2021 for Columbus Day.

107-005 (20050502)

7. Utilities.

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

107-065 (20080501)

Within the highway construction limits there are underground and overhead utility facilities located within the project limits. There are known utility adjustments required for the construction project as noted below. Coordinate construction activities with a call to Diggers Hotline or a direct call to the utilities that have facilities in the area as required per statutes. Use caution to ensure the integrity of underground facilities and maintain code clearance from overhead facilities at all times. Adjustments in the location of

certain described items may be necessary, as directed by the engineer, when it becomes evident that a utility conflict could occur.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, no utility relocations are necessary for this work. Coordinate planting activities with a call to Diggers Hotline or a direct call to the utilities that have facilities in the area as required per statutes. Use caution to ensure the integrity of underground facilities and maintain code clearance from overhead facilities at all times. Adjustments to the locations of the trees/shrubs may be necessary, as directed by the Corridor Vegetation Inspector, if it becomes evident that there is a utility conflict or one that could occur in the future.

The following utility companies have facilities within the project area.

AT&T Wisconsin (Communication) – has facilities within the project limits.

Relocations completed fall 2018.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, AT&T Wisconsin has an underground fiber optic cable along the south side of Avalon Road and the south side of CTH O. AT&T Wisconsin also has an underground telephone line in conduit along the north side of CTH S, shared with Charter Communications. No conflicts are anticipated with these facilities.

Field contact is:

Carol Anason,
316 West Washington Avenue
Madison, WI 53703
(608) 252-2385
ca2624@att.com

Alliant Energy (Electric) – has facilities within the project limits.

Relocations completed fall 2018.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, Alliant Energy has overhead facilities along the south right-of-way of Hart Road and Creek Road. While ornamental trees may be planted under and around the power lines, large shade trees should be offset no less than 20 feet from the overhead lines. No conflicts are anticipated.

Field contact is:

Dean Copp
935 WBR Townline Road
Beloit, WI 53511
(608) 364-6431
deancopp@alliantenergy.com

Alliant Energy (Gas) – has facilities within the project limits.

Relocations completed Fall 2018.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, Alliant Energy has a 12-inch high-pressure gas facility along the south right-of-way of Hart Road. Do not plant any tree root ball within 10 feet laterally of the gas main. Three days in advance of working within 25 feet of this facility, contact Dean Copp to schedule a watch at this gas main, per Diggers Hotline. No conflicts are anticipated.

Field contact is:

Dean Copp
935 WBR Townline Road
Beloit, WI 53511
(608) 364-6431
deancopp@alliantenergy.com

ATC (Electric) – has facilities within the project limits.

Within the highway construction limits, overhead electric lines cross IH 39/90 south of Spring Brook. No conflicts are anticipated.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, no ATC (Electric) facilities have been identified at these locations.

Field contact is:

Alex Metz
5303 Fen Oak Drive
Madison WI 53718
(608) 252-2385
ametz@atcllc.com

Charter Communications (Communication) – has facilities within the project limits.

Within the highway construction limits, communication feed to Clinton through the IH 43/Hart Road interchange will be completed prior to construction. Relocations near Kerry Ingredients and along STH 81 will take place within the summer of 2019, depending on the progress of the STH 81 roadway work. The work along STH 81 will need to be completed during construction. This work will take approximately 5 days.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, Charter has overhead cable facilities on Alliant Energy poles along the south of Hart Road. Charter also has facilities along the north side of CTH S in conduit shared with AT&T Wisconsin. No conflicts are anticipated with these facilities.

Field contact is:

Tom Phillips
2016 Cranston Road
Beloit; WI 53511
Thomas.phillips@charter.com

TransCanada (ANR Gas Pipeline) – has facilities within the project limits.

Within the highway construction limits, vent relocations will take place prior to construction.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, ANR Pipeline has high pressure gas facilities crossing Hart Road east of I-39. No conflicts are expected with these facilities.

Field Contact is:

Todd Brister
W3925 Pipeline Lane
Eden, WI 53019
(920) 477-2235
todd_brister@transcandada.com

Work within the TransCanada right-of-way will be performed according to the following guidelines:

No ground disturbance shall be made within TransCanada's right-of-way or within 25 feet, measured at right angles, of TransCanada pipeline(s) except in the presence of a TransCanada company representative.

Notice of at least 72 hours in advance of construction must be provided to the TransCanada field contact. TransCanada will arrange for a representative to be on site when work is occurring on or near the right-of-way area or within 25' of the pipelines.

Contractor must hydro-vac or hand expose TransCanada's buried pipeline(s) prior to use of mechanical equipment within 15 feet of the pipeline(s).

No bucket, any attachment or load may be swung over the pipeline(s) where there is less than 24 inches of cover.

When existing TransCanada buried pipelines are exposed, as a minimum, the following backfill requirements shall be met:

- A layer of select bedding material, sand or a mixture of sand and crushed stone, shall be placed on the bottom of the trench within the pipeline right-of-way. This bedding shall be a minimum of 4" thick and be compacted.
- Structural backfill sand shall then be carefully placed in 6-inch lifts and compacted up to the middle of the TransCanada pipeline.

The backfill, sand or native soil, above the pipe shall be free of rocks, cobbles and boulders and be compacted enough to prevent excessive settlement.

In the event of equipment crossings prior to placement of the protective concrete slabs, the contractor shall install and maintain temporary crossings of TransCanada's pipeline(s) at location(s) specified by TransCanada and that are/is perpendicular to TransCanada's pipeline(s). A minimum of 4 feet of total cover over TransCanada's pipeline(s) is required. If fill is required to obtain the minimum cover, a suitable material (preferably a bank run gravel material, or a combination of wooden mats and bank run gravel, or a TransCanada approved "Portable Land Bridge") will be placed on the existing surface of the ground over the pipeline(s) from a point 15 feet ahead of the pipeline crossing to a point 15 feet beyond the pipeline crossing. The crossing area should be a minimum of 20 feet wide so as to adequately bear the crossing weights of the heavy equipment. All vehicular traffic will cross TransCanada's pipeline(s) at these designated locations only.

The applicable state one-call system must be contacted at 811 according to its advance notification requirements prior to any ground disturbance.

Should it be necessary for a TransCanada employee/representative to enter the excavation to inspect its pipeline(s), the excavation at the crossing shall be sloped, permitted safe with trench boxes, or shored according to the requirements of the Occupational Safety and Health Administration

City of Beloit (Sewer and Water) – has facilities within the project limits.

Within the highway construction limits, relocations will be completed prior to construction.

Sewer:

Manholes south of Spring Brook on the east side of IH 39 will be adjusted prior to construction as part of this contract. Sewer relocations north of IH 43 along IH 39 will be completed prior to the start of construction.

Water:

A water valve adjustment will be completed in advance of construction.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, no City of Beloit facilities have been identified at these locations.

Field contact is:

Jodine Saunders
2351 Springbrook CT
Beloit, WI 53511
(608) 364-2918
saundersj@beloitwi.gov

Rock Energy Cooperative (electric) – has facilities within the project limits.

Within the highway construction limits, no Rock Energy Cooperative facilities have been identified at these locations.

Within the locations of the Native Prairie Seeding and Tree/Shrub Planting sites, Rock Energy Cooperative has overhead electric facilities at both Creek Road and at Woodman Road. No conflicts are anticipated with these facilities.

Field contact is:

Tony Haffelder
(608) 752-4550
tonyh@rock.coop

8. Other Contracts.

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

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

The following contracts are anticipated to be under construction within the time period of this contract and may affect landscaping work:

Project 1003-10-76/-81

These projects involve the reconstruction of I-39/90 mainline between the Hart Road bridge crossing and the STH 11/Avalon Road interchange. The projects are currently under construction until May 2020.

Projects 1003-10-79 and 1003-11-71

These projects involve Phase 1 construction of the I-39/90 and I-43 interchange. The projects are currently under construction until November 2019.

Project 1003-10-84

This project involves the widening and rehabilitation of the I-39/90 bridges over CTH O and 1 mile of adjacent mainline reconstruction. This project is currently under construction until May 2020.

9. Railroad Insurance and Coordination – Dakota, Minnesota and Eastern Railroad (CP).

A Description

Comply with standard spec 107.17 for all work affecting Dakota, Minnesota and Eastern Railroad (CP) property and any existing tracks.

A.1 Railroad Insurance Requirements

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

Insurance is filed in the name of Dakota, Minnesota and Eastern Railroad d/b/a Canadian Pacific.

Notify evidence of the required coverage, and duration to:

Jim Krieger, Manager Public Works; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 330-4555; E-mail: jim_krieger@cpr.ca.

Also send a copy to the following:

Teri Beckman, SW Region Railroad Coordinator; 2101 Wright Street, Madison, WI 53704; Telephone (608) 516-6512; E-mail: teri.beckman@dot.wi.gov.

Adam Kopp, 111 Interstate Blvd., Edgerton, WI 53534; Telephone (608) 576-8551; E-mail: adam.kopp@dot.wi.gov.

Include the following information on the insurance document:

Project ID: 1003-10-80

Project Location: Beloit, Wisconsin

Route Name: IH 39/90, Rock County

Railroad Subdivision: Rockford

Crossing ID: 388204K

Railroad Milepost: 65.32

Work Performed: B-53-300 construction

A.2 Train Operation

Approximately 0 through freight trains operate daily at up to 10 mph. Approximately 1 train operates switching movements daily through the crossing.

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

Construction Contact

Jim Krieger, Manager Public Works; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 330-4555; E-mail jim_krieger@cpr.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

Dave LeClaire, Supervisor of Public Works; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 330-4556; E-mail dave.leclaire@cpr.ca a minimum of 40 working days in advance to arrange for a railroad flagger. Reference the Crossing ID, Wisconsin Milepost and Subdivision found in A.1.

* Contact DM&E (CP) prior to letting for flagman work hour availability.

Cable Locate Contact

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

DM&E (CP) will only locate railroad owned facilities located in the railroad right-of-way. The railroad does not locate any other utilities.

A.4 Work by Railroad

The railroad will perform the work described in this section, except for work described in other special provisions and will be accomplished without cost to the contractor.

NONE.

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

A.5 Temporary Grade Crossing

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

B Railroad Flagging

Arrange with the railroad for the flagging of trains and safety of railroad operations if clearances specified in standard spec 107.17.1 are not maintained during construction operations.

The following conditions may also warrant flagging:

1. Cranes swinging (including length of boom/outriggers and /or appurtenances) or handling materials or equipment within 25 feet of the centerline of any track.

2. Construction operations that are in proximity of power lines or railroad signal and communication lines, underground cables, fuel oil facilities or pipe lines and which might result in fire or damage to such facilities, danger to railroad operations or danger to the public in the transaction of business on railroad premises.
3. Excavation, tunneling, blasting, pile driving, placing, or removing cofferdams or sheeting, or similar activities that might cause the railroad's tracks or buildings to be undermined, heaved out of normal level, shifted out of alignment, or otherwise impaired.
4. Bridge painting activities including rigging of falsework, scaffolding or similar activities over railroad tracks.
5. Deck removal activities over railroad tracks.
6. Pouring of bridge decks in spans over an operated track.
7. At any other time in railroad representative's judgment, the contractor's work or operations constitute an intrusion into the track zone and create an extraordinary hazard to railroad traffic, and at any other time when flagging protection is necessary for safety to comply with the operating rules of the railroad.

Projects with concurrent activity may require more than one flagger.

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

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

C Flagging by Railroad– Railroad Does Not Pay Flagging Costs

C.1 General

Replace paragraph (4) of standard spec 107.17.1 with the following:

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

Work that requires railroad flaggers to occupy the work zone for longer duration or longer than the normal work day will require 40 day written notice to the railroad.

C.2 Rates –DM&E (CP)

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

- $800 daily rate for an eight-hour day (including wages, labor surcharges, meals, lodging, vehicle and mileage expenses),
- $1,100 daily rate for an eight-hour day on Saturdays, Sundays or holidays (including wages, labor surcharges, meals, lodging, vehicle and mileage expenses),
- $135 per hour overtime rate for all time worked before or after the regular assigned eight hours on any day, or for a minimum three hour call on Saturdays, Sundays, or Holidays.

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

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

C.3 Reimbursement Provisions

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

C.4 Excluded Conditions

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

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

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

C.5 Payment for Flagging

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

ITEM NUMBER	DESCRIPTION	UNIT
801.0117	Railroad Flagging Reimbursement	DOL

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

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

D Rail Security Awareness and Contractor Orientation

Prior to entry on railroad right-of-way, the contractor shall arrange for on-line security awareness and contractor orientation training and testing and be registered through "e-RAILSAFE" for all contractor and subcontractor employees working on railroad right-of-way. See e-railsafe.com "Information". The security awareness and contractor orientation training is shown under the railroad's name.

The department has secured right of entry to railroad property; neither the contractor nor subcontractors or their employees will be required to sign a right of entry form.

The security awareness and contractor orientation certification is valid for two year(s) and must be renewed for projects that will carry over beyond the 2 year period. Contractor and subcontractor employees shall wear the identification badge issued by e-RAILSAFE when on railroad right-of-way. Costs associated with training and registration are incidental to other items in the contract.

stp-107-034 (20170615)

10. Information to Bidders, WPDES General Construction Storm Water Discharge Permit.

The department has obtained coverage through the Wisconsin Department of Natural Resources to discharge storm water associated with land disturbing construction activities of this contract under the Wisconsin Pollutant Discharge Elimination System General Construction Storm Water Discharge Permit (WPDES Permit No. WI-S066796-1). A certificate of permit coverage is available from the regional office by contacting Jennifer Grimes at (608) 884-1147. Post the permit in a conspicuous place at the construction site.

stp-107-056 (20180628)

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

The department has obtained a U.S. Army Corps of Engineers Section 404 permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit is available from the regional office by contacting Jennifer Grimes at (608) 884-1147, jennifer.grimes@dot.wi.gov.

stp-107-054 (20080901)

12. Environmental Protection.

Broom or brush any mud, dirt, or debris deposited on any roads, as a result of construction activity at the end of the day and as directed by the engineer.

Supplement standard spec 107.18 as follows:

All equipment to be used on the native seed and tree/shrub planting sites must be free of material that may contain weed seed upon entering or exiting the site.

Ensure that all equipment that has been in contact with areas potentially infested with invasive plant species has been decontaminated. Use the following inspection and removal procedures (guidelines from the Wisconsin Department of Natural Resources) for disinfection:

1. Prior to leaving the contaminated site, wash machinery and ensure that the machinery is free of all soil and other substances that could possibly contain exotic invasive species;

2. Clean all equipment with hot water of 105°F to 110°F for a period of 30 minutes or hot water of 140°F for a period of 5 minutes. After cleaning, dry all equipment in a sunny location for at least 3 days.

Complete the inspection and removal procedure before equipment is brought to the project and before the equipment leaves the project site.

Make equipment available for inspection by the Corridor Vegetation Inspector prior to operating within the planting site limits.

13. 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 WDNR 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.

14. Erosion Control.

Supplement standard spec 107.20 with the following:

Unless otherwise directed by the engineer at the end of each day, drive a tracked vehicle up and down all untracked or newly graded slopes to reduce the erosive potential of the slopes. The tracks shall be roughly perpendicular to the direction of storm water runoff flow down the slopes. Upslope tracking is incidental to the cost of grading.

As part of the ECIP, detail each construction phase per year; include plans for staging large fills and detailed plans for placing temporary and permanent erosion control items to provide for winterization of the project.

Delete the last sentence of standard spec 107.20(7) and replace it with the following:

Provide the permanent erosion control measures immediately after performing grading operations, unless temporary erosion control measures are specified or authorized by the engineer.

15. Erosion Control Structures.

Within seven calendar days after beginning work on the bridge superstructure, place all permanent erosion control devices, including riprap, erosion mat, ditch checks, seed, fertilizer, mulch, soil stabilizer, or any other item required by the contract or deemed necessary by the engineer. These devices shall be in place in the area under the bridge and on both sides of the roadway, from the waterway to a point 100-feet behind the backwall of the abutment. Within said limits, place these devices to a height equivalent to the calculated water elevation resulting from a storm that occurs on the average of once every two years (Q2) as shown on the plan, or as the engineer directs. Before initial construction operations, place turbidity barriers, silt screens, and other temporary erosion control measures as the plans show and remove them after the permanent erosion control devices are in place unless directed otherwise by the engineer.

In the event that construction activity does not disturb the existing ground below the Q2 elevation, the above timing requirements for permanent erosion control shall be waived.

stp-107-070 (20030820)

16. Contractor Data Packet.

The department will provide electronic design data for project 1003-10-80. The data provided is for the bidder's general knowledge only and is not a part of the contract. The department assumes no responsibility for discrepancies between the data provided and the contract documents.

The contractor data packet contains the following:

1. Field control data, LandXML v1.2 file.
2. Existing topographic data, 2D AutoCAD DWG files.
    a. Mapping
    b. Utilities
3. Reference line alignments and proposed profiles, LandXML v1.2 file(s).
4. Superelevation transition information, comma separated value (csv) text file(s).
5. Proposed roadway features, 2D AutoCAD DWG file.
6. Proposed structure horizontal features, 2D in AutoCAD DWG file.
7. Surface models, LandXML v1.2 files and AutoCAD DWG files containing 3D face objects representing surface TIN triangles of surface models as follows:
    a. Existing ground surface.
    b. Proposed top surface.
        i. Top of topsoil outside the roadway subgrade shoulder points extended to the slope intercepts.
        ii. Top of shoulder and top of pavement within the roadway subgrade.
    c. Proposed datum surface.
        i. Top of topsoil outside the roadway subgrade shoulder points extended to the slope intercepts.
        ii. Subgrade surface within the roadway subgrade shoulder points.
8. Proposed surface model longitudinal breaklines, 3D AutoCAD DWG files.
9. Surface model outer boundaries, 3D AutoCAD DWG file.
10. Slope stake report, comma separated value (csv) text file.
11. Earthwork data, Excel spreadsheet xlsx file(s).
12. Right-of-way and easement data, LandXML v1.2 file and 2D AutoCAD DWG file.
13. Metadata information.

(10/31/2017)

17. Native American Hiring.

Pre-Bid

Before bid submittal, contact the Ho-Chunk Nation Department of Labor to provide information on hiring procedures and future employment opportunities, and gather information on the tribal work force.

Ho-Chunk Nation Department of Labor contact information:

Tracy Thundercloud
Executive Director of Labor
PO Box 667
Black River Fall, WI 54615
(715) 284-9343 Ext. 1140
tracy.thundercloud@ho-chunk.com

Maintain documentation of all efforts made to communicate with the Ho-Chunk Nation. Pre-bid, submit documentation to the Bureau of Project Development at DOTDTSDHighwayConstructionContractors@dot.wi.gov in conjunction with the Proposal Request Form. The Eligible Bidders list will not be updated until this documentation is received. Include the following information in documentation:

- Proposal number/route number/termini/county
- Person(s) contacted
- Method of communication (phone, email, written, in person)
- Information exchanged (hiring procedures, available positions, referrals received, employee performance, etc)

After Execution

At a minimum of three days before the tribal coordination meeting, contact the Ho-Chunk Nation Tribal Workforce Development Manager to provide the following information regarding available employment opportunities for prime and subcontractors:

- Job classification/trade
- Job qualifications and required skills
- Employment period
- Wage
- Copy of job application

After receiving employment opportunities, the Ho-Chunk Nation Workforce Training and Development office will within two business days provide employment referrals or provide other recruitment sources to obtain qualified referrals.

Document all efforts made to communicate job opportunities and the results of hiring activities throughout the life of the contract. At any time during the life of the contract, provide Ho-Chunk Nation communication documentation within five business days of request by the department.

Tribal Coordination Meeting

Between execution of contract and the project preconstruction conference, setup and coordinate a meeting with the Tribal officials and leaders at Ho-Chunk Nation and notify and invite WisDOT Statewide Tribal Liaison, 4822 Madison Yards Way, 4th Floor South, P.O. Box 7965, Madison, WI 53707-7965, ryan.greendeer@dot.wi.gov, (608) 347-1873. The prime contractor and all subcontractors shall attend this meeting. Discuss available employment opportunities and other tribal areas of interest such as scope of work, Tribal regulations, borrow sites, waste sites, and available aggregate.

Project Completion

As a part of the document submittals required under standard spec 109.7, submit documentation summarizing communications regarding job opportunities throughout the life of the contract. Provide final report to the tribe and Statewide Tribal Affairs compiling the results of hiring activities for the prime contractor as well as for subcontractors at all tiers.

107-200 (20140630)

18. Contract Award and Execution.

Supplement standard spec 103 as follows:

103.9 Mobilization Workshops

103.9.1 Workshop Schedule

After contract award, attend the following workshops. Each workshop is described below and will include but not be limited to the topics outlined below.

Workshop	Timeframe
Initial Work Plan (IWP)	Prior to Notice to Proceed (NTP)
Cost Reduction Incentive & Submittals	Prior to preconstruction meeting
Utility Coordination	Prior to preconstruction meeting
Baseline CPM Progress Schedule	After NTP and submittal of Baseline CPM Progress Schedule
Work Force Opportunities	Day of preconstruction meeting

The workshop dates will be scheduled by the engineer after contract award. The engineer may modify the original workshop schedule to ensure attendance by the necessary department and contractor personnel. Workshops may be scheduled earlier than specified if agreed to by all parties. Workshops may be deleted and/or combined depending on the complexity and requirements of the project.

103.9.2 Workshops

103.9.2.1 Initial Work Plan

103.9.2.1.1 General

The Initial Work Plan workshop will provide a forum to discuss and answer questions relative to the proposal, bid schedule, and other questions in the Project Questionnaire described in standard spec 103.9.2.1.2. The Initial Work Plan Workshop will include:

- Contractor responses to the attached Project Questionnaire.
- Department presentation of the use of CPM scheduling on the project.
- Contractor presentation of the conceptual work plan for the project.
- Department and contractor discussion of the level of detail and features in the Initial Work Plan Schedule and the Baseline CPM Progress Schedule.

103.9.2.1.2 Project Questionnaire

Provide the following information in the order shown below. This information will constitute the “Project Questionnaire.”

General Information

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

1. Provide the following information about the company:

    - Firm Name
    - Address
    - Telephone and facsimile numbers; e-mail address
    - Contracting Specialties
    - Years performing work in contracting specialties

- Geographic areas served
- Total Management Employees and years of service
- Project Managers
- General Superintendents
- Craft Superintendents
- Engineers
- Estimators
- CPM Schedulers

Construction Engineering

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

2. Provide (if applicable) your third-party construction engineering firms.
3. Provide plan for construction surveying.

Subcontractors

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

Permanent Material Suppliers

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

Quality Control (where applicable)

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

2. Provide/attach a copy of your Construction Quality Control Manager's resume indicating the manager's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).
3. List the major elements and/or Table of Contents of your Construction Quality Management Program.
4. Provide the name of your Independent Quality Control Testing firm (Construction Quality Control Lab) and qualifications indicating the firm's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).

Organization Chart

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

Work Rules

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

Maintenance of Traffic

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

2. Attach a copy of your Preliminary Schedule indicating your approach to achieving the substantial completion schedule.
3. Include an outline of your approach to the maintenance of traffic and how you shall stage the construction to meet the substantial completion schedule including planned locations for local street and freeway access into and out of the work zones for each stage of construction.

Construction

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

    - Retaining wall construction by type of work
    - Bridge demolition
    - Roadway structural section
    - Roadway excavation
    - Underground construction
    - Office and yard facilities

103.9.2.2 Cost Reduction Incentives and Submittals

The Cost Reduction Incentive (CRI) and Submittals workshop will have two primary topics outlined below:

Cost Reduction Incentives

Identify value enhancing opportunities and consider modifications to the plans and specifications that will reduce either the total cost, time of construction or traffic congestion, without impairing, in any manner, the essential functions or characteristics of the project, including, but not limited to, service life, economy of operation, ease of maintenance, benefits to the traveling public, desired appearance, or design and safety standards.

Submit recommendations resulting from the workshop for approval by the engineer as cost reduction incentive proposals in conformance with the provisions in standard spec 104.10 "Cost Reduction Incentive."

The department and the contractor may be able to complete the CRI Concept process, as specified in standard spec 104.10.2, during the CRI workshop.

Submit CRIs after the CRI workshops that were not introduced at the CRI workshop.

Submittals

The Submittals Workshop will identify the key required submittals for the project, categorize submittals into functional areas, and develop a schedule for submittals, submittal reviews, and material fabrications and deliveries. The workshop participants will at a minimum:

1. Review the project special provisions.
2. Categorize submittals into functional areas including but not limited to:
    - MSE Retaining Walls
    - Temporary Shoring
    - Falsework and Formwork
    - Girder Shop Drawings, Fabrication, and Delivery Dates
    - Steel Transportation, Delivery, and Erection

- Structure Demolition Plans
- Pile Hammers and High Capacity Piling
- Concrete/ Asphalt
- Materials
- ITS / Lighting
- Traffic Signals
- Sanitary Sewer and Water
- Permits

3. Develop a schedule for submittals. Submittal schedule data shall be incorporated into CPM progress schedule to reflect submittal preparation durations and dates, submittal approval durations and dates, and material fabrication periods with forecasted delivery dates. Reference Baseline CPM Progress Schedule in these special provisions.

103.9.2.3 Utility Coordination

The Utility Coordination Workshop will define the scope and schedule of utility relocation work and the respective roles and responsibilities of the project team.

1. At a minimum, the following key personnel will attend the Utility Coordination Meeting.
    - Department's Utility Coordinator
    - Contractor's Project Manager, Foreman, Supervisor
    - Designer Team's Utility Coordinator
    - Key Utility Company Representative(s)
2. At a minimum, the Utility Coordination Meeting will include a review of the following:
    - Summary of all required utility relocations on the project.
    - Special provisions addressing utility work.
    - Sharing of contact information.
    - Scheduling of work for utility relocation(s) including critical milestones and staging for the work.
    - Contractor's work schedule and anticipated conflicts with the utility's construction schedule.

103.9.2.4 Baseline CPM Scheduling

At the Baseline CPM Scheduling workshop, provide a presentation of the Baseline CPM Schedule. In the presentation, include a discussion of the anticipated fabrication and delivery durations for long lead material procurements, construction staging and sequencing of the work, understanding of traffic phasing, and application of labor and equipment resources to the work. Address comments raised in the engineer's review.

103.9.2.5 Work Force Opportunities

The Work Force Opportunities workshop will provide a venue for contractors to have meaningful dialogue with TrANS providers regarding the hiring of TrANS graduates. For the prime contractor and the subcontractors, provide staff with hiring authority to participate in a job-matching session during this workshop. The workshop will take place on the same day and in the same location as the pre-construction meeting. The workshop participants will at a minimum:

1. Review contractor hiring processes for general labor positions.
2. Review and listen to presentation provided by TrANS providers regarding the training program including details regarding how contractors can hire TrANS graduates.

3. Review TrANS graduate availability for working on project.
4. Meet one-on-one for at least two minutes with each TrANS graduate in attendance at the meeting.

(1/5/2017)

19. 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)

105-005 (20151210)

20. Notice to Contractor – Construction Safety.

Add the following to standard spec 107:

Description

This specification describes minimum occupational safety and health requirements for the prime contractor and their subcontractors performing work on this project. The fundamental objective of these requirements is to eliminate construction related injuries and incidents so that their associated impacts to workers and the public, budgets and schedules are avoided or minimized.

Definitions

Certified Crane Operator. To be certified a crane operator one must pass both written and practical tests offered by a nationally accredited testing organization, such as the National Commission for the Certification of Crane Operators (NCCCO) or the Operating Engineers Certification Program (OECP).

Competent Person. One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Critical Lift. A critical lift applies to, but is not limited to the following: any crane lift or hoisting operation that exceeds 75 percent of the rated capacity of the crane, requires the use of more than one crane or hoisting device, involves barge-mounted cranes, where the center of gravity could change, lifts where existing outriggers cannot be fully extended due to site constraints, lifts involving multiple lift rigging assemblies or other non-routine/difficult rigging arrangements.

Project Safety Officer (PSO). The person or persons designated by the department to coordinate implementation of a construction safety management system, including risk assessment, training, evaluating effectiveness, corrective/preventive action, and management review.

Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.

Safety Representative (SR). A person designated by the contractor to develop and implement the company's health and safety plan, assess job hazards, and identify and carry out corrective and preventive actions.

General Requirements

Notify the department immediately of any agency compliance inspections, including but not limited to the Occupational Safety and Health Administration (OSHA).

Report all project-related fatalities and OSHA-recordable injuries and illnesses that result in inpatient hospitalizations within 8 hours to the Project Safety Officer (PSO). Report all other project-related OSHA-recordable injuries and illnesses monthly to the PSO.

Safety Representative Requirements

Provide at least one Safety Representative (SR). Each SR shall perform inspections, safety observations and other safety-related duties on-site on a weekly basis, at a minimum. Provide an alternate SR in the event of illness or other unforeseen circumstances.

Each SR and alternate SR shall have training, knowledge and experience in construction safety and health, including but not limited to a current OSHA 10-hour Occupational Safety and Health Training Course in Construction Safety and Health. Provide evidence of SR certifications, qualifications and training to the PSO.

Each SR and alternate SR shall attend a 2-hour Construction Safety Awareness Training provided by the department at the beginning of the project and at least once every two years. The SR shall communicate and distribute materials provided in the 2-hour Construction Safety Awareness Training to their site workers prior to starting site construction activities.

Requirements for Construction Health and Safety Programs

In addition to implementing programs to meet the requirements of OSHA Construction Safety and Health standards, develop a written safety plan for the work to be performed. Note: General guidance is provided in Section 1-35.1.2 of the Construction and Materials Manual.

Traffic Control and Vehicle Collision Prevention/Risk Reduction

All vehicles and mobile equipment shall use high-intensity rotating, flashing, oscillating, or strobe lights according to Section 6G.02 of the Manual of Uniform Traffic Control Devices (FHWA, 2009).

Provide crash cushions or truck (or trailer)-mounted attenuators (TMAs) on shadow vehicles to protect workers, vehicles, and mobile equipment from vehicle collisions according to the Manual of Uniform Traffic Control Devices (FHWA, 2009, Section 6F.86). Coordinate with the engineer at least 72 hours before placing a TMA in service.

Personal Protective Equipment (PPE)

Minimum Requirement Personal Protective Equipment (PPE) to be worn in Construction Work Areas:

ASTM F2413-11 safety-toed boots rated for impact and puncture resistance (PR) shall be worn.

ANSI Z-87+ impact-resistant safety glasses with sideshields shall be worn. Requirements for faceshields, goggles, welding shades, etc. shall be determined by the SR.

ANSI Z-89.1 Class G or E hard hats where there is potential for impact or injury to the head.

Daytime Work: ANSI/ISEA 107-2004 Class 2 or 3 high visibility vests at all times and Type E pants for flaggers and other personnel working on the traffic side of concrete barriers (yellow/lime).

Nighttime Work: ANSI/ISEA 107-2004 Class 2 or 3 retro-reflective safety vests (yellow/lime) and Type E pants (Type 3 ensemble) and a hard-hat-mounted LED light (“miner’s lamp”).

Hearing protection shall be used, if the work site noise exceeds 90 decibels (dBA), as 8-hour average exposure measurements. [29 CFR 1926.52 and .101]

Walking and Working Surfaces

Keep all accessible work areas and passageways free from debris, obstructions and other slip, trip and fall hazards.

Excessive Driving Hours/Extended Work Shifts

Distribute a one-page handout to each truck driver accessing the work zone to increase their awareness of hazards related to extended work shifts. The department will make the handout available electronically.

Cranes and Hoists.

Ensure that all crane operators have been certified by the National Commission for the Certification of Crane Operators (NCCCO) or by the Operating engineer Certification Program (OECP) if they will be operating a 10-Ton or greater capacity crane or if they are involved in critical lifts.

Provide critical lift plans to the department at least 72 hours prior to a critical lift. The contractor is responsible for all submittals, assumptions, calculations, and conclusions. Have a professional engineer, registered in the state of Wisconsin and knowledgeable of the specific site conditions and requirements, verify the adequacy of the design. Submit one copy of each design, signed and sealed by the same professional engineer verifying the design, to the engineer.

Crane operators shall safely terminate hoisting operations in the event of wind conditions that exceed the original equipment manufacturer's specifications for safe operation.

Work near American Transmission Company (ATC) 69 kV, 138 kV, and 345 kV Overhead Electric Lines

WisDOT is aware of possible induced voltage on metal objects from overhead 69 kV, 138 kV, and 345 kV electric lines. WisDOT staff are utilizing personal protective equipment (PPE) in the form of insulated gloves when inspecting or working on metal objects in the vicinity of these lines. Please use PPE according to your company policies and OSHA requirements. Consult the current version of the ATC guidance document "Induced Voltage and Nuisance Shocks" (ATC, 2013) for best practices to prevent nuisance shocks when working around these overhead lines.

Documentation and Records

Maintain documents and records and ensure that they are readily available upon request. At a minimum this includes:

1. Written Safety Plan for Work Activities to be Performed

2. Names of Safety Representatives and copies of their OSHA 10-Hour Occupational Safety and Health Training Course in Construction Safety and Health training cards.

3. Names of Competent Persons and Qualified Persons (if required by OSHA for the work performed).

4. Reports of inspections of the job sites, materials, and equipment [29 CFR 1926.20(b)(2)].

5. Documentation that the SR has communicated and distributed materials from the Construction Safety Awareness Training to their site workers. At a minimum this will include a dated sign-in sheet with the names and signatures of the workers trained. The department will provide a sign-in sheet template electronically.

6. Project site OSHA 300 Log (no worker names)[29 CFR 1904.29]

7. Project site OSHA 301 Incident Report (no worker names) [29 CFR 1904.29]

8. Hazard Communication Program [29 CFR 1926.59]

    a. Hazardous Chemical Inventory,

    b. Location of Safety Data Sheets (SDSs)

    c. Hazard Warning Symbols

    d. Information and training requirements.

9. Exposure Monitoring results (if monitoring is required under a specific OSHA standard-no worker names)

10. Crane operator certifications (if applicable)

11. Fall Protection Plan (if applicable) [29 CFR 1926.500-.503 and 1926.104]

12. Confined Space Entry Procedures (if applicable). [29 CFR 1926.1200-.1213]

13. Lockout/Tagout Procedures (if applicable). [29 CFR 1926.417 and .702]

14. Respiratory Protection Program (if applicable) [29 CFR 1926.103 and 1910.134(c)]

15. Emergency Action Plan [29 CFR 1926.35]

    a. Emergency escape procedures and emergency escape route assignments

    b. Procedures to be followed by employees who remain to operate critical equipment before they evacuate

    c. Procedures to account for all employees after emergency evacuation has been completed

    d. Rescue and medical duties for those employees who are to perform them;

        · First Aid and Medical Treatment Procedures [29 CFR 1926.50]

        · Equipment and Supplies

        · Names of persons certified in first aid

        · Location of the nearest medical facility.

    e. The preferred means of reporting fires and other emergencies

    f. Prime contractor's alarm system

    g. Names or regular job titles of persons who can be contacted for further information or explanation of duties under the plan.

16. Fire Protection Program (if applicable) [29 CFR 1926.150]

17. Fire Prevention Plan and Hot Work Permit procedures (if applicable) [29CFR 1926.352]

(2/21/17)

22. Notice to Contractor – Revisions to Traffic Control Plans.

The traffic control and staging plans/details contained within the project plans have been developed from an FHWA approved Transportation Management Plan (TMP). According to TMP requirements, the DEPARTMENT shall revise the TMP during construction if conditions warrant. This specification shall be followed to obtain concurrence for implementation of any proposed changes to construction phasing/staging that will affect the traffic patterns depicted in the plans.

Submit traffic control revision(s) to the engineer a minimum of 21 calendar days prior to the anticipated implementation of the proposed change(s). Include the following:

Detail on existing or new project plan sheets that show:

- The revised traffic pattern, widths, grades, temporary pavement, signs, traffic control devices, pavement marking, flaggers, time of day, width restrictions, and any other details required to convey a new or revised traffic control design.
- Erosion control measures required, including the location(s) of any tracking pad(s).

Written summary of proposed traffic control change including:

- Benefits to implementing the change (i.e., cost or time savings, ease of construction, increased safety to workers, and the motoring public).
- Timeframe to construct, duration in place, and time to remove.

The request will be reviewed, and if warranted, concurred with designated I-39/90 Corridor Management Team (CMT) staff, the engineer, and WisDOT Central Office Field Construction Coordinator (if warranted). If the request is approved, it will be forwarded to FHWA for review and processing a minimum of 7 calendar days in advance of the contractor's anticipated implementation.

The engineer shall correspond with the following FHWA and department staff to obtain concurrence:

- Greg Newhouse, FHWA, Gregory.Newhouse@dot.gov
- Rich Cannon, I-39 CMT Traffic, Richard.Cannon@dot.wi.gov
- Jeff Gustafson, I-39 CMT Traffic, Jeffrey.Gustafson@dot.wi.gov

(10/3/2016)

23. Notice to Contractor – New or Revised Temporary Construction Access to I-39/90/43.

Traffic control and staging plans/details contained within the project plans shall be followed by the contractor. The contractor's use of any construction access point(s) to I-39/90/43 which is/are not shown in the plans is prohibited without the prior written approval from FHWA and the department. To obtain written approval for temporary access to I-39/90/43 during construction, the contractor shall provide the following:

Details on existing or new project plan sheets that show:

- The location, dimensions, grades, and slopes for any new/revised temporary construction access point(s) to I-39/90/43.
- Traffic control measures that are required to manage this access change.
- Traffic control measures that are required to secure/close any new/revised construction access points when not in use.
- Erosion control measures required to manage this change, including the location(s) of any tracking pad(s).

Written summary of proposed temporary construction access change including:

- Timeframe to construct, duration in place, and time to remove.
- Cost of proposed temporary access including grading, traffic control, erosion control, and all other items and incidentals to implement and remove the access.

- Benefits in implementing the change (i.e., cost or time savings, ease of construction, increased safety to workers, and the motoring public).
- Signed Construction Permit if temporary access traverses private property.

The above information shall be provided to the engineer a minimum of 14 calendar days prior to the contractor's anticipated implementation of the new/revised temporary construction access to I-39/90/43. The request will be reviewed, and if warranted, concurred with designated I-39/90 CMT Traffic and Project staff, the engineer, and WisDOT Central Office Field Construction Coordinator (if warranted). If these parties concur with the request, it will be forwarded to FHWA for review and processing a minimum of 7 calendar days in advance of the contractor's anticipated implementation.

The engineer shall correspond with the following FHWA and department staff for concurrence:

- Greg Newhouse, FHWA, Gregory.Newhouse@dot.gov
- Rich Cannon, I-39 CMT Traffic, Richard.Cannon@dot.wi.gov
- Jeff Gustafson, I-39 CMT Traffic, Jeffrey.Gustafson@dot.wi.gov

In the event of an emergency situation the above review process, including the extent of information required to be submitted and approval timeframes, can be modified if agreed upon by all parties.

(10/3/2016)

24. Notice to Contractor – Airport Operating Restrictions – Site Specific.

General Restrictions

A temporary permit is not required from the Federal Aviation Administration (FAA) for the permanent or temporary installations that are included in the plans NOT LISTED BELOW UNDER 'SITE SPECIFIC RESTRICTIONS' as long as the contractor uses equipment that will not exceed 200 feet above ground level. The contractor shall submit FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA a minimum of 45 days before beginning construction operations that propose to use equipment that will exceed 200 feet above ground level.

If required, the FAA will return FAA Form 7460-2, Notice of Actual Construction or Alteration, with a determination. The contractor shall complete and send FAA Form 7460-2, Part 1 to the FAA at least 48 hours prior to starting the actual construction or alteration of a structure. Additionally, the contractor shall submit Part 2 no later than 5 days after the structure has reached its greatest height.

Contact Justin Hetland, Airspace Safety Program Manager, Bureau of Aeronautics at (608) 267-5018 (Justin.Hetland@dot.wi.gov) with any questions. Refer to the following FAA website for instructions to complete the form and the required information.

http://oeaaa.faa.gov/oeaaa/external/portal.jsp.

Site Specific Restriction

The Federal Aviation Administration (FAA) has height restrictions surrounding select airports. The department has obtained Temporary Determination of No Hazard to Air Navigation for all temporary structure (i.e. crane) erections associated with bridge, noise barrier, and retaining wall construction at the following location. A copy of the determination can be obtained through the engineer.

Project ID	Structure	Location	Latitude	Longitude	Heights	Issue Date	Expiration Date	Aeronautical Study No.
1003-10-80	Crane (Temporary for B-53-300)	SB IH 39/90 over CPRR and Spring Brook	42-31-13 N NAD 83	88-58-31 W	160 feet AGL 1,000 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17351-OE(A)
1003-10-80	Crane (Temporary for B-53-302/303)	EB and WB STH 81 over IH 39/90	42-31-41 N NAD 83	88-58-31 W	160 feet AGL 1,000 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17352-OE(A)
1003-10-80	Crane (Temporary for B-53-304)	IH 43 SB to IH 39/90 SB ('FC' Line) South Abutment	42-31-32 N NAD 83	88-58-32 W	160 feet AGL 1,009 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17353-OE(A)
1003-10-80	Crane (Temporary for B-53-304)	IH 43 SB to IH 39/90 SB ('FC' Line) Pier 3	42-31-38 N NAD 83	88-58-28 W	160 feet AGL 972 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17354-OE(A)
1003-10-80	Crane (Temporary for B-53-304)	IH 43 SB to IH 39/90 SB ('FC' Line) Pier 6	42-31-43 N NAD 83	88-58-23 W	160 feet AGL 982 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17355-OE(A)
1003-10-80	Crane (Temporary for B-53-304)	IH 43 SB to IH 39/90 SB ('FC' Line) North Abutment	42-31-47 N NAD 83	88-58-13 W	160 feet AGL 1,009 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17356-OE(A)
1003-10-80	Crane (Temporary for B-53-305)	IH 39/90 SB to IH 43 NB ('FD' Line) North Abutment	42-31-56 N NAD 83	88-58-32 W	160 feet AGL 1,018 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17357-OE(B)
1003-10-80	Crane (Temporary for B-53-305)	IH 39/90 SB to IH 43 NB ('FD' Line) South Abutment	42-31-51 N NAD 83	88-58-27 W	160 feet AGL 1,014 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17358-OE(B)

1003-10-80	Crane (Temporary for B-53-306)	IH 39/90 NB to IH 43 NB ('FB' Line) South Abutment	42-31-43 N NAD 83	88-58-20 W	160 feet AGL 1,012 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17359-OE(A)
1003-10-80	Crane (Temporary for B-53-306)	IH 39/90 NB to IH 43 NB ('FB' Line) North Abutment	42-31-47 N NAD 83	88-58-10 W	160 feet AGL 1,005 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17360-OE(A)
1003-10-80	Crane (Temporary for B-53-307)	IH 43 NB ('FB' Line) over 'MB' Line	42-31-40 N NAD 83	88-58-24 W	160 feet AGL 1,010 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17361-OE(A)
1003-10-80	Crane (Temporary for B-53-46/47)	Existing STH 81 over IH 39/90	42-31-39 N NAD 83	88-58-31 W	160 feet AGL 976 feet AMSL	10/01/2018	04/01/2020	2018-AGL-17362-OE(A)

As a condition of the Determinations, cranes shall be marked and/or lit according to FAA Advisory Circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, flags/red lights – Chapters 3 (Marked), 4, 5 (Red) and 12.

For all other locations not listed under the lighting requirements above, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, the contractor is encouraged to install and maintain it according to FAA Advisory Circular 70/7460-1 K Change 2.

Notify the manager of SOUTHERN WISCONSIN RGNL at (608) 757-5768 at least 3 business days prior to any temporary structure being erected and again when the temporary structure is removed from the site.

Lower any temporary structure (i.e. crane) to the ground when not in use.

It is required that the manager of JVL Air Traffic Control Tower at (608) 754-2611 be notified at least 5 business days prior to any temporary structure being erected and again when any temporary structure is removed from the site. Additionally, please provide contact information for the onsite operator in the event that Air Traffic Control requires the temporary structure to be lowered immediately.

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

Any height of a temporary structure exceeding above ground level (AGL) or above mean sea level (AMSL), as listed in the temporary determination, will result in a substantial adverse effect and will warrant a Determination of Hazard to Air Navigation.

The determination expires unless extended, revised or terminated by the issuing FAA office. If an extension is needed, the contractor must request an extension to the effective period of the determination. The request must be postmarked or delivered, to the office below, at least 30 days prior to the expiration date:

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

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

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

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

The contractor must copy the engineer on any correspondence with the FAA.

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

(1/5/2015)

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

John Roelke, License Number AII-119523, inspected Structures B-53-48/51 for asbestos on November 15, 2013. No regulated Asbestos Containing Material (RACM) was found on these structures. A copy of the inspection report is available from: Jennifer Grimes at (608) 884-1147.

James Gondek, License Number AII-108099, inspected Structures B-53-46/47 for asbestos on December 5, 2005. No regulated Asbestos Containing Material (RACM) was found on these structures. A copy of the inspection report is available from: Jennifer Grimes at (608) 884-1147.

According to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days before beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form to Jenny Grimes at (608) 884-1147 and DOT BTS-ESS Attn: Hazardous Materials Specialist PO Box 7965, Madison, WI 53707-7965. In addition, comply with all local or municipal asbestos requirements.

Use the following information to complete WDNR form 4500-113:

- Site Name: Structure B-53-48, IH 90 EB over Spring Brook/CPRR
- Site Address: 0.6M E JCT IH 43 TO S
- Ownership Information: WisDOT Transportation Southwest Region, 2101 Wright Street, Madison, WI 53704-2583
- Contact: Jamie Grainger
- Phone: (608) 884-1173
- Age: 60 years old. This structure was constructed in 1959.
- Area: 14,100 SF of deck

- Site Name: Structure B-53-51, IH 39NB/90WB over Spring Brook/CPRR

- Site Address: 1.9M N ILL STATE LINE
- Ownership Information: WisDOT Transportation Southwest Region, 2101 Wright Street, Madison, WI 53704-2583
- Contact: Jamie Grainger
- Phone: (608) 884-1173
- Age: 60 years old. This structure was constructed in 1959.
- Area: 12,856 SF of deck

- Site Name: Structure B-53-46, IH 43 SB over IH 90
- Site Address: 6.9M S JCT STH 140 TO S
- Ownership Information: WisDOT Transportation Southwest Region, 2101 Wright Street, Madison, WI 53704-2583
- Contact: Jamie Grainger
- Phone: (608) 884-1173
- Age: 60 years old. This structure was constructed in 1959.
- Area: 11,562 SF of deck

- Site Name: Structure B-53-47, STH 81 EB over IH 90
- Site Address: 3.4M E JCT USH 51 TO N
- Ownership Information: WisDOT Transportation Southwest Region, 2101 Wright Street, Madison, WI 53704-2583
- Contact: Jamie Grainger
- Phone: (608) 884-1173
- Age: 60 years old. This structure was constructed in 1959.
- Area: 11,860 SF of deck

Insert the following paragraph in Section 6.g.:

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

stp-107-125 (20120615)

26. Notice to Contractor, Subcontractor Pre-Certification.

Pre-certification is required for native prairie seeding (with follow-up surveillance and care), and tree/shrub installation (with follow-up surveillance and care).

Subcontractors from each of the pre-certified lists titled "Native Seed Installation and Restoration Management" and "Woody Vegetation Installation and Restoration Management" shall perform the work associated with the pertinent items listed further in this article. The same subcontractor is allowed if that subcontractor is on both lists.

The pre-certified lists are located on the department's Highway Construction Contract Information (HCCI) web site.

Subcontractors or entities not on the department list are not permitted to perform the work.

Native Seed Installation and Restoration Management pre-certification is required for the following pay items:

- SPV.0005.501 Pre-Planting Vegetation Treatment
- SPV.0005.502 Seed Bed Preparation
- SPV.0060.506 Native Seed Surveillance and Care Cycles
- SPV.0085.509 Seeding Native Mix N1
- SPV.0085.510 Seeding Native Mix N2
- SPV.0085.511 Seeding Native Mix N3
- SPV.0085.512 Seeding Native Mix N4

Woody Vegetation Installation and Restoration Management pre-certification is required for the following pay items:

- 632.0101 Trees
- 632.0201 Shrubs
- 632.9101 Landscape Planting Surveillance and Care Cycles
- SPV.0035.501 Topsoil Special
- SPV.0060.508 Planting Living Snow Fence

At the preconstruction meeting or 14 days prior to the start of construction, whichever date is earlier, submit the names, positions, experience, and qualifications of any personnel to be used on this project that were not listed in the Request for Qualifications. Any new personnel must be approved by the department before vegetation management work begins.

27. Clearing, Items 201.0105, and Item 201.0205; Grubbing, Items 201.0205, and Item 201.0220.

Supplement standard spec 201.3 with the following:

Emerald Ash Borer (EAB)

The emerald ash borer (EAB) has resulted in a quarantine of ash trees (*Fraxinus, sp*) by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) and the Wisconsin Department of Natural Resources (DNR).

Ash trees species attacked by emerald ash borer include the following:

- Green ash (F. pennsylvanica) is found throughout the state but is most common in southern Wisconsin. It may form pure stands or grow in association with black ash, red maple, swamp white oak, and elm. It grows as an associate in upland hardwood stands, but is most common in and around stream banks, floodplains, and swamps.
- Black ash (F. nigra) is distributed over the entire state but is most frequently found in northern Wisconsin. It is most common in swamps but is also found in other wet forest types.

- Blue ash (F. quadrangulata) is a threatened species that is currently found only at a few sites in Waukesha County. The species is at the edge of its range in Wisconsin but is common in states farther south. The species is not of commercial importance. Blue ash twigs are 4-sided.
- White ash (F. americana) tends to occur primarily in upland forests, often with Acer saccharum.
- Includes all horticultural cultivars of these species.

(Note: blue ash twigs are 4-sided. All other Wisconsin ash trees have round stems.)

Mountain ash (Sorbus Americana and S. decora) is not a true ash and is not susceptible to EAB infestation.

The contractor shall be responsible for hiring a certified arborist to identify all ash trees that will be cleared and grubbed for the project. In addition, prior to scheduled clearing and grubbing activities, the arborist shall mark all ash trees with flagging tied around the trunk perimeter (florescent lime is suggested as it isn't identified with other project activities).

Follow and obey the following DATCP order:

ATCP 21.17 Emerald Ash Borer, Import Controls and Quarantine

1. Importing or moving regulated items from infested areas; prohibition. Except as provided in sub. (3), no person may do any of the following:
    a) Import a regulated item under sub. (2) into this state if that item originates from an emerald ash borer regulated area identified in 7CFR 301.53-3.
    b) Move any regulated item under sub. (2) out of an emerald ash borer regulated area that is identified in 7CFR 301.53-3 and located in this state.

Note: The United States Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS) periodically updates the list of regulated areas in 7CFR 301.53-3. Subsection (1) applies to new regulated areas as those areas are identified in the CFR.

1. Regulated items.

The following are regulated items for purposes of sub. (2):

a) The emerald ash borer, Agrilus planipennis Fairmaire in any living stage.
b) Ash trees.
c) Ash limbs, branches, and roots.
d) Ash logs, slabs or untreated lumber with bark attached.
e) Cut firewood of all non-coniferous species.
f) Ash chips and ash bark fragments (both composted and uncomposted) larger than one inch in diameter.
g) Any other item or substance that may be designated as a regulated item if a DATCP pest control official determines that it presents a risk of spreading emerald ash borer and notifies the person in possession of the item or substance that it is subject to the restrictions of the regulations.

Regulatory Considerations

The quarantine means that ash wood products may not be transported out of the quarantined area.

Clearing and grubbing includes all ash trees that are to be removed from within the project footprint. If ash trees are identified within clearing and grubbing limits of the project, the following measures are required for disposal:

Chipped ash trees

1. May be left on site if used as landscape mulch within the project limits. If used as mulch on site, chips may not be applied at a depth greater than standard mulch applications as this will impede germination of seeded areas.
2. May be buried on site within the right-of-way according to standard spec 201.3 (14).
3. May be buried on adjacent properties to projects within the quarantined zone with prior approval of the engineer according to standard spec 201.3 (15).
4. May be trucked to a licensed landfill within the quarantined zone with the engineer's approval according to standard spec 201.3 (15).

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

28. Debris Containment B-53-48, Item 203.0225.S.701; Debris Containment B-53-51, Item 203.0225.S.702.

A Description

This special provision describes providing a containment system to prevent debris from structure removal, reconstruction, or other construction operations from falling onto facilities located under the structure. Using this containment system does not relieve the contractor of requirements under standard spec 107.17 and standard spec 107.19 or requirements under a US Army Corps of Engineers Section 404 Permit.

B (Vacant)

C Construction

Before starting work, submit a debris containment plan to the engineer for review. Incorporate engineer-requested modifications. Do not start work over any highway or railroad until the engineer approves the debris containment plan.

Maintain adequate protection throughout construction for people and property within the potential fall zone. Ensure that a containment system capable of protecting underlying facilities from falling construction debris is in place before beginning deck repair, parapet removal, or other operations that may generate debris.

At least 15 working days before conducting potential debris generating operations, contact the following owners or lessees:

- B-53-48 and B-53-51: CPRR Contact –Jim Krieger, Manager Public Works; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 330-4555; E-mail: jim_krieger@cpr.ca.
- B-53-46, B-53-47: Jamie Grainger, (608) 884-1173, Jamie.Grainger@dot.wi.gov

D Measurement

The department will measure Debris Containment (Structure) as a single lump sum unit of work for each structure, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
203.0225.S.701	Debris Containment B-53-48	LS
203.0225.S.702	Debris Containment B-53-51	LS

Payment is full compensation for furnishing, installing, maintaining, and removing a debris containment system.

stp-203-010 (20080902)

29. Removing Old Structure Over Waterway With Minimal Debris Station 203+41'SB', Item 203.0600.S.701; Removing Old Structure Over Waterway With Minimal Debris Station 203+81'SB', Item 203.0600.S.702.

Conform to standard spec 203 as modified in this special provision.

Add the following to standard spec 203:

203.3.6 Removals Over Waterways and Wetlands

203.3.6.2 Removing Old Structure Over Waterway with Minimal Debris

Remove the existing Structures B-53-48 and B-53-51 over Spring Brook in large sections and conforming to the contractor's approved structure removal and clean-up plan. During superstructure removal, prevent all large pieces and minimize the number of small pieces from entering the waterway or wetland. Remove all reinforcing steel, all concrete, and all other debris that falls into the waterway or wetland. The contractor may leave limited amounts of small concrete pieces scattered over the waterway floor or wetland only if the engineer allows.

Submit a structure removal and clean-up plan as part of the erosion control implementation plan required under standard spec 107.20. Do not start work under the structure removal and clean-up plan without the department's written approval of the plan. Include the following information in the structure removal and clean-up plan:

- Methods and schedule to remove the structure.
- Methods to control potentially harmful environmental impacts.
- Methods for superstructure removal that prevent all large pieces and minimize the number of small pieces from entering the waterway or wetlands.
- Methods to control dust and contain slurry.
- Methods for removing piers and abutments. If blasting in water, include restrictions that regulatory agencies and the contract require.
- Methods for cleaning the waterway or wetlands.

If stockpiling spoil material, place it on an upland site an adequate distance from the waterway, wetland, or any open water created by excavation. Install silt fence between the spoil pile and the waterway, wetland, or excavation site.

Add the following Removing Old Structure bid item to standard spec 203.5.1:

ITEM NUMBER	DESCRIPTION	UNIT
203.0600.S.701	Removing Old Structure Over Waterway With Minimal Debris Station 203+41'SB'	LS
203.0600.S.702	Removing Old Structure Over Waterway With Minimal Debris Station 203+81'SB'	LS

stp-203-020 (20170615)

30. Removing Pipe Cover or Cover Plate, Item 204.9060.S.001.

A Description

This special provision describes removing the pipe covers or cover plates used to block soil from entering culverts, storm sewer inlets, or storm sewer endwalls as shown on the plans and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Pipe Cover or Cover Plate by each pipe cover or cover plate removed, 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
204.9060.S.001	Removing Pipe Cover or Cover Plate	EACH

31. Removing Inlet Covers, Item 204.9060.S.002.

A Description

This special provision describes removing the inlet covers from previous projects as shown on the plans and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Inlet Covers by each inlet cover removed, 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
204.9060.S.002	Removing Inlet Covers	EACH

32. Roadway Excavation.

Excavation of frozen ground directed by the engineer to maintain work as scheduled will be paid for as common excavation. Backfilling of these excavated areas will be paid for as either Roadway Embankment or Select Borrow as directed by the engineer. This does not relieve the contractor of their responsibility to protect the subgrade from further freezing of the soils prior to or after this excavation or the timely backfilling of any areas excavated due to frozen conditions.

Supplement standard spec 205.5.2(1) to include the following:

Provide the department with an earth flow diagram within 30 calendar days of receiving the contract Notice to Proceed.

Identify on the earth flow diagram, all excavation material within the project; material shrinkage and swell factors; acceptable on-site material available for use as embankment within the project; anticipated off-site material that will be required for use as embankment within the project (if applicable); and anticipated material to be disposed of off-site (if applicable). It is the sole responsibility of the contractor to prepare their individual investigation and testing program to establish material shrinkage and swell factors.

33. Borrow.

Replace standard spec 208.1(1) with the following:

This section describes constructing embankments and other portions of the work consistent with the earthwork summary and defines the contract requirements for embankment material if required by the plans or if the contractor elects to utilize off-site material to complete the roadway embankments.

Delete standard spec 208.2.2(2).

Supplement standard spec 208.3 to include the following:

The contractor shall be responsible for complying with all permit requirements in obtaining embankment materials.

Supplement standard spec 208.4 with the following:

The department will not measure embankment material from its source.

Supplement standard spec 208.5 with the following:

The department will not pay directly for work specified under this section pertaining to Borrow. This work is included in the Roadway Embankment bid item.

(5/31/2016)

34. Select Borrow, Item 208.1100.

Conform to the requirements of standard spec 208 and as hereinafter provided.

Materials

Furnish and use material that consists of granular material meeting the following requirements: Maximum particle size of 12 inches when measured from any face. The material passing the No. 4 sieve shall have a maximum of 15% by weight passing the No. 200 sieve.

As a contractor’s option, the department will allow the use of select crushed material for select borrow. The material shall conform to the requirements of standard spec 312 and will be measured and paid for as Select Borrow.

Measurement

Replace standard spec 208.4 with the following:

The department will measure select borrow 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:

The engineer and contractor mutually agree to an alternative volume calculation method;

The method of average end areas is not feasible.

If it is not possible to compute volumes of select borrow 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 select borrow material beyond the limits of the required slopes as shown on the plans.

(11/29/2016)

35. Backfill Coarse Aggregate Size No. 1, Item 209.0300.S.001.

A Description

This special provision describes furnishing and placing coarse aggregate backfill as shown on the plans and as hereinafter provided.

B Materials

Provide clean concrete aggregate graded according to the requirements as specified under standard spec 501.2.5.4.5. The soundness and wear requirements are deleted from this material.

C Construction

Construct the coarse aggregates according to standard spec 209.3.

D Measurement

The department will measure Backfill Coarse Aggregate Size No. 1 in volume by the cubic yard in the vehicle.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
209.0300.S.001	Backfill Coarse Aggregate Size No. 1	CY

Payment is full compensation for furnishing and installing the aggregate.

stp-209-030 (20161130)

36. Base Aggregate Dense 3/4 –Inch, item 305.0110.

Revise standard spec 301.2.4.3 as follows:

Furnish aggregate classified as crushed stone, from a department-approved quarry, for 3/4-inch base when used in the top 3 inches of the unpaved portion of the shoulder or for unpaved driveways and field entrances.

(1/5/2017) (SWR 305.01-09212015)

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

Revise standard spec 305.2.2.1 when base is ≥ 50% crushed gravel as follows:

Use 1 ¼-inch base aggregate that conforms to the following gradation requirements.

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

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

(7/26/2017) (SWR 305.02-08032016)

38. Rout and Seal, Item 415.6000.S.

A Description

This special provision describes routing, cleaning, drying, and sealing the longitudinal edge of pavement joints in new asphaltic pavement shoulders immediately adjacent to the edge of the concrete mainline pavement.

B Materials

Furnish material that conforms to the requirements of the Specifications for Joint Sealants, Hot-Poured, for Concrete and Asphalt Pavements, ASTM Designation: D 6690, Type II, modified to require that the bond strength test be run at -20 degrees F. (The unmodified ASTM D 6690, Type II allows this test to be run at either 0 degrees F or -20 degrees F.)

Deliver each lot or batch of sealing compound to the jobsite in the manufacturer's original sealed container. Mark each container with the manufacturer's name, batch or lot number, and the safe heating temperature. Present the manufacturer's certification stating that the compound meets the requirements of this specification. Before applying the sealant, furnish to the engineer a certificate of compliance and a copy of the manufacturer's recommendations on heating and applying the sealant.

C Construction

C.1 Equipment

Heat the sealing compound to the pouring temperature recommended by the manufacturer in an approved kettle or tank, constructed as a double boiler, with the space between the inner and outer shells

filled with oil or other satisfactory heat transfer medium. If and when using the heating kettle on concrete or asphaltic pavement, properly insulate the heating kettle to ensure heat is not radiated to the pavement surface.

Make rout cuts in a single pass. Two-pass cutting will not be allowed. Use a self-propelled mechanical router capable of routing the bituminous pavement to provide a 1.0:1.0 depth to width ratio of all routed cracks. The router blade or blades shall be of such size and configuration to cut the desired joint reservoir in one pass. No spacers between blades shall be allowed unless the contractor can demonstrate to the engineer that the desired reservoir and rout cut can be obtained with them. Either wet or dry routing will be permitted provided the above conditions are met. Use a pressure distributor for applying sealing material through a hand-operated wand or nozzle according to sealant manufacturer's instructions.

C.2 Methods

Conduct the operation so that the routing, cleaning, and sealing are continuous operations. Traffic shall not be allowed to knead together or damage the routed joints. Rerout, if necessary, routed joints not sealed before traffic is allowed on the pavement when routing and sealing operations resume. Do not perform rout cutting, cleaning, and sealing, within 48 hours of the placement of the shoulder's surface course.

Rout the longitudinal joint to a minimum width of 3/4 inches and a minimum depth of 3/4 inches. Use a power vacuum or equivalent to immediately remove any routing slurry, dirt, or deleterious matter adhering to the joint walls or remaining in the joint cavity, or both. Before sealing, dry the cleaned joints either by air-drying or by using a high capacity torch. Immediately before sealing, blow out the dried crack with a blast of compressed air, 80-psi minimum. Continue cleaning until the joint is dry, and until all dirt, dust, or deleterious matter is removed from the joint and adjacent pavement to the satisfaction of the engineer. If the air compressor produces dirt or other residue in the joint cavity, the contractor shall be required to clean the joint again.

If cleaning operations could cause damage to, or interfere with, traffic in adjacent lanes, or both, provide protective screening that is subject to the approval of the engineer to the cleaning operation.

Following cleaning, dry the routed joints and warm them with a hot air lance. Take care not to burn the pavement surface. Under no circumstances shall more than two minutes elapse between the time the hot air lance is used, and the sealant is placed.

Provide positive temperature control and mechanical agitation. Do not heat the sealant to more than 20 degrees F below the safe heating temperature. The safe heating temperature can be obtained from the manufacturer's shipping container. Provide a direct connecting pressure type extruding device with nozzles shaped for insertion into the joint. Immediately remove sealant spilled on the surface of the pavement.

Seal the joints when the sealant material is at the pouring temperature recommended by the manufacturer. Fill the joint such that after cooling, the sealant is flush with the adjacent pavement surface. Do not overfill the joint; the engineer may allow a very slight overband. Sand shall not be spread on the sealed joints to allow for opening to traffic. Before opening to traffic, the sealant shall be tack free.

D Measurement

The department will measure Rout and Seal in length by the linear foot, 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
415.6000.S	Rout and Seal	LF

Payment is full compensation for rout cutting; cleaning the joint; and rerouting as required under C.2.

stp-415-100 (20140630)

39. Optimized Aggregate Gradation and Concrete Mixtures.

A Description

This special provision describes optimized aggregate gradation, optional optimized mixture designs, and associated additional requirements for class 1 concrete used in concrete pavements. Conform to standard specification part 7 and as follows:

Optimized Aggregate Gradation

A Job Mix Formula (JMF) contains all of the following:

- Proportions for each aggregate fraction conforming to Table 1.
- Individual gradations for each aggregate fraction.
- Composite gradation of the combined aggregates including working ranges on each sieve according to Table 2.

Submit the target JMF and aggregate production gradation test results to the engineer for review 10 business days before initial concrete placement.

TABLE 1 TARANTULA CURVE GRADATION BAND

SIEVE SIZES	PERCENT RETAINED
2 in.	0
1 1/2 in.	≤5
1 in.	<16
3/4 in.	<20
1/2 in.	4-20
3/8 in.	4-20
No. 4	4-20
No. 8[1]	<12
No. 16[1]	<12
No. 30[1] [2]	4-20
No. 50[2]	4-20
No. 100[2]	≤10
No. 200[2]	≤2.3

*[1]*Minimum of 15% retained on the sum of the #8, #16, and #30 sieves.

*[2]*Conform to 24-34% retained of fine sand on the #30-200 sieves.

TABLE 2 JMF WORKING RANGE

SIEVE SIZES	WORKING RANGE[1] (PERCENT)
2 in.	±5
1 1/2 in.	±5
1 in.	±5
3/4 in.	±5
1/2 in.	±5
3/8 in.	±5
No. 4	±5
No. 8	±4
No. 16	±4
No. 30	±4
No. 50	±3
No. 100	±2
No. 200	≤ 2.3

[1]Working range limits of composite gradation based on moving average of 4 tests.

Test each component aggregate once per 1,500 cubic yards during concrete production. Take samples by one of the following sampling methods:

1. At the belt leading to the weigh hopper.

Working face of the stock piles at the concrete plant if approved by the engineer.

The department will take independent QV samples using the same sampling method the contractor uses for QC sampling. QV samples may be taken by the contractor's QC personnel if witnessed by the department's QV personnel. The department will split each QV sample and retain half for all dispute resolutions. If QV test results conform to the specification, the department will take no further action. If QV test results are nonconforming, add the QV to the QC test results as if it were an additional QC test.

If, during concrete production, the moving average of four for any sieve fall outside the allowable JMF working range do the following:

1. Notify the engineer of the test results within 1 business day from the time of sampling;
2. Make immediate adjustments to the JMF, within the limits specified in Table 3;
3. Review JMF adjustments with the engineer. Both the contractor and engineer will sign the adjusted JMF if the adjustments comply with Table 3.
4. If the moving average of four falls outside the adjusted allowable working range, stop production and provide a new mix design including JMF to the engineer.

TABLE 3 ALLOWABLE JMF ADJUSTMENTS

SIEVE SIZES	ALLOWABLE ADJUSTMENT (PERCENT)
≥ No. 4	±5
No. 8 – No. 30	±4
No. 50	±3
No. 100	±2

Dispute Resolution

The department will resolve disputes as specified in standard spec 106.3.4.3.5 using QV split samples.

Sublot and Lot Size

A sublot consists of up to 1,500 cubic yards. A lot consists of two sublots.

Optimized Concrete Mixtures

The contractor may use a reduced cementitious content for concrete pavement placed if the contractor does the following:

1. Use an optimized aggregate gradation as defined in this special provision.
2. Conform to the additional testing requirements for flexural strength as specified in the contract special provisions.
3. Submit aggregate gradation result records no more than 2 years old when developing the mix design.
4. Determine the volume of voids in the optimized aggregates using ASTM C29.
5. Download and follow the instructions tab of the Optimized Gradation and Mix Design Spreadsheet located at:

   https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx

6. Design an appropriate paste content based upon the Performance-based PCC Mix Design Guide located at:

   https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx

7. Provide a minimum Vpaste/Vvoids of 1.25. (Paste/Void ratio equals the volume of paste divided by the volume of voids.).

8. Evaluate workability of trial batches by following section 6.8 of AASHTO Draft Performance Engineered Concrete Pavement Mixtures Specifications located at:

   https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx

9. Submit trial batch workability results when submitting the mix design.

10. Submit the CP Tech center computer spreadsheet concrete mix design to the engineer for review at least 3 business days before producing concrete.

11. Provide a minimum cement content of 520 pounds per cubic yard, except if using type I, IL, or III cement in a mix where the geologic composition of the coarse aggregate is primarily igneous or metamorphic materials, provide a minimum cement content of 660 pounds per cubic yard.

12. The contractor may use class C fly ash or grade 100 or 120 slag as a partial replacement for cement. For binary mixes use up to 30% fly ash or slag. For ternary mixes use up to 30% fly ash plus slag in combination. Replacement values are in percent by weight of the total cementitious material in the mix.

13. See CMM 8-70.2.2.3 for additional guidance.

B (Vacant)

C (Vacant)

D (Vacant)

E (Vacant)

(2/14/2018)

40. Aggregates For Concrete Pavements.

This special provision describes specialized material requirements for aggregates used in Concrete Pavements. Conform to standard spec 415 and 501, as modified in this special provision. Conform to standard spec 715 for QMP Concrete Pavement and Structures.

Replace standard spec 501.2.5.4.1 with the following:

501.2.5.4.1 General

(1) The department will sample and test aggregates as follows:

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

Lightweight Pieces[1]……AASHTO T 113

[1] Material having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of lightweight pieces by dividing the weight of lightweight pieces in the sample retained on the 3/8-inch sieve by the weight of the total sample.

(2) Contact the engineer a minimum of 4 weeks prior to paving to collect a sample of the aggregates proposed for the project. The engineer will obtain the sample, or observe the contractor obtaining the sample. The sampler must be HTCP certified to sample aggregates.

(3) The department will randomly sample coarse aggregate for lightweight pieces testing at least once per 10,000 cubic yards during placement of concrete pavement.

(4) Use clean, hard, durable crushed gravel or crushed limestone free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances, or adherent coatings considered injurious.

(5) Use virgin aggregates only.

Replace the first paragraph of standard spec 501.2.5.4.2 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
Thin or elongated pieces based on a 3:1 ratio	15.0
Materials passing the No. 200 sieve	1.5
Lightweight Pieces	5.0

Replace the first paragraph of standard spec 501.2.5.4.3 with the following:

(1) The percent wear shall not exceed 40, the weighted soundness loss shall not exceed 9 percent, and the weighted freeze-thaw average loss shall not exceed 12 percent.

41. Concrete Pavement.

Add the following as standard spec 415.3.6.4:

415.3.6.4 Concrete Protective Surface Treatment

This specification applies to all sawed concrete joints on the IH 39/90 and IH 43 interstate mainlines and ramps, also including sawed joints on concrete shoulders, and to all concrete placement methods. Treat sawed surfaces of transverse and longitudinal joints with a silane joint sealant found on the department approved products list for Concrete Protective Surface Treatments. Prepare surface by pressure washing all saw slurry from sawed joints and allow to dry thoroughly prior to application of silane sealer. Apply the product directly to the interior of the sawed joint. Do not use the broadcast spray method of application.

42. Concrete Pavement Flexural Strength.

This special provision describes accepting concrete pavement based on flexural strength. Conform to standard spec part 7 as modified in this special provision.

Replace standard spec 710.5.5 with the following:

710.5.5 Strength

(1) Cast all 6-inch by 12-inch cylinders or 6-inch x 6-inch x 21-inch beams in a set from the same sample. Do not cast more than one set of specimens from a single truckload of concrete. Mark each specimen to identify the lot and sublot or location on the project it represents.

(2) Provide facilities for initial curing. For up to 48 hours after casting, maintain the temperature adjacent to the specimens in the range of 60 to 80 F and prevent moisture loss. Between 24 and 48 hours after casting, transport the specimens to a department-qualified laboratory for standard curing until testing at 28 days.

(3) Determine the 28-day strength of each specimen in psi. Test each specimen to failure. Use a testing machine that automatically records the date, time, rate of loading, and maximum load of each specimen. Provide a printout of this information for each specimen tested.

Replace standard spec 715.2.1(2) *with the following:*

(1) The contractor need not provide separate laboratory mix designs for high early strength concrete nor provide routine 28-day strength tests during placement for high early strength concrete.

Replace standard spec 715.2.3.1(1) *with the following:*

(1) Use at least five pairs of beams to demonstrate the flexural strength of a mix design. Use either laboratory strength data for new mixes or field strength data for established mixes. Demonstrate that the 28-day flexural strength of the proposed mix will equal or exceed the 85 percent within limits criterion specified in standard spec 715.5.2.

Replace standard spec 715.3.1.1(1) with the following:

(1) Provide slump, air content, concrete temperature, and strength test results as specified in standard spec 710.5. Provide a battery of QC tests, consisting of results for each specified property, using a single sample randomly located within each sublot. Cast 3 specimens for strength evaluation.

Replace standard spec 715.3.1.3(1) with the following:

(1) The department will perform verification testing for air content, slump, temperature, and strength at a minimum of one verification test per lot.

Replace standard spec 715.3.2.1 with the following:

715.3.2.1 General

(1) The department will make pay adjustments for strength on a lot-by-lot basis using the strength of contractor QC specimens. The department will use flexural strength for pavements and compressive strength for structures. The department will assess concrete for removal and replacement based on a sublot-by-sublot analysis of core strength. Perform coring and testing, fill core holes with an engineer approved non-shrink grout, and provide traffic control during coring.

(2) Randomly select two QC strength specimens to test at 28 days for percent within limits (PWL). Compare the strengths of the two randomly selected QC specimens and determine the 28-day sublot average strength as follows:

- If the lower strength divided by the higher strength is 0.9 or more, average the two QC specimens.
- If the lower strength divided by the higher strength is less than 0.9, break one additional specimen and average the two higher strength specimens.

Replace standard spec 715.3.2.2.1 with the following:

715.3.2.2.1 Pavement

(1) If a sublot strength is less than 500 psi, the department may direct the contractor to core that sublot to determine its structural adequacy and whether to direct removal. Cut and test cores according to AASHTO T24 as and where the engineer directs. Have an HTCP-certified PCC technician I perform or observe the coring.

Replace standard spec 715.5.1 with the following:

715.5.1 General

(1) The department will pay incentive for strength under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
715.0415	Incentive Strength Concrete Pavement	DOL
715.0502	Incentive Strength Concrete Structures	DOL

(2) Incentive payment may be more or less than the amount the schedule of items shows.

(3) The department will administer disincentives for strength under the Disincentive Strength Concrete Pavement and Disincentive Strength Concrete Structures administrative items.

(4) The department will adjust pay for each lot using PWL of the 28-day sublot average strengths for that lot. The department will measure PWL relative to the lower specification limit of 650 psi for pavements and 4000 psi for structures. The department will not pay a strength incentive for concrete that is nonconforming in another specified property, for ancillary concrete accepted based on tests of class I concrete, or for high early strength concrete unless placed in pavement gaps as allowed under standard spec 715.3.1.2.1.

(5) Submit strength results to the department electronically using the MRS software. The department will validate contractor data before determining pay adjustments.

(6) All coring and testing costs under standard spec 715.3.2.2 including filling core holes and providing traffic control during coring are incidental to the contract.

Replace standard spec 715.5.2 with the following:

715.5.2 Pavements

(1) The department will adjust pay for each lot using equation “QMP 6.01” as follows:

Percent within Limits (PWL)	Pay adjustment (dollars per square yard)
≥ 95 to 100	(0.2 x PWL) - 19
≥ 85 to < 95	0
≥ 50 to <85	(2.0/35 x PWL) - 170/35
<50	-2

(2) The department will not pay incentive if the lot standard deviation is greater than 60 psi.

(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 sublot average strengths. The department will reduce pay for sublots with an average strength below 600 psi by $2 per square yard.

(4) For integral shoulder pavement and pavement gaps accepted using tests from the adjacent travel lane, the department will adjust pay using strength results of the travel lane for integrally placed concrete shoulders and pavement gaps regardless of mix design and placement method, included in a lane-foot lot.

43. HMA Pavement Modification.

A Description

This special provision describes specialized material requirements for HMA Pavements. Conform to standard spec 460 as modified in this special provision.

Replace the noted HMA mixture values in Table 460-2 under 460.2.7 with the following:

1. LA Wear (AASHTO T96) – LT, MT, HT, and SMA mixtures:
   - 100 revolutions – 13% loss maximum
   - 500 revolutions – 40% loss maximum
2. Soundness (AASHTO T104) (sodium sulfate) – LT, MT, HT, and SMA mixtures:
   - 9.0% loss maximum
3. Freeze/ Thaw (AASHTO T103) (specified counties) – LT, MT, HT, and SMA mixtures:
   - 12% loss maximum

Replace Note 3 at the end of Table 460-2 under 460.2.7 with the following:

[3] For No. 5 (9.5 mm) and No. 4 (12.5 mm) nominal maximum size mixtures, the specified VFB range is 73 – 76%.

44. 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:

https://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:

https://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/ft3. 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/ft3 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.

Table 1

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

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 sublot 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 sublot and perform the number of random tests as specified in Table 2.

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

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

(1) Calculate the average sublot densities using the individual test results in each sublot.

(2) If all sublot 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 sublot average is more than one percent below the target density, do not include the individual test results from that sublot when computing the lot average density and remove that sublot's tonnage from the daily quantity for incentive. The tonnage from any such sublot 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 sublot 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 sublot 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 sublot. Testing in a previously accepted sublot 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 sublot 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 sublot and lot densities.

(6) If 2 consecutive sublot 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 sublot per mix design. The sublots selected will be within the active work zone. The contractor will supply the necessary traffic control for the department's testing activities.

(2) The QV tester will test each selected sublot using the same testing requirements and frequencies as the QC tester.

(3) If the verification sublot average is not more than one percent below the specified minimum target density, use the QC tests for acceptance.

(4) If the verification sublot average is more than one percent below the specified target density, compare the QC and QV sublot averages. If the QV sublot average is within 1.0 lb/ft3 of the QC sublot average, use the QC tests for acceptance.

(5) If the first QV/QC sublot average comparison shows a difference of more than 1.0 lb/ft3 each tester will perform an additional set of tests within that sublot. Combine the additional tests with the original set of tests to compute a new sublot average for each tester. If the new QV and QC sublot averages compare to within 1.0 lb/ft3, use the original QC tests for acceptance.

(6) If the QV and QC sublot averages differ by more than 1.0 lb/ft3 after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

(1) The testers may perform investigation in the work zone by analyzing the testing, calculation, and documentation procedures. The testers may perform gauge comparison according to B.3.2.1.

(2) The testers may use comparison monitoring according to B.3.2.2 to determine if one of the gauges is out of tolerance. If a gauge is found to be out of tolerance with its reference value, remove the gauge from the project and use the other gauge's test results for acceptance.

(3) If the testing discrepancy cannot be identified, the contractor may elect to accept the QV sublot density test results or retesting of the sublot 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)

45. Ice Hot Weather Concreting, Item 501.1000.S.

Conform to standard spec 501.3.8.2 except the department will pay for ice at the contract unit price under the Ice Hot Weather Concreting bid item. This special provision only applies to work done under the following contract bid items:

Concrete Masonry Bridges	Concrete Masonry Retaining Walls
Concrete Masonry Bridges HES	Concrete Masonry Retaining Walls HES
Concrete Masonry Culverts	Concrete Masonry Endwalls
Concrete Masonry Culverts HES	Concrete Masonry Overlay Decks
High Performance Concrete (HPC) Masonry Structures	

Replace standard spec 501.4 and 501.5 with the following:

501.4 Measurement

The department will measure Ice Hot Weather Concreting by the pound acceptably completed, measured only if the conditions prescribed in standard spec 501.3.8.2 are met.

501.5 Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
501.1000.S	Ice Hot Weather Concreting	LB

Payment for Ice Hot Weather Concreting is full compensation for ice used to cool concrete placed in hot weather as specified in standard spec 501.3.8.2.

The department will not pay directly for the concrete specified under this section. Concrete is incidental to the various bid items using it. Payment under those bid items includes providing all materials, including aggregates and associated aggregate source testing, cement, fly ash, slag, and admixtures; for preparing, transporting, storing, protecting and curing concrete; and for contractor requirements related to testing specified in standard spec 501.3.10.

If required to remove and replace any concrete damaged by lack of proper protection. Perform this work at no expense to the department.

stp-501-010 (20151210)

46. Pier Construction.

Determine the method of construction, and observe the following conditions:

- If a cofferdam is used, build the cofferdam of non-erodible material.
- Concrete poured under water will be allowed; pour the concrete conforming to standard spec 502.3.5.3. Ensure that the forms are tight to prevent leakage of concrete into the stream. Treat all displaced water by filtration, settling basin, or other means sufficient to reduce the cement content before discharging the water into the stream.
- Excavated material from the stream may be utilized in the fill slopes so long as it is covered with other suitable material to prevent it from eroding back into the stream.

stp-502-010 (20050502)

47. Expansion Device Modular B-53-304, Item 502.3110.S.701; Expansion Device Modular B-53-305, Item 502.3110.S.702; Expansion Device Modular B-53-306, Item 502.3110.S.703.

A Description

This special provision describes furnishing and installing shop-fabricated waterproof modular expansion devices as the plans show conforming to standard spec 502 as modified in this special provision. Ensure that modular expansion joint devices seal the deck surface, curbs, gutters, and parapet walls as the plans indicate. Leaking or seeping of water through the joint will be cause for rejection of modular expansion devices.

B Materials

B.1 General

Furnish parts and elements that have material properties meeting the physical and chemical requirements shown in their manufacturer's technical data or as noted below, except as modified by the standard spec, this special provision, or the plans. Furnish certified test results from the manufacturer attesting to physical and chemical properties. Do not use any aluminum components or hardware.

B.2 Modular Expansion Device System Components

Furnish components for the Modular Expansion Device System from one of the following manufacturers and model series:

- D.S. Brown Company, Steelflex Modular D-Series
  (419) 257-3561

- R.J. Watson, Inc., Modular RJW-Series
  (716) 741-2166

- Watson, Bowman, & Acme Inc., Wabo-Maurer STM-Series
  (716) 691-7566

B.3 Steel Plates, Bars, Shapes, and Sheets

Furnish steel plates, bars, shapes, and extrusions that have been fabricated from high strength, low alloy grade 50 or grade 50W steel conforming to ASTM A709, or as shown on the approved shop drawings. Anchor bars and support bar boxes may be fabricated from ASTM A709 grade 36 steel. Furnish anchor bolts, bolts, nuts, and washers that conform to the requirements of ASTM F3125. Secondary shapes or joint components may be assembled with bolts, nuts, and washer conforming to ASTM A490.

Furnish stainless steel sheets for the sliding surfaces of support bars that conform to the requirements of ASTM A167, alloy 304, 20 micro-inch RMS finish.

B.4 Elastomeric Seal Elements

Furnish preformed elastomeric seal elements that are polychloroprene (neoprene) of a rectangular or strip cross section having a minimum thickness of 1/4 inch and conform to ASTM D3542 modified to omit the recovery test. The elastomeric seal elements shall meet the following physical properties:

Property	Requirement	Test Method
Tensile Strength, min	2000 psi	ASTM D412
Elongation @ Break, min	250%	ASTM D412
Hardness, Type A, Durometer	60± 5 pts	ASTM D2240
Compression Set, 70 Hrs @ 212º F, max	35%	D395 Method, B Modified
Ozone Resistance, after 70 hours at 100º F under 20% Strain with 100 pphm ozone	No Cracks	ASTM D1149 and D518, Method A
Mass Change in Oil 3 after 70 hours @ 212º F, Mass Change, max	45%	ASTM D471

Furnish manufacturer's certification for production of polychloroprene represented, showing test results for the cured material supplied and certifying that it meets all specified requirements.

The seal element shall be one piece, and full length of the expansion joint including curb and parapet face projections. The lubricated adhesive for installing the preformed elastomeric elements in place shall be one-part moisture curing polyurethane and hydrocarbon solvent mixture as recommended by the manufacturer.

B.5 Support Bars

Place support bars parallel to the roadway at a maximum support assembly spacing of 4’-0". Furnish support bars that are not less than 1 1/2 inches in width and at least 4 inches in height; each transverse center beam shall have an individual support bar.

Support bars shall incorporate stainless steel sliding surfaces to minimize resistances to joint movements. Stainless steel shall be welded to support bars. Support the support bars above, below, and laterally as required to prevent uplifting, transmit bearing loads, and to maintain positioning of the bar.

Fabricate support bar bearings from polyurethane compound with PTFE self-lubricating surfaces having engineering properties equivalent to adiprene, Teflon, or cast nylon with MDS. Positively lock the support bar bearings and springs or spacers into the support box by a dowel or pin. The connection must permit subsequent removal and replacement of the bearings and springs. The support bar springs shall be constructed similarly to the bearings but shall provide the required precompressive force to maintain the support bar in place while under traffic loads. Use a suitable equilibrium device that works counter to the compression forces of the sealing elements to maintain equalized expansion properties for each element across the modular joint assembly. Furnish anchor plates for the support bar springs or neoprene blocks that have a minimum thickness of 3/4 inch.

B.6 Transverse Center Beams

Transverse center beams shall be at least of 4 1/2 inches in height and have a minimum vertical web thickness of 3/4 inch. Design transverse center beams for an AASHTO HS25 live loading plus 30 percent impact. Make shop splices in the transverse center beam with a full penetration weld. The exterior transverse beams shall have a minimum vertical web thickness of 3/4 inch.

The connections between the transverse center beams and support bars shall be a full penetration weld according to the plan details. Full penetration welds to be tested by ultrasound using the compressive criteria.

B.7 Support Bar Boxes

Furnish support bar boxes that consist of steel plates not less than 1/2 inch in thickness fabricated with continuous welds at all joints. The inside dimensions of the box shall be consistent with all boxes and within +0.040 inches of prescribed height as measured where the bearings and spring compress about the support bar. Fabricate support box plates with a continuous weld. Make anchorage details as the plans show.

B.8 Structural Steel Surfaces

Galvanize after fabrication, according to ASTM A123, all structural steel surfaces of the expansion joint devices and anchorages, except ASTM A-490 bolts, components of stainless steel, and parts coated with polyurethane, adipene, nylon, or Teflon.

Galvanize or metallize conforming to standard spec 635 all bolts, nuts, washers, and steel components that are not galvanized using the above procedure, including all ASTM A-490 bolts.

If a retainer clip is used for locking the neoprene strip type seal, continuously weld it on its top side. Due to the galvanizing coating requirement, also make a continuous weld underneath the clip.

All welding shall be according to AWS D1.5 or D1.6 of the welding code and shall be done by certified welders only. A shop certified under AISC category for simple structures shall perform fabrication.

The fabricator will be permitted to shop weld pre-galvanized transverse roadway sections, complete with anchorages, of the expansion device steel extrusions. The pre-galvanized roadway sections shall be not less than 10 feet long. The pre-galvanized roadway side sections shall have additional anchorages, if required, so as to provide an anchorage within 9 inches of each end of the section. Abutting ends shall be beveled 1/4 inch on three sides and deburred. All galvanizing shall be completely removed from the areas to be welded. The pre-galvanized sections shall be groove welded on three sides with care taken to

prevent weld material from entering the gland groove. The weld across the top of the extrusion shall be ground smooth and all areas of galvanizing damaged by the welding operations shall be repaired conforming to standard spec 635. Make field splices in transverse center roadway sections with a partial penetration weld.

C Construction

The manufacturer of the prefabricated expansion joint assembly shall prepare shop drawings showing details of the assembly and installation. Submit shop drawings to the engineer conforming to standard spec 105.2 with electronic submittal to the fabrication library under standard spec 105.2.2. Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings.

Support the modular joint assembly at 8'-0 minimum spacing along both sides of the joint. Construct the modular expansion device system according to the details shown on the shop drawings. Tolerance requirements shall be according to AASHTO specifications.

Install according to the plan details, the manufacturer's and supplier's approved shop drawings, and as the engineer directs. In addition, the manufacturer shall submit current product literature with the shop drawings and the shop drawings shall reflect that literature.

Remove all modular expansion joint forming material from the joint opening. Pre-set the modular joint assembly according to the approved shop drawings, joint temperature setting data, and specifications. The maximum joint opening for a single modular unit shall be 3 inches.

The joint assembly manufacturer shall furnish technical assistance to the contractor and engineer through the personal services of a technical representative, who is a fulltime employee of the manufacturer during installation of the joint sealing systems. This representative shall be accessible to the engineer and shall be at the site during the work that involves the setting of all parts of each modular expansion joint assembly. The contractor shall be responsible for informing the representative before the date of installation.

D Measurement

The department will measure Expansion Device Modular (Structure) as a single lump sum unit for the structure, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
502.3110.S.701	Expansion Device Modular B-53-304	LS
502.3110.S.702	Expansion Device Modular B-53-305	LS
502.3110.S.703	Expansion Device Modular B-53-306	LS

Payment is full compensation for furnishing and placing the device complete in place; furnishing and completely installing all elements and parts of the joints, anchors, armor or structural metal; galvanizing materials; furnishing and installing all hardware, pads, bonding material, and reinforcing bars within the blockout not otherwise covered for payment, and barrier railing plates.

stp-502-021 (20180628)

48. Bar Steel Reinforcement HS Stainless Structures, Item 505.0800.S.

A Description

This special provision describes furnishing and placing stainless steel reinforcing bars and associated stainless steel bar couplers.

Conform to standard spec 505 as modified in this special provision.

B Materials

B.1 General

Furnish stainless steel reinforcing bars conforming to ASTM A955 and to one of the following Unified Numbering System (UNS) designations: S31653, S31803, S32205, or S32304. Supply grade 60 bars, all of the same UNS designation. Conform to the chemical composition specified for the given UNS designation in ASTM A276 table 1.

Supply bars that are free of dirt, mill scale, oil, and debris by pickling to a bright or uniform light finish. The department may reject bars displaying rust/oxidation, questionable blemishes, or lack of a bright or uniform pickled surface.

Furnish chairs or continuous supports made of stainless steel or recycled plastic to support high-strength stainless bar steel reinforcement subject to the plastic chair restriction stated in standard spec 505.3.4(1).

Furnish couplers made from one of the UNS alloys allowed for bar steel.

Furnish tie wire made from one of the UNS alloys allowed for bar steel or from an engineer-approved plastic or nonmetallic material. Ensure that stainless steel tie wire is dead soft annealed.

B.2 Fabrication

Before fabrication, supply test results from an independent testing agency certifying that the reinforcement meets the requirements of Annex A1 of ASTM A955.

Bend bars conforming to standard spec 505.3.2 and according to ASTM A955. Bend and cut bars using equipment thoroughly cleaned or otherwise modified to prevent contamination from carbon steel or other contaminants. Use tools dedicated solely to working with stainless steel.

B.3 Control of Material

Identify reinforcement bars delivered to the project site with tags bearing the identification symbols used in the plans. Include the UNS designation, heat treat condition, heat number, grade corresponding to minimum yield strength level, and sufficient documentation to track each bar bundle to a mill test report.

Provide samples for department testing and acceptance according to CMM 8-50 Exhibit 1 requirements for concrete masonry reinforcement for uncoated bar steel.

Provide mill test reports for the project that do the following:

1. Verify that sampling and testing procedures and test results conform to ASTM A955, ASTM A276 table 1, and these contract requirements.

2. Include a chemical analysis with the UNS designation, heat lot identification, and the source of the metal.

3. Include tensile strength, yield strength, and elongation tests results conforming to ASTM A955 for each size furnished.

4. Certify that the bars have been pickled to a bright or uniform light finish.

C Construction

C.1 General

Ship, handle, store, and place the stainless steel reinforcing as follows:

1. Separate from regular reinforcement during shipping. Pad points of contact with steel chains or banding, or secure with non-metallic straps.

2. Store on wooden cribbing separated from regular reinforcement. Cover with tarpaulins if stored outside.

3. Handle with non-metallic slings.

4. Do not flame cut or weld. Protect from contamination when cutting, grinding, or welding other steel products above or near the stainless steel during construction.

5. Place on plastic or stainless steel bar chairs. If placing stainless steel chairs on steel beams, use chairs with plastic-coated feet.

6. Tie with stainless steel wire or an engineer-approved plastic or nonmetallic material.

Do not tie stainless steel reinforcing bars to, or allow contact with, uncoated reinforcing bars or galvanized steel. Maintain at least 1 inch clearance between stainless steel bars or dowels and uncoated or galvanized steel. Where 1 inch clearance is not possible, sleeve bars with a continuous polyethylene or nylon tube at least 1/8 inch thick extending at least 1 inch in each direction and bind with nylon or polypropylene cable ties. Sleeves are not required between stainless steel bars and shear studs. Stainless steel bars can be in direct contact with undamaged epoxy-coated bars.

Cut flush with the top flange or remove uncoated fasteners, anchors, lifting loops, or other protrusions into a bridge deck before casting the deck on prestressed concrete beams.

C.2 Splices

Splice as the plans show. Provide stainless steel couplers conforming to the minimum capacity, certification, proof testing, and written approval requirements of standard spec 550.3.3.4. The contractor may substitute stainless steel couplers for lap slices the plans show if the engineer approves in writing.

If increasing or altering the number or type of bar splices the plans show, provide revised plan sheets to the engineer showing the reinforcement layout, type, length, and location of revised bar splices and revised bar lengths. Obtain engineer approval for the location of new lap splices or substitution of mechanical bar couplers before fabrication. Ensure that new lap splices are at least as long as those the plans show.

D Measurement

The department will measure Bar Steel Reinforcement HS Stainless Structures by the pound acceptably completed, computed from the nominal weights of corresponding sizes for carbon steel deformed bars in AASHTO M31 regardless of stainless steel alloy provided. The department will not measure extra material used if the contractor alters the reinforcement layout as allowed under C.2, extra material for splices or couplers the plans do not show, or the weight of devices used to support or fasten the steel in position.

The department will measure the Bar Couplers Stainless bid items as each individual coupler, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB

Payment for Bar Steel Reinforcement HS Stainless Structures is full compensation for furnishing and placing stainless steel reinforcing bars, including supports. Where the plans specify bar couplers, the department will pay for the length of bars as detailed with no deduction or increase for installation of the coupler.

Payment for the Bar Couplers Stainless bid items is full compensation for providing couplers; including bar steel that is part of the coupler and not detailed in the plan; for threading reinforcing bars; for installing and coating the splice; and for supplying and testing 3 couplers.

stp-505-005 (20141107)

49. Primary Members.

Replace standard spec 506.3.1.1(1) with the following:

(1) Ensure that the following are fabricated by an approved fabricator selected from the department's APL for primary members:

- Webs and flanges of plate, tub, and box girders.
- Rolled beams and their cover plates.
- Main truss members (chords, verticals, and diagonals of truss panels, transverse wind bracing, floor system).
- Floor beam webs and flanges.
- Arch ribs, ties, and hangers.
- Pier diaphragm members and in-span external diaphragm members for tub girders.
- Splice plates for primary members.
- Columns.

bos-506-005 (20190327)

50. Polymer Overlay, Item 509.5100.S.

A Description

This special provision describes providing two layers of a two-component polymer overlay system to the bridge decks the plans show.

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 percent solids, 100 percent reactive, thermosetting compound with the following properties:

Property	Requirements	Test Method
Gel Time[1]	15 - 45 minutes @ 73° to 75° F	ASTM C881
Viscosity[1]	7 - 70 poises	ASTM D2393, Brookfield RVT, Spindle No. 3, 20 rpm
Shore D Hardness[2]	60-75	ASTM D2240
Absorption[2]	1% maximum at 24 hr	ASTM D570
Tensile Elongation[2]	30% - 70% @ 7 days	ASTM D638
Tensile Strength[2]	2000 to 5000 psi @ 7 days	ASTM D638
Chloride Permeability[2]	<100 coulombs @ 28 days	AASHTO T277

[1] Uncured, mixed polymer binder
[2] Cured, mixed polymer binder

Ensure that the polymer resin when mixed with aggregate has the following properties:

Property	Requirement[1]	Test Method
Minimum Compressive Strength	1,000 psi @ 8 hrs 5,000 psi @ 24 hrs	ASTM C579 Method B, Modified[2]
Thermal Compatibility	No Delaminations	ASTM C884
Minimum Pull-off Strength	250 psi @ 24 hrs	ASTM C1583

[1] Based on samples cured or aged and tested at 75°F

[2] 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 aggregate that is non-polishing; clean; free of surface moisture; fractured or angular in shape; free from silt, clay, asphalt, or other organic materials; and conform to the following:

Aggregate Properties

Property	Requirement	Test Method
Moisture Content[1]	1/2 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

[1] Sampled and tested by the department before placement.

Gradation

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

B.4 Approval of Bridge Deck Polymer Overlay System

A minimum of 20 working days before 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 before placement. If requested, supply the department with samples of the polymer for the purpose of acceptance testing.

B.4.1 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.4.2 Certified Report of Test or Analysis

Conform to the following:

Polymer Binder: Submit a certified report of test or analysis from an independent laboratory dated less than 3 years before 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 before the date of the project letting showing the aggregates meet the requirements of section B.3.

C Construction

C.1 General

Ensure that the overlay system is 1/4 inch thick or thicker.

Conform to the following:

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 before 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 1/4 inches or more is greater than 50 percent 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 before 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.

Before 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 before 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 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 before the contractor placing the polymer overlay.

C.2.3 Transitional Area

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

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

C.3 Overlay Application

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:

1. Ambient air temperature is below 50 F or above 100 F.
2. Deck temperature is below 50 F.
3. Moisture content in the deck exceeds 4.5 percent when measured by an electronic moisture meter or shows visible moisture after 2 hours when measured according to ASTM D4263.
4. Rain is forecasted during the minimum curing periods listed under C.5.
5. Materials component temperatures below 65 F or above 99 F.
6. Concrete age is less than 28 days unless approved by the engineer.
7. The deck temperature exceeds 100 F.
8. 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. Before applying the second layer, broom and blow off the first layer with compressed air to remove all loose excess aggregate.

Before 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[1] (GAL/100 SF)	Aggregate[2] (LBS/SY)
1	2.5	10+
2	5.0	14+

[1] The minimum total applications rate is 7.5 GAL/100 SF.

[2] 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 degrees 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 before placement of polymer overlay; and place the polymer overlay according to section C.3.

D Measurement

The department will measure Polymer Overlay 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	Polymer Overlay	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.

The department will pay separately for Concrete Deck Repair.

stp-509-030 (20170615)

51. Concrete Staining B-53-302, Item 517.1010.S.701; Concrete Staining B-53-303, Item 517.1010.S.702; Concrete Staining B-53-304, Item 517.1010.S.703; Concrete Staining B-53-305, Item 517.1010.S.704; Concrete Staining B-53-306, Item 517.1010.S.705; Concrete Staining B-53-307, Item 517.1010.S.706; Concrete Staining R-53-63, Item 517.1010.S.707; Concrete Staining R-53-64, Item 517.1010.S.708; Concrete Staining R-53-65, Item 517.1010.S.709; Concrete Staining R-53-66, Item 517.1010.S.710; Concrete Staining R-53-67, Item 517.1010.S.711; Concrete Staining R-53-69, Item 517.1010.S.712; Concrete Staining R-53-70, Item 517.1010.S.713.

A Description

This special provision describes providing a two coat concrete stain on the exposed concrete surfaces of structures as the plans show.

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:

: Bonding Admixture:	TK-225 by TK Products
	Achro 60 by Thoro Products
	Achro Set by Master Builders

B.2 Concrete Stain

Use concrete stain manufactured for use on exterior concrete surfaces, consisting of a base coat and a pigmented sealer finish coat. Use the following products, or equal as approved by the department, as part of the two coat finish system:

Tri-Sheen Concrete Surfacer, Smooth by TK Products

Tri-Sheen Acrylic by TK Products

TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products

Safe-Cure & Seal EPX by Chem Masters

H&C Concrete Stain Solid Color Water Based by Sherwin-Williams

C Construction

C.1 General

Furnish, prepare, apply, cure, and store all materials according to the product manufacturer's specifications for the type and condition of application required.

Match or exceed the stain manufacturer's minimum recommended curing time of the concrete or 28 days, whichever is greater, before staining.

C.2 Preparation of Concrete Surfaces

Provide a sack rubbed finish as specified in standard spec 502.3.7.5, using mortar as indicated above on concrete surfaces with open voids or honeycombing.

Following the sack rubbing, clean all concrete surfaces that are to be coated to ensure that the surface is free of all laitance, dirt, dust, grease, efflorescence, and any foreign material and that the surface will accept the coating material according to product requirements. As a minimum, clean the surface using a 3000-psi water blast. Hold the nozzle of the water blaster approximately 6 inches from the concrete surface and move it continuously in a sweeping motion. Give special attention to smooth concrete surfaces to produce an acceptable surface texture. Correct any surface problems resulting from the surface preparation methods. Grit blasting of the concrete surface is not allowed.

C.3 Staining Concrete Surfaces

Apply the concrete stain according to the manufacturer's recommendations.

Apply the concrete stain when the temperature of the concrete surface is 45º F or higher, or as given by the manufacturer.

The color of the stain shall be as given on the plan. Tint the base coat to match the finish coat; the two coats shall be compatible with each other.

Do not begin staining the structure until earthwork operations are completed to a point where this work can begin without receiving damage. Where this work is adjacent to exposed soil or pavement areas, provide temporary covering protection from overspray or splatter.

C.4 Test Areas

Before 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, before 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.701	Concrete Staining B-53-302	SF
517.1010.S.702	Concrete Staining B-53-303	SF
517.1010.S.703	Concrete Staining B-53-304	SF
517.1010.S.704	Concrete Staining B-53-305	SF
517.1010.S.705	Concrete Staining B-53-306	SF
517.1010.S.706	Concrete Staining B-53-307	SF
517.1010.S.707	Concrete Staining R-53-63	SF
517.1010.S.708	Concrete Staining R-53-64	SF
517.1010.S.709	Concrete Staining R-53-65	SF
517.1010.S.710	Concrete Staining R-53-66	SF
517.1010.S.711	Concrete Staining R-53-67	SF
517.1010.S.712	Concrete Staining R-53-69	SF
517.1010.S.713	Concrete Staining R-53-70	SF

Payment is full compensation for furnishing and applying the two coat system; for preparing the concrete surface; and for preparing the sample panels.

stp-517-110 (20140630)

52. Surface Drain Pipe Corrugated Metal Slotted, 12-Inch, Item 521.2005.S.001.

A Description

This special provision describes furnishing and installing slotted corrugated metal pipe surface drain as the plans show.

Conform to standard spec 521 as modified in this special provision.

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

Before backfilling, plug the upper end of the slotted drain as the plans show or as approved by the engineer.

Before 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 plan details. 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.001	Surface Drain Pipe Corrugated Metal Slotted Enter 12-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.

stp-521-005 (20150630)

53. Driven Piles

Replace standard spec 550.2.1 (3) with the following:

For steel pipe sections and steel pile shells for cast-in-place concrete piles, use ASTM A252 grade 3 steel or engineer approved alternate.

54. Driven Piles Using Pile Dynamic Analyzer

Where indicated in the structure plans, replace standard spec 550.3.6 with the following:

550.3.6 Driving Resistance

(1) Drive piles to the depths necessary to obtain the required driving resistance per the driving resistance determination method called for in the plans.

(2) Driving resistance will be developed by the engineer from Pile Dynamic Analyzer (PDA) testing performed on the designated piles at each substructure unit as shown on the plans. The driving criteria will be given as blows per foot with hammer stroke and minimum penetration of the pile or as directed by the engineer.

The PDA test piles at each substructure unit are designated on the plans and will be monitored using a PDA. Pile installation for these test piles will be controlled by the PDA testing and the engineer per the Pile Dynamic Analyzer (PDA) Testing and Restrike Special Provision within this contract.

For the PDA driving resistance determination method, pile restrikes will be required per the PDA Testing and Restrike Special Provision, or as directed by the engineer. Accommodate a time delay in the pile driving sequence as defined in the PDA Testing Special Provision to allow the engineer time to develop the production pile driving criteria.

(3) If the required driving resistance is not met at the minimum tip elevation, driving shall continue until it is achieved. If the required driving resistance is achieved above the minimum tip elevation, driving shall continue until both the minimum tip elevation and required driving resistance criteria are met. If practical pile refusal is encountered prior to the minimum tip elevation, the engineer will determine if driving can be halted.

Where indicated in the structure plans, delete standard spec 550.3.7.

55. Cover Plates Temporary, Item 611.8120.S.

A Description

This special provision describes providing and removing steel plates to cover and support asphaltic pavement and traffic loading at manholes, inlets and similar structures during milling and paving operations.

B Materials

Provide a 0.25 inch minimum thickness steel plate that extends to the outside edge of the existing masonry.

C (Vacant)

D Measurement

The department will measure Cover Plates Temporary as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
611.8120.S	Cover Plates Temporary	EACH

Payment is full compensation for furnishing, installing, and removing the cover plates.

The steel plates shall become the property of the contractor when no longer needed in the contract work.

stp-611-006 (20151210)

56. 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 in length 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.

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57. Furnishing and Planting Plant Materials.

The work covered by this special provision is according to standard spec 632 except as hereinafter specified.

Supplement standard spec 632.2.2.1 with the following:

All plant material must conform to American Standard for Nursery Stock, ANSI Z60.1-2014 for type, shape, and height.

Provide plants grown within the states of Wisconsin, Minnesota, Michigan, or parts of northern Illinois, Indiana or Ohio located within Zone 5 of the “Plant Hardiness Zone Map” produced by the United States Department of Agriculture, Miscellaneous Publication No. 1475, issued January 1990, updated January 24, 2012.

Modify paragraph (1) of standard spec 632.2.2.2 as follows:

Collected grown stock is not allowed.

Supplement standard spec 632.2.2.4 as follows:

Requests for substitution(s) of root category (i.e. bare root vs. balled and burlapped) must be documented in writing to the Corridor Vegetation Inspector. Approval of a root category substitution is required, and the department may execute a contract change order to adjust contract unit prices for the substituted materials.

Requests for substitution(s) of plant species must include written documentation from at least three nurseries stating that the plant species is unavailable. Include the nursery's contact information with the documentation.

Supplement standard spec 632.2.2.8 with the following:

Plants with undersized, insufficient, unbalanced, damaged, or improperly stored, transported or handled root systems will be rejected.

To prevent stem-girdling roots over time, plants with encircling roots that cannot be properly repositioned during installation will be rejected.

Supplement standard spec 632.2.2.9.1 with the following:

Plants must be protected from excessive vibrations. Plants shall not be thrown or bounced off a truck or loader to the ground. Plants shall not be dragged, lifted, or pulled by the trunk or foliage parts in a manner that will loosen the roots in the ball.

Ensure there is adequate drainage in the planting holes and bed areas. If drainage is insufficient, perform a percolation test by filling a 16-inch-deep planting hole with water and measure the time it takes for the water to drain from the hole. Adequate drainage will be equal to or greater than ½ inch per hour. In the case of inadequate drainage, request approval from the Corridor Vegetation Inspector to either relocate or remove the planting location(s).

Supplement standard spec 632.2.2.9.3 with the following:

Roots cannot extend more than 4" beyond the burlap.

Numerous larger diameter root stubs must not be present.

Roots must fill the soil ball.

Plant must be no more than 10% off center in the soil ball, unless the ball is oversized allowing a centered plant within the minimum radius spread for the root type as specified in the plans.

Delete standard spec 632.2.3.1, 632.2.3.2, and 632.2.3.4.

Delete standard spec 632.2.4.1.

Supplement standard spec 632.2.6 with the following:

Mulch shall be hardwood chip mulch. Provide fibrous wood mulch not containing manufactured boards or chemically treated wood, including but not limited to wafer board, particle board, and chromated copper arsenate (CCA) or penta-treated wood. Ensure that the material does not contain bark of black walnut trees.

Replace standard spec 632.2.9(1) with the following:

Rodent protection consists of wire mesh material embedded and staked into the ground as shown in the construction detail in the plans.

Delete standard spec 632.2.14.

Supplement standard spec 632.3.1 with the following:

Prior to proceeding with plant installation work and to the satisfaction of the Corridor Vegetation Inspector, schedule and perform a “Competency Test” demonstrating acceptable plant installation methods for each root category applicable to this project. The test will include handling plants, digging holes and beds, installing plants, initial watering, installing applicable protection materials, and mulching.

Supplement standard spec 632.3.2 with the following:

Store any trees or shrubs delivered before use in a way that protects them from damage by heat, moisture, rodents, or other causes. The storage locations and requirements are described elsewhere in these special provisions. Discard and replace, at no cost to the department, any previously accepted plant material that becomes damaged. Plant material should not be stored on site more than seven days.

Replace paragraph (2) of standard spec 632.3.4 with the following:

Excavate planting holes as shown in the plan details, and to minimum widths shown in the plant data charts. The planting hole diameter for trees shall be at least three times the diameter of the root ball or 8-foot minimum. The soil shall be loosened beyond the edge of the planting hole. Excavation may be done by shovel, backhoe, or stump grinder, but a soil auger may not be used.

For balled and burlapped (B&B) plants, determine the depth of plant hole by measuring the distance from the point at which the trunk flare begins to the bottom of the ball and subtracting 2 inches.

Excavated planting holes that will be left open when work is not in progress or pose an immediate and considerable hazard to pedestrians or vehicles shall be adequately barricaded with appropriate warning devices.

Delete standard spec 632.3.4 (4).

Supplement standard spec 632.3.7 with the following:

For B&B plants, loosen the burlap to the top of the ball and locate the trunk flare. Remove excess soil, without damaging the plant, if the trunk flare is buried less than 4 inches in the root ball soil. If trunk flare is buried in the root ball soil more than 4 inches it will be rejected. Keep the root ball intact until it is secure in the hole.

Test the soil ball by pulling on the stem or crown of the ball. If the stem or crown moves and the ball does not, the ball is broken and will be rejected.

The soil pad on which the B&B soil ball or root ball will be placed shall be of undisturbed soil. Carefully set the plant in the hole so that the trunk flare is 2 inches above the existing grade. Once the tree or shrub is set and backfilled, any rope, string, or twine should be removed from around the trunk. If the root ball appears in danger of completely collapsing, only remove twine and burlap from the top one-third of the ball. Remove the wire basket. If the root ball appears in danger of completely collapsing, the top 8-16 inches of the wire basket will be removed once the ball is stable in the planting hole. Cut wire basket and do not leave any protruding points of wire which could cause injury. Do not remove the wire basket by

pulling on the root ball. Vertically slice through any remaining burlap at 6-inch intervals around the ball in a manner that does not damage the roots.

Verify within 60 days that all ropes, strings, burlap, and other wrappings have decomposed so as not to restrict growth of trunk and roots. If this has not occurred, remove the restricting materials within one week of notification by the Corridor Vegetation Inspector.

Prior to planting balled and potted (B&P) or container grown (CG) plants, remove the plastic, metal, or biodegradable container. If roots are crowded or coiled on the bottom, sides, or surface of the root ball, gently separate from the edges or surface.

Replace paragraph (3) of standard spec 632.3.7 with the following:

Use backfill material, Topsoil Special, for tree pits and planting beds.

Carefully tamp the soil lightly to avoid leaving air pockets but not so firmly as to drive out all the fine air spaces needed for a well-aerated soil. Tamp each soil layer in a way that avoids injuring the roots or ball or disturbing the plant position. To avoid packing the soil too firmly, water the soil halfway through the backfill process and allow it to drain. After the water is absorbed, resume backfilling and water again thoroughly.

To complete backfilling, smooth the surface soil with a rake and check to ensure that the trunk flare is completely exposed and that the top of the rootball is not covered with soil. Build a “saucer” at the outer edge of the hole to retain water and allow it to soak down to the roots.

Any remaining burlap must be completely covered with soil. If exposed to the air, it will dry out, potentially wicking moisture from the ball and making it difficult to re-wet. If the root collar is deep in the ball and the ball planted high as a result, soil will have to be mounded above grade to assure the burlap is covered.

Supplement paragraph (5) of standard spec 632.3.7 with the following:

After planting, water the planting area deeply. Newly planted trees and shrubs must receive adequate water during the establishment period.

Supplement standard spec 632.3.9 as follows:

Shovel cut an edge around the perimeter of planting beds at the locations shown on the plans. Manually, or machine cut, edge to a minimum width and depth as shown in the plan detail. Fill shovel cut edge with the appropriate mulch and finish approximately 2 inches below adjacent lawn grades. Tamp mulch lightly and add additional mulch, as necessary, so that the final level of the mulch, after compacting, is level with adjacent lawn grades.

Place the hardwood chip mulch immediately after planting.

58. Landscape Planting Surveillance and Care Cycles.

The work covered by this special provision is according to standard spec 632 except as hereinafter specified.

Replace paragraph (1) of standard spec 632.3.18.1.1 with the following:

A plant establishment period of one year shall follow the completion of planting. There is no plant establishment period for living snow fence plantings.

Delete standard spec 632.3.18.1.2.

Supplement standard spec 632.3.19.1 with the following:

Perform a complete and thorough spring clean-out of all planting beds that contain trees, shrubs, perennials, ornamental grasses and/or bulbs. Perform spring clean-out during the first care cycle or as soon as weather and growing season conditions permit. Do not perform spring clean-out until the ground is no longer saturated from the spring thaw; walking on saturated soil will result in compaction. Ensure that Spring clean-out includes removal of past-season herbaceous material that was left standing over winter, cutting back ornamental grasses to within 3-inches of the mulched surface, removing any material damaged over the winter by pruning according to the language outlined in standard spec 632, removal of trash or other debris that has accumulated in planting beds, removal of leaves or other plant debris that has accumulated on the top of the mulched surface, weeding, and any and all other clean-out and maintenance operations as directed by the Corridor Vegetation Inspector.

Perform a complete and thorough fall clean-out of all planting beds that contain trees, shrubs, perennials, ornamental grasses and/or bulbs. Perform fall clean-out during the last care cycle. Do not perform fall clean-out if the soil is saturated from rain event; wait until the soil moisture levels have gone down before performing the final bed clean-out. Ensure that fall clean-out includes coordination with the Corridor Vegetation Inspector and the City of Janesville Forestry Department to determine which herbaceous perennial and ornamental grass material to leave standing through the winter and which to cut back to the ground, removing any material damaged during the growing season by pruning according to the language outlined in standard spec 632, removal of trash or other debris that has accumulated in planting beds, removal of leaves or other plant debris that has accumulated on the top of the mulched surface, weeding, and any and all other clean-out and maintenance operations as directed by the Corridor Vegetation Inspector.

Top dress all mulched areas with 1”-2” of specified mulch material immediately prior to the end of the surveillance and care period.

Mow a 5-foot band of turf around the shrub bed limits. Mow to a 4-inch height when the turf height exceeds 9-inches. This requirement applies to standard turf grass only. Native prairie mowing specifications are described elsewhere.

Replace paragraph (1) of standard spec 632.3.19.1 with the following:

Properly care for trees and shrubs from the time of planting and during the period of establishment until final acceptance of the work. No follow-up care is required for living snow fence plantings.

At least 14 days prior to planting, submit a care cycle schedule to the Corridor Vegetation Inspector. Use a department provided template. Provide schedule updates to the Corridor Vegetation Inspector as necessary.

Replace item 3. of paragraph (10) of standard spec 632.3.19.1 with the following:

Following the completion of each care cycle, fill out the department provided worksheet “Tree and Shrub Scouting Report”. Complete one worksheet per site, sign the worksheet, and submit to the Corridor Vegetation Inspector.

Supplement standard spec 632.3.19.2 with the following:

The department will assess daily damages in the amount of $1,000.

Replace paragraph (2) of standard spec 632.3.20 with the following:

Remove and replace plants, as ordered by the Corridor Vegetation Inspector, that are not conforming to the above requirements, with satisfactory plants. Use the same materials and methods for replacement planting as specified for the original planting.

Removal and replacement of living snow fence plantings is not required.

Replace paragraph (2) of standard spec 632.4 with the following:

The department will measure Landscape Planting Surveillance and Care Cycles as each individual care cycle acceptably completed. All tree and shrub planting sites, excluding living snow fence sites, under care for any particular year are included in the work for each care cycle.

59. Plant Delivery and Temporary Storage.

Supplement standard spec 632.3.2 with the following:

Determine location(s) for delivery of the trees, shrubs, and seeds, and submit the location(s) to the Corridor Vegetation Inspector for approval. The delivery location(s) may be on the public right-of-way or private property. The delivery location(s) must not directly access to/from I-39/90/43. The location(s) shall be secure, shaded, have water available for tree and shrub irrigation, and provide easy access for the department. The plant material must be planted within seven days of when the material is delivered to the plant material delivery location(s).

Each delivery location(s) must be approved by the Corridor Vegetation Inspector through the ECIP or an ECIP amendment.

60. Blue Specific Service SIgns.

Add the following to standard spec 638.3.4:

Do not remove or move blue specific service signs or their associated posts. Specific service signs are signs with logos that identify commercial entities providing gas, food, lodging, camping, or attractions. A separate contractor, Interstate Logos – Wisconsin, is responsible for these signs. Contact Interstate Logos – Wisconsin at (844) 496-9163 a minimum of 14 calendar days in advance to coordinate removing, moving, or re-installation of these signs.

The contractor is responsible for damage done to these signs due to contractor operations.

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61. Field Office Type D, Item 642.5401.

Replace standard spec 642.2.1 (4) with the following:

Provide and maintain suitable interior sanitary facilities conforming to state and local health requirements, in clean and good working condition, provide a weekly cleaning service, and stock with sanitary supplies for the duration of the contract.

Add the following to standard spec 642.2.2.1 (2):

Provide CAT 5 services with a minimum of six CAT 5 receptacles.

Add standard spec 642.2.2.1 (6) as follows:

Provide a field office having an adjacent hard surface parking facility with a minimum capacity of 16 passenger vehicles.

Replace standard spec 642.2.2.4 with the following:

Under bid item Field Office Type D, furnish a facility with a minimum interior space of 1,500 square feet including a meeting room that is at least 20 feet by 20 feet; furnish indoor sanitary facilities that are housed within, or directly adjacent to, the field office; clean, maintain, and supply the field office and sanitary facilities weekly; and equip with the following:

- Ten suitable office desks with drawers and locks.
- Ten ergonomically correct office chairs in working condition according to standard spec 642.2.2.1 (4).
- Two four-drawer file cabinets.
- Two four-shelf bookcases.
- Four 2.5 x 5 foot (minimum) tables.
- Four 4 x 8 foot (minimum) tables for the meeting room.
- Twenty, or more, folding chairs.

Add standard spec 642.3 (7) as follows:

Locate the field office to be within X miles of the XX interchange.

Add standard spec 642.5 (4) as follows:

Payment of the field office is full compensation for providing a weekly cleaning service for the field office and sanitary facilities, for providing sanitary supplies as necessary, for replenishing paper, toner cartridges, and other supplies before fully expended, for maintaining the photocopier/scanner in working order at all times and for providing and supporting CAT 5 services.

62. Traffic Control.

Supplement standard spec 643.3.1 with the following:

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

Provide the State Patrol, Dane and Rock County Sheriff's Departments, and the engineer a current telephone number with which the contractor or his representative can be contacted during non-working hours in the event a safety hazard develops.

Do not permit equipment or vehicles to directly cross the live traffic lanes of the highway. All construction vehicles and equipment entering or leaving live traffic lanes shall yield to through traffic. Equip all contractor's vehicles or equipment operating in the live traffic lanes with a hazard identification beam

(flashing yellow signal light). Operate the flashing yellow beam only when merging or exiting live traffic lanes or when parked or operating on shoulders.

All construction vehicles and equipment operating on or near roadways open or closed to traffic, shall be equipped with at least one flashing yellow light. The flashing yellow light shall be activated when vehicles or equipment are operated on the roadway, parked in close proximity to the roadway, and when entering or exiting live lanes of traffic. The flashing amber light shall be mounted approximately midway between the transverse extremities of the vehicles or machinery and at the highest practical point that provides visibility from all directions. The light shall be of the flashing strobe or revolving type meeting the following minimum requirements:

Flashing Strobe Type Light	Revolving Type Light
360-degree lens	360-degree lens
60 to 90 flashes per minute	45 to 90 flashes per minute
5-inch minimum height	4-5/8 inch minimum height
3-3/4 inch minimum diameter	3-3/4 inch minimum diameter

The light shall be equipped with bulbs of 50 candlepower minimum. Mounting shall be either magnetic or permanent. No compensation for furnishing and installing the flashing amber light to contractor owned construction equipment or vehicles will be provided for in the contract.

The contractor shall not disturb, remove or obliterate any traffic control signs, advisory signs, shoulder delineators, sand barrel array or beam guard in place along the traveled roadways not shown on the plans without the approval of the engineer.

The traffic requirements are subject to change at the direction of the engineer in the event of an emergency.

Cover existing signs which conflict with traffic control as directed by the engineer. The turning of traffic control devices when not in use to obscure the message will not be allowed under this contract.

Replace standard spec 643.3.1(6) with the following:

Provide 24-hour a day availability of equipment, forces and materials to promptly restore barricades, lights, or other traffic control devices that are damaged or disturbed. Restore any barricade, light, or other traffic control so that the device is not out of service for more than two hours.

Supplement standard spec 643.3.6(3) with the following:

Place one flashing arrow board in advance of each lane closure taper and place one flashing arrow board within each lane closure taper at locations directed by the engineer.

63. Traffic Control Signs.

This special provision describes mounting height requirements and sign support requirements. Conform to standard spec 643, as modified in this special provision.

Supplement standard spec 643.2.9.1(5) as follows:

Provide associated advanced signing, including portable traffic control signing, according to the MUTCD. Mount all portable traffic control sign at a minimum height of 5 feet, measured from the bottom of the sign, above the edge of pavement.

64. General Requirements for Electrical Work.

Replace standard spec 651.3.3 (3) with the following:

Request a signal inspection of the completed signal installation to the engineer at least five working days prior to the time of the requested inspection. Notify Graham Heitz of WisDOT SW Region at (608) 246-5362 to coordinate the inspection. The department's Region Electrical personnel will perform the inspection.

65. Traffic Signals, General.

All traffic signal work shall be according to the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, 2019 edition, and these plans and specifications.

Note that failure to comply with the state standards and specifications may result in the cost of the corrections to be made at the contractor's expense. Also, any additional disruption of State-owned facilities shall be repaired or relocated as needed at the contractor's expense.

Notify Graham Heitz of WisDOT SW Region at (608) 246-5362 at least three weeks prior to the beginning of the traffic signal work.

66. Intelligent Transportation Systems (ITS) – Control of Materials.

Standard spec 106.2 – Supply Source and Quality

Add the following to standard spec 106.2:

Existing equipment shall be salvaged by the contractor. This equipment includes the following:

Salvaged Items
(4) Wireless Mesh Radio Assembly
(2) ITS Pole Mounted Cabinet
(1) Microwave Detector Assembly
(1) Camera Assembly
(1) ITS Field Cabinet
(1) Cellular Modem

Existing equipment shall be salvaged and reinstalled by the contractor. This equipment includes the following:

Salvaged Items
(1) DMS Controller
(1) Hart Rd ITS Equipment, including:
(1) Ethernet Switch
(1) Hardwired Bluetooth Sensor
(1) Electrical Service Breaker Disconnect Box
(1) Pole Mounted Cabinet

The department will furnish a portion of equipment to be installed by the contractor. This department-furnished equipment includes the following:

Department-Furnished Items
(1) Camera Pole 80-FT
(1) ITS Field Cabinet
(1) ITS Pole Mounted Cabinet (Temporary Condition)
(12) Microwave Detector Assembly
(1) Camera Assembly
(3) Ethernet Switch
(3) Terminal Servers
(5) Lighting Arrestor
(5) 12-CT Fiber Optic Termination Panel
(4) Fiber Optic Splice Enclosure
(3,245 LF) Fiber Optic Cable Outdoor Plant 12-CT
(35,840 LF) Fiber Optic Cable Outdoor Plant 72-CT

Contact Dean Beekman, WisDOT Traffic Management Center, at (414) 227-2154 to obtain a copy of the manufacturer list and contact names for department-furnished equipment.

Pick-up small department-furnished equipment, such as communications devices, cameras, and controllers, from the department's Traffic Management Center, 433 W. St. Paul Ave., Milwaukee, WI 53203 at a mutually agreed upon time during normal state office hours. Contact the department's Traffic Management Center at (414) 227-2166 to coordinate pick-up of equipment.

Large department-furnished equipment, such as camera poles will be delivered by the supplier to a contractor-controlled site within Rock 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.

67. Intelligent Transportation Systems – General Requirements.

A Description

A.1 General

This contract includes furnishing and installing elements for an Intelligent Transportation System (ITS) in or along the existing roadway as shown on the plans.

Unusual aspects of this project include:

1. The project includes working on cables and equipment that are carrying data between roadside equipment and the department's Traffic Management Center. Interruption of this service is not expected to perform this work. If an interruption is determined necessary, it must be done on a weekend, and must be done in a way that minimizes communications outages for the existing equipment. Notify the department's Traffic Management Center at least 48 hours in advance of the planned interruption.
2. The department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment prior to installing it.
3. The project area includes ITS devices connected with a wireless mesh communications system. Upon completion of the project, communications will be provided through a fiber optic communications system. The wireless mesh system shall remain operational until the engineer confirms the fiber optic system is operational and approves the removal of the wireless mesh system.

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

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 shall 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 shall 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 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 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, in separate cabinets sharing a single concrete base, and in a pole-mounted cabinet and equipment sharing the same pole 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 shall 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 shall 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 communications 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 surge protector. Locate the protector as far as possible from electronic equipment. Ensure all wiring between the surge protectors and the point of entry is free from sharp bends.

C.6. Lightning Arrester

Install a lightning arrester at each microwave detector location as shown on the plans to protect the equipment and conductors from the damaging effects of lightning.

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 is included under the ITS items in the contract.

68. Install Conduit Into Existing Item, Item 652.0700.S.

A Description

This special provision describes installing proposed conduit into an existing manhole, pull box, junction box, communication vault, or other structure.

B Materials

Use 2-inch nonmetallic conduit, 3-inch nonmetallic conduit, and 2-inch HDPE 3-duct conduit as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the standard spec.

C Construction

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for entering conduits at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

D Measurement

The department will measure Install Conduit Into Existing System by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
652.0700.S	Install Conduit Into Existing Item	EACH

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.

stp-652-070 (20100709)

69. Electrical Service Meter Breaker Pedestal STH 81 Lighting, Item 656.0200.001.

Replace standard spec 656.2.3, Meter Breaker Pedestal Service, paragraph (1) to read as follows:

(1) Furnish an approved service having a meter breaker pedestal, 22,000-AIC circuit breakers unless the local utility requires otherwise, grounding electrodes and connections, conduit and fittings, and necessary conductors and equipment required by the WSEC and the utility for a service connection. Furnish a pedestal with a 100 A 2-pole main breaker and a 30 A spare breaker. When the meter breaker pedestal is energized, install an approved meter seal at all access points on the meter trough. Meter shall be time of use type.

70. Electrical Service Meter Breaker Pedestal I-39/90 NB & STH 81, Item 656.0200.002;

Supplement standard spec 656.2.1 with the following:

(5) Contact Dean Copp at Alliant Energy (608) 364-6431 to obtain approval prior to purchasing two position commercial pedestal with breakers.

Replace standard spec 656.2.3 (1) with the following:

(1) Furnish an approved service having a meter breaker pedestal, 22,000-AIC circuit breakers unless the local utility requires otherwise, grounding electrodes and connections, conduit and fittings, and necessary conductors and equipment required by the WSEC and the utility for a service connection. Furnish a pedestal with an amperage capacity of 200 A. The pedestal shall include one 50 A 2-pole breaker and two 40 A breakers, as shown on plans. When the meter breaker pedestal is energized,

install an approved meter seal at all access points on the meter trough. Meter shall be time of use type. Meter pedestal shall have the capability of housing two separate meters.

Replace standard spec 656.3.2 (1) with the following:

(1) The local utility will furnish and install a 200 A, 120/240 volt AC, single phase, 3-wire underground electrical service lateral. The lateral shall be terminated at a meter pedestal as the plans show. Arrange and assume responsibility for the timely installation of the service lateral by the utility. Terminate the lateral at a meter socket, meter breaker pedestal, a NEMA 3R Breaker Enclosure, or a main lugs only meter pedestal, as the plans show.

71. Electrical Service Meter Breaker Pedestal I-39/90 SB & STH 81 Signal, Item 656.0200.003;

Replace standard spec 656.2.3 (1) with the following:

(1) Furnish an approved service having a meter breaker pedestal, 22,000-AIC circuit breakers unless the local utility requires otherwise, grounding electrodes and connections, conduit and fittings, and necessary conductors and equipment required by the WSEC and the utility for a service connection. Furnish a pedestal with a 50 A main breaker. When the meter breaker pedestal is energized, install an approved meter seal at all access points on the meter trough. Meter shall be time of use type.

72. Electrical Service Meter Breaker Pedestal STH 81 & Freeman Pkwy Item 656.0200.004.

Supplement standard spec 656.2.1 with the following:

(5) Contact Dean Copp at Alliant Energy (608) 364-6431 to obtain approval prior to purchasing two position commercial pedestal with breakers.

Replace standard spec 656.2.3 (1) with the following:

(1) Furnish an approved service having a meter breaker pedestal, 22,000-AIC circuit breakers unless the local utility requires otherwise, grounding electrodes and connections, conduit and fittings, and necessary conductors and equipment required by the WSEC and the utility for a service connection. The pedestal shall include one 50 A 2-pole breaker and one 50 A breaker. When the meter breaker pedestal is energized, install an approved meter seal at all access points on the meter trough. Meter shall be time of use type. Meter pedestal shall have the capability of housing two separate meters.

73. Electrical Service Meter Breaker Pedestal Hart Rd, Item 656.0200.005.

Replace standard spec 656.2.3 (1) with the following:

(1) Furnish an approved service having a meter breaker pedestal, 22,000-AIC circuit breakers unless the local utility requires otherwise, grounding electrodes and connections, conduit and fittings, and all necessary conductors and equipment required by the WSEC and the utility for a service connection. Furnish a pedestal with a 100 A 2-pole main breaker and a 30 A spare breaker. When the meter breaker pedestal is energized, install an approved meter seal at all access points on the meter trough. Meter shall be time of use type.

74. Electrical Service Breaker Disconnect Box I-39/90 NB & STH 81 Signal, Item 656.0500.001.

Replace standard spec 656.2.6 (1) with the following:

(1) Furnish a 100 A outside-rated breaker box with space for 6 circuits, but no main breaker; 30 A circuit breaker (22,000 AIC or larger as required by power companies), conduit fittings, grounding electrodes, and connections and necessary conductors and equipment required to provide power to the cabinet.

75. Electrical Service Breaker Disconnect Box I-39/90 & STH 81 Lighting, Item 656.0500.002.

Replace standard spec 656.2.6 (1) with the following:

(1) Furnish a 100 A outside rated breaker box with space for 6 circuits, but no main breaker; 40 A 2-pole circuit breaker (22,000 AIC or larger as required by power companies), conduit fittings, grounding electrodes, and connections and necessary conductors and equipment required to provide power to the cabinet.

76. Electrical Service Breaker Disconnect Box I-39/90 SB & STH 81 Signal, Item 656.0500.003.

Replace standard spec 656.2.6 (1) with the following:

(1) Furnish a 100 A outside rated breaker box with space for 6 circuits, but no main breaker; 40 A circuit breaker (22,000 AIC or larger as required by power companies), conduit fittings, grounding electrodes, and connections and necessary conductors and equipment required to provide power to the cabinet.

77. Electrical Service Breaker Disconnect Box ISTH 81, Item 656.0500.004.

Replace standard spec 656.2.6 (1) with the following:

(1) Furnish a 100 A outside rate breaker box with space for 6 circuits, but no main breaker; a 30 A breaker (22,000 AIC or larger as required by power companies), conduit fittings, grounding electrodes, and connections and necessary conductors and equipment required to provide power to the cabinet.

78. Temporary Traffic Signals for Intersection STH 81 & Freeman Pkwy, 661.0200.01;
Temporary Traffic Signals for Intersection I-39/90 SB & STH 81 – Stage 2A Phase 1 to 3B, 661.0200.02;
Temporary Traffic Signals for Intersection I-39/90 SB & STH 81 – Stage 3C to 3F , 661.0200.03;
Temporary Traffic Signals for Intersection I-39/90 SB & STH 81 – Stage 3F to 5 , 661.0200.04;
Temporary Traffic Signals for Intersection I-39/90 NB & STH 81 – Stage 2A Phase 1 to 3F, 661.0200.05;
Temporary Traffic Signals for Intersection I-39/90 NB & STH 81 – Stage 4A to 5, 661.0200.06.

Supplement standard spec 661.2.1 with the following:

(6) All wood poles shall be plumb and level.

(7) All signal timing changes requested by the engineer shall be coordinated with Graham Heitz of WisDOT SW Region at (608) 246-5360.

Replace standard spec 661.3.1(2) with the following:

(2) Request a signal inspection of the complete temporary traffic signal installation. Make this request to the engineer at least five working days before the requested inspection. Notify Graham Heitz of WisDOT SW Region at (608) 246-5360 to coordinate the inspection. The department's region electrical personnel will perform the inspection.

Supplement standard spec 661.3.1.4 with the following:

(4) Arrange for monthly inspections with the engineer to check the height of the span wire above the roadways. Ensure the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway. Make all height adjustments within 24-hours of an inspection indicating that adjustments are required. Notify the engineer in writing upon completion of all necessary adjustments. Maintain a written log to properly document the date of each monthly inspection, the heights above the roadway, the roadway clearance after adjustments have been made and acceptance by the engineer. Provide to the engineer all documentation related to the monthly span wire height checks and all records related to maintenance performed on the temporary traffic signal installations to the engineer.

Replace standard spec 661.5 with the following:

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

ITEM NUMBER	DESCRIPTION	UNIT
661.0200.01	Temporary Traffic Signals for Intersections STH 81 & Freeman Pkwy	LS
661.0200.02	Temporary Traffic Signals for Intersections I-39/90 SB & STH 81 – Stage 2A Phase 1 to 3B	LS
661.0200.03	Temporary Traffic Signals for Intersections I-39/90 SB & STH 81 – Stage 3C to 3F	LS
661.0200.04	Temporary Traffic Signals for Intersections I-39/90 SB & STH 81 – Stage 3F to 5	LS
661.0200.05	Temporary Traffic Signals for Intersections I-39/90 NB & STH 81 – Stage 2A Phase 1 to 3F	LS
661.0200.06	Temporary Traffic Signals for Intersections I-39/90 NB & STH 81 – Stage 4A to 5	LS

(2) Payment for the Temporary Traffic Signals for Intersections bid item is full compensation for providing, operating, maintaining, and repairing the complete temporary installation; and for removal. Payment also includes the following:

1. Furnishing and installing the replacement equipment.
2. The cost of delivery and pick-up of the cabinet assemblies.
3. Removal of service and site restoration.
4. Inspection and documentation.

(3) Payment for Generators is full compensation for providing, maintaining, and operating generators, including fuel and oil; for providing and locating a backup generator at the site; and for providing flaggers if required.

79. Ramp Closure Gates 24-FT, Item 662.1024.S.

A Description

This special provision describes providing freeway on-ramp closure gates on type 5 steel luminaire poles.

B Materials

B.1 General

Provide five user manuals and a listing of vendors and contact information for each manufactured component including flasher electrical components. The engineer may allow alternates equal to specified manufactured components. The engineer may require plan detail modifications to accommodate alternates. The engineer may accept alternate arms or mounting adaptors only if the contractor can demonstrate that the department can easily remove and replace the arms.

B.2 Components

Furnish type 5 steel poles designed to carry twin 15-foot luminaire arms and conforming to standard spec 657 and with dimensions for acceptable installation of the ramp gate hardware as shown on the detail. Ensure a contiguous pole by eliminating the hand hole near base of pole, thus allowing uninhibited mounting of the gate pivot assembly. Furnish galvanized steel nuts and bolts conforming to ASTM A307 except where designated as high strength (HS), conform to ASTM F3125. For the ramp closure gate locking mechanism, furnish a 3/4-inch handle nut. Furnish grade A36 steel for the gate supports, gate pivot assembly, and associated hardware galvanized after fabrication by either a mechanical or hot-dip process. Grind welded connections, rough edges, and burrs smooth before galvanizing to ensure a finished appearance. Ensure that the galvanized coating conforms to ASTM A 153. Provide aluminum/fiberglass gate arms of the nominal length the bid item indicates and conforming to plan dimensions. Cover gate arms on two sides with alternating red and white shop-applied type H reflective from the department's approved products list. Also provide a shear pin base that is the manufacturer’s "permanent pivot" style. Obtain components from: B&B Roadway 15191 Hwy 243 Russellville, AL 35654 Tel: (888) 560-2060 Gate arm: model MU605 Furnish a worm gear winch with a single line vertical lift capacity of 2000 lbs. Ensure that the winch has hardened steel gears, a handgrip, permanently lubricated bearings, a reinforced arc-welded reel Double click here to enter Construction Ids separated by commas. 357 of 384 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. Install structure identification plaques in the location the plan details show.

D Measurement

The department will measure the Ramp Closure Gates bid items as each individual installation, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
662.1024.S	Ramp Closure Gates 24-FT	EACH

Payment for the Ramp Closure Gate bid items is full compensation for providing ramp closure gates including support poles; for gate arm assemblies including guides, collars, and gate arms; and for structure identification plaques.

662-005 (20180628)

80. Install ITS Field Cabinet, Item 673.0200.S.

A Description

This special provision describes installing a department-furnished type 170, size 334 field cabinet.

B Materials

The department will furnish the type 170, size 334 field cabinet. Provide all necessary miscellaneous mounting hardware and internal power cables. With the field cabinet, the department will furnish cabinet bolts to anchor the cabinet to the concrete base.

C Construction

Install the field cabinet on a new or existing concrete base paid separately. Make all power connections to the cabinet, isolating the neutral bus from the cabinet and equipment ground.

Effectively ground all cable grounding shields and any spare or unused conductors in the field cabinet to the equipment grounding terminal strip.

D Measurement

The department will measure Install ITS Field Cabinet by the unit, installed 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
673.0200.S	Install ITS Field Cabinet	EACH

Payment is full compensation for installing the state-furnished field cabinet; making all connections; and grounding as necessary.

stp-673-005 (20100630)

81. Removing 50-Foot Camera Pole, Item 677.9051.S.

A Description

This special provision describes removing existing camera poles.

B (Vacant)

C Construction

Disconnect all cables, wiring and equipment that are mounted on or in the poles, and remove the pole from the concrete footing. The department will pick up any antennae, cameras, or other equipment mounted on the pole; contact maintenance staff at (414) 227-2166 at the department's Traffic Management Center, when the material is ready to be picked up. Properly dispose of the pole, conduit, cabling, and wiring away from the project site.

D Measurement

The department will measure Removing 50-Foot Camera Pole by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
677.9051.S	Removing 50-Foot Camera Pole	EACH

Payment is full compensation for removing and disposing of the existing camera pole; disconnecting any necessary wiring; removing the equipment mounted on the poles; disposing of cabling and wiring; and transportation.

stp-677-901 (20100630)

82. Install Ethernet Switches, Item 678.0600.

Replace standard spec 678.3.5 (1) with the following:

(1) Install ethernet switches and terminal servers in new or existing field cabinets. Connect to the devices the plans show or engineer directs.

83. Seismograph Item 999.1000.S.

A Description

This special provision describes furnishing seismographs and employing trained operators to monitor construction-induced vibrations on buildings/structures, and submittal of all required documentation.

B Material

Use seismographs conforming to Wisconsin Department of Safety and Professional Services (SPS) 307.43, Wisconsin Administrative Code that are continuous data recorders supplied with all the accessories necessary for making vibration and noise monitoring observations.

C Construction

Conduct monitoring procedures conforming to SPS 307.44 and as follows: Take seismograph readings before construction activities to establish an ambient or background index.

During construction, place seismographs to monitor all vibration-inducing construction activities or as the engineer directs. At a minimum utilize one seismograph. If more than one major construction activity per day is taking place, multiple seismographs may be required. Place seismographs on a stable surface within 3 feet of the building/structure nearest to the construction operation. Provide data recorded for each vibration occurrence to the engineer which includes the following:

1. Identification of vibration monitoring instrument used.
2. Description of equipment used by the contractor.
3. Name of qualified observer and interpreter.
4. Distance and direction of recording station from the vibration area.
5. Type of ground at recording station and material on which the instrument is sitting.
6. Peak particle velocity and principal frequency in each component.
7. A dated and signed copy of records of seismograph readings.
8. A comparison of measured seismograph readings to maximum allowable readings identified in SPS 307.43 or as specified in this special provision.

If construction activities generate ground vibration in excess of the peak particle velocity limits as shown in SPS 307.44, stop the construction operation in progress and implement alternate construction methods to produce results within the allowable peak particle velocity limits.

D Measurement

The department will measure Seismograph as a 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
999.1000.S	Seismograph	LS

Payment is full compensation for furnishing and operating seismographs, operators, and for producing documentation reports

stp-999-005 (20161130)

84. Subsoiling, Item SPV.0005.500.

A Description

This special provision describes subsoiling designated areas as shown on the plans or as directed by the engineer or Corridor Vegetation Inspector, and as hereinafter provided.

B (Vacant)

C Construction

Subsoil the designated area as shown in the plans or as directed by the Corridor Vegetation Inspector after topsoil or compost placement. Schedule a 500-square-foot test area and demonstrate competence to the Corridor Vegetation Inspector for either swale and slope subsoiling, or basin subsoiling, prior to continuing operations. The Corridor Vegetation Inspector shall identify the test area. Subsoiling shall consist of two operations: deep tilling passes and a surface mixing pass. For the deep tilling passes, loosen subsoiled areas to a depth of 20 inches of the in-place material and placed topsoil or compost. For the surface mixing pass, loosen the subsoiled areas to a depth of 6 to 8 inches. After obtaining approval by the Corridor Vegetation Inspector that the equipment and methods are sufficient to perform the work, complete the subsoiling operation for the designated areas within the project. Work done without the Corridor Vegetation Inspector's approval will be considered as unauthorized work.

For the deep tilling passes, create subsoiling channels with a commercially available, multi-shanked implement attached to track-type equipment. There shall be a minimum of two shanks on the equipment, with each shank located behind a track so that the soil is loosened after it is tracked. Do not pull the shanks through previous channels, but instead create multiple channels. The equipment shall be capable of exerting a penetration force necessary for the site. No disc cultivators, chisel plows, or spring-loaded equipment will be allowed. Space the grid channels 24 to 30 inches apart, depending on equipment, site conditions, and the plan. The channel depth shall be to a minimum of 20 inches.

For the surface mixing pass, use a disk chisel or coulter chisel plow with twisted points, or other approved implement, to mix the top 6 to 8 inches of the soil. Do the operation in one pass with a commercially available implement attached to track-type equipment applying no more than 5 psi of pressure or to a tractor with a minimum of two tires per axle. The equipment shall be capable of exerting a penetration force necessary for the site.

If soils are saturated, delay operations until the soil dries to field capacity or less. Field capacity is the amount of water retained in the soil after it has been saturated and allowed to drain freely.

C.1 Swale and Slope Subsoiling

Complete the deep tilling operation in three passes for each ten feet of swale width. On erodible slopes steeper than 6 horizontal to 1 vertical (6:1), work at right angles to the direction of surface drainage whenever practical. Follow this with a surface mixing pass parallel to the direction of ditch flow.

C.2 Basin Subsoiling

Perform the deep tilling operation in two sets of passes to form a two-directional (90°) grid. Follow this with a surface mixing pass completed in either direction.

C.3 Exceptions

Area exceptions to subsoiling include areas within the drip line of any existing trees, over utility installations within 30 inches of the surface, when trenching/drainage lines are installed, where compaction is by design (abutments, footings or inslopes steeper than 4:1), and inaccessible slopes, as approved by the Corridor Vegetation Inspector. In cases where exceptions occur, observe a minimum setback as directed by the Corridor Vegetation Inspector.

C.4 Finish Grading

Upon completion of the subsoiled area, finish grade the area as described in standard spec 625.3.3, except that only light-weight equipment as approved by the Corridor Vegetation Inspector may be used. Drive no other equipment over the subsoiled area after the area has been finish-graded. Any subsoiled areas that are re-compacted shall be subsoiled and finish-graded at no expense to the department.

D Measurement

The department will measure Subsoiling by the acre of area, 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.0005.500	Subsoiling	ACRE

Payment is full compensation for subsoiling designated areas shown on the plans or as directed by the Corridor Vegetation Inspector; and performing finished grading operations of these subsoiled areas.

(1/23/2018)

85. Pre-Planting Vegetation Treatment, Item SPV.0005.501.

A Description

This special provision describes applying pre-seeding broadcast herbicides onto the Invasive Species and Weed Management Areas (including native seed planting areas) shown in the plans.

B Materials

B.1 Herbicides

Provide manufacturers labels with appropriate application rates to the Corridor Vegetation Inspector.

The selection of herbicide(s) to be used for controlling each target weed species shall be based upon the guidelines of the Midwest Invasive Plant Network's Invasive Plant Control Database (http://mipncontroldatabase.wisc.edu/). This site provides broadleaf herbicides recommendations for controlling broadleaf weeds, as well as grass-selective herbicides for controlling non-native cool season perennial grasses in early spring or late fall when warm season native grasses are dormant.

If the following broadleaf weeds are present, mix the low residual broadleaf herbicide 2, 4-Dichlorophenoxyacetic acid (2, 4-D) with glyphosate herbicide to ensure control:

Field Bindweed (Convolvulus arvensis)

Canada Thistle (Cirsium arvense)

Crown Vetch (Securigera varia)

Many broadleaf herbicides have extended periods of activity in the soil and can retard the germination and survival of many wildflower seedlings. The use of any broadleaf herbicide other than 2, 4-D must be approved by the Corridor Vegetation Inspector prior to application. Do not apply any herbicides to the seeding site that will adversely affect the germination and growth of native prairie seedlings.

Use one of the following grass-selective herbicides to control unwanted cool season grasses in native prairies:

Poast (Sethoxydim)

Fusilade (Fluazifop-p-butyl)

Clethodim

Each species of non-native cool season grass is more susceptible to damage by one of the above herbicides. Select the most effective herbicide for use on each target weedy grass species. Follow manufacturer's directions when mixing and applying herbicides. The addition of crop oil concentrate to the herbicide mix may be required to ensure successful control.

B.2 Herbicide Applicator Certification

Provide a DATCP-certified and -licensed applicator to apply herbicides. Provide copies of certification paperwork to the Corridor Vegetation Inspector prior to herbicide treatment.

C Construction

C.1 Pre-Seeding Treatment

Apply herbicide to the areas delineated in the plans as Invasive Species and Weed Management Areas and Shrub Bed Limits. All existing weeds, grasses, and other vegetation must be eliminated prior to seeding or planting without disturbing the soil except for hand pulling individual weeds or woody vegetation.

After each herbicide application, fill out the department provided worksheet "Herbicide Treatment Summary". Complete one worksheet per site per application, sign the worksheet, and submit to the Corridor Vegetation Inspector.

Herbicides used to control weeds prior to seeding or planting must be selected to ensure that post-application carry over in the soil will not affect germination of native seeds or shrubs. Apply herbicide at appropriate concentration.

Existing vegetation shall be treated with herbicide at least once prior to seeding or planting to kill all existing vegetation. The treatment of the vegetation shall be timed to ensure optimal weed control. Follow the suggested eradication sequence described below or obtain approval for other methods from the Corridor Vegetation Inspector.

If vegetation to be sprayed is taller than 12 inches, mow vegetation to 4 inches or less in height, 4 to 6 weeks before the first application of herbicide.

Apply the appropriate herbicide(s) when vegetation is at 12 inches in height or has regrown to a height of at least 12 inches following mowing.

Re-treat undesirable vegetation after allowing it to regrow to a height of 12 inches. Do not mow, till, drive vehicles over, or disturb the vegetation in any way between herbicide applications.

After the final herbicide application, the area may be seeded with the native seed mixtures or planted with the shrubbery. The timing of the planting shall be according to the herbicide manufacturer's instructions.

Prevent herbicide drift onto adjacent trees and shrubs. Plants damaged due to herbicide drift will be replaced at the expense of the contractor.

D Measurement

The department will measure Pre-Planting Vegetation Treatment by the acre, 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.0005.501	Pre-Planting Vegetation Treatment	ACRE

Payment is full compensation for furnishing and applying herbicide; re-applying herbicide as needed; documenting herbicide applications; and mowing.

86. Seed Bed Preparation, Item SPV.0005.502.

A Description

This special provision defines the work needed for the native seeding areas that require seed bed preparation.

B (Vacant)

C Construction

C.1 Inspection and Approval

The native seeding areas have been finished with topsoil installed by others under a highway construction contract. Verify, with approval from the Corridor Vegetation Inspector, that the existing topsoil does or does not provide a suitable native seed planting bed that meets the following criteria: for the upper 2 inches of the topsoil, 100 percent of the material must pass a 1-inch sieve and at least 90 percent must pass the No. 10 sieve.

C.2 Surface Treatment

For those areas identified by the Corridor Vegetation Inspector that do not meet the topsoil requirements listed above, break down all clods and lumps using the appropriate pulverizing equipment to meet the specified gradation. Remove rocks, twigs, foreign material, and clods that cannot be broken down. Dress the entire surface to present a uniform appearance.

Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, stones larger than 1" in diameter, and/or any other construction refuse has been deposited within area(s) to be seeded. Remove any non-hazardous materials from the seed bed and inform the Corridor Vegetation Inspector of any hazardous materials.

D Measurement

The department will measure Seed Bed Preparation by the acre, 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.0005.502	Seed Bed Preparation	ACRE

Payment is full compensation for providing the equipment and labor needed to prepare the seed beds, as approved by the Corridor Vegetation Inspector, to a uniform appearance, and for removing and disposing of unsuitable or foreign material.

87. Roadway Embankment, Item SPV.0035.001.

Conform to standard spec 207 unless modified by this special provision.

A Description

Replace standard spec 207.1(1) with the following:

This section describes providing and placing, in embankments and in miscellaneous backfills, material obtained under the bid items in the roadway and drainage excavation or excavation for structure sections; or material obtained under Borrow as specified in standard spec 208 and modified under these special provisions.

B Materials

Conform to standard spec 207.2.

C Construction

Conform to standard spec 207.3.

D Measurement

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:

1. The engineer and contractor mutually agree to an alternative volume calculation method;

2. The method of average end areas is not feasible.

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 as shown on the plans.

E Payment

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 item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.001	Roadway Embankment	CY

Payment is full compensation for providing material from roadway excavation or borrow material; and for forming, compacting, shaping, sloping, trimming, finishing, and maintaining the embankments.

The department will pay for all work associated with select borrow material separately as specified under the Select Borrow bid item.

The department will pay for erosion control, fertilizing, and seeding of borrow sites and associated areas separately as specified for borrow sites and material disposal sites in 628.5.1.

(10/31/2016)

ASP-5 will be applied to this item. The Fuel Usage Factor for this item is 0.23.

88. Abandoning Culvert Pipe, Item SPV.0035.002.

A Description

This special provision describes abandoning existing culverts by filling them with cellular concrete according to the pertinent requirements of standard spec 204 and 501, as shown in the plans, and as hereinafter provided.

B Materials

Provide cellular concrete meeting the following specifications: 1 part cement, 1 part fly ash, 8 parts sand, or an approved equal, and water. Provide cement meeting the requirements of standard spec 501.2.1 for Type 1 Portland Cement. Provide sand meeting the requirements of standard spec 501.2.5.3. Provide water meeting the requirements of standard spec 501.2.4.

C Construction

First close the ends of the existing culverts as directed in standard spec 204.3.3.2(2). Then tap the culvert where necessary and fill from these locations as directed by the engineer.

D Measurement

The department will measure Abandoning Culvert Pipe Special in volume by the cubic yard, acceptably completed according to standard spec 109.1.3.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.002	Abandoning Culvert Pipe	CY

Payment is full compensation for furnishing all materials; excavating, closing ends, tapping, backfilling, and finishing where necessary.

89. Topsoil Special, Item SPV.0035.501.

A Description

This special provision describes furnishing and installing Topsoil Special at tree pits and planting bed locations shown in the plans.

B Materials

Furnish topsoil materials according to standard spec 625.

C Construction

Remove construction materials, stone, or other debris larger than 2" in length or diameter, debris, slag piles and trash from area or tree pit receiving Topsoil Special.

Till, disc, or hoe subgrade to loosen and de-compact. Obtain the Corridor Vegetation Inspector's approval of subgrade preparation including depth excavated, removal of trash materials, and loosening of subgrades before placing any Topsoil Special.

Provide Topsoil Special over entire planting bed area or in the tree pit to the depth indicated on the plans. Fine grade to match adjacent grades, accounting for settling. Place Topsoil Special in 6-inch lifts, watering or tamping to reduce settling potential.

D Measurement

The department will measure Topsoil Special in volume by the cubic yard, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.501	Topsoil Special	CY

Payment is full compensation for site preparation, excavating, and disposing of surplus materials; and for furnishing and installing all materials.

90. High Performance Concrete (HPC) Masonry Structures, Item SPV.0035.701.

This special provision describes specialized material and construction requirements for high-performance concrete used in bridge structures. Conform to standard spec 501, 502, and 509, as modified in this special provision. Conform to standard spec 715 for QMP Concrete Pavement and Structures.

MODIFY STANDARD SPECIFICATIONS AS FOLLOWS:

501.2.5.4.1 General

(1) The department will sample and test aggregates as follows:

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
Lightweight Pieces[1]…… ……. AASHTO T 113

[1] Material having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of lightweight pieces by dividing the weight of lightweight pieces in the sample retained on the 3/8-inch sieve by the weight of the total sample.

(2) Contact the engineer a minimum of 4 weeks prior to placing concrete to collect a sample of aggregates proposed for the project. The engineer will obtain the sample, or observe the contractor obtaining the sample. The sampler must be HTCP certified to sample aggregates.

(3) The department will randomly sample coarse aggregate for lightweight pieces testing at least once at least once per 10,000 cubic yards during HPC structure concrete production.

(4) Use clean, hard, durable crushed limestone free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances, or adherent coatings considered injurious.

(5) Use virgin aggregates only.

501.2.5.4.2 Deleterious Substances

Replace paragraph one with the following:

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
Thin or elongated pieces based on a 3:1 ratio	15.0
Materials passing the No. 200 sieve	1.5
Lightweight Pieces	2.0

501.2.5.4.3 Physical Properties

Replace paragraph one with the following:

The percent wear must not exceed 35, the weighted soundness loss must not exceed 6 percent, and the weighted freeze-thaw average loss must not exceed 12 percent.

501.3.2.4.3.3 Extended Delivery Time

Delete paragraph one.

501.3.5.1 General

Replace paragraph one with the following:

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

501.3.5.2 Delivery

Replace paragraph three with the following:

Deliver and completely discharge concrete within one hour beginning when adding water to the cement, or when adding cement to the aggregates. A decrease in air temperature below 60° F or the use of department-approved retarders does not increase the discharge time.

501.3.7.1 Slump

Replace the entire text with the following:

Use a 2-inch to 4-inch slump.

Perform the slump tests for concrete according to AASHTO T 119.

501.3.8.2.1 General

Replace the entire text with the following:

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

If the concrete temperature at the point of placement exceeds 80° F, do not place concrete for items covered in this special provision.

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

The department will pay $0.75 per pound for the quantity of ice required to reach a target temperature of 75° F if the following conditions are met:

The un-iced concrete temperature exceeds 80° F.

The contractor has performed the actions outlined in the contractor's accepted temperature control plan.

The contractor elects to use ice.

501.3.8.2.2 Bridge Decks and Structural Approach Slabs

Replace the entire text with the following:

(1) Do not place concrete for bridge decks or structural approach slabs when the ambient air temperature is above 80° F.

(2) For concrete placed in bridge decks and structural approach slabs, submit a written evaporation control plan at each pre-pour meeting. In that plan, outline the actions the contractor will take to maintain concrete surface evaporation at or below 0.15 pounds per square foot per hour. Do not place concrete for bridge decks or structural approach slabs without the engineer's written acceptance of that evaporation control plan. Perform the work as outlined in the evaporation control plan.

(3) If predicting a concrete surface moisture evaporation rate exceeding 0.15 pounds per square foot per hour, do not place concrete for bridge decks or structural approach slabs.

(4) Provide evaporation rate predictions to the engineer 24 hours prior to each bridge deck or structural approach slab pour.

(5) Compute the evaporation rate from the predicted ambient conditions at the time and place of the pour using the nomograph, or computerized equivalent, specified in CMM 5.25, figure 1. Use weather information from the nearest national weather service station. The engineer will use this information to determine if the pour will proceed as scheduled.

(6) At least 8 hours before each pour, the engineer will inform the contractor in writing whether or not to proceed with the pour as scheduled. If the actual computed evaporation rate during the pour exceeds 0.15 pounds per square foot per hour, at the sole discretion of the engineer, the contractor may be allowed to implement immediate corrective action and complete the pour.

502.3.5.4 Superstructures

Delete paragraph five.

502.3.7.8 Floors

Delete paragraphs 13.

Replace paragraphs 14 and 15 with the following:

(14) If staging requires public traffic on bridge deck prior to polymer overlay application, 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.

(15) If providing a broom finish, draw the broom transversely across the full width of the pavement with adjacent strokes slightly overlapping. Perform brooming to produce uniform corrugations and approximately 1/8 inch in depth. Complete brooming before concrete hardens and this operation tears or roughens the surface. Brooming shall provide a surface free from rough or porous areas, irregularities, and depressions that result from improper broom handling. Furnish brooms of a sufficient quality, size and construction, and operate them to produce a surface finish the engineer approves. Provided the contractor obtains satisfactory results, the engineer will allow manual brooming instead of mechanical brooming.

Add the following to the end as paragraphs 19, 20 and 21:

(19) Do not place bridge deck concrete more than 10 feet ahead of the finishing machine. If there is a delay of more than 10 minutes during the placement of a bridge deck, cover all concrete (unfinished and finished) with wet burlap to protect the concrete from evaporation until placement operations resume.

(20) Hand finishing, except for the edge of deck, must be kept to a minimum. The finishing machine must be equipped with a pan behind the screed. Apply micro texture using a broom or turf drag following the use of a 10-foot straight edge. Only finish by hand as necessary to close up finished concrete. Begin wet curing the deck immediately following the micro texture.

(21) For bridge decks with a design speed of 40 mph or greater that will not receive a polymer overlay under this contract, provide longitudinal grooving according to the provision included in this contract. For bridges receiving a polymer overlay under this contract, provide longitudinal grooving on structural approach slabs according to the provision in this contract.

502.3.8.1 General

Replace paragraph one with the following:

Maintain adequate moisture throughout the concrete mass to support hydration for at least 14 days.

502.3.8.2.1 General

Replace the entire text with the following:

Wet cure the concrete for bridge decks, sidewalks and raised medians for 14 days by use of a soaker hose system, or other engineer-approved methods. Cover the finished surface of bridge decks and overlays with one layer of wetted burlap or wetted cotton mats within 10 minutes after the finishing machine has passed. Apply the burlap/cotton gently so as to minimize marking of the fresh concrete. Keep the first layer of burlap/cotton continuously wet until the bridge deck or overlay is sufficiently hard to apply a second layer of wetted burlap/cotton. Immediately after applying the second layer of burlap/cotton, continue to keep the deck wet until placing and activating the soaker hose system. Throughout the remainder of the curing period, keep the burlap/cotton continuously wet with soaker hoses hooked up to a continuous water source. Inspect the burlap/cotton twice daily to ensure the entire surface is moist. If necessary, alter the soaker hose system as needed to ensure the entire surface is completely covered and stays moist. After 48 hours from the time of completion of the bridge deck or overlay pour, the soaker hose system and burlap/cotton may be covered with polyethylene sheeting. Provide a continuous flow of water through the soaker hose system for the entire curing period.

Do not uncover any portion of the deck at any time for any reason during the first 7 days of the curing period.

Set up and test the fogging system before each bridge deck, raised median and sidewalk pour. The fogging system must remain set up and in operating condition for the duration of the pour.

502.3.8.2.3 Decks

Delete the entire text.

502.3.8.2.4 Parapets

Replace the entire text with the following:

Cure the inside and outside concrete faces and tops of railings or parapets by covering with wetted burlap immediately after form removal and surface finish application. Keep the burlap thoroughly wet for at least 7 days; or by covering for the same period with thoroughly wet polyethylene-coated burlap conforming to standard spec 501.2.9.

Secure coverings along all edges to prevent moisture loss.

502.3.9.6 Bridge Decks

Replace paragraph two with the following:

Protect the underside of the deck, including the girders, for bridge deck and overlay pours by housing and heating when the national weather service forecast predicts temperatures to fall below 32° F during the cold weather protection period. Maintain a minimum temperature of 40° F in the enclosed area under the deck for the entire 14-day curing period.

502.5.1 General

Replace paragraph one with the following:

The department will pay for plan quantities according to standard spec 109.1.1.2 at the contract unit price and incidentals necessary to complete the work under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.701	High Performance Concrete (HPC) Masonry Structures	CY

710.5 Sampling and Testing

Add the following:

710.5.7 Chloride Penetration Resistance

(1) For each new or changed mix design, measure chloride penetration resistance according to AASHTO T 277 (Rapid Chloride Permeability Test) at a frequency of 1 test per 3 months (quarterly) of production.

(2) Permeability samples for AASHTO T 277 testing must be stripped of their molds and wet cured to an age of 7 days in a standard moist room or water tank. After 7 days, submerge the samples in water heated to 100° F until an age of 28 days. Upon completion of the curing process, obtain one sample from each cylinder and test according to AASHTO T 277.

(3) Ensure that the initial accepted mix designs meet the chloride penetration resistance limit of 1500 coulombs based on the AASHTO T 277 Rapid Chloride Permeability test. Chloride resistance testing conducted quarterly using AASHTO T 277 Rapid Chloride. Permeability Test during production will not be used for acceptance of previously accepted mixes and concrete masonry mixed and placed according to the contract requirements. For quarterly chloride resistance test results exceeding 1500 coulombs, the department may require adjustment of the concrete mix going forward to improve the chloride penetration resistance.

715.2.3.2 Structures

Replace paragraph one with the following:

(1A) Develop and test each mix to be used for HPC Masonry Structures. Produce a laboratory trial mix for each mix, as well as a trial mix from each plant used to supply the project. Test all mixes at a department-qualified laboratory.

(1B) The laboratory trial mix data must include the results of the following tests:

1. AASHTO T 119 Slump of Hydraulic Cement Concrete.
2. AASHTO T 121 Mass per Cubic Foot, Yield.
3. AASHTO T 152 Air Content.
4. AASHTO T 22 Compressive Strength.
5. AASHTO T 277 Rapid Determination of the Chloride Permeability of Concrete, using the modified curing procedure according to standard spec 710.5.7. (2) herein.
6. AASHTO T 309 Temperature.
7. Water Cement Ratio.

(1C) The 28-day compressive strength must be greater than or equal to 4000 psi. The 28-day results of the permeability test must be less than or equal to 1500 coulombs.

Replace paragraph two with the following:

(2) Provide a minimum cementitious content of 470 pounds per cubic yard and a maximum cementitious content of 540 pounds per cubic yard. For all superstructure and substructure concrete, unless the engineer approves otherwise in writing, conform to one of the following:

1. Use class C fly ash or grade 100 or 120 slag as a partial replacement for Portland cement. For binary mixes use 15% to 30% fly ash or 20% to 30% slag. For ternary mixes use 15% to 30% fly ash plus slag in combination. Percentages are stated as percent by weight of the total cementitious material in the mix.

Use a type IP or IS blended cement.

(10/26/2016)

91. Baseline CPM Progress Schedule, Item SPV.0060.001; CPM Progress Schedule Updates and Accepted Revisions, Item SPV.0060.002.

Replace standard spec 108.4 with the following:

108.4 Critical Path Method Progress Schedule

108.4.1 Software

Use the latest version of Oracle (Primavera) Project Manager (P6) version 7.0 or newer to prepare the Initial Work Plan Schedule, Baseline CPM Progress Schedule, and all Monthly CPM Updates.

108.4.2 Personnel

Designate a Project Scheduler who will be responsible for scheduling the Work and submit for department approval a professional resume describing a minimum of three years of developing and managing specific CPM scheduling experience on major (interstate) highway reconstruction projects or projects of similar size and complexity. This includes recent experience using Oracle P6 software.

108.4.3 Definitions

The department defines terms used in standard spec 108.4 as follows:

Activity

A task, event or other project element on the schedule, during the course of the project that contributes to completing the project. Activities have a description, scheduled (or actual) start and finish dates, duration and one or more logic ties.

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.

Construction Activity

Construction activities are discrete work activities performed by the contractor, subcontractors, utilities, or third parties within the project limits.

CPM Progress Schedule

A Critical Path Method (CPM) Progress Schedule is a network of logically related activities. The CPM schedule calculates when activities can be performed and establishes the critical or longest continuous path or paths of activities through the project.

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 Construction Schedule (PCS)

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

Float

Float, as used herein, is the total float of an activity; i.e., it is the amount of time between the date when an activity can start (the early start), and the date when an activity must start (the late start). In cases where the total float of an activity has a different value when calculated based on the finish dates, the lower (more critical) value will govern.

Forecast Completion Date

The completion date(s) predicted by the latest accepted CPM Update, which may be earlier or later than the contract completion date(s), depending on progress.

Fragnet

A group of logically-related activities, typically inserted into an existing CPM schedule to model a portion of the project, such as the work associated with a change order or delay impact.

Initial Work Plan Schedule

The Initial Work Plan (IWP) Schedule is a time-scaled CPM schedule showing detailed activities for the first 90 calendar days of work and summary level activities for the remainder of the project.

Intermediate Milestone Date

A contractually required date for the completion of a portion of the work, so that a subsequent portion of the work or stage of traffic phasing may proceed.

Master Program Schedule

The department's schedule for the overall I-39/90 Corridor Management Program, including intermediate milestone dates contract completion dates and codes.

Procurement Activity

Procurement activities are activities of duration reflecting contractor preparation and submittal of material submittals, department approval of material submittals, material fabrication durations, and material delivery durations.

Work Breakdown Structure (WBS)

A framework for organizing the activities that makes up a project by breaking the project into successively greater detail by level. A WBS organizes the project work. It does not address the sequencing and scheduling of project activities.

108.4.4 Department's Preliminary Construction Schedule

The department's Preliminary Construction 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 Construction Schedule is ease of identification of work availability during each Stage/Phase and the logical relationship between the Stages/Phases. The Preliminary Construction Schedule reflects one possible approach to completing the work, consistent with the traffic phasing requirements and the interim/final completion date(s) contained in the contract. The logic contained in the Preliminary Construction Schedule is not intended to alter or supplement contract requirements for the phasing of the work, but to reflect those requirements. Any reliance on the department's Preliminary Construction Schedule is at the sole risk of the contractor.

108.4.5 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 CPM schedule is the contractor's committed plan to complete all work within the completion deadlines.

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. Schedule the Work in the manner required to achieve the completion date and intermediate milestone dates specified in the Prosecution and Progress Special Provision.

Contactor project management personnel shall actively participate in the schedule development, the monthly updating of progress, and all schedule revisions throughout the entire duration of the contract. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate schedule.

108.4.6 Submittals

108.4.6.1 Initial Work Plan Schedule

Submit an Initial Work Plan (IWP) Schedule consisting of the following:

Provide a detailed plan of activities to be performed during the first 90 calendar days of the contract. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.

Provide activities as necessary to depict administrative work, including submittals, reviews, material procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar days (20 business days).

Provide activities as necessary to depict third-party work related to the contract.

Provide summary activities for the balance of the project beyond the first 90 calendar days of the project. Summary activities may have durations greater than 28 calendar days (20 business days).

Submit the IWP Schedule, including the P6 native data file (XER) and an electronic file (PDF). Submit the P6 native data file (XER) and an electronic file (PDF) to the following DOT email boxes; DOTDTSDSWMEGASCHEDULERS@dot.wi.gov and I39project@dot.wi.gov.

Following department receipt of the IWP Schedule, allow ten business days for department review and return of comments. Within five business days of receiving the IWP Schedule, the department will schedule a workshop for the contractor to present the IWP Schedule and to answer questions raised during the department's review. Provide formal responses to the comments and resubmit the IWP Schedule as necessary. A notice to proceed will not be issued until the engineer accepts the IWP Schedule. The department will use the IWP Schedule to monitor the progress of the work until the Baseline CPM Progress Schedule is accepted.

Submit an updated version of the IWP Schedule on a bi-monthly basis (every other week) until the engineer accepts the Baseline CPM Progress Schedule. With each update, include actual start dates, completion percentages, and remaining durations for activities started but not completed. Include actual finish dates for completed activities.

108.4.6.2 Baseline CPM Progress Schedule

Within ten business days of receiving an approved IWP Schedule, as required in the contract, submit a Baseline CPM Progress Schedule and written narrative consisting of the following:

1. Develop the Baseline CPM schedule. The Baseline CPM is the contractor's committed plan to complete the Work within the time frames required to achieve the contract completion date and intermediate milestone dates. The department will use the schedule to monitor the progress of the work. Include the following:
    a. Provide a detailed plan of activities to be performed during the entire contract duration, including all administrative and construction activities required to complete the work as described in the contract documents. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.

b. Provide activities as necessary to depict administrative work, including submittals, reviews, material procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar days (20 business days).

c. Provide activities as necessary to depict third-party work related to the contract. Third-party work activities may include but is not limited to Railroads, Utilities, Real Estate and local government agencies.

d. Make allowance for specified work restrictions, non-working days, time constraints, calendars, and potential or approved weather delays; reflect involvement and reviews by the department; and coordination efforts with adjacent contractors, utility owners, and other third parties.

e. With the exception of the Project Start Milestone and Project Completion Milestone, all activities must have predecessors and successors. Predecessors and successors shall not be linked to the same activity with different relationship types. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish- to-Finish relationship with succeeding activities. Do not use Start-to-Finish relationships. Do not use Finish-to-Start relationships with a lag or overlap unless the engineer accepts requested exceptions. Include and discuss request for exceptions in the schedule narrative provided with each schedule submittal.

f. Schedule activities shall include the following:

   i. A clear and legible description. The use of abbreviations shall be limited. Descriptions shall include an action verb describing the work performed, a basic description of the materials used, and, where applicable, a general location of the work.
   ii. Codes for Contract ID / WisDOT Project ID, Responsibility, Stage, and Area. The department may provide additional codes for use within department reporting.
   iii. Activities shall carry a single Responsibility assignment.

g. Schedule all intermediate milestones in the proper sequence and input as either a “Start on or After” or “Finish on or Before” date. Do not use other constraint types, within the software, without prior approval by the engineer. Do not apply date constraints on any work tasks without prior approval by the engineer. Provide predecessors and successors for each intermediate milestone as necessary to model each Stage of the Work. Unless the engineer accepts a requested exception, the schedule shall encompass all the time in the contract period between the starting date and the specified completion date.

h. Develop and submit an anticipated cash-flow curve for the project within the P6 application, based on the Baseline CPM schedule by assigning cost values to selective work tasks within the CPM schedule that total the value of the contract.

i. Provide budgeted quantities consistent with the bid quantities on selective construction tasks within the CPM schedule. The engineer will provide a summarized list of 30 generalized quantity items that will be identified and applied by the contractor using the P6 software application.

2. Provide an electronic PDF of the CPM schedule depicting the CPM network. Organize the logic diagram by grouping related activities, based on the activity codes in the CPM.

3. Provide a written narrative with the Baseline CPM explaining the planned sequence of work, as-planned critical path, critical activities for achieving intermediate milestone dates, traffic phasing, and planned labor and equipment resources. Use the narrative to further explain:

   a. 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.

   b. Use of constraints.

   c. Use of calendars.

d. Estimated number of adverse weather days on a monthly-basis.

e. Scheduling of permit and environmental constraints, and coordination of the schedule with other contractors, utilities, and public entities.

4. Submit the Baseline CPM schedule including the P6 native data file (XER) and an electronic file (PDF). Submit the P6 native data file (XER) and an electronic file (PDF) to the following dot email boxes; DOTDTSDSWMEGASCHEDULERS@dot.wi.gov and I39project@dot.wi.gov.

Within ten business days of receiving the Baseline CPM schedule, the department will schedule a workshop, review the submittal, and return review comments.

Within five business days after the Baseline CPM scheduling workshop, the department will either accept the contractor's Baseline CPM schedule or provide additional comments. Within five business days, address the department's comments and resubmit a revised Baseline CPM, including formal responses to the department's review comments. If the engineer requests justifications for activity durations provide information that may include estimated labor, equipment, unit quantities, and production rates used to determine the activity duration.

The engineer will accept the Baseline CPM based solely on whether the schedule is complete as specified in this section and meets the requirements of the contract. The engineer's acceptance of the schedule does not modify the contract and does not relieve the contractor from meeting the contract requirements.

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

108.4.6.3 Monthly CPM Schedule Updates

Submit CPM Schedule updates on a monthly basis after acceptance of the Baseline CPM Schedule. With each CPM Schedule update, include the following:

1. Actual start dates, completion percentages, and remaining durations for activities started but not completed, and actual finish dates for completed activities, through the final acceptance of the project.

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.

Include a narrative report that includes a brief description of monthly progress, changes to the critical path from the previous update, sources of potential delay, work planned for the next 30 calendar days, and all changes to the CPM Schedule. Changes to the CPM Schedule include the addition or deletion of activities, changes to activity descriptions, original durations, relationships, overlap (lag/lead), constraints, calendars, or previously recorded actual dates. Justify changes to the CPM Schedule in the narrative by describing associated changes in the planned methods or manner of performing the work or changes in the work itself.

Submit each CPM Schedule update; including the P6 native data file (XER) and an electronic file (PDF) on three separate CD-ROM's. Submit the P6 native data file (XER), the electronic file (PDF), responses to the DOT review comments, and the progress schedule update narrative to the following dot email boxes; DOTDTSDSWMEGASCHEDULERS@dot.wi.gov and I39project@dot.wi.gov.

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

108.4.6.4 Three-Week Look-Ahead Schedules

Submit Three-Week Look-Ahead Schedules on a weekly basis after NTP. The schedule shall be prepared by computer. Provide three hard copies (11” x 17”) to the engineer. With each Three-Week Look-Ahead include:

1. Activities underway and as-built dates for the past week.

Actual as-built dates for completed activities through final acceptance of the project.

Planned work for the upcoming three-week period.

The activities of the Three-Week Look-Ahead schedule shall include the activities underway and critical RFIs and submittals, based on the CPM schedule. The Three-Week Look-Ahead may also include details on other activities not individually represented in the CPM schedule.

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 schedule.

108.4.6.5 Weekly Production Data

Provide estimated and actual weekly production curves for items of work on a weekly basis for applicable items of work as requested by the department including but not limited to the following:

1. Provide data on the following items by the units specified:
    a. Underground Facilities – LF per week
    b. Retaining Walls – SF per week
2. MSE Walls
3. Other Wall Types
    a. Bridge Construction
4. Foundation Pile – EACH per week
5. Foundation/Substructure Concrete – CY per week
6. Structural Steel Girders – EACH per week
7. Prestressed Concrete Girders – EACH per week
8. Deck Formwork – SF per week
    a. Roadway Excavation – CY per week
    b. Roadway Embankment – CY per week
    c. Roadway Structural Section
9. Grading/Subgrade Preparation – SY per week
10. Base Material Placement – TON per week
11. Base Material Subgrade Preparation – SY per week
12. Asphaltic Base – TON per week
13. Asphaltic and HMA Pavements – TON per week

14. Concrete Pavement – SY per week

15. Concrete Pavement – CY per week

    a. Finishing Items – SY 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.

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.

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.

108.4.7 Progress Review Meetings

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

After submitting the monthly update and receiving the engineer's comments, attend a job-site meeting, as scheduled by the engineer, to review the progress of the schedule. At that meeting, address comments as necessary, and document agreement or disagreement with the department. The monthly meeting will be coordinated to take place on the same day and immediately before or after a weekly meeting, whenever possible.

108.4.8 CPM Progress Schedule Revisions

A CPM Progress Schedule Revision may be submitted, prior to the next CPM Monthly Update, if necessary due to changes in the Work or project conditions as authorized by the engineer. Prepare the CPM Revision in the same format as required for CPM Monthly Updates, including justification for changes to the schedule. The process for comment and acceptance of a CPM Revision will be the same as for CPM Monthly Updates. If the CPM Revision is accepted, prepare the next monthly update based on the revised CPM. If the CPM Revision is rejected, prepare the next monthly update based on the previous month's update.

The engineer will monitor the progress of the work and may request revisions to the CPM schedule. Revise the schedule as requested by the engineer and submit a CPM Progress Schedule Revision within 10 business days of the request. The process for comment and acceptance of a CPM Revision will be the same as for CPM Monthly Updates. The engineer may request that the contractor revise the CPM schedule for one or more of the following reasons:

1. The forecast completion date is scheduled to occur more than 14 calendar days after the contract completion date.
2. An intermediate milestone is scheduled to occur more than 14 calendar days after the date required by the contract.
3. The engineer determines that the progress of the work differs significantly from the current schedule.
4. A contract change order requires the addition, deletion, or revision of activities that causes a change in the contractor's work sequence or the method and manner of performing the work.

108.4.9 Documentation Required for Time Extension Requests

The information below is to be applied in compliance with standard spec 108.9 and 108.10 and does not replace the above mentioned specifications. To request a time extension to an intermediate milestone date or the contract completion date associated with changes to the work, provide a narrative document separate from the monthly schedule update narrative document that specifically details the work added or deleted and the other activities affected and or impacted based on the latest accepted CPM Monthly Update. For added work including impact delay activities, submit a proposed fragnet of activities to be added or revised in the CPM schedule, indicating how the fragnet is to be tied to the CPM schedule.

To request a time extension to an intermediate milestone date or the contract completion date associated with delays to the work, provide a narrative detailing the affected activities and the cause of the delay, based on the latest accepted CPM Monthly Update. Requests for time extensions due to delays shall meet the following criteria:

1. For requests to extend the contract completion date, include a detailed description of how the delay, or additional work, affected the project's critical path, based on the latest accepted CPM Monthly Update.
2. For requests to extend an intermediate milestone date, include a description of how the delay, or additional work, affected the controlling (longest) path to the milestone, based on the latest accepted CPM Monthly Update.
3. The department and the contractor agree that the float is not for the exclusive use or financial benefit of either party. Either party has the full use of the float on a first come basis until it is depleted.

108.4.10 Measurement for CPM Progress Schedule

The department will measure Baseline CPM Progress Schedule for each required submittal, acceptably completed.

The department will measure CPM Progress Schedule Updates and Accepted Revisions for each required submittal, acceptably completed.

108.4.11 Payment for CPM Progress Schedule

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.001	Baseline CPM Progress Schedule	EACH
SPV.0060.002	CPM Progress Schedule Updates and Accepted Revisions	EACH

Payment is full compensation for furnishing all work required under these bid items. The department will pay the contract unit price for the Baseline CPM Progress Schedule after the department accepts the schedule. Thereafter, the department will pay the contract unit price for each monthly CPM Progress Schedule update acceptably completed. The department will pay the contract unit price for CPM Revisions, if the department accepts the revision. The department will not pay for proposed revisions that are not accepted.

Failure to provide satisfactory schedule submittals within the times specified will result in liquidated damages being assessed and may result in the department managing to the contractor's latest accepted schedule until such time as the contractor submits an updated or revised schedule.

If the contractor does not provide satisfactory progress schedule submittals, updates and revisions, within the time specified by these specifications, the department will assess liquidated damages. The department will deduct the amount of $500 per calendar day due to the contractor for every calendar day that the submission of the Initial Work Plan Schedule, Baseline CPM Progress Schedule, Revised CPM Progress Schedule, and the Monthly Progress Schedule is delinquent.

If the Initial Work Plan Schedule, Baseline CPM Progress Schedule, Revised CPM Progress Schedule, and the Monthly Progress Schedule update submittals are not received by the department within 10 business days after the submittal time specified, and, within 10 days of the submittal date, the engineer finds the schedule submittal unacceptable, the department will only make progress payments for the value of materials, as specified in standard spec 109.6.3.2.1, until the schedule is submitted and found acceptable.

(10/25/2017)

92. Test Pits, Item SPV.0060.004.

A Description

This special provision describes excavating test pits and backfilling as directed by the engineer and geotechnical engineer and as hereinafter provided. Test pits are for the purpose of locating and relieving trapped water within the existing roadway embankments.

B Materials

Construct test pits conforming to standard spec 205.2 for Roadway Excavation.

Provide materials to conform to standard spec 312.2 for Select Crushed Material.

C Construction

All excavation of test pits shall be performed during daytime hours. The engineer and geotechnical engineer (Hassen A. Hassen, hassen.hassen@dot.wi.gov) shall be present during excavation.

The location of test pits shall be determined by the engineer and geotechnical engineer. Contact the engineer at least 4 weeks prior to earthwork operations. Test pits shall be excavated at least 2 weeks prior to roadway excavation operations. Different timelines, to meet particular project's needs, may be required by the engineer and geotechnical engineer.

Excavate the foreslope of the existing roadway embankment beginning at the edge of the existing subgrade shoulder point at a slope of 1:1 down to the elevation of the toe of existing slope, but no lower than 1 foot above the ditch flow line if a ditch is present. Excavations shall be 10 feet wide measured parallel to the roadway shoulder. The bottom of the test pit shall be sloped to drain away from the roadway.

If water is present or seeping from the embankment, backfill with select crushed where the test pit is located on an embankment that is supporting live traffic. Place select crushed to stabilize the test pit and allow water to seep out. If the embankment is not supporting live traffic, then the test pit shall remain open and maintained until seeping stops or as approved by the engineer and geotechnical engineer.

If water is not present or seeping from the embankment, backfill the test pit with roadway embankment or a material approved by the engineer and geotechnical engineer.

D Measurement

The department will measure Test Pits by each unit, acceptably installed.

The department will measure Select Crushed Material as specified in standard spec 312.4.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.004	Test Pits	EACH

Payment is full compensation for all engineer approved work specified including excavating, sloping, shaping, stockpiling, backfilling with roadway embankment, compacting, and maintaining.

If select crushed material is required for backfilling, the department will pay for select crushed under the select crushed item 312.0110. The department will pay for erosion control, if required, under the erosion control bid items.

(5/22/2017)

93. Roadway Cleanup, Item SPV.0060.005.

A Description

This special provision describes removing trash, tires and other debris from the IH 39/43 roadway during bi-directional traffic operations.

B (Vacant)

C Construction

Roadway cleanup will be scheduled by the department to occur on a once per month basis. For months with holiday work restrictions, the cleanup will be scheduled to occur immediately prior to the holiday break. The cleanup will occur on a weeknight, Tuesday through Thursday, during the time from 12:00 AM to 5:00 AM.

Traffic control for roadway cleanup will be provided by the department with the assistance of the Wisconsin State Patrol. A rolling slowdown will be used for traffic control. The necessary advanced signing and law enforcement personnel will be required to be on site prior to and during the rolling slowdown operation. Arrangements for implementing a rolling slowdown on IH 39/43 will be made by Jeff Gustafson at the Southwest Region Madison Office, (608) 516-6400. A rolling slowdown will only be allowed in one direction (northbound or southbound) at a time. Concurrent northbound and southbound rolling slowdowns will not be allowed. A northbound rolling slowdown will occur immediately following a southbound rolling slowdown, or vice versa, to complete the roadway cleanup loop (both northbound and southbound) for the project length.

Provide personnel and equipment capable of retrieving and transporting all types of roadway debris from the travel lanes and shoulders. Temporary precast concrete barrier will be present on the left side and may be present on the right side (outside). All debris shall be removed from the roadway and shoulder areas within the concrete barriers. If no concrete barrier is located on the outside, the debris removal area shall be extended to include the construction clear zone.

D Measurement

The department will measure Roadway Cleanup as each individual unit, acceptably completed, which includes both directions of the roadway (northbound and southbound) for the project's length of bi-directional traffic.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.005	Roadway Cleanup	EACH

Payment is full compensation for providing personnel and equipment to remove debris from the traffic lanes and shoulders for both directions (northbound and southbound) of IH 39/43, and disposal of collected debris.

(10/16/2017)

94. Emergency Response to Traffic Incident Involving Guard Rail or EAT, Item SPV.0060.006.

A Description

This special provision describes providing prompt response to an emergency repair request involving a damaged guard rail or an Energy Absorbing Terminal (EAT) device on IH 39/43 or an IH 39/43 ramp that is damaged due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide appropriate staff to the incident site within 45 minutes of receiving a repair request from the responding agency. Staff deployed shall be capable of immediately assessing the severity of the damage to the device and consult with the department's representative on potential repair or replacement options and the projected timeline to restore the roadside device to its proper working condition. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff within 45 minutes of receiving a repair request, the department will assess the contractor $2500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted 45-minute response time. Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

For contractor owned devices, repair work shall be completed according to standard spec 614, and as directed by the engineer. For state-owned devices, repair work is covered under articles Repair State Owned Guard Rail and Repair State Owned EAT of these special provisions. In either case, once repair work has been started, work shall continue until completion. Repair work shall be completed off the traveled way to the maximum extent allowable.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Incident Involving Guard Rail or EAT as each individual response, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.006	Emergency Response to Traffic Incident Involving Guard Rail or EAT	EACH

Payment is full compensation for providing a prompt staff response to an emergency repair request for a damaged guard rail or an EAT located within the project limits.

The cost of providing the appropriate level of on-call staff for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(11/29/2017)

95. Emergency Response to Traffic Incident Involving Concrete Barrier Temporary, Item SPV.0060.007.

A Description

This special provision describes providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier located on IH 39/43 or an IH 39/43 ramp that is damaged or displaced due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide staff, equipment, and materials to the incident site within 45 minutes of receiving a repair request from the responding agency. The contractor shall consult with the department's representative on potential repair or replacement options to restore the temporary concrete barrier to proper working condition. Staff and equipment deployed shall be capable of completing the needed repairs as quickly as possible once repair work is started. Repair work shall be completed off the traveled way to the maximum extent allowable. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating and completing repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff and equipment within 45 minutes of receiving a repair request, the department will assess the contractor $2500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted 45-minute response time. Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

For contractor owned temporary barrier, repair work shall be completed according to standard spec 603 and 643, and as directed by the engineer. For state-owned temporary barrier, repair work is covered under article Repair State Owned Concrete Barrier Temporary Precast of these special provisions.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Incident Involving Concrete Barrier Temporary Precast as each individual response, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.007	Emergency Response to Traffic Incident Involving Concrete Barrier Temporary	EACH

Payment is full compensation for providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier located within the project limits.

The cost of providing the appropriate level of on-call staff, equipment, and materials for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(11/29/2017)

96. Emergency Response to Traffic Incident Involving Crash Cushions, Item SPV.0060.008.

A Description

This special provision describes providing prompt response to an emergency repair request involving a damaged crash cushion device on IH 39/43 or an IH 39/43 ramp that is displaced or damaged due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide appropriate staff to the incident site within 45 minutes of receiving a repair request from the responding agency. Staff deployed shall be capable of immediately assessing the severity of the damage to the device and consult with the department's representative on potential repair or replacement options and the projected timeline to restore the roadside device to its proper working condition. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff within 45 minutes of receiving a repair request, the department will assess the contractor $2500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted 45-minute response time. Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

For contractor owned devices, repair work shall be completed according to standard spec 614, and as directed by the engineer. For state-owned devices, repair work is covered under articles Repair State Owned Crash Cushion or Repair State Owned Crash Cushion Low Maintenance of these special provisions. In either case, once repair work has been started, work shall continue until completion. Repair work shall be completed off the traveled way to the maximum extent allowable.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Incident Involving Crash Cushion as each individual response, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.008	Emergency Response to Traffic Incident Involving Crash Cushion	EACH

Payment is full compensation for providing a prompt staff response to an emergency repair request for a damaged crash cushion device located within the project limits.

The cost of providing the appropriate level of on-call staff for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(11/29/2017)

97. Install Department Furnished Crash Cushion Low Maintenance, SPV.0060.010.

A Description

This special provision describes transporting, installing, and salvaging a department-furnished low maintenance crash cushion at a location as directed by the engineer according to standard spec 614, and as hereinafter provided. Maintenance/repair of a department furnished low maintenance crash cushion is covered under a separate bid item.

B Materials

Replace the first sentence of standard spec 614.2.7(1) with the following:

The department will furnish the low maintenance crash cushion (Model SCI 100GM Crash Attenuator from Smart Cushion Innovations (SCI) Products).

Pick-up and transport the department-furnished low maintenance crash cushion from the department's designated storage site (3715 N Newville Rd, Janesville, WI 53545) to the project's installation site upon coordination and approval from the engineer.

C Construction

Replace the first sentence of standard spec 614.3.4(1) with the following:

Install a department-furnished low maintenance crash cushion at locations directed by the engineer within 3 days of receiving notification from the engineer.

When its use is no longer needed, the department-furnished low maintenance crash cushion shall be salvaged and returned to the department's storage site.

D Measurement

The department will measure Install Department Furnished Crash Cushion Low Maintenance, 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.0060.010	Install Department Furnished Crash Cushion Low Maintenance	EACH

Payment is full compensation for pick-up and transport from the department's designated storage site to the project, installation, salvaging and transport back to the department's storage site of a department-furnished low maintenance crash cushion as described in this article.

(10/11/2017)

98. Repair State Owned Crash Cushion Low Maintenance, Item SPV.0060.011.

A Description

This special provision describes providing emergency repair services to a state owned low maintenance crash cushion located on IH 39 or an IH 39 ramp that becomes compressed/damaged due to a vehicular collision during the time this contract is in effect. This work shall be according to standard spec 614, as directed by the engineer, and as hereinafter provided. Responding to the incident site with the appropriate staff, equipment and materials is covered under a separate bid item.

B Materials

Conform to standard spec 614.

C Construction

Repairs shall be completed as quickly as possible once repair work is started. Repair work shall be completed off of the traveled way to the maximum extent possible.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the engineer.

D Measurement

The department will measure Repair State Owned Crash Cushion Low Maintenance as each individual unit, acceptably repaired.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.011	Repair State Owned Crash Cushion Low Maintenance	EACH

Payment is full compensation for completing the necessary repair work to restore the state owned low maintenance crash cushion to a safe and operational condition.

The department will pay for additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(10/24/2017)

99. Repair State Owned Energy Absorbing Terminal (EAT), Item SPV.0060.012; Repair State Owned Guardrail, Item SPV.0090.001.

A Description

This special provision describes providing emergency repair services, including the replacement of unusable components or hardware, for state owned energy absorbing terminals or guardrail located on IH 39/43 or an IH 39/43 ramp that is damaged due to a vehicular collision during the time this contract is in effect. This work shall be according to standard spec 614, as directed by the engineer, and as

hereinafter provided. Responding to the incident site with the appropriate staff, equipment and materials is covered under a separate bid item.

B Materials

Conform to standard spec 614.

C Construction

Repairs shall be completed as quickly as possible once repair work is started. Repair work shall be completed off of the traveled way to the maximum extent possible.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the engineer.

D Measurement

The department will measure Repair State Owned Energy Absorbing Terminal (EAT) as each individual unit, acceptably repaired. The department will measure Repair State Owned Guardrail by the linear foot, acceptably repaired.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.012	Repair State Owned Energy Absorbing Terminal (EAT)	EACH
SPV.0090.001	Repair State Owned Guardrail	LF

Payment is full compensation for completing the necessary repair work to restore the state owned semi-rigid barrier system to a safe and operational condition, including replacement of damaged, unusable hardware.

The department will pay for additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(10/24/2017)

100. Repair State Owned Crash Cushion, Item SPV.0060.013.

A Description

This special provision describes providing emergency repair services, including the replacement of unusable components or hardware, for state owned crash cushions located on IH 39/43 or an IH 39/43 ramp that are damaged due to a vehicular collision during the time this contract is in effect. This work shall be according to standard spec 614, as directed by the engineer, and as hereinafter provided. Repair of a state owned low maintenance crash cushion is covered under a separate bid item. Responding to the incident site with the appropriate staff, equipment and materials is covered under a separate bid item.

B Materials

Conform to standard spec 614.

C Construction

Repairs shall be completed as quickly as possible once repair work is started. Repair work shall be completed off of the traveled way to the maximum extent possible.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the engineer.

D Measurement

The department will measure Repair State Owned Crash Cushion as each individual unit, acceptably repaired.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.013	Repair State Owned Crash Cushion	EACH

Payment is full compensation for completing the necessary repair work to restore the state owned crash cushion to a safe and operational condition, including replacement of damaged, unusable components.

The department will pay for additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(10/24/2017)

101. Temporary Sign Support Type I, Item SPV.0060.014.

A Description

This special provision describes the construction of sign supports for temporary Type I signs as shown on the plans.

B Materials

Use lumber and hardware conforming to standard spec 507.

C Construction

Construct the fixed message sign portable support according to the detail on the plans. Grade surrounding location of portable support such that the support can be located on a level surface.

D Measurement

The department will measure Temporary Sign Support Type I as each location, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.014	Temporary Sign Support Type I	EACH

Payment is full compensation for furnishing and installing Temporary Sign Support Type I portable supports; for moving due to contractor operations; for preparing a level location for sign support and for removing the portable supports at the completion of the work.

102. Sealing Structures, Item SPV.0060.015.

A Description

This special provision describes sealing off the hole in manholes or inlets after temporary pipes are removed per the locations shown on the plans or as directed by the engineer.

B Materials

Furnish all materials necessary to construct sealing of structure. Use brick, concrete block, with mortar or any grade of concrete specified under standard spec 501.3.1.3.

C Construction

Plug the holes in the structure where the existing pipe connections were located with brick or concrete masonry, or with any grade of concrete under standard spec 501.3.1.3. Reconstruct the walls of the structure to match the existing wall thickness, making the patch flush with the interior and exterior of the structure. Completely seal the existing hole to make a watertight patch.

D Measurement

The department will measure Sealing Structures as each location, regardless of number of holes sealed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.015	Sealing Structures	EACH

Payment is full compensation for sealing; for hauling and disposing of materials; for providing any required brick, concrete block or concrete and for backfilling.

103. Access Gate 6-FT, Item SPV.0060.016.

A Description

This special provision describes furnishing and erecting access gates per the plan detail at locations shown on the plans or as directed by the engineer, and as hereinafter provided.

B Materials

Furnish a round steel pipe tubing gate that has a minimum of 6 horizontal rails. Overall dimensions shall be a minimum of 48-inches tall and a minimum of 66-inches wide. Dimensions between horizontal rails, overall vertical height, and overall horizontal width can vary slightly from the plan detail if approved by the engineer.

Gate shall have round, heavy steel pipe tubing with a minimum outside diameter of 1-3/4 -inches constructed of a minimum 20 gauge thickness. Steel pipe tubing shall be painted. The paint color shall be either green or gray.

Provide Grade “A” Concrete Masonry according to standard spec 501 to set 6-inch diameter x 8-foot treated wood gate posts.

Provide zinc-coated bolts, nuts and washers that are according to ASTM Designation A325.

C Construction

All field welded surfaces shall have all paint removed and be properly cleaned prior to welding. After welding is complete, surface shall be primed with premixed rustproof paint followed by two field coats of enamel paint.

D Measurement

The department will measure Access Gate 6-FT as each individual unit, acceptably installed and 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.0060.016	Access Gate 6-FT	EACH

Payment is full compensation for furnishing and installing all materials including the gate, welding, hardware, latch chain, gate posts, and concrete masonry. The department will supply the keyed lock.

(8/12/2014)

104. Covering Storm Sewer, Item SPV.0060.018.

A Description

This special provision describes covering various sized storm sewer pipe stubs and storm sewer structure pipe cutouts to prevent sediment from infiltrating into the storm sewer system. The locations of covering storm sewer are shown on the plans.

B Materials

Furnish storm sewer stub covers made of a polyethylene film and plywood. Provide a polyethylene film meeting the following requirements:

Property Requirements	**Value**	**Test Method**
Tensile Strength, min.	40 lbf	ASTM D7003
Grab tensile strength, min.	50 lbf	ASTM D7004
Elongation at Breat, min.	400%	ASTM D7003
Hydrostatic Resistance	32 psi	ASTM D751
Permeability	0.058 g/100in ^{2}/day	ASTM E96 Pro. B

Provide plywood with a minimum thickness of 3/4-inch at storm sewer pipe stub locations.

C Construction

Completely cover the storm sewer openings with one continuous piece of polyethylene film. Cover a minimum of one foot of the stub length or one foot of the structure height with the polyethylene film and secure the polyethylene film to the storm sewer pipe stub or storm sewer structure.

Place a sheet of plywood to cover the opening of the storm sewer stub. Provide one continuous sheet and extend the plywood sheet a minimum of 2 inches beyond the outside diameter of the pipe on all sides. Place the plywood tight to the polyethylene film and the storm sewer stub and secure the plywood as necessary to prevent movement or separation from the pipe while backfilling the trench.

D Measurement

The department will measure Covering Storm Sewer by each individual covering storm sewer, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.018	Covering Storm Sewer	EACH

Payment is full compensation for furnishing, delivering, and assembling all specified materials.

105. Uncover Signs, Item SPV.0060.019.

A Description

This special provision describes removing interim materials used to previously cover signs or portions of signs from previous projects as shown on the plans and as hereinafter provided.

B (Vacant)

C Construction

Conform to standard spec 204.3 and 643.

D Measurement

The department will measure Uncover Signs by each unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.019	Uncover Signs	EACH

Payment is full compensation for removing and disposing of sign covers; for disposing offsite; and for repairing or replacing contractor damaged signs.

106. Reinforced Concrete Endwalls and Grate 38x60-Inch, Item SPV.0060.020.

A Description

Construct Reinforced Concrete Endwalls and Grates according to standard spec 504, 505, 506, and 522, as shown on the plans, and as hereinafter provided.

B Materials

Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish steel pipe conforming to the requirements of standard spec 506.2.3.6.

Furnish pipe grates galvanized according to ASTM A123

Furnish angles and brackets galvanized according to ASTM A123

Furnish required hardware galvanized according to ASTM

C Construction

Repair pipes, rods, angles, and brackets on which the galvanized coating has been damaged according to the requirements of AASHTO M36M.

D Measurement

The department will measure Reinforced Concrete Endwalls and Grates 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.0060.021	Reinforced Concrete Endwalls and Grates, 38x60-Inch	EACH

Payment is full compensation for constructing the endwalls including the grates; for all excavating, including forming bed; and for all backfill.

107. Inlets 5-FT Diameter, Item SPV.0060.023; Inlets 6-FT Diameter, Item SPV.0060.024; Inlets 7-FT Diameter; Item SPV.0060.025.

A Description

This special provision describes furnishing and installing 5-FT, 6-FT, and 7-FT diameter inlets according to the standard spec 611, as shown on the plans and as hereinafter provided.

B Materials

Conform to standard spec 611.

C Construction

Conform to standard spec 611.

D Measurement

The department will measure Inlets 5-FT, 6-FT, 7-FT Diameter by each unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.023	Inlets 5-FT Diameter	EACH
SPV.0060.024	Inlets 6-FT Diameter	EACH
SPV.0060.025	Inlets 7-FT Diameter	EACH

Payment is full compensation for furnishing and installing 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.

108. Emergency Response to Pavement Repairs, Item SPV.0060.026.

A Description

This special provision describes providing prompt response to an emergency repair request of damaged or deteriorated concrete or HMA pavement located on IH 39 or an IH 39 ramp. The provisions of this article will not be applicable during a project's winter shutdown period.

B (Vacant)

C Construction

The contractor shall provide staff, equipment, and materials to the incident site within 45 minutes of receiving a repair request from the responding agency. The contractor shall consult with the department's representative on potential repair or replacement options to restore the damaged or deteriorated pavement section to a safe and drivable condition. Staff and equipment deployed shall be capable of completing the needed repairs as quickly as possible once repair work is started. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating and completing repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff and equipment within 45 minutes of receiving a repair request, the department will assess the contractor $2500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted 45-minute response time. Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Pavement Repairs as each individual response acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.026	Emergency Response to Pavement Repairs	EACH

Payment is full compensation for providing prompt response to an emergency repair request for damaged or deteriorated concrete or HMA pavement located within the project's construction limits.

The cost of providing the appropriate level of on-call staff, equipment, and materials for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for concrete pavement or HMA pavement repairs under the respective concrete pavement or HMA pavement bid items in the contract.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(4/8/2019)

109. Salvage and Reinstall Single Decorative Light Pole Assembly, Item SPV.0060.350; Salvage and Reinstall Twin Decorative Light Pole Assembly, Item SPV.0060.351.

A Description

This special provision describes salvaging, transporting, storing, and reinstalling decorative light pole assemblies according to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans.

B Materials

Furnish all hardware and materials necessary to install salvaged decorative light pole assemblies.

C Construction

Notify Jason Dupuis at the City of Beloit at (608) 364-6735 at least ten working days prior to the removing the light pole assemblies. Coordinate acceptable dates for removal of the existing lighting system. Complete the removal work as soon as possible following shut down of this equipment.

Remove and salvage decorative light poles, metal bases, decorative luminaire arms, and luminaires per plan from their concrete footing and disassemble out of traffic. Remove wiring/cabling per plan and dispose of off department right-of-way. Ensure that access handhold doors and hardware remain intact. Inspect salvaged equipment for damage or defects.

If damage or defects discovered, contact Jason Dupuis at the City of Beloit at (608) 364-6735. The department assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working lighting equipment to the engineer and city. Any equipment not identified as damaged or not working, prior to removal, shall be replaced by the contractor at no cost to the department.

If construction staging requires, store salvaged equipment that is to be reinstalled at other locations.

Reinstall decorative light pole, luminaire, and luminaire arm, including hardware, per plan and per manufacturer's recommendation.

Reinstall the decorative light pole, luminaire arm, and existing luminaire at the new locations shown on the plan and according to standard spec 652.3, 657.3, 659.3. Where the existing luminaire is HPS, install a new LED luminaire. New LED luminaires are paid for under separate bid item.

D Measurement

The department will measure Salvage and Reinstall Single Decorative Light Pole Assembly and Salvage and Reinstall Twin Decorative Light Pole Assembly by each unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.350	Salvage and Reinstall Single Decorative Light Pole Assembly	EACH
SPV.0060.351	Salvage and Reinstall Twin Decorative Light Pole Assembly	EACH

Payment is full compensation for removing and disassembling lighting equipment, scrapping of some materials, disposing of scrap material, protecting from damage, providing and installing all materials including hardware, fittings, mounting devices, and attachments necessary to completely install luminaire fixture, light pole, and luminaire arm.

110. Decorative Luminaire Fixture, Item SPV.0060.352; Decorative Light Pole, Item SPV.0060.353; Decorative Luminaire Arm 6-FT, Item SPV.0060.354.

A Description

This special provision describes furnishing and installing decorative luminaire fixtures, decorative light poles, and decorative luminaire arms.

B Materials

Provide decorative luminaire fixture, light pole, and luminaire arm as shown in the plans and as specified herein.

Lighting Equipment	Manufacturer	Catalog No.	Description
Luminaire Fixture	Sternberg Lighting	2A-1970LED-S-BTSR-FG-6ARC35T3-MDL03-HSHB	Decorative Luminaire Fixture
Light Pole	Sternberg Lighting	5225T6-4-.250-SS	Twin Arm Decorative Light Pole
Luminaire Arm	Sternberg Lighting	DAG6	Decorative Luminaire Arm 6-FT

Provide catalog cuts of the luminaire fixture, light pole, and luminaire arm for review by Jason Dupuis of City of Beloit at (608) 364-6735 prior to finalizing the order to the manufacturers. Furnish all other hardware and materials necessary to install decorative luminaire fixture, light pole, and luminaire arm. Color of luminaire fixture, light poles, and luminaire shall be black.

C Construction

Construct according to the applicable portions of standard spec 659 and the manufacturer's recommendations. Fill in any open holes in the light pole using a grommet or other engineer-approved device to prevent water from entering the pole.

D Measurement

The department will measure Decorative Luminaire Fixture, Decorative Light Pole, and Decorative Luminaire Arm 6-ft as 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.0060.352	Decorative Luminaire Fixture	EACH
SPV.0060.353	Decorative Light Pole	EACH
SPV.0060.354	Decorative Luminaire Arm 6-ft	EACH

Payment is full compensation for providing and installing all materials including hardware, fittings, mounting devices, and attachments necessary to completely install luminaire fixture, light pole, and luminaire arm.

111. Salvage and Reinstall Lighting Control Cabinet 120/240, Item SPV.0060.355.

A Description

This special provision describes salvaging and reinstalling an existing lighting control cabinet.

B Materials

Furnish all hardware and materials necessary to install the salvaged lighting control cabinet.

C Construction

Notify Jason Dupuis at the City of Beloit at (608) 364-6735 at least ten working days prior to the removing the lighting cabinet. Coordinate acceptable dates and durations for outages of the existing lighting system. Complete the removal work as soon as possible following shut down of the equipment.

Remove lighting control cabinet per plan from its concrete footing and disassemble out of traffic. Remove the electric service meter breaker pedestal. Remove wiring/cabling per plan. Ensure that access handhold doors and hardware remain intact. Make a reasonable effort to inspect salvaged equipment for damage or defects. Dispose of all equipment not being reinstalled.

If damage or defects discovered, contact Jason Dupuis of City of Beloit at (608) 364-6735. The City of Beloit assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Notify Jason Dupuis, in writing, of any damaged or non-operating equipment. Any equipment not identified as damaged or not working, prior to removal, shall be replaced by the contractor at no cost to the department.

Reinstall the salvaged lighting control cabinet at the new location shown on the plan and according to standard spec 652.3 and 659.3.

D Measurement

The department will measure Salvage and Reinstall Lighting Control Cabinet 120/240 as 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.0060.355	Salvage and Reinstall Lighting Control Cabinet 120/240	EACH

Payment is full compensation for removing, disassembling lighting equipment, scrapping of some materials, disposing of scrap material, salvaging the equipment, stowing, protecting from damage, reinstalling the lighting equipment, furnishing necessary materials to complete the reinstallation, making proper connections, and coordinating with the City of Beloit.

112. Lighting Control Cabinet 120/240 30-Inch Special, Item SPV.0060.356.

A Description

This special provision describes furnishing and installing a lighting control cabinet according to the pertinent provisions of standard spec 659 and as hereinafter provided. Specific items are noted in the plans.

B Materials

Furnish all materials according to the plans, standard spec 659, and Standard Detail Drawing Lighting Control Cabinet 120/240 Volt, except the main breaker in the cabinet shall be a 40 Amp/2-Pole breaker instead of a 100 Amp/2-Pole breaker.

C Construction

Install lighting cabinet according to standard spec 659.3.

D Measurement

The department will measure Lighting Control Cabinet 120/240 30-Inch 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.0060.356	Lighting Control Cabinet 120/240 30-Inch Special	EACH

Payment is full compensation for furnishing and installing the lighting cabinet including circuit wiring connections, hardware, and fittings; and for making the lighting system fully operational.

113. Traffic Signal Face 3S 12-Inch Black Housing, Item SPV.0060.357; Traffic Signal Face 4S 12-Inch Black Housing, Item SPV.0060.058; Pedestrian Signal Face 16-Inch Black Housing SPV.0060.359

A Description

This special provision describes furnishing and installing a traffic signal face or pedestrian signal face at the STH 81 and Freeman Parkway intersection, except that the housing shall be black.

B Materials

Furnish all materials according to the plans, WisDOT standard spec 658, except the signal housing shall be black.

C Construction

Install traffic signal face according to standard spec 658.3.

D Measurement

The department will measure traffic signal face and pedestrian signal face 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.0060.357	Traffic Signal Face 3S 12-inch Black Housing	EACH
SPV.0060.358	Traffic Signal Face 4S 12-inch Black Housing	EACH
SPV.0060.359	Pedestrian Signal Face 16-inch Black Housing	EACH

Payment is full compensation for furnishing and installing a traffic signal face and for providing a complete and functioning assembly.

114. Transporting and Installing State Furnished Video Detection Camera, Item SPV.0060.360.

A Description

This special provision describes the transporting and installing of department furnished Video Detection Camera.

B Materials

Pick up the department furnished Video Detection Camera and mounting hardware at the department's Electrical Shop. Notify Graham Heitz of WisDOT SW Region at (608) 246-5362 to make arrangements for picking up the department furnished materials for the Video Detection Camera at least five working days prior to material pick-up. All remaining hardware, fasteners, and wiring connections are incidental to this item.

C Construction

Notify Graham Heitz of WisDOT SW Region at (608) 246-5362 at least five working days prior to the installation of the cameras. Install the pole/arm mounting brackets, extension arm (if required) and cameras as shown on the plans. Install the video detection cameras per plan. Make all necessary cable/wire connections. Final determination of location will be made by the department's electrical personnel to ensure the best line of sight per manufacturer's recommendations.

Assist the department and vendor with aiming and programming the cameras during turn-on. The department will schedule the video detection camera turn-on and provide notification a minimum of five working days prior to turn-on.

D Measurement

The department will measure Transporting and Installing State Furnished Video Detection Camera 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.0060.360	Transporting and Installing State Furnished Video Detection Camera	EACH

Payment is in full compensation for transporting and installing the state furnished video detection camera and mounting hardware; for assisting the vendor and department with aiming and programming the cameras.

115. Transporting and Installing State Furnished Microwave Veh Detection System, Item SPV.0060.361.

A Description

This special provision describes the transporting and installing of state furnished Microwave Vehicle Detection System.

B Materials

Pick up the department furnished Microwave Vehicle Detection System at the department's Electrical Shop. Notify Graham Heitz of WisDOT SW Region at (608) 246-5362 to make arrangements for picking up the department furnished materials for the Microwave Vehicle Detection System at least five working days prior to material pick-up. All remaining hardware, fasteners, and wiring connections are incidental to this item.

C Construction

Notify Graham at least five working days prior to the scheduled installation of the detection system and all subsequent changes in operation. Install the microwave detectors per plan. Install the detectors manufacturer's connector cable whip from the detectors to the handhold or base. WisDOT will install microwave detection equipment in the traffic signal control cabinet.

Vehicle detection programming will be performed by WisDOT. Notify Graham Heitz of WisDOT upon completion of installation of microwave detectors.

D Measurement

The department will measure Transport and Install State Furnished Microwave Veh Detection System 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.0060.361	Transporting and Installing State Furnished Microwave Veh Detection System	EACH

Payment is in full compensation for transporting and installing the state-furnished microwave detectors.

116. Remove Pole Type 5, Item SPV.0060.401.

A Description

This special provision describes removing an existing pole type 5 and all attached equipment that is not being salvaged by the project.

B Materials

Provide all tools and equipment necessary to remove the existing pole type 5 and detach all equipment (that is not being salvaged by the project).

C Construction

Prior to removal, the engineer or delegated representative shall verify that all salvageable items have been removed from the pole type 5. Carefully remove the existing pole type 5 and all non-salvageable items attached. Dispose of remaining materials off of department right-of-way.

Disconnect all cables and wiring that are mounted on or in the pole. Properly dispose all removed materials off the job site and off the department right-of-way.

D Measurement

The department will measure Remove Pole Type 5 by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.401	Remove Pole Type 5	EACH

Payment is full compensation for removing the pole type 5 and all attached equipment (that is not being salvaged by the project).

117. Remove Wood Pole, Item SPV.0060.402.

A Description

This special provision describes removing an existing wood pole and all attached equipment that is not being salvaged by the project.

B Materials

Provide all tools and equipment necessary to remove the existing wood pole and detach all equipment (that is not being salvaged by the project).

C Construction

Coordinate with Kyle Hemp of the WisDOT SW Region at (608) 246-5367 and Alliant Energy (as necessary) to disconnect the temporary power service at the location indicated on the plans prior to the removal of the wood pole.

Prior to removal, the engineer or delegated representative shall verify that all salvageable items have been removed from the wood pole. Remove the in-place wood pole at the location indicated on the plans. Remove the entire wood pole, including any non-salvageable items still attached.

Disconnect all cables and wiring that are mounted on or in the pole. Properly dispose all removed materials off the job site and off the department right-of-way. After the wood pole is removed, backfill the removal site with similar material to surrounding material and match the surrounding grade.

D Measurement

The department will measure Remove Wood Pole by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.402	Remove Wood Pole	EACH

Payment is full compensation for removing the wood pole and all attached equipment (that is not being salvaged by the project) including all labor, tools, equipment, for backfilling and restoring the site to match surrounding, and incidentals necessary to complete the contract work.

118. Remove Electrical Service Meter Breaker Pedestal, Item SPV.0060.403.

A Description

This special provision describes removing an in-place electrical service meter breaker pedestal.

B (Vacant)

C Construction

Prior to removing the meter breaker pedestal, contact Kyle Hemp of the WisDOT SW Region at (608) 246-5367 and Alliant Energy (as necessary) to arrange for disconnection of the service lateral and removal of the meter housing by the electrical utility.

After disconnection of the service lateral and salvaging/removal of the meter housing by the electrical utility, carefully remove the meter breaker pedestal including any cabling and wiring, and any base or foundation. Properly dispose of meter breaker pedestal components off the job site and off department right-of-way.

Backfill the removal site with material similar to surrounding material and match the surrounding grade.

D Measurement

The department will measure Remove Electrical Service Meter Breaker Pedestal by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.403	Remove Electrical Service Meter Breaker Pedestal	EACH

Payment is full compensation for removing and disposing the meter breaker pedestal, and for backfilling and restoring the site to match surroundings.

119. Salvage Wireless Mesh Radio Assembly, Item SPV.0060.404.

A Description

This special provision describes salvaging an existing wireless mesh radio assembly.

B (Vacant)

C Construction

Contact WisDOT SW Region ITS Engineer, Kyle Hemp, (608) 246-5367, to confirm that the fiber optic communications system along IH 39/90 is operational at least 14 calendar days prior to removing the wireless mesh radio assembly.

Perform a field review of existing wireless mesh radio assembly equipment with Kyle Hemp to determine the condition of equipment prior to removal. The department will identify all items to be removed and salvaged or disposed. Coordinate the delivery of any salvaged items with Kyle Hemp.

Carefully remove the existing wireless mesh radio assembly at the locations indicated on the plans. If applicable, remove all mounting hardware associated with the wireless mesh radio assembly. Remove all cables/wires connected to the equipment and properly dispose of off the job site and off department right-of-way.

Storage of the salvaged materials prior to pick-up is the responsibility of the contractor and is incidental to this item.

Any materials which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

D Measurement

The department will measure Salvage Wireless Mesh Radio Assembly by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.404	Salvage Wireless Mesh Radio Assembly	EACH

Payment is full compensation for removing, salvaging, transporting, and storage of the wireless mesh radio assembly; disconnecting all wiring connections; and for meeting with the department.

120. Salvage Microwave Detector Assembly, Item SPV.0060.405.

A Description

This special provision describes salvaging an existing microwave detector assembly.

B (Vacant)

C Construction

Contact WisDOT SW Region ITS Engineer, Kyle Hemp, (608) 246-5367, to perform a field review of existing microwave detector assembly equipment to determine the condition of equipment prior to removal. The department will identify all items to be removed and salvaged or disposed. Coordinate the delivery of any salvaged items with Kyle Hemp.

Carefully remove the existing microwave detector assembly at the location indicated on the plans. If applicable, remove all mounting hardware associated with the microwave detector assembly. Remove all cables/wires connected to the equipment and properly dispose of off the job site and off department right-of-way.

Storage of the salvaged materials prior to pick-up is the responsibility of the contractor and is incidental to this item.

Any materials which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

D Measurement

The department will measure Salvage Microwave Detector Assembly by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.405	Salvage Microwave Detector Assembly	EACH

Payment is full compensation for removal, salvaging, transporting, and storage of the microwave detector assembly; disconnecting all wiring connections; removing all conduit connections; and for meeting with the department.

121. Salvage Cellular Modem, Item SPV.0060.406.

A Description

This special provision describes salvaging an existing cellular modem and associated antenna.

B (Vacant)

C Construction

Contact WisDOT SW Region ITS Engineer, Kyle Hemp, (608) 246-5367, to confirm that the fiber optic communications system along IH 43 is operational at least 14 calendar days prior to removing the cellular modem.

Perform a field review of existing equipment with Kyle Hemp to determine the condition of equipment prior to removal. The department will identify all items to be removed and salvaged or disposed. Coordinate the delivery of any salvaged items with Kyle Hemp.

Carefully remove the existing cellular modem and associated antenna at the location indicated on the plans. If applicable, remove all mounting hardware associated with the cellular modem and associated antenna. Remove all cables/wires connected to the cellular modem and associated antenna back to the next connected device.

Storage of the salvaged materials prior to pick-up is the responsibility of the contractor and is incidental to this item.

Any materials which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

D Measurement

The department will measure Salvage Cellular Modem by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.406	Salvage Cellular Modem	EACH

Payment is full compensation for removal, salvaging, transporting, and storage of the cellular modem; disconnecting and disposing of all wiring connections; and for meeting with the department.

122. Salvage Camera Assembly, Item SPV.0060.407.

A Description

This special provision describes salvaging an existing camera assembly.

B (Vacant)

C Construction

Contact WisDOT SW Region ITS Engineer, Kyle Hemp, (608) 246-5367, to perform a field review of existing camera assembly equipment with Kyle Hemp for condition of equipment prior to removal. The department will identify all items to be removed and salvaged or disposed. Coordinate the delivery of any salvaged items with Kyle Hemp.

Schedule the deactivation of the existing camera assembly so that it is operational until no less than seven days from the activation of the proposed camera assembly.

Carefully remove the existing camera assembly at the location indicated on the plans. If applicable, remove all mounting hardware associated with the camera assembly. Remove all cables/wires connected to the camera assembly and properly dispose of off the job site and off department right-of-way.

Storage of the salvaged materials prior to pick-up is the responsibility of the contractor and is incidental to this item.

Any materials which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

D Measurement

The department will measure Salvage Camera Assembly by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.407	Salvage Camera Assembly	EACH

Payment is full compensation for removal, salvaging, transporting, and storage of the camera assembly; disconnecting and disposing of all wiring connections; and for meeting with the department.

123. Salvage and Reinstall DMS Controller, Item SPV.0060.408.

A Description

This special provision describes salvaging and reinstalling the existing DMS controller as indicated on the plans.

B (Vacant)

C Construction

Prior to removing, the engineer or delegated representative shall determine if the DMS controller is fully functional and inspect the equipment for damage. If the DMS controller is found to be non-functional or damaged, contact Kyle Hemp of the department's SW Region at (608) 246-5367.

Carefully remove the DMS controller at the location indicated in the plans. Salvage all mounting hardware associated with the DMS controller. Salvage all cables/wires connected from each device to the next connected device. Provide cables and wires needed to make devices operational.

Storage of the salvaged DMS controller prior to reinstallation is the responsibility of the contractor and is incidental to this item.

Any materials which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

Reinstall the DMS controller and make operational within 7 days of removal. Reinstall the DMS controller as indicated in the plans and per manufacturer's recommendations.

D Measurement

The department will measure Salvage and Reinstall DMS Controller by the unit, acceptably removed and reinstalled.

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	Salvage and Reinstall DMS Controller	EACH

Payment is full compensation for salvaging, transporting, storing, and reinstalling DMS controller; for making all connections; and for making all systems operational.

124. Salvage ITS Pole Mounted Cabinet, Item SPV.0060.409.

A Description

This special provision describes salvaging an existing pole mounted cabinet and any housed equipment not being re-installed on the project.

B (Vacant)

C Construction

Contact WisDOT SW Region ITS Engineer, Kyle Hemp, (608) 246-5367, to perform a field review of the existing pole mounted cabinet and housed equipment to determine the condition of equipment prior to removal. The department will identify all items to be removed and salvaged or disposed. Coordinate the delivery of any salvaged items with Kyle Hemp.

Carefully remove the existing pole mounted cabinet, including any housed equipment not being re-installed on the project, at the locations indicated on the plans. Remove all mounting hardware associated with the pole mounted cabinet. Remove all cables/wires connected to the pole mounted cabinet.

Storage of the salvaged materials prior to pick-up is the responsibility of the contractor and is incidental to this item.

Any materials which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

D Measurement

The department will measure Salvage ITS Pole Mounted Cabinet by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.409	Salvage ITS Pole Mounted Cabinet	EACH

Payment is full compensation for removal, salvaging, transporting, and storage of the pole mounted cabinet, including any housed equipment not being re-installed on the project; disconnecting and disposing of all wiring connections; and for meeting with the department.

125. Native Seed Surveillance and Care Cycles, Item SPV.0060.506.

A Description

This special provision describes the post-seeding monitoring, documentation, and care for the native seed planting areas.

A.1 Native Seed Establishment Period

The native seed surveillance and care period is from initial planting until December 15 of the succeeding year.

B Materials

B.1 Herbicides

Comply with the material requirements specified in the article Pre-Planting Vegetation Treatment.

C Construction

C.1 General

Proper care of native plants consists of weeding, re-seeding, and any other work necessary to maintain the native plants and promote continued establishment.

Remove any trash, debris, slurry, sediment, or other material deposited by wind, water, or other means in any of the native seeded areas.

C.2 Care Specialist

Provide one person, called the Care Specialist, responsible for the well-being of the native seed planting areas. Also provide any other personnel, vehicles, equipment, tools, and materials needed to carry out the Care Specialist's recommendations throughout the full term of the establishment period. The care specialist will do the following:

1. For each care cycle, perform surveillance and care of the native seed planting areas throughout the growing season to promote native seed growth. At least 14 days prior to planting, submit a native seed surveillance and care cycle schedule to the Corridor Vegetation Inspector. Use a department provided template. Provide schedule updates to the Corridor Vegetation Inspector as necessary.

2. After each visual inspection, but prior to executing the work for each care cycle, fill out the pertinent information required on the department provided worksheet “Native Seed Scouting Report”. After all care activities have been completed for a care cycle, fill out the remainder of the same worksheet. Complete one worksheet per site per care cycle, sign the worksheet, and submit to the Corridor Vegetation Inspector.

3. Conduct a field assessment native plant survey during July or August for each seeding site. Fill out the department provided worksheet “Native Plant Survey” or an equivalent worksheet approved by the Corridor Vegetation Inspector. Complete one worksheet per site, sign the worksheet, and submit to the Corridor Vegetation Inspector.

4. Provide a final examination of the native seed planting sites by December 1 of the establishment period. Fill out the department provided worksheet “Final Assessment of Native Plantings”. Required attachments to be included with this submittal include but are not limited to: photos, a dominant native and non-native species list, written assessment of standard performance achievements, summary of management efforts for the year, summary of management recommendations for the following year, map showing each established native seed mix area, and a list of the established plant species in each area. Complete one worksheet per site, sign the worksheet, and submit to the Corridor Vegetation Inspector.

5. Follow the Performance Standards contained in this article.

C.3 Re-Seeding

If bare ground exceeds 10% of the native seeded area, re-seed all bare spots larger than 4-square feet. Re-seed all areas, at the earliest appropriate planting time. Areas to be re-seeded must be approved by the Corridor Vegetation Inspector before work begins.

C.4 Invasive Species and Weed Management

Identify and manage weeds within the Invasive Species and Weed Management Areas (including native seeding areas) shown in the plans. Common approaches to control invasive species and weeds within and near native prairie sites are described below. Submit other techniques to the Corridor Vegetation Inspector for approval.

Do not begin the process of undesirable weed control and eradication, using herbicides, until native plant establishment is at a point where the native plants can be readily recognized and identified. Other weed control methods may be applied earlier as appropriate.

C.4.1 Spot Herbicide Treatment

Spot treatment entails the use of an absorbent material that has been soaked in an appropriate selective herbicide to control undesirable weeds. Apply herbicide at appropriate concentration. Identify all weeds and prairie plants when not in flower.

C.4.2 Spray Herbicide Treatment

Select the appropriate herbicide for treating newly-emerging weeds. Spray weeds in the spring when emerging from the soil, and no more than 6 inches in height. Focus the herbicide application at the ground level to minimize drift onto nearby desirable species.

C.4.3 Inverted Cone Herbicide Treatment

Place a three- to four-inch diameter inverted cone over the sprayer nozzle by affixing it to the sprayer wand just above the point of attachment to the nozzle. The cone can be constructed by cutting off the narrow stem of a funnel so that only the cone remains. Remove the sprayer nozzle and fit the inverted funnel cone over the sprayer wand. Reattach the sprayer nozzle so the cone sits just above it and affix the cone onto the sprayer wand. Cover the unwanted vegetation with the cone and spray herbicide so that the drift is contained within the cone.

Treat undesirable cool season weeds such as Quackgrass, Kentucky Bluegrass, and Smooth Bromegrass by using grass-selective herbicides. Remove weeds in mid- to late fall after the warm season prairie grasses are dormant and the cool season weedy grasses are actively growing. Air temperature must be above 60º F to ensure satisfactory results. If the site contains significant components of cool season native grasses, obtain approval of the Corridor Vegetation Inspector before proceeding.

C.4.4 Mowing

During each growing season, defined as May 1 – October 1, mow the Invasive Species and Weed Management areas (including the native seeding areas) per the specifications below.

Mow when vegetation reaches a height of 12 inches. Set the mower height to 6 inches. Multiple mowing's will be required.

Mowing should be timed to occur before any weeds produce viable seeds to prevent future weed infestations. Mowing will not be allowed if target weed species possess mature seeds. Coordinate the scheduling of all mowing's with the Corridor Vegetation Inspector prior to performing this work.

Mowing should be performed only when soils are dry and not subject to rutting or compaction. Areas that are damaged by indiscriminate mowing shall be re-seeded at the expense of the contractor.

Selective mowing may be required once the native vegetation is established to reduce weed seed production. Mowing may not be possible in very wet areas.

Use a flail-type mower. Verify that the cut vegetation does not bury small seedlings with large clumps of plant debris. Remove all undesirable plant material from the landscape site. Mowing equipment shall be washed prior to using at project sites to minimize the spread of weedy species.

C.4.5 Mechanical Methods

Techniques include hoeing, cutting, girdling, and tilling.

C.4.6 Digging/Hand-pulling

Remove entire root to prevent re-sprouting. Use with small or young plants, sandy or loose soils, or when soils are damp.

C.5 Weedy Species

The following weedy species must be controlled in the Invasive Species and Weed Management areas as soon as they become evident/visible:

GRASSES

Common Name	**Scientific Name**
Tall Fescue	Festuca arundinacea
Reed Canary Grass	Phalaris arundinacea
Giant Reed Grass	Phragmites australis
Kentucky Bluegrass	Pro pratensis
Smooth Brome	Bromus inermis
Orchard Grass	Dactylis glomerate
Quackgrass	Elytrigia repens

BROADLEAF WEEDS

Common Name	Scientific Name
Perennial Pepperweed*	Lepidium latifolium
Japanese Knotweed	Polygonum cuspidatum or Fallopia japonica
Canada Goldenrod	Solidago canadensis
Canada Thistle*	Cirsium arvense
Crown Vetch*	Securigera varia
Field Bindweed*	Convolvulus arvensis
Horsenettle*	Solanum caroliniense
Leafy Spurge	Euphorbia esula
Wild Parsnip	Pastinaca sativa
White Sweet Clover	Melilotus alba
Yellow Sweet Clover	Melilotus officinale

**Denotes weeds that cannot be killed by Glyphosate and require the addition of the appropriate broadleaf herbicide to the glyphosate tank mix in the first herbicide treatment.*

C.6 Damages for Failing to Perform

If the Care Specialist fails to perform the surveillance or fails to perform the proper care for a period greater than 3 weeks, the department will assess daily damages in the amount of $1,000 to cover the cost of performing the work with other forces. The department will assess these damages for each day the requirements of this special provision remain incomplete.

C.7 Acceptance Of Native Seed Areas

The Corridor Vegetation Inspector will make a final inspection of the native seeding areas and accept those areas conforming to the following performance standards:

Native Seed Performance Standards

1. Native plants must be established, healthy, thriving, upright and green.

2. The seeded areas show signs of satisfactory germination and growth of at least 50% of the planted species at the end of the establishment period.

3. Proper surveillance and care of the native seed beds has occurred, and documentation has been delivered to the department.

D Measurement

The department will measure Native Seed Surveillance and Care Cycles as each individual care cycle, acceptably completed. All native seed planting sites under care for any particular year are included in the work for each care cycle.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.506	Native Seed Surveillance and Care Cycles	EACH

Payment is full compensation for providing a Care Specialist, inspecting and caring for the native plant sites, documenting site visits and care activities, identifying weeds for removal; furnishing and applying herbicide; re-applying herbicide as needed; mowing; hoeing; cutting; girdling; tilling; digging; hand-pulling; disposing of weeds off-site; and for furnishing all labor, tools, materials, equipment and incidentals necessary to complete the work. Multiple mobilizations and work efforts at the same site will not be paid for separately.

The department will assess damages, as described in this specification, for failing to perform the required surveillance and care.

126. Delineator Post Steel Modified, Item SPV.0060.507.

A Description

This special provision describes furnishing an installing steel posts and attaching sign I56-50, 12”x18” to the post. The locations of the posts will be marked by the department and will be located at the native seed planting areas. Conform to the requirements of standard spec 633, the standard detail drawing, and the construction detail shown in the plans.

Providing sign is included in the bid item Signs Type II Reflective H.

B Materials

Conform to standard spec 633.

C Construction

Attach sign so message faces away from the native seed planting area.

D Measurement

The department will measure Delineator Post Steel Modified as each individual post, 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.0060.507	Delineator Post Steel Modified	EACH

Payment is full compensation for furnishing and installing posts; installing the sign on the posts.

127. Planting Living Snow Fence, Item SPV.0060.508.

A Description

This special provision describes installing plants of the species, varieties and sizes furnished by the department, and includes furnishing all necessary materials, excavation, salvaging topsoil, backfilling, watering and disposing of surplus and waste materials.

B Materials

Plant material for living snow fence is furnished by the department. Pickup plant material at the following location and transport to the project site.

DNR Service Center
3911 Fish Hatchery Road
Fitchburg, WI 53711

Plant material will be bare root stock with a maximum length of 18”.

Geotextile weed barrier requirements are contained in a separate article.

C Construction

Install living snow fence stock in either a dug hole, dug trench or by machine specifically made for this purpose. Ensure tree is vertical and sufficiently supported by soil. Space plant rows as shown in the plan detail.

A geotextile weed barrier shall be placed around the living snow fence plants as shown in the plan detail.

Planting shall occur in the spring and no later than June 1.

After initial planting, water each plant sufficiently to keep the topsoil in a moist condition. Immediately, place mulch around the plants as shown in the plan detail.

Identify and catalog any issues, concerns or problems with the plant stock. Identify and catalog any plants that need replacement within 2 weeks after planting.

D Measurement

The department will measure Planting Living Snow Fence as each individual plant, 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.0060.508	Planting Living Snow Fence	EACH

Payment is full compensation for picking up, transporting, handling, planting, initial watering, and cataloging of the plant material.

Providing and installing weed barrier fabric shall be paid for under the Weed Barrier Fabric bid item.

128. Decorative Medallion B-53-302, Item SPV.0060.701; Decorative Medallion B-53-303, Item SPV.0060.703.

A Description

Construct a decorative concrete masonry medallion on each end of the bridge pier cap and abutment body using a form liner, as shown on the plans and hereinafter provided.

B Materials

The City of Beloit will supply the decorative medallion form liner. Contact City of Beloit public works director at (608) 364-6690.

The contractor, at contractor expense, is responsible for having the form liner repaired or replaced by the manufacturer if any damage to the form liner occurs while in the contractor's possession.

Provide concrete masonry bridges as specified in standard spec 502.

Provide bar steel reinforcement HS coated bridges as specified in standard spec 505.

C Construction

Construct the decorative medallion as shown on the plans.

Protect form liner from dirt and debris until needed on work site.

Attach the form liner to the forms according to the manufacturer's installation instructions.

Place concrete masonry bridges and bar steel reinforcement HS coated bridges according to standard spec 502 and 505, respectively.

After removing the form liner, clean and return the form liner to the City of Beloit.

D Measurement

The department will measure Decorative Medallion B-53-302 or B-53-303 as each individual decorative medallion 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.0060.701	Decorative Medallion B-53-302	EACH
SPV.0060.703	Decorative Medallion B-53-303	EACH

Payment is full compensation for installing and removing the form liner, protecting the form liner from dirt and debris, cleaning the form liner, returning the form liner to the City of Beloit, for constructing the top curved portion and other irregular shaped portions of the Decorative Medallion, all concrete masonry bridges and bar steel reinforcement HS coated bridges as required by the plans for the Decorative Medallion.

129. Decorative Medallion Staining B-53-302, Item SPV.0060.702; Decorative Medallion Staining B-53-303, Item SPV.0060.704.

A Description

This special provision describes furnishing and applying a concrete stain to the exposed concrete formlined medallion surfaces on both faces of the medallion above the pier cap and on the abutment body on the structure, as detailed in the plans and/or directed by the City of Beloit 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. Use the following products, or equal, as approved by the department:

Tri-Sheen Concrete Surfacer, Smooth by TK Products

Tri-Sheen Acrylic by TK Products

TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products

Safe-Cure and Seal EPX by Chem Masters

H&C Shield Plus 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 as given in 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, so 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 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 formlined concrete medallion surface until this work can begin without receiving damage due to other construction operations. Provide temporary covering protection from overspray or splatter.

C.4 Test Areas

Prior to applying stain to the structure, perform test applications on sample panels that measure a minimum of 48-inches x 48-inches and are constructed to demonstrate workmanship in the use of the form liner specified on the structure. Prior to staining, allow the concrete to cure for the stain manufacturer's minimum recommended curing time or 28 days, whichever is greater. Submit color samples to the department prior to staining the sample panels. Prepare the concrete surfaces of the sample panels and apply stain using the same materials and same manner as proposed for the structure. Do not apply stain to the structure until the department and the City of Beloit approve the test panels.

C.5 Surfaces to be Coated

Apply stain color to the specific area of the formlined concrete medallion surface as shown on the plans and/or as directed by the City of Beloit.

D Measurement

The department will measure Medallion Concrete Staining B-53-359 as each individual medallion concrete 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
SPV.0060.702	Decorative Medallion Staining B-53-302	EACH
SPV.0060.704	Decorative Medallion Staining B-53-303	EACH

Payment is full compensation for furnishing and applying the coloring system; preparing the concrete surface; and for preparing sample panels.

130. Bearings High-Load Multi-Rotational Fixed B-53-304, Item SPV.0060.705; Bearings High-Load Multi-Rotational Guided B-53-304, Item SPV.0060.706; Bearings High-Load Multi-Rotational Fixed B-53-305, Item SPV.0060.707; Bearings High-Load Multi-Rotational Guided B-53-305, Item SPV.0060.708; Bearings High-Load Multi-Rotational Fixed B-53-306, Item SPV.0060.709; Bearings High-Load Multi-Rotational Guided B-53-306, Item SPV.0060.710.

A Description

This special provision describes designing, manufacturing, furnishing, fabricating, and installing high-load multi-rotational bearing assemblies. Define high-load multi-rotational bearings as pot or disc style bearings where called for on the plans.

B Materials

B.1 Qualifications of the Manufacturer

Submit to the engineer evidence of the manufacturer's minimum of 5 years' experience in the design and manufacture of high-load multi-rotational bearings of the type specified. Submit to the engineer evidence of the manufacturer's certification by the American Institute of Steel Construction Quality Certification Program – Simple Steel Bridges.

B.2 General

Use materials conforming to standard spec 506. Do not use any reclaimed material in the finished bearings. Any visual defects will be cause for rejection.

B.3 Steel Plate

Use steel plate conforming to the requirements of ASTM A709, Grade 36, Grade 50, or Grade 50W.

B.4 Stainless Steel

Use stainless steel conforming to the requirements of ASTM A240, Type 304, Number 8 finish.

B.5 Brass

Use brass for sealing rings used in pot bearings conforming to the requirements of ASTM B36, half-hard alloy 260.

B.6 Polytetrafluoroethylene (PTFE)

Use PTFE manufactured from pure virgin unfilled TFE resin conforming to ASTM D4894 or D4895. Provide PTFE material that is resistant to acids, alkalis, and petroleum products. Provide PTFE material that is non-absorbing to water, stable from -360 degrees F to +500 degrees F, and non-flammable. Use material meeting the following test requirements:

Physical Property	ASTM Test Method	Requirement
Ultimate Tensile Strength, min.	D638	2800 psi
Ultimate Elongation, min.	D638	200%
Specific Gravity	D792	2.12

B.7 Adhesive

To bond the sheet PTFE, use adhesive made of an epoxy material stable from -100 degrees F to +250 degrees F.

B.8 Elastomer

Use an elastomeric rotational element in the construction of pot bearings containing only virgin crystallization-resistant polychloroprene (neoprene) conforming to AASHTO M251 (ASTM D4014). Use neoprene with physical properties conforming to the specifications above with modifications as follows:

Provide Shore A Durometer hardness of 50 +/- 10 points.

Use Type 2 die to prepare samples for compression set tests.

Use neoprene conforming to minimum low temperature property Grade 4. An elastomer of a higher grade number may be used.

B.9 Polyether Urethane Disc

Mold the disc bearing polyether urethane disc from a polyether urethane compound. Construct it per AASHTO LRFD Bridge Construction Specifications, Section 18.3.2.8 and meet the following test requirements:

Physical Property	ASTM Test Method	Requirement
Hardness, Shore D Durometer	D2240	45 min. 65 max.
Tensile Stress	D412	
At 100% Elongation, min.		1500 psi
At 200% Elongation, min.		2800 psi
Tensile Strength, min.	D412	4000 psi
Ultimate Elongation, min.	D412	220%
Compression Set After 22 Hours	D395 (Method B)	
Temperature		158 degrees F
Compression set, max.		40%

B.10 Connecting Bolts

Use high strength bolts conforming to standard spec 506. Use lock washers that are steel, regular, helical spring washers meeting ANSI B18.21.1. Galvanize lock washers according to AASHTO M232. Coordinate all bolted connections between the bearing manufacturer and the structural steel fabricator for the steel superstructure members.

B.11 Anchor Bolts

Provide anchor rods as shown on the plans and conforming to ASTM F1554 (Grade 105) and hot-dip galvanize per AASHTO M232.

B.12 Grout

Use non-metallic, non-corrosive, non-shrink grout for filling anchor bolt blockouts per ASTM C1107 with minimum 28-day compressive strength called for on the plans.

B.13 Bearing Pads

Provide a 1/8-inch thick bearing pad the same size as the masonry plate conforming to standard spec 506.2.6.

C Construction

C.1 Design Requirements

C.1.1 General

Design bearings for the loads and movements given on the plans and conforming to AASHTO LRFD Bridge Design Specifications, Section 14. Include a minimum rotation of 0.02 radians or the design rotation, whichever is greater, in bearing designs. In these rotations, include all applicable service loads and movements shown on the plans, maximum rotations caused by fabrication and installation tolerances, and allowance for uncertainty. In the designs, assume that vertical and horizontal loads occur simultaneously. Include all bearing components, load plates, sole plates, masonry plates, elastomeric pads, connection bolts, and concrete anchor bolts in the design.

Meet the following additional design and construction requirements for the bearings:

C.1.2 Pots

Machine the pot from a single piece of steel. Provide the pot cavity with an inside diameter nominally equal to the diameter of the elastomeric pad. Provide a pot deep enough to permit the seal and piston rim to remain in full contact with the vertical face of the pot wall under all design loads, movements, and rotations. Do not permit contact between metal components preventing further displacements or rotation. Provide pot walls designed to withstand both the internal pressures caused by the vertical loads (considering the elastomer to behave as a fluid) and the design lateral loads.

C.1.3 Pistons

Machine the piston from a single piece of steel. Use a piston thickness sufficient to provide at least 1/8-inch vertical clearance between rotating and non-rotating components of the bearing assembly at maximum rotation. Provide an outside diameter of the piston at least 0.04 inches less than the inside diameter of the pot. For bearings carrying horizontal loads, design the piston and mating pot wall thickness to meet the requirements of AASHTO LRFD 14.7.4.7.

C.1.4 Sole and Masonry Plates

Design the sole and masonry plates to distribute the bearing loads into the surrounding substructure and/or superstructure. Provide a sole or masonry plate thickness as shown on the plans not less than ¾-inch. Provide shim plates or thicker masonry and sole plates than are required per strength considerations to meet service and installation considerations specified by the engineer, such as weldability and bearing height. Provide the masonry plate with a machined recess sized to allow the snug placement of the piston, pot or lower bearing plates.

C.1.5 Upper and Lower Steel Plates

Apply, as appropriate, the provisions of AASHTO LRFD Bridge Design Specifications, Sections 3, 4, and 6 to the design of the upper and lower steel plates used in disc bearings. Limit the thickness of each of the upper and lower steel plates to a minimum of 0.045 x disc diameter.

C.1.6 Guide Bars

When necessary, weld guide bars to the slide plates. Design guide bars for the specified horizontal loads, but not less than 10 percent of the vertical capacity of the bearing.

Provide guided members with their contact area within the guide bars in all operating positions. Provide a total clearance between guide bars and the guided member of 1/16-inch, ±1/32-inch.

C.1.7 Finish of Steel Components

Finish all steel surfaces in contact with elastomer, PTFE, or other steel surfaces to a smoothness of 125 micro-inch (rms) or less.

C.1.8 Stainless Steel Sheet

Use stainless steel sheets of 16 gauge minimum thickness when the maximum dimension of the surface is less than or equal to 12 inches and use a minimum of 13 gauge when the maximum dimension is larger than 12 inches. Attach the stainless steel sheets to their backing plates by continuous fillet welding along their edges. Do no bond and/or mechanically fasten any of the stainless steel sheets. Design and attach the stainless steel sheets to their backing plates with a connection capable of resisting the frictional force set up in the bearing. Weld per AWS D1.6. Extend the backing plates beyond the edge of the stainless steel sheets to accommodate the welds and do not protrude the welds above the stainless steel sheets.

Face the stainless steel sheets downward and completely cover the PTFE sheets in all operating positions, plus one additional inch in the direction of movement. Finish the surfaces in contact with the PTFE to a smoothness of 20 micro-inch (rms) or less.

C.1.9 Brass Sealing Rings

Use flat brass sealing rings with a minimum width of 3/8-inch and a minimum thickness of 0.09375 inch. Use a minimum number of 3 and a maximum number of 4 rings, depending upon the design load of the bearings. Finish the rings to a smoothness of 63 micro-inch (rms) or less.

Do not exceed 0.01 inch between the ring and the wall. Provide one vertical cut at 45 degrees to the tangent with a maximum gap of 0.05 inch on each ring. Stagger the gaps a minimum of 90 degrees relative to one another when the rings are in place.

C.1.10 PTFE Sheets

Provide PTFE sheets with a minimum thickness of 1/8-inch, and bond with epoxy into a square-edged recess of a depth equal to one-half the PTFE sheet thickness. Make the shoulders of the recesses sharp and square. Provide smooth PTFE surfaces free from blisters and bubbles. Design the PTFE sheets per AASHTO LRFD Bridge Design Specifications, Section 14.7.2.

C.1.11 Elastomeric Disc

Individually mold, in one piece, all elastomeric discs. Do not layer or stack the discs. Cuts, gouges, or nicks from machine cutting or flash trimming are cause for rejection. Mold the sealing groove integrally. Provide elastomeric discs square to the pad top surface and of the same nominal dimension as the brass sealing rings. Design the discs for an average stress on the elastomer at the service limit state not to exceed 3500 psi.

C.1.12 Polyether Urethane Disc

At the service limit state, design the disc so that its instantaneous deflection under total load does not exceed 10% of the thickness of the unstressed disc, and the additional deflection due to creep does not exceed 8% of the thickness of the unstressed disc. Design the components of the bearing as not to lift off each other at any location at the service limit state. Do not exceed an average stress on the disc at the service limit state of 5000 psi. If the outer surface of the disc is not vertical, compute the stress using the smallest plan area of the disc.

C.1.13 Connecting Bolts

Use bolts to connect the top plate of the bearing to the steel superstructure members using a “snug tight” connection as defined in AASHTO LRFD Bridge Construction Specifications, Section 11.5.6.4.

C.1.14 Translation Capacity

Provide the translation capability for both guided and non-guided bearings by means of a polished stainless steel sliding plate that bears on a PTFE sheet or other approved material.

C.1.15 Geometric Limitations

Limit the horizontal dimensions to the available bearing seat area of the concrete and the bottom flanges as detailed on the plans. Submit any modifications required to accommodate the bearings chosen to the engineer for approval prior to ordering materials. Prepare any modifications required at no additional cost to the department.

C.1.16 Future Maintenance

Design and manufacture bearings so that future maintenance of the bearings can be performed. Demonstrate in writing how individual components of the bearings or entire assemblies could be replaced. Restrict vertical upward movement of the superstructure and structural steel, due to jacking, to less than 1/2-inch. Obtain the engineer’s approval of procedures for future replacements of individual components prior to manufacture of any bearings for this project.

C.2 Structural Steel Coordination

Coordinate all connections and fit up between the bearing manufacturer and the structural steel fabricator. Obtain engineer approval of any modifications from details shown in the plans required to accommodate the bearings chosen prior to ordering materials. Prepare any modifications required at no additional cost to the department.

C.3 Submittals

Submit the following items to the engineer for review and approval prior to fabrication of the bearing assemblies:

Shop drawings for all components and assemblies, including general arrangements and large scale details. Include with the shop drawings tables showing load capacity and movement rating, if applicable, of each bearing, including initial offset required at various ambient temperatures. Include the manufacturer’s instructions for proper installation of the bearing assemblies in the shop drawings. Shop drawings which lack manufacturer’s installation instructions will be returned without approval. Wrapping material is subject to the engineer’s approval.

Calculations showing conformance of the bearings to the design loadings, movements and other specified requirements.

Welding procedures. Use qualification procedures of AWS D1.5 and D1.6 for all shop welders, welding operators, welding equipment, and welding procedures.

Drawings indicating surfaces to be painted or zinc metalized according to section C.7 of this special provision and type of coating used.

C.4 Shop Inspection

Allow the inspectors free access to the necessary areas of the manufacturer’s plant. Notify the engineer at least two weeks in advance of manufacturing.

C.5 Fabrication Requirements

C.5.1 Tolerances

Provide fabrication tolerances conforming to the requirements of the AASHTO LRFD Bridge Construction Specifications, and as herein specified.

C.5.2 Determination of Flatness

Use the following method to determine the flatness of bearings after welding and fabrication:

Place a precision straightedge that is longer than the nominal dimension to be measured in contact with the plate surface to be measured.

Select a feeler gage with a thickness corresponding to the flatness tolerances of the AASHTO code cited above and having a tolerance of ±0.001 inch and attempt to insert it under the straightedge.

Flatness is acceptable if the feeler does not pass under the straightedge.

C.6 Painting or Metalizing

Paint or zinc metalize the bearing assemblies conforming to AWS C2.18-93 and AWS C2.23:2003. Do not galvanize. Do not paint or metalize the pot cavity and all surfaces covered by stainless steel or PTFE sheet. Do not allow any paint or metalizing into tapped holes.

C.7 Sampling, Testing, and Inspection

Sample per the AASHTO LRFD Bridge Construction Specifications, the standard specifications, or as determined by the engineer. Perform all testing in the presence of a representative of the department or its designated inspection agency.

Perform three separate tests. Conduct the first test on all bearing types with the bearing loaded to 150% of the vertical design capacity at the specified design rotation, but not less than 0.02 radians. Maintain uniform contact on all rotational elements during the test. Maintain the test load for at least 30 minutes.

Conduct the second test to measure the coefficient of friction on a representative sliding bearing. During this test, load the bearing to 100% of the vertical design capacity while measuring the coefficient of friction. Measure the coefficient of friction at the bearing design capacity on the 5^{th}, 15^{th}, and 100^{th} cycles at a speed of 1-inch/minute. Run a total of 100 cycles. Calculate the sliding coefficient of friction as the horizontal load required to maintain continuous sliding at a given speed divided by the bearing's design capacity vertical load. Prior to testing, apply the vertical load continuously for a minimum of one hour. Do not exceed a measured sliding coefficient of friction of 0.03 at 68 degrees F, except when approved by the engineer.

Conduct the third test on fixed and guided bearing assemblies to verify the horizontal load carrying capacity. During this test, load the bearing to 100% of the vertical design capacity while applying a horizontal load equal to 150% of the horizontal design load capacity.

Replace any bearing showing failure of the sealing rings or other component parts during or after these load tests at no additional cost to the department.

Do not allow the following during testing:

Binding of bearing components or other movement restrictions under design displacements and/or rotations;

"Lift-off" or separation between plates and PTFE or elastomer under rotation;

Greater than 3% measured static and dynamic coefficient of friction;

Cracks or permanent deformation of the PTFE, stainless steel, other components, or welds;

Extrusion of the elastomer or signs of cold flow of the PTFE;

Instantaneous compression deflection under total load in excess of 10% of the thickness of the unstressed disc for disc bearings.

Furnish the engineer with certified copies of the test reports on the physical properties of the component materials for the furnished bearings and a certification by the bearing manufacturer stating the furnished bearing assemblies conform to all the requirements shown on the plans and specifications contained herein.

Furnish the engineer random samples of component materials used in the bearings for testing by the department. The department reserves the right to have the manufacturer perform the specified load tests on one or more of the furnished bearings. A furnished bearing is defined as a high-load multi-rotational bearing assembly that has been delivered to the site. Replace the tested bearing, if it shows failure, at no additional cost to the department. If the tested bearing shows failure, load test the remaining bearings for acceptance at the manufacturer's expense.

C.8 Identification, Storage, and Handling

Fully assemble each bearing at the manufacturing plant and deliver to the construction site as complete units. Submit copies of all delivery tickets to the engineer.

Stamp each sole plate, intermediate load plate, and masonry plate on their edge faces with the manufacturer's name, bearing type or model number, structure number, bearing number as shown on the plans, the installed location, bearing orientation, centerlines for alignment in the field, upstation direction, and top surface location.

Stamp the sole plate of each bearing assembly by the bearing manufacturer prior to shipping of the sole plates to the steel fabricator or construction site. Place the stamp on a surface visible after installation so it remains clearly visible after storage, painting, shipment to the fabricator, and delivery to the project field site.

Store each bearing in the fabrication shop or at an independent warehouse in a clean, dry, and covered facility until required at the project construction site. Transport and deliver the bearings to the project site when required for installation by others under a separate construction and erection contract. While in storage, keep the bearings banded, wrapped, and secured in a condition suitable for shipment. Store and ship the bearings in moisture-proof and dust-proof covers. Do not stack the bearings. Hold the bearings together with removable restraints so sliding surfaces are not damaged.

Do not disassemble the bearing devices prior to installation without the knowledge and consent of the engineer and manufacturer. Repair or replacement of damaged bearing assemblies, in part or in whole, will be at the discretion of the engineer with no additional cost to the department.

C.9 Installation

Install the bearings in strict conformance to the manufacturer's instructions as approved by the engineer. Furnish technical assistance to the contractor and the engineer through the personal services of a technical representative who is a full-time employee of the manufacturer during installation of the bearings. The manufacturer's technical representative is required to be present for the placement of the first bearing. At the option of the engineer, the technical representative may be required to be present for the placement of any number of additional bearings. Take measures to limit bearing rotation to 0.02 radians during construction.

D Measurement

The department will measure Bearings High-Load Multi-Rotational Fixed, Bearings High-Load Multi-Rotational Guided, and Bearings High-Load Multi-Rotational Non-Guided by the unit for each bearing, 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.0060.705	Bearings High-Load Multi-Rotational Fixed B-53-304	EACH
SPV.0060.706	Bearings High-Load Multi-Rotational Guided B-53-304	EACH
SPV.0060.707	Bearings High-Load Multi-Rotational Fixed B-53-305	EACH
SPV.0060.708	Bearings High-Load Multi-Rotational Guided B-53-305	EACH
SPV.0060.709	Bearings High-Load Multi-Rotational Fixed B-53-306	EACH
SPV.0060.710	Bearings High-Load Multi-Rotational Guided B-53-306	EACH

Payment is full compensation for furnishing and installing bearings.

131. Pile Dynamic Analyzer (PDA) Testing, Item SPV.0060.711; Pile Dynamic Analyzer (PDA) Restrikes, Item SPV.0060.712; Case Pile Wave Analysis Program (CAPWAP) Evaluation, Item SPV.0060.713.

A Description

The items consist of providing Pile Dynamic Analyzer (PDA) load testing and analyses/evaluation. This Dynamic Pile Load Testing is being done to set pile resistance criteria. Production piles will be driven conforming to pile resistance criteria produced by the contractor after PDA testing and evaluation is completed at each substructure unit. PDA restrikes will be completed as described in this special provision, or as directed by the engineer.

The piles and pile driving will be paid for under standard spec 550. This applies to both piles installed using the PDA criteria and for production piles installed using the criteria developed by the contractor from the PDA installations.

Data collected during the testing described herein will form the basis for the final driving criteria to be applied to production piles in the substructure unit under consideration. Submit the name and qualifications of the person(s) completing this work. Provide documentation that the person(s) completing this work have successfully completed at least 5 PDA testing projects within the last 3 years, and that these identified projects are of a scope and complexity similar to that anticipated for this project. Persons without this minimum experience will not be allowed to complete work on this project. Also submit documentation of experience with PDA equipment manufactured by Pile Dynamics, Inc. and the CAse Pile Wave Analysis Program (CAPWAP). All dynamic monitoring shall be performed using a PDA (Model PAK, PAX, or PAL). Furnish all equipment necessary for the dynamic monitoring such as sensors, cables, or wireless transmitters, etc. The equipment shall conform to the requirements of ASTM D4945. A person with a minimum of 4 years of experience and who has achieved a minimum of Advanced Level on the Foundation QA Examination for Providers of PDA Testing Services, shall be in charge of PDA operations and of data interpretation. They shall be present on site, or by remote connection, at the time of all PDA testing.

B Pre-Pile Driving Meeting

The contractor and the subcontractors for the bridge foundations and PDA testing, analysis and evaluations are required to attend a mandatory Pre-Pile Driving meeting to review and discuss related schedules, procedures, work activities and SPVs. The project's Geotechnical engineer and a Geotechnical engineer from WisDOT Central Office will also attend the meeting.

The meeting will take place subsequent to the pre-construction meeting and two weeks prior to beginning the first pile driving work. The contractor will notify the engineer of the date of the meeting in writing one week ahead of it.

The contractor will provide all required documentations, aforementioned in section A, to, and have them approved by, the engineer prior to the meeting.

Costs incurred to attend the meeting are incidental to these items.

C Construction

C.1 Test Locations

Perform dynamic pile load testing at the pile locations identified on the plans. These locations are referred to simply as 'PDA Test Piles' throughout the remainder of this specification. Piles noted as PDA Test Piles are a functional load-carrying part of the completed foundation unit, and not solely used for testing.

C.2 Driving Sequence

Perform PDA testing on the first two piles installed in each substructure unit. PDA Test Piles shall be located as shown on the footing plan. No other piles in the substructure unit shall be used for PDA testing unless agreed to by the engineer. Do not drive any other piles in the unit until all required testing has been completed and the final driving criteria for that substructure unit has been determined in writing and accepted by the engineer.

C.3 Pile Driving

Drive PDA Test Piles to penetration depths and/or penetration resistances as directed by the engineer. Drive PDA Test Piles using the same methods and equipment that have been accepted for driving the production piles.

Drive PDA Test Piles to one of the following lengths:

If the required plan driving resistance is achieved at a pile length less than plan length, stop driving the pile. Pile restrikes will be required as described in Section C.6 of this special provision to document that the minimum plan required driving resistance is achieved.

If PDA indicated pile capacity is greater than or equal to 85% of the required driving resistance, at the estimated plan length, stop driving. Pile restrikes will be required as described in Section C.6 of this special provision to document that the minimum plan required driving resistance is achieved.

If the pile resistance at plan length is less than 85% of the required driving resistance, continue to drive the pile until the resistance reaches 85% or more of the plan driving resistance. Upon achieving 85% or more, stop driving. Pile restrikes will be required as described in Section C.6 of this special provision to document that the minimum plan required driving resistance is achieved.

In all cases, the required plan driving resistance will be shown either through end of initial drive data or from restrike data, as defined above.

C.4 Scheduling

Provide a written schedule to the engineer showing all required PDA Test Pile activities for the following week. Submit this schedule a minimum of 2 working days prior to the first day included in the schedule.

Multiple concurrent PDA testing and/or analyses will be allowed. Any delays to the contractor's schedule due to coordination or untimeliness of PDA testing or evaluation/analyses will not be grounds for extension of contract time.

C.5 Installation Testing

Perform dynamic measurements following procedures set forth in ASTM D4945 during the driving of piles designated as PDA Test Piles.

Continuous PDA monitoring may require multiple installations of PDA testing equipment depending on the supplied pile length. If multiple piles lengths are used to produce the final installed pile, multiple PDA equipment installations will be required. With the PDA testing equipment attached, drive the pile and monitor using the PDA equipment.

C.6 Restrike Tests

Perform restrike tests on all PDA test piles as part of the initial dynamic pile load testing program as described in section C.5. See restrike criteria given in section C.3.

Wait a minimum of 12 hours and a maximum of 72 hours or a time period as directed by the engineer, after initial pile installation is complete; then, restrike each PDA test pile with the required dynamic testing instruments attached.

Warm the hammer before the restrike by applying at least 20 blows to a non-test pile, or by other means acceptable to the engineer.

The maximum amount of penetration required during the restrike test shall be 6 inches, or the maximum number of hammer blows required will be 30, whichever occurs first.

The pre-approved pile-driving hammer used for restrike testing shall be capable of supplying enough energy to develop a minimum of twice the required driving resistance shown on the plans.

C.7 CAPWAP Evaluation and Drive Criteria

Pile-driving criteria for each substructure unit shall be determined from dynamic pile tests conducted on the total length of each pile noted for PDA Testing in the plans. Submit the required driving resistance and the driving criteria for the production piles determined by dynamic pile testing to the engineer for acceptance for the production pile installation. Electronically submit the driving criteria and a report with the results of the CAPWAP evaluation to the engineer.

Utilize the dynamic test data to establish the following pile driving criteria: (1) a minimum driven length below cutoff level, and (2) a maximum penetration rate per 10 hammer blows for 30 consecutive blows. Drive all remaining piles in each unit according to the established criteria for that unit.

Driving production piles shall continue until the required driving resistance is achieved for 30 consecutive hammer blows. Mark penetration per 10 consecutive hammer blows.

The engineer may alter driving criteria as necessary to assure development of adequate pile capacity. In any pile where pile capacity or integrity is suspect, the engineer may order PDA testing.

D Measurement

The department will measure Pile Dynamic Analyzer (PDA) Testing as each individual unit, acceptably completed, in which one unit includes all PDA-related effort on one pile during the initial driving.

The department will measure Pile Dynamic Analyzer (PDA) restrikes as each individual unit acceptably completed, in which one unit includes all of the restrike and testing effort required on an individual pile when it is restruck.

The department will measure CAse Pile Wave Analysis Program (CAPWAP) Evaluation as each individual unit acceptably completed, in which one unit includes all analyses and effort required to provide drive criteria for installation of production piles in one substructure unit.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.711	Pile Dynamic Analyzer (PDA)Testing	EACH
SPV.0060.712	Pile Dynamic Analyzer (PDA) Restrikes	EACH
SPV.0060.713	CAse Pile Wave Analysis Program (CAPWAP) Evaluation	EACH

Payment for Pile Dynamic Analyzer (PDA) Testing is full compensation for facilitating the initial dynamic pile load test on a given pile, including possible multiple sensor installations.

Payment for Pile Dynamic Analyzer (PDA) Restrikes is full compensation for facilitating and performing one restrike test on a pile, including the sensor installation, mobilization of equipment, hammer warm-up, and pile restriking.

Payment for CAse Pile Wave Analysis Program (CAPWAP) Evaluation is full compensation for providing the personnel, software and equipment to evaluate the results of the monitoring for each substructure unit for the purpose of establishing production pile driving criteria, and the electronic submittal of the driving criteria and report with the results of the CAPWAP evaluation.

132. Seeding Native Mix N1, Item SPV.0085.509; Seeding Native Mix N2, Item SPV.0085.510; Seeding Native Mix N3, Item SPV.0085.511; Seeding Native Mix N4, Item SPV.0085.512.

A Description

This special provision describes furnishing and sowing the required native seed mix on areas shown in the plans.

B Materials

B.1 Native Seed

B.1.1 Labeling

Each native seed species will be packaged separately for each seed mixture. Packages for each species shall document seed test and date, mix composition, and the following information:

1. Scientific name of genus and species (subspecies and variety as necessary)
2. Guarantee that seeds are true to species.
3. Bulk Weight
4. PLS Weight
5. Percent PLS
6. Year of harvest and any specialized treatments that have been applied to ensure or enhance germination
7. Seed Origin (geographical location)
8. Seed supplier contact information including company name, address, phone number, and contact person’s name and e-mail address
9. Percent Weed Seed
10. Noxious Weeds Found

Provide copies of shipment and certification paperwork to the Corridor Vegetation Inspector before the native seed mixtures arrive at the landscaping site.

B.1.2 Purity and Germination

Seed lots with testing data over 12-months old will be rejected. Seed tests shall be provided for each individual seed lot, with the following required information:

1. Seed Origin and Source
2. Crop Year

3. Date of Seed Test
4. % Purity
5. % Germination
6. % Inert Material
7. % Other Crop Seed and Other Crop Species
8. % Weed Seed (as allowed per standards of the Wisconsin Crop Improvement Association)
9. Noxious Weeds Found (none allowable)

No seed lots containing Wisconsin Noxious Weeds will be approved for native prairie plantings, as per the list of noxious weed species identified by the Wisconsin Crop Improvement Association, https://wcia.wisc.edu/2015Standards09102015.pdf.

B.1.3 Inoculation

All legume seeds shall be inoculated with fresh Rhizobium bacteria of the appropriate strain for each legume species prior to seeding.

B.1.4 Storing Seed

Store any seed delivered before use in a way that protects it from damage by heat, moisture, rodents, or other causes. Discard and replace, at no cost to the department, any previously tested and accepted seed that becomes damaged. Seed should not be stored on site more than seven days.

B.1.5 Native Seed Mixtures

The following Native Seed Mixtures will be used within the native seed planting areas, dependent on soil and moisture conditions:

MIX N1 - NATIVE PRAIRIE SEED MIX – DRY SOILS

Sun Conditions: Full sun to one-half day full sun
Suitable Soil Moisture Conditions: Dry to dry-mesic soils
Suitable Soil Types: Well-drained sand and loamy sand

MIX N2 - NATIVE PRAIRIE SEED MIX – MESIC SOILS

Sun Conditions: Full sun to one-half day full sun
Suitable Soil Moisture Conditions: Mesic to wet-mesic soils
Suitable Soil Types: Well-drained sandy loam, loam, silt loam, clay loam

MIX N3 – WET PRAIRIE NATIVE SEED MIX

Sun Conditions: Full sun to one-half day sun
Suitable Soil Moisture Conditions: Wet-mesic to wet soils
Suitable Soil Types: Moist loamy sand, sandy loam, loam, silt loam, clay loam

MIX N4 - INFILTRATION AREA NATIVE SEED MIX FOR SANDY SOILS

Sun Conditions: Full sun to one-half day full sun
Suitable Soil Moisture Conditions: Wet-mesic to wet soils
Suitable Soil Types: Well-draining sand-based engineered soils

The appropriate mix for each landscaping site is identified in the plans. The seed mixtures shall be composed of seeds of the proportions, by weight, listed in Table 1 below.

	Table 1 - Native Seed Mixtures					
			Mix N1	Mix N2	Mix N3	Mix N4
	Species	**Common Name**	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre
Forbs	Agastache foeniculum	Lavender Hyssop	1.0	1.0		1.0
	Allium cernuum	Nodding Pink Onion		8.0		4.0
	Amorpha canescens	Leadplant	2.0			
	Asclepias incarnata	Marsh Milkweed		12.0	12.0	10.0
	Asclepias syriaca	Common Milkweed	4.0	5.0	9.0	6.0
	Asclepias tuberosa	Butterflyweed	12.0			
	Aster azureus	Sky Blue Aster	2.0	2.0		
	Aster laevis	Smooth Aster	2.0	2.0		
	Aster novae-angliae	New England Aster		2.0	3.0	2.0
	Aster ptarmicoides	White Aster	1.0			
	Astragalus canadensis	Canada Milkvetch	2.0			
	Baptisia alba	White Wild Indigo		8.0	9.0	6.0
	Coreopsis lanceolata	Lanceleaf Coreopsis	3.0			
	Dalea candida	White Prairie Clover	8.0			
	Dalea purpurea	Purple Prairie Clover	12.0			
	Echinacea purpurea	Purple Coneflower		8.0		
	Eryngium yuccifolium	Rattlesnake Master		8.0		
	Eupatorium maculatum	Spotted Joe Pye Weed			3.0	4.0
	Eupatorium perfoliatum	Boneset			1.5	2.0
	Helenium autumnale	Sneezeweed			1.5	2.0
	Helianthus pauciflorus	Showy Sunflower	1.0			
	Heliopsis helianthoides	Ox Eye Sunflower	2.0	3.0	4.5	5.0
	Lespedeza capitata	Roundhead Bushclover	6.0			
	Liatris aspera	Rough Blazingstar	8.0			
	Liatris pycnostachya	Prairie Blazingstar		8.0	9.0	16.0
	Liatris spicata	Marsh Blazingstar			9.0	
	Lobelia siphilitica	Great Blue Lobelia			1.5	
	Lupinus perennis	Wild Lupine	16.0			
	Monarda fistulosa	Bergamot	1.0	1.0	1.5	1.0
	Monarda punctata	Dotted Mint	1.0			
	Penstemon digitalis	Smooth Penstemon		2.0		
	Penstemon grandiflorus	Beardtongue	8.0			
	Ratibida pinnata	Yellow Coneflower	4.0	5.0	7.5	4.0

	Table 1 - Native Seed Mixtures					
			Mix N1	Mix N2	Mix N3	Mix N4
	Species	**Common Name**	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre
	Rudbeckia hirta	Black Eyed Susan	4.0	4.0	6.0	4.0
	Rudbeckia laciniata	Green Headed Coneflower			4.5	
	Rudbeckia subtomentosa	Sweet Black Eyed Susan		2.0	3.0	3.0
	Rudbeckia triloba	Brown Eyed Susan	2.0	2.0		3.0
	Senna hebecarpa	Wild Senna		6.0		7.0
	Siphium integrifolium	Rosinweed	1.0			1.0
	Silphium laciniatum	Compassplant	5.0	6.0		
	Silphium terebinthinaceum	Prairie Dock		4.0	12.0	6.0
	Solidago rigida	Stiff Goldenrod	1.0	1.0	1.5	1.0
	Solidago speciosa	Showy Goldenrod	1.0			
	Tradescantia ohiensis	Ohio Spiderwort	8.0	6.0		6.0
	Verbena hastata	Blue Vervain		1.0	1.5	2.0
	Verbena stricta	Hoary Vervain	2.0			
	Vernonia fasciculata	Ironweed		4.0		4.0
	Veronicastrum virginicum	Culver's Root		1.0		
	Zizia aurea	Golden Alexanders		8.0	7.5	8.0
		Sub Total:	**120.0**	**120.0**	**108.0**	**108.0**

	Table 1 - Native Seed Mixtures					
			Mix N1	Mix N2	Mix N3	Mix N4
	Species	**Common Name**	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre
Graminoids	Andropogon gerardii	Big Bluestem	4.0	4.0	6.0	4.0
	Bouteloua curtipendula	Side Oats Grama	30.0	30.0		
	Bromus ciliatus	Fringed Brome			24.0	16.0
	Carex bebbii	Bebb's Sedge			6.0	6.0
	Carex stipata	Awl Fruited Sedge			6.0	6.0
	Carex vulpinoidea	Brown Fox Sedge			6.0	6.0
	Sporobolus heterolepis	Prairie Dropseed	12.0			
	Elymus canadensis	Canada Wild Rye	32.0	32.0		32.0
	Elymus virginicus	Virginia Wild Rye			66.0	32.0
	Glyceria striata	Fowl Manna Grass			4.5	
	Panicum virgatum	Switchgrass	2.0	2.0		4.0
	Schizachyrium scoparium	Little Bluestem	32.0	32.0		16.0
	Scirpus atrovirens	Dark Green Bulrush			6.0	
	Scirpus cyperinus	Woolgrass			4.5	
	Sorghastrum nutans	Indiangrass	8.0	8.0		8.0
	Spartina pectinata	Prairie Cordgrass			3.0	2.0
	Sporobolus heterolepis	Prairie Dropseed		12.0		

	Table 1 - Native Seed Mixtures					
			Mix N1	Mix N2	Mix N3	Mix N4
	Species	**Common Name**	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre	PLS Oz/Acre
		Sub Total:	**120.0**	**120.0**	**132.0**	**132.0**
		TOTAL:	**240.0**	**240.0**	**240.0**	**240.0**
	Substitute Species					
	Anemone canadensis	Canada Anemone		X		
Substitute Forbs	Anemone cylindrica	Thimbleweed	X			
	Astragalus canadensis	Canada Milkvetch		X		
	Aster Ptarmicoides	White Aster	X			
	Aster puniceus	Swamp Aster			X	X
	Baptisia bracteata	Cream False Indigo	X			
	Ceanothus americanus	New Jersey Tea	X			
	Euphorbia corollata	Flowering Spurge	X			
	Gentiana andrewsii	Bottle Gentian			X	
	Helianthus occidentalis	Western Sunflower	X	X		
	Iris shrevei	Wild Iris			X	X
	Kuhnia eupatorioides	False Boneset	X			
	Mimulus ringens	Monkey Flower			X	X
	Pycnanthemum virginianum	Mountain Mint			X	X
	Ruellia humilis	Wild Petunia	X			
	Senna hebecarpa	Wild Senna			X	
	Solidago ohioensis	Ohio Goldenrod			X	X
	Solidago riddellii	Riddell's Goldenrod			X	X
	Solidago speciosa	Showy Goldenrod		X		
	Thalictrum dasycarpum	Purple Meadow Rue			X	X
	Vernonia fasciculata	Ironweed			X	
	Veronicastrum virginicum	Culver's Root			X	X
	Zizi Aurea	Golden Alexanders		X		
Substitute Graminoids	Bromus kalmii	Kalm's Bromegrass	X			
	Calamagrostis canadensis	Canada Blue Joint Grass		X	X	X
	Carex bicknellii	Copper Shouldered Oval Sedge	X			
	Carex crinita	Fringed Sedge		X	X	X
	Carex scoparia	Lance-Fruited Sedge		X	X	X
	Danthonia spicata	Poverty Oats Grass	X			
	Elymus trachycaulus	Slender Wheatgrass	X	X		

Verify and inspect individual seed species at the grower's nursery, the place of collection, or at the collector's holding site. Recommend the seed lots for mixture. Seed lots must be approved by the Corridor Vegetation Inspector prior to blending any seed. Verify and inspect the final mixtures and recommend the mixtures to the Corridor Vegetation Inspector for approval. Inform Corridor Vegetation Inspector of any concerns with the seed prior to sowing.

Furnish copies of seed bag tags and/or seed tests results for each seed lot, performed by a certified seed testing lab to the Corridor Vegetation Inspector.

All seed shall be Pure Live Seed (PLS) and originating and obtained from Wisconsin, Minnesota, Eastern Iowa or Northern Illinois nurseries, specializing in growing native species from Upper Midwestern genotypes in Zone 5a or lower of the US Agricultural Research Service, Plant Hardiness Zone Map, Miscellaneous Publication Vol. No. 1475, Issued January, 1990, Updated January 24, 2012, http://planthardiness.ars.usda.gov/PHZMWeb/

Ensure that all seed used is cold, dry stratified.

If a listed species is not available, substitutions may be made from the alternative seed species listed in Table 1 under **Substitute Species** for each of the seed mixtures. Before using an alternate, provide documentation showing that a required species is not available to the Corridor Vegetation Inspector. Obtain substitution approval from the Corridor Vegetation Inspector prior to ordering substitute seed.

If substitutions in a seed mix are made, maintain the forbs to graminoids ratios and numbers of species counts listed in Table 2. The weight of any item substituted cannot be more than twice or less than half by weight, in comparison to the item it is replacing. All substitutions are to be approved by the Corridor Vegetation Inspector.

Table 2 - Table of Minimum Requirements for Native Seed Mixtures

	% Forbs by Weight	% Graminoids by Weight	# of Forbs	# of Graminoids	# of Total Prairie Species per Mix
Mix N1 – Native Prairie Seed Mix – Dry Soils	50	50	28	7	35
Mix N2 - Native Prairie Seed Mix – Mesic Soils	50	50	27	7	34
Mix N3 - Wet Prairie Native Seed Mix	45	55	20	10	30
Mix N4 - Infiltration Area Native Seed Mix for Sandy Soils	45	55	24	11	35

C Construction

C.1 Seed Bed Inspection

Prior to seeding, obtain concurrence from the Corridor Vegetation Inspector that the existing topsoil is adequate in terms of quality, as further described in the Seed Bed Preparation article.

The Corridor Vegetation Inspector shall review the site by evaluating seed beds for proper weed control and soil condition prior to authorizing contractor to proceed with seeding. Additional seed bed preparation, as authorized by the Corridor Vegetation Inspector, will be paid for under the Seed Bed Preparation bid item.

C.2 Vegetation Eradication

Pre-planting herbicide treatment is described in the Pre-Planting Vegetation Treatment article.

If little or no perennial vegetation is present on the site, the Corridor Vegetation Inspector may approve a truncated site preparation process at his/her discretion.

The Corridor Vegetation Inspector shall have sole authority in determining when the seed bed has been properly prepared for seeding.

C.3 Seeding Methods and Timing

Three seeding methods are approved for sowing the Native Seed Mixtures:

1. No-till prairie seed drills.
2. Broadcast roller seeders.
3. Pull-behind broadcast seeders that can be calibrated to seed prairies at the appropriate low rates per acre.

No-till seed drills shall be set up to handle the flow characteristics and calibration requirements for the proper distribution of prairie flower and grass seeds. The seed bed must be graded to extremely smooth conditions for no-till drills to work properly, with the maximum variation in soil elevations of no more than one-half inch in height. The no-till seeder should be set so that the seed is placed only 1/4 inch deep in the soil. Any micro-variations in topography will result in the seed being planted either too deeply so that it will not germinate or is dropped onto the surface of the soil rather than being deposited into the soil itself.

Broadcast roller seeders require a freshly worked up seed bed in order to be effective. The soil must be loose, with maximum variation in soil elevation of no more than 4 inches in height prior to using a broadcast roller seeder.

Pull-behind broadcast seeders also require a freshly prepared seed bed for success. The soil must be loose, with a maximum variation in soil elevation of no more than 1 inch. The site must be dragged smooth and rolled with a cultipacker immediately following seeding.

Hydro-seeding is not an approved method for seeding native prairies and shall not be used for this purpose.

All native seeding will be fall dormant seeding, unless otherwise approved by the Corridor Vegetation Inspector. Sow seed between November 1 to the time when the soil is frozen. Planting may occur on partially frozen soil if the seed makes good contact with the soil at time of planting. The Corridor Vegetation Inspector must approve seeding on partially frozen soil.

C.4 Seeding Rates

Use the following sowing rate for native seeding:

Native Seed Mixtures at 15.0 pounds/acre

The entire native seeding area shall be seeded with the equipment set at one-half the designated rate. Then the entire site shall be seeded again with the remaining seed and with the equipment traveling in a direction perpendicular to the first seeding. On small areas the entire amount of seed may be sown in one direction at the discretion of the Corridor Vegetation Inspector.

C.5 Erosion Control

Place Erosion Mat Class I Type B over Soil Stabilizer Type B on native seeding areas only where directed by the Corridor Vegetation Inspector.

Place Seeding Mixture No. 30 and Fertilizer, Type A on areas within the Invasive Species and Weed Management limits that are not seeded with a native seed mix.

C.6 Seed Establishment Period

The work necessary during the establishment period is described in the Native Seeding Surveillance and Care Cycles article.

D Measurement

The department will measure Seeding Native Mix (mixture) 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.0085.509	Seeding Native Mix N1	LB
SPV.0085.510	Seeding Native Mix N2	LB
SPV.0085.511	Seeding Native Mix N3	LB
SPV.0085.512	Seeding Native Mix N4	LB

Payment is full compensation for providing, inspecting, handling, and storing seed; for providing the required culture and inoculating seed as specified; for removing foreign and deleterious objects, construction materials, and stones from the seed bed, sowing, covering and firming the seed.

Seed bed preparation that involves working up the topsoil will be paid for under the Seed Bed Preparation bid item.

Pre-planting herbicide treatment will be paid for under the Pre-Planting Vegetation Treatment bid item.

Erosion Control items shall be paid for, as necessary, under the respective standard bid items.

Seeding Mixture No. 30 and Fertilizer, Type A shall be paid for, as necessary, under the respective bid items.

Follow-up care during the establishment period will be paid for under the Native Seed Surveillance and Care Cycles bid item.

133. Compost Tube, Item SPV.0090.002.

A Description

This special provision describes furnishing and installing compost tubes or wattles as shown on the plans or as directed by the engineer and as hereinafter provided. Compost tube shall consist of cylinders of biodegradable compost encased within biodegradable netting.

B Materials

Provide compost that:

1. is a well-decomposed, stable, weed-free, organic, commercially manufactured material resulting from the biological degradation and transformation of plant or animal-derived materials under controlled conditions designed to promote aerobic decomposition.
2. is mature with regard to its suitability for serving as an erosion control Best Management Practice (BMP) as defined in the table below.
3. is stable with regard to oxygen consumption and carbon dioxide generation.
4. does not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth.
5. does not possess objectionable odors.
6. has a moisture content with no visible free water or dust produced when handling the material.

Compost feedstock may include, but is not limited to, yard waste, clean chipped wood, farm crop residue, farm animal manure, or vegetable food waste. Do not use materials that have been treated with chemical preservatives as a compost feedstock or as wood chips.

Test according to the United States Composting Council's “Test Methods for Examining of Composting and Compost (TMECC)”. Provide compost with the United States Composting Council's Seal of Testing Assurance Program (STA) certification and STA product label. The compost producer must be a participant in the United States Composting Council's Seal of Testing Assurance program.

Provide quality control documentation that includes the following:

1. The compost technical data sheet with the feedstock by percentage in the final compost product.
2. A certification that the compost meets federal and state health and safety regulations.
3. A copy of the producer's STA certification.
4. A certified report of tests performed by an STA-certified lab, verifying that the compost meets the requirements in the table below.

Compost must comply with the following:

PROPERTY	TEST METHOD	REQUIREMENT
Particle Size	*TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	100% Passing, 3 inch 90 – 100% Passing, 1 inch 70 – 100% Passing, ¾ in 30 – 75% Passing, ¼ inch Maximum length 6 inches
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0-8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhoscm)	Below 5.0
Moisture Content	TMECC 03.09-A Total Solids and Moisture at 70+/- 5 deg C % Wet Weight Basis	35 – 50
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	Minimum 40% Max 60% ash content
Maturity	TMECC 05.05-A Germination and Vigor "Germination and Root Elongation" Seed Emergence Seedling Vigor % Relative to Positive Control	80 or Above
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal %>4mm fraction, dry mass (weight) basis	Less than 1%
Pathogens	Shall meet Class A requirements for pathogens as specified in NR 204.07(6)(a)	Pass
Chemical Contaminants	Shall meet pollutant concentrations as specified in NR 204.07(5)(c)	Pass
Carbon to Nitrogen Ratio	C:N	10:1 – 20:1

*TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

Immediately remove from the project, compost not conforming to the above requirements or taken from a source other than those tested and replace the compost at no cost to the department.

The engineer reserves the right to sample compost at the jobsite.

Compost tube shall be a minimum of 5 inches in diameter. Netting material shall be clean, evenly woven, and free of encrusted concrete or other contaminating materials such as preservatives. Netting material shall be free from cuts, tears, or weak places and shall have a minimum lifespan of 6 months and a maximum lifespan of not more than 24 months.

Wood stakes used in securing Compost Tube shall be made from untreated Douglas fir, hemlock, or pine species. Wood stakes shall be 2-inch by 2-inch nominal dimension and 36 inches in length. Install/locate wood stakes per manufacturer’s recommendations.

C Construction

Compost tube shall be installed as soon as construction will allow or when designated by the engineer. Compost tube installation and trenching shall begin from the base of the slope and work uphill prior to any topsoil or compost placement. Trenches shall, at all times, be perpendicular to the direction of flow down the slope. Excavated material from trenching shall be spread evenly along the uphill slope and be compacted using hand tamping or other method approved by the engineer. On gradually sloped or clay-type soils trenches shall be 2 to 3 inches deep. On loose soils or on steep slopes, trenches shall be 3 to 5 inches deep, or half the thickness of the Compost tube, whichever is greater.

The contractor shall exercise care when installing wattles to ensure the method of installation minimizes the disturbance of waterways and prevents sediment or pollutant discharge into water bodies.

C.1 Maintenance

Maintain Compost tube until the project has been completed or directed otherwise. Routinely inspect Compost tube for any material dislodgement. Replace and redress any dislodged material.

D Measurement

The department will measure Compost Tube by the linear foot of tube, acceptably installed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.002	Compost Tube	LF

Payment is full compensation for furnishing and installing Compost Tube as shown in the plans or as directed by the engineer; including the required trenching and subsequent spreading of trenched material after the embankment is stabilized; and the furnishing and installing of wood stakes to secure Compost Tube.

(9/6/2016)

134. Repair State Owned Concrete Barrier Temporary Precast, Item SPV.0090.003.

A Description

This special provision describes providing emergency repair services to state owned concrete barrier temporary precast located on IH 39/43 or an IH 39/43 ramp that is knocked out of alignment or damaged

due to a vehicular collision during the time this contract is in effect. Repair services may also include the replacement of unsuitable sections of concrete barrier due to extensive damage sustained during a collision. This work shall be according to standard spec 603, as directed by the engineer, and as hereinafter provided. Responding to the incident site with the appropriate staff, equipment and materials is covered under a separate bid item.

B Materials

Conform to standard spec 603.

C Construction

Repairs shall be completed as quickly as possible once repair work is started. Repair work shall be completed off of the traveled way to the maximum extent possible.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the engineer.

D Measurement

The department will measure Repair State Owned Concrete Barrier Temporary Precast by the linear foot, acceptably repaired.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.003	Repair State Owned Concrete Barrier Temporary Precast	LF

Payment is full compensation for completing the necessary repair work to restore the state-owned barrier system to a safe and operational condition; including replacement of damaged, unusable units.

The department will pay for additional traffic control measures, if required, under the respective traffic control bid items in the contract.

(10/24/2017)

135. Traffic Control Gawk Screen Furnished, Item SPV.0090.004; Traffic Control Gawk Screen Installed, Item SPV.0090.005.

A Description

This special provision describes furnishing and installing traffic control gawk screen on concrete barrier as a traffic control device and removal upon completion of the project.

B Materials

Furnish rectangular shaped screen for temporary mounting on top of concrete barrier.

Furnish a polymer, polyethylene, or UV protected thermoplastic, or similar lightweight product that will not shatter when impacted and is proven crashworthy.

Submit shop drawings a minimum of two weeks prior to the proposed use of Traffic Control Gawk Screen.

Requirements:

- 24 inches in height.
- The same length as the concrete barrier on which it will be mounted, without splicing, except account for longitudinal overhang between the concrete barrier as shown in the plans.
- Mounted with two poles, at the spacing shown in the plan, attached to the mounting plate with the mounting plate drilled into the top of the concrete barrier.
- Secured with a chain and pin, or other approved method, to the mounting pole.
- Capable of being securely connected to the adjacent screen section using polyethylene brackets, or similar approved fasteners, made of non-metallic materials.
- Capable of expanding without buckling.
- Capable of contracting without creating gaps in the screening and while remaining securely fastened to the adjacent screen.
- Gray in color and opaque.
- Has finished faces on both sides of the screen.
- Capable of remaining in place from traffic gusts, wind gusts, and other outdoor elements that may move or displace the screen.

Furnish and install mounting pipe and hardware according to manufacturer/supplier directions.

Installations and removals of the gawk screen to/from its supports on the jobsite shall not require any tools.

C Construction

Furnish and deliver traffic control gawk screen to worksites within the project. Install the screen according to manufacturer's recommendations at contract-identified locations or as the engineer directs. Fasten screen sections together.

Provide surveillance and maintenance as specified in standard spec 643.3.2. Repair or replace any portion of the screen that is damaged as directed by the engineer at no additional cost. Replace any screen sections that buckle, deform, shrink, or have any other material or installation failure, as determined by the engineer, at no additional cost.

Remove screen when no longer needed at the installation site, during winter when directed by the engineer, and upon project completion. In permanent concrete barrier, concrete parapet, and department owned temporary concrete barrier, remove mounting hardware to below the concrete surface. Encapsulate all exposed metal and fill all holes left by anchorage methods with an epoxy from the department's approved products list. Fill holes as the screen is removed.

D Measurement

The department will measure Traffic Control Gawk Screen Furnished by the linear foot, acceptably delivered to the project site.

The department will measure Traffic Control Gawk Screen Installed by the linear foot, acceptably completed, measured along the base of the screen after installation for each contract-identified or engineer-directed initial installation. The department will also measure subsequent contract-identified or engineer-directed reinstallations. The department will not measure installations made solely to accommodate the contactor'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.0090.004	Traffic Control Gawk Screen Furnished	LF
SPV.0090.005	Traffic Control Gawk Screen Installed	LF

Payment for Traffic Control Gawk Screen Furnished is full compensation for furnishing traffic control screen, mounting posts, and mounting and fastening hardware; initial delivery; and storage until installation.

Payment for Traffic Control Gawk Screen Installed is full compensation for each installation; moving/trucking to another worksite within the project, unloading, and reinstalling; screen surveillance, maintenance, repair, and replacement; removing; disposal; and concrete barrier repair due to screen installation and after screen removal.

(5/31/2016)

136. Bore and Jack Culvert Pipe Reinforced Concrete Class III 48-Inch, Item SPV.0090.006; Bore and Jack Culvert Pipe Reinforced Concrete Class III 60-Inch, Item SPV.0090.007.

A Description

This special provision describes furnishing and installing culvert pipe by jacking and boring with or without a casing pipe. The method of installation may be selected, but open-cut will not be allowed.

B Materials

Culvert pipe shall be reinforced concrete pipe, Class as shown on the plans, conforming to standard spec 522.

Steel casing shall conform to ASTM A53, Grade B Steel Pipe, 35,000 psi minimum yield, with a minimum wall thickness of 0.469 inches. Casing shall be a minimum of 4 inches larger than the outside diameter of the carrier pipe.

If casing is used, annular spaced shall be filled with lean concrete proportioned of 1-1/2 bags of Portland cement, 6 cubic feet of concrete sand, and 12 cubic feet of coarse aggregate, or one bag Portland cement and 12 cubic feet of graded aggregate.

C Construction

Establish reference point and bench marks required to control jacking of casing pipe to elevations indicated on drawings.

Excavate access pit, shaft or approach tunnel according to standard spec 206.

If a casing pipe is used, weld joints with a continuous circumferential weld. Contractor shall be responsible for providing stress transfer across joints capable of resisting jacking forces applied.

Pipe shall be attached to concrete brick supports to be used as a carrier for insertion into casing. Support and brace pipe to prevent shifting or flotation during filler material placement.

Carrier pipe or casing pipe shall be jacked and bored by selected method to line and grade indicated on drawings.

Upon completion of installation of pipe, completely fill annular space between carrier pipe and pipe casing with lean concrete. Fill ends of casing pipe with a minimum 1-foot thick bulkhead.

Backfill casing pipe ends according to standard spec 206 and restore surface.

Demonstrate to satisfaction of the department that the entire length of the casing bas been backfilled.

D Measurement

The department will measure Bore and Jack Culvert Pipe Reinforced Concrete Class III 48-Inch, and Class III 60-Inch by the linear foot, acceptably completed. Measurement will consist of the length provided in the plan. The department will not pay extra if the contractor exceeds the length in the plan.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.006	Bore and Jack Culvert Pipe Reinforced Concrete Class III 48-Inch	LF
SPV.0090.007	Bore and Jack Culvert Pipe Reinforced Concrete Class III 60-Inch	LF

Payment is full compensation for providing all materials, including carrier pipe, steel casing pipe, and connections; for all excavating except rock excavation; for sheeting and shoring; for laying pipe; for sealing joints and making connections to new or existing fixtures; for filing annular space and constructing bulkheads; for backfilling; for providing granular backfill material; for removing sheeting and shoring; for cleaning out and restoring the worksite.

137. Remove Left in Place Concrete Barrier Temporary Precast Barrier Wall, Item SPV.0090.008.

A Description

This special provision describes removing the temporary concrete barrier wall from previous projects as shown on the plans and as hereinafter provided.

B (Vacant)

C Construction

Conform to standard spec 603.3.2.

D Measurement

The department will measure Remove Left in Place Concrete Barrier Temporary Precast Barrier Wall by the linear foot, measured along the base of the barrier wall, 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.0090.008	Remove Left in Place Concrete Barrier Temporary Precast Barrier Wall	LF

Payment is full compensation for removing and disposing of barrier; for disposing offsite; for removing existing anchor pins; and for repairing or placing epoxy in existing anchor holes.

138. Install State Furnished CAT-5E Cable, Item SPV.0090.350.

A Description

This special provision describes the transporting and installing of department furnished CAT-5E cable.

B Materials

Notify Graham Heitz of WisDOT SW Region at (608) 246-5362 at least five working days prior to material pick-up to make arrangements for picking up the department furnished cable.

C Construction

Perform work according to standard spec 655.3.

D Measurement

The department will measure Install State Furnished CAT-5E Cable 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.0090.350	Install State Furnished CAT-5E Cable	LF

Payment is full compensation for transporting and installing the cable; for making all connections; for providing connectors, and for testing the installed cable.

139. Conduit Loop Detector 1-1/4-Inch, Item SPV.0090.351.

A Description

This special provision describes furnishing and installing 1-1/4-Inch conduit loop detector for traffic signal detectors.

B Materials

Provide materials according to standard spec 652.2.

C Construction

Perform work according to standard spec 652.3.

D Measurement

The department will measure Conduit Loop Detector 1-1/4-Inch by linear foot, acceptably completed, measure around the loop and from the loop to the nearest pull box.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.351	Conduit Loop Detector 1-1/4-Inch	LF

Payment is full compensation for providing materials, including conduit, compacted backfill, surface sealer, pull wire, condulets, and conduit fittings.

140. Abutment Anchorage, Item SPV.0090.701.

A Description

This special provision describes designing, furnishing materials and erecting abutment anchorage according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the abutment anchorage shall be 75 years minimum.

This special provision describes the quality management program (QMP) for abutment anchorage. 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 abutment anchorage, 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 abutment anchorage 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 at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed abutment anchorage 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 abutment anchorage. Submit shop drawings to the engineer conforming to 105.2 with electronic submittal to the fabrication library under 105.2.2. Certify that shop drawings conform to quality control standards by submitting department form DT2329 with each set of shop drawings. Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin abutment anchorage 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 abutment anchorage 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 abutment anchorage 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. The abutment anchorage shall be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Abutment anchorage 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. Abutment anchorage that does 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 abutment anchorage 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 plan for the wall adjacent to the abutment.

The design of the abutment anchorage 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 minimum length of soil reinforcement measured from the back face of the abutment shall be equal to 0.7 of the wall height, or as shown on the wall plan for the wall adjacent to the abutment. 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 the abutment. 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 abutment. 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 abutment. The reinforcement and the reinforcement/abutment connection strength shall be designed to resist maximum factored reinforcement loads according to AASHTO LRFD Section 11.10.6. Abutment 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.

B.3 Abutment Anchorage System Components

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

B.3.1 Backfill

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

Place backfill in a zone extending horizontally from the back face of the abutment to 1 foot minimum beyond the end of the reinforcement and extending vertically from the bottom of abutment 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.3.2 Soil Reinforcement

All steel portions of the abutment anchorage 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 abutment connections or any other steel portion of the abutment anchorage 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 abutment anchorage shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the elevation of the bottom of the abutment 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 abutment.

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 abutment, 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 abutment anchorage 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 abutment. 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 of the abutment. The engineer may order the removal of any large or heavy equipment that may cause damage to the abutment.

C.2 Compaction

Compact all backfill behind the abutment 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 abutment should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the abutment. 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 Abutment Anchorage Components

C.3.1 General

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 abutment.

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.

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 abutment anchorage 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 abutment anchorage 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 each grading site during all abutment anchorage backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

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

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

Ensure that the nuclear gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to 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 abutment anchorage is given on the wall plan for the wall adjacent to the abutment, available on the WisDOT Bureau of Structures Highway Structures Information (HSI) website. After completing 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 Abutment Anchorage by the linear foot, acceptably completed, measured as the length of the abutment requiring anchorage.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.701	Abutment Anchorage	LF

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 abutment anchorage components to produce a functional anchorage system; constructing the retaining system and providing temporary drainage; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, and performing compaction testing.

The department will pay separately for abutment body/backwall and structural approach slab.

141. Survey Project 1003-10-80 with Optional AMG for Concrete Pavement and Base Course, Item SPV.0105.001.

A Description

Modify standard spec 105.6 and 650 to define the requirements for construction staking for this contract.

Add the following to standard spec 105.6.1.

Horizontal and vertical control points, provided by the department, are generally at 1-mile intervals for horizontal control and at ½-mile intervals for vertical control. Control points will be provided in a hard copy and ASCII electronic format.

Replace standard spec 105.6.2 with the following:

The department will not perform any construction staking for this contract. The contractor shall 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.

Replace standard spec 650.3.8 with the following:

650.3.8 Concrete Pavement

650.3.8.1 General

(1) Under the Construction Staking Concrete Pavement bid item the contractor may substitute automated machine guidance (AMG) for conventional staking on all or part of the concrete pavement and underlying base.

650.3.8.2 Conventional Concrete Pavement Staking

(1) Set construction stakes or marks at 25-foot intervals. Set and maintain additional stakes as necessary to establish location and grade along intersecting road radii; and for auxiliary lanes, vertical curves, horizontal curves, and curve transitions according to the plans. Locate stakes to within 0.02 feet horizontally and establish elevations to within 0.01 feet vertically. Set and maintain sufficient additional stakes at each cross-section to achieve the required accuracy and to support the method of operations.

650.3.8.3 Automated Machine Guidance for Concrete Pavement

650.3.8.3.1 General

(1) No base or paving stringlines are required for AMG work.

(2) Coordinate with the engineer throughout the course of construction to ensure that work performed using AMG conforms to the contract tolerances and that the methods employed conform to the contractor's AMG work plan and accepted industry standards. Address AMG issues at weekly progress meetings.

(3) Use a total station to provide station, offset, and elevations at locations specified in standard spec 650.3.8.3.5 and at additional engineer-directed locations after fine grading the base and after placing the concrete pavement. Allow the engineer access to view current display data on the contractor's AMG equipment during paving and fine grading operations.

(4) Provide the department field staff up to 8 hours of formal training on contractor's AMG systems.

650.3.8.3.2 AMG Work Plan

(1) Submit a comprehensive written AMG work plan for department review at least 5 business days before the preconstruction conference. The engineer will review the plan to determine if it conforms to the requirements of this special provision.

(2) Trim the base course and place concrete pavement as the contractor's AMG work plan provides. Update the plan as necessary during construction.

(3) The AMG work plan should discuss how AMG technology will be integrated into other technologies employed on the project. Include, but do not limit the contents to, the following:

1. Designate which portions of the contract will be done using AMG and which portions will be done using conventional staking.
2. Describe the manufacturer, model, and software version of the AMG equipment including the angular accuracy and the measurement frequency of the guidance system.
3. Provide information on the qualifications of contractor staff. Include formal training and field experience. Designate a single staff person as the primary contact for AMG technology issues.
4. Describe how project control is to be established. Include a list and map showing control points enveloping the site. Incorporate department-provided primary control and contractor-provided secondary control into a single site control network. At a minimum provide secondary control every 250 feet on alternating sides of the traveled way outside of the grading limits. Use engineer-approved survey markers. Ensure that secondary control points are accurate to within 0.02 feet horizontally and to within 0.01 feet vertically.
5. Describe site calibration procedures. Include a map of the control points used for site calibration and control points used to check the site calibration. Describe the site calibration and checking frequency as well as how the site calibration and checking information will be documented.
6. Describe the contractor's quality control procedures. Describe procedures for checking, mechanical calibration, and maintenance of equipment. Include the frequency and type of checks performed to ensure that the trimmed base and concrete pavement conform to the contract plans.

650.3.8.3.3 Equipment

(1) Use robotic total station machine guidance or other engineer approved combination of methodologies to meet the contract requirements.

(2) Perform periodic sensor calibrations and other routine adjustments as required to ensure that the trimmed base and concrete pavement conform to the contract plans.

650.3.8.3.4 Geometric and Surface Information

650.3.8.3.4.1 Department Responsibilities

(1) The department will provide design model information as outlined in the Design Model Data article of these special provisions.

650.3.8.3.4.2 Contractor Responsibilities

(1) Review department-provided design model data for areas of the project employing AMG. Report inconsistencies between that data and the contract plans to the engineer and work with the engineer to resolve those inconsistencies. Develop a contractor construction model.

(2) Obtain elevations of adjacent pavement and bridges at centerline, edge of pavement, and other locations necessary to characterize existing profile and cross slope. Adjust design profile grade and cross slope to provide a smooth transition from the new pavement to the existing pavement or bridge. Notify the engineer when a smooth profile cannot be provided. Submit final adjusted plan elevations to the engineer.

(3) Provide the resulting construction model data proposed for the paving operation to the department in LandXML v1.2 or AutoCAD DWG.

650.3.8.3.4.3 Managing and Updating Information

(1) Notify the department of any errors or discrepancies in department-provided information. The department will determine what revisions may be required. The department will revise the contract plans, if necessary, to address errors or discrepancies that the contractor identifies. The department will provide the best available information related to those contract plan revisions.

(2) Revise the construction model as required to support construction operations and to reflect any contract plan revisions the department makes. Perform checks to confirm that the revised construction model agrees with the contract plan revisions. Provide a copy of the resulting adjusted construction model data to the engineer in LandXML v1.2 or AutoCAD DWG. The department will pay for costs incurred to incorporate contract plan revisions as extra work.

650.3.8.3.5 Site Calibration

(1) Designate a set of control points for site calibration for the portion of the project employing AMG machine guidance. Incorporate the department-provided control framework used for the original survey and design.

(2) Calibrate the site by determining the parameters governing the transformation of AMG information into the project coordinate system. Use the full set of control points designated under 650.3.8.3.5 (1) for the initial site calibration. Provide the resulting site calibration file to the engineer before beginning base construction operations.

650.3.8.3.6 Construction Checks

650.3.8.3.6.1 Daily Calibration Checks

(1) In addition to the site calibration, perform site calibration checks. At a minimum, check the calibration at the start of each day as described in the contractor's AMG work plan. Report out-of-tolerance checks to the engineer. The measured position must match the established position at each individual control point within the following tolerances:

- Horizontally to 0.02 feet or less.
- Vertically to 0.01 feet or less.

(2) Discuss the previous week’s daily calibration check results at the weekly progress meeting for monitoring the AMG work.

650.3.8.3.6.2 Final Base Checks

(1) Check the trimmed base against the plan elevation at randomly selected points on cross sections located at stations evenly divisible by 100. Conduct at least one random check per 250 lane-feet corresponding to the basic units used to assess pavement thickness under standard spec 415.3.16. Also check the trimmed base at additional points as the engineer directs. Notify the engineer at least two business days before making final checks so the engineer can observe the process.

(2) Ensure that no individual check is off by more than 0.02 foot vertically of the adjusted plan elevation. Notify the engineer if this criterion is exceeded.

(3) The department may conduct periodic independent base checks. The department will notify the contractor if any individual check differs by more than 0.05 foot horizontally or 0.02 foot vertically from the design.

650.3.8.3.6.3 Final Pavement Checks

(1) Check the pavement at drainage structures, bridges, driveways, intersections, ramp termini, and additional points as the engineer directs. Notify the engineer at least two business days before making final checks so the engineer can observe the process.

(2) Notify the engineer immediately if the final pavement surface does not match the final adjusted plan elevation within 0.02 foot vertically.

(3) The department may conduct periodic independent pavement elevation checks. The department will notify the contractor if any individual check differs by more than 0.05 foot horizontally or 0.02 foot vertically from the adjusted plan.

D Measurement

The department will measure Survey Project (project ID) with Optimal AMG for Concrete Pavement and Base Course 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.0105.001	Survey Project 1003-10-80 with Optional AMG for Concrete Pavement and Base Course	LS

Payment is full compensation for performing all survey work required to layout and construct all work under this contract.

(2/14/2018)

142. Concrete Pavement Joint Layout 1003-10-80, Item SPV.0105.002.

A Description

This special provision describes designing the joint layout and staking the location of all joints on project 1003-10-80, including mainline, ramps and intersections (traditional and roundabouts) to accommodate the concrete paving operation.

B (Vacant)

C Construction

Design the joint layout and stake the location of all joints on project 1003-10-80, including mainline, ramps and intersections (traditional and roundabouts), to accommodate the concrete paving operation. Plan and set all points necessary to establish the horizontal position of the transverse and longitudinal joints in the concrete pavement according to the plans, the American Concrete Pavement Association Intersection Joint Layout Guidelines, and as directed by the engineer. Establish the joint layout in a manner to best-fit field conditions, construction staging, the plan, and as directed by the engineer.

D Measurement

The department will measure Concrete Pavement Joint Layout, completed according to the contract and accepted, as a single complete lump sum unit of work.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.002	Concrete Pavement Joint Layout 1003-10-80	LS

Payment is full compensation for designing the joint layout on the mainline, ramps and all traditional and roundabout intersections; for completing all surveying work necessary to locate all transverse and longitudinal joints; and for making adjustments to match field conditions and construction staging.

143. Remove and Transport Salvaged Traffic Signals STH 81 & Freeman Pkwy, Item SPV.0105.350.

A Description

This special provision describes removing existing traffic signals at the intersection of STH 81 & Freeman Pkwy according to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans.

B (Vacant)

C Construction

Arrange for the de-energizing of the traffic signals with the local electrical utility after receiving approval from the engineer that the existing traffic signals can be removed.

Notify Jason Dupuis at the City of Beloit at (608) 364-6735 at least five working days prior to the removal of the traffic signals. Complete the removal work as soon as possible following shut down of this equipment.

Dispose of all signal equipment and the meter breaker pedestal, except for the traffic signal cabinet (and all components inside the traffic signal cabinet), video detection cameras, and street signs mounted on signal poles. Deliver salvaged traffic signal equipment to the City of Beloit, 2400 Springbrook Court, Beloit, WI, 53511. Contact Jason Dupuis at least five working days prior to delivery to make arrangements.

The City of Beloit assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working traffic signal equipment to be salvaged to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department.

Remove all standards and poles per plan, and remove transformer bases, cabling/wiring, pedestal bases, signal heads, arms, luminaires, and mounting devices. Dispose of non-salvaged materials off the project site and off the right-of-way.

Remove underground signal cable, internal wires, street lighting cable, loop detector wire, and lead in cable except where noted in the plans. Dispose of wire and cable off the right-of-way.

D Measurement

The department will measure Remove and Transport Salvaged Traffic Signals STH 81 & Freeman Pkwy as a single lump sum unit of work for each intersection, 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.0105.350	Remove and Transport Salvaged STH 81 & Freeman Pkwy	LS

Payment is full compensation for removing, salvaging, transporting, disassembling traffic signals, scrapping of some materials, disposing of scrap material, and delivering the requested materials to the city.

144. Furnish and Install Iteris Video Detection System STH 81 & Freeman Pkwy, Item SPV.0105.351.

A Description

This special provision describes the minimum requirements for a system that detects vehicles on a roadway using video technology. Work consists of furnishing and installing Traffic Signal Iteris Video Detection System as shown on the plans.

B Materials

B.1 System Hardware

The video detection system (VDS) shall consist of one to four video devices, a video detection processor (VDP) capable of processing from one to four detection sources, output extension modules, video surge suppressors, a video monitor, and a pointing device. The VDS shall include Iteris model RZ-4 WDR cameras, Vantage Edge 2 processor, Vantage TS2-IM interface, and Edgeconnect.

B.2 Detection

The video cameras used for traffic detection shall be furnished by the supplier and shall be qualified by the supplier to ensure proper system operation.

Recommended camera placement height shall be 33 feet (or 10 meters) above the roadway with a riser mounted on mast arm, and over the traveled way on which vehicles are to be detected. For optimum detection, the camera should be centered above the traveled roadway. The camera shall view approaching vehicles at a distance not to exceed 350 feet for reliable detection (height to distance ratio of 10:100). Camera placement and field of view (FOV) shall be unobstructed and as noted in the installation documentation provided by the supplier.

B.3 Coaxial Cable

Provide a Belden 8281 coaxial cable to be used between the camera/radar device and the processor in the traffic cabinet. This cable shall be suitable for installation in conduit or overhead with appropriate span wire. Use BNC plug connectors at both the detection device and cabinet ends. The coaxial cable, BNC connector, and crimping tool shall be approved by the supplier of the video detection system, and the manufacturer's instructions must be followed to ensure proper connection.

B.4 Manufacturer Warranty

The manufacturer / supplier shall provide a limited three-year warranty on the video detection system. Refer to the supplier's standard warranty included in the Terms and Conditions of Sale documentation.

During the warranty period, technical support shall be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support shall be available from factory-certified personnel or factory-certified installers. During the warranty period, updates to VDP system software shall be available from the supplier without charge.

B.5 Power Cable

Provide a 16 AWG three-conductor power cable with a minimum outside diameter of 0.325 inch and a maximum diameter of 0.490 inch. The power cable shall be terminated at the detection device per manufacturer's instructions and shall only require standard wire strippers and a screw driver for installation (no special connectors or crimping tools shall be used for installation). The cabling shall comply with the National Electric Code, as well as local electrical codes. The detection device may acquire power from the luminaire, if necessary.

B.6 Mouse Port

A USB mouse port shall be provided on the front panel of the rack mount video processing unit. The mouse port shall not require special mouse software drivers. The mouse port shall be used as part of system setup and configuration. A mouse shall be provided with each video processor.

B.7 Detection Monitor

Provide a flat screen color video monitor with a minimum 9" diagonal picture display. The monitor shall support EIA standards RS-170 composite video signal (1.0 v p-p, 75 OHM). A separate computer shall not be required for programming detection zones.

The monitor shall have a resolution of 900 lines at center. Video bandwidth shall be >11 MHz. Loop through connectors shall be provided, and both input and output connectors shall be BNCs. The monitor power source shall be 120 VAC +/- 10%, 60 Hz. Power consumption shall not be greater than 18 W. Ambient operating temperature shall be +50 to +122 degrees Fahrenheit.

The controls located on the front panel shall be on/off, contrast, bright, vertical hold, and horizontal hold. Rear panel shall have controls for vertical size, vertical linearity and scan switch.

Dimensions shall not exceed 9" (W) and 10" (H). Weight shall not exceed 10 pounds.

C Construction

Install the Video Vehicle detection system according to the pertinent sections of the standard specifications and manufacturer's recommendations. Notify Jason Dupuis at the City of Beloit at (608) 364-6735 prior to determining final camera placements to determine best visibility.

The coaxial cable and power cable will run continuously (without splices) from the traffic signal cabinet to the video detection camera. Leave 10 feet of cable in each pull box. Install the camera manufacturer's connector cable whip from the camera to the handhole or base.

Mark each end of the lead appropriately to indicate the equipment label (i.e. V1, V2, etc.). Splice, solder and shrink wrap the power cable to the camera manufacturer's cable whip. Allow 3 feet of slack on each cable.

Notify Jason Dupuis at the City of Beloit at (608) 364-6735 upon completion of the installation of the power cable, cable whip and camera at each intersection.

D Measurement

The department will measure Furnish and Install Iteris Video Detection System as a single lump sum unit of work for each intersection, 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.0105.351	Furnish and Install Iteris Video Detection System STH 81 & Freeman Pkwy	LS

Payment is full compensation for furnishing and installing the Iteris Video Detection System, cable, cable whips, mounting hardware, and cameras; arranging for and providing programming by the vendor.

145. Removing Lighting Control Cabinet STH 81 Lighting, Item SPV.0105.352.

A Description

This special provision describes removing lighting control cabinet at STH 81 to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C Construction

Notify Jason Dupuis at the City of Beloit at (608) 364-6735 at least three working days prior to the shutdown of the existing street lighting system. The lighting system shutdown shall coincide with the closure of Gateway Boulevard for reconfiguration of the STH 81 and Gateway Blvd intersection. All lighting equipment removal shall occur during this period.

Remove the lighting control cabinet from its base. Remove wiring/cabling from the cabinet and dispose of off right-of-way.

D Measurement

The department will measure Remove Lighting Control Cabinet STH 81 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.0105.352	Remove Lighting Control Cabinet STH 81 Lighting	LS

Payment is full compensation for removing the lighting cabinet, disposing of scrap material, and incidentals necessary to complete the contract work.

146. Traffic Signal and Lighting Equipment Painting STH 81 & Freeman Pkwy, Item SPV.0105.353.

A Description

This special provision describes the painting of the exterior surfaces of traffic signal equipment, street lighting equipment and associated mounting hardware. Individual signal and lighting equipment is paid for in separate bid items.

B Materials

Contact Jason Dupuis at the City of Beloit at (608) 364-6735 prior to ordering traffic signal equipment to obtain the exact color code from the City of Beloit.

Obtain signal and lighting equipment powder-coated in the black color from the manufacturer or supplier. Signal and lighting equipment includes monotube arms, monotube poles, luminaire arms, lighting poles, signal standards, and metal bases. Cabinets shall not be painted. All black items shall match in color. All signal hardware, lighting hardware, sign hardware and stainless steel banding used on standards and poles, shall be cleaned and painted with a primer and two finish coats of the best rust resistant synthetic resin enamel in the color that exactly matches the color code provided by the City of Beloit.

C Construction

Install per manufacturer's instructions. Marks and scratches on painted equipment and signal hardware shall be touched up with two coats of synthetic resin enamel consistent in color and texture to the original finish, or as directed by the engineer.

D Measurement

The department will measure Traffic Signals and Lighting Equipment Painting 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.0105.353	Traffic Signals and Lighting Equipment Painting	LS

Payment is full compensation for furnishing traffic signal and lighting equipment, hardware, and banding in the color specified by the City of Beloit.

147. Traffic Signal Controller and Cabinet STH 81 & Freeman Pkwy, Item SPV.0105.354.

A Description

This special provision describes furnishing, installing, and making operational, a traffic signal controller and fully equipped cabinet at the intersection of STH 81 & Freeman Pkwy.

The traffic signal control cabinet shall be NEMA TS2 Type 1 and the traffic signal controller shall be an Eagle EPAC M62 ATC.

B Materials

B.1 General

Provide the project plans and specifications to the traffic signal controller and cabinet supplier at least 18 weeks prior to scheduled field installation. Coordinate with the traffic signal controller and cabinet supplier to schedule the cabinet delivery date and time to the project site location. Notify Jason Dupuis at the City of Beloit at (608) 364-6735 at least five working days prior to cabinet delivery.

Coordinate directly with the traffic signal controller and cabinet supplier to schedule the cabinet acceptance testing. Notify Jason Dupuis at the City of Beloit at (608) 364-6735 and participate in the acceptance testing. The City of Beloit has the final determination of the cabinet acceptance testing date and time. The acceptance testing procedures will be provided by the City of Beloit.

The owner will not be responsible for project delays and costs due to the delays of delivery by the supplier or by the failure of the traffic signal controller and cabinet to pass acceptance testing.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

B.2 Cabinet

B.2.1 Cabinet Design

(1) Furnish a door-in-door ground mounted (without anchor bolts) aluminum cabinet of clean-cut design and appearance. Provide a cabinet of minimum size 44 inches wide, minimum 24 inches deep, and minimum 52 inches to maximum 60 inches high. The size of the cabinet shall provide ample space for housing the controller, all of the associated devices which are to be

furnished with the controller, all other auxiliary devices herein specified, and all equipment to be furnished as listed in the materials section of this specification.

(2) The cabinet shall comply with the environmental and operating standards outlined in the NEMA TS2 Standard. The cabinet shall provide reasonable vandalism protection. The cabinet shall have a NEMA 3R rating.

(3) Construct the cabinet from type 5052-H32 aluminum with a minimum thickness of 0.125 inches. Furnish the cabinet with a natural, uncoated, aluminum finish inside and outside. Continuously weld all seams. The surface shall be smooth, free of marks and scratches. Use stainless steel for all external hardware.

(4) On the top of the cabinet, incorporate a 1-inch slope toward the rear to prevent rain accumulation. Incorporate a rain channel into the design of the main door opening to prevent liquids from entering the enclosure.

(5) Include an exhaust plenum with a vent screen into the roof of the cabinet. Perforations in the vent screen shall not exceed 0.125 inches in diameter.

(6) Equip the lower section of the cabinet door with a louvered air entrance. The air inlet shall be large enough to allow sufficient air flow per the rated fan capacity. Louvers must satisfy the NEMA rod entry test for Type 3R ventilated enclosures. Secure a washable, fiberglass, removable air filter to the air entrance. The filter shall fit snugly against the cabinet door wall.

(7) Attach an aluminum, easily removable, gasketed cover over the air filter and louver.

B.2.2 Doors

(1) The cabinet door opening shall be a minimum of 80 percent of the front surface of the cabinet. The main door and police door-in-door shall each close against a weatherproof and dust-proof, closed-cell neoprene gasket seal. The gasket material for the main door shall be a minimum of 0.188 inches thick by 1.00 inch wide. The gasket material for the police door shall be a minimum of 0.188 inches thick by 0.500 inches wide. Permanently bond the gaskets to the cabinet.

(2) Equip the main door with a three-point latching mechanism. The upper and lower locking points of the latching mechanism shall each have a pair of nylon rollers. The handle on the main door shall utilize a shank of stainless steel 3/4 inches minimum diameter. The handle shall include a hasp for the attachment of an optional padlock. The cabinet door handle may turn either clockwise or counterclockwise to open and shall not extend outwards past the edge of the door at any time. Position the lock assembly so the key will not cause any interference with the handle, or a person's hand on the handle, when opening the cabinet door.

(3) Include on the main door a solid stainless steel rod stop and catch mechanism capable of rigidly holding the door open at approximately 90, 120, and 180 degrees under windy conditions. The operator must be able to engage and disengage the catch with a shoed or booted foot.

(4) The main door hinge shall be a one-piece, continuous piano hinge with a minimum 0.25 inch stainless steel pin running the entire length of the right side of the door (right-handed). Attach the hinge in such a manner that no rivets or bolts are exposed.

(5) Equip the main door with a brass Corbin tumbler lock No. 2, swing away dust cap, and provide two keys No. 2. Equip the police door-in-door with a standard police lock and provide one key. Electrically bond the door to the rest of the cabinet with a braided copper grounding conductor. The length of the grounding conductor shall allow the door to swing fully open, without using the stop bar, without stretching or breaking the grounding conductor. The grounding conductor shall not interfere with normal door operation.

(6) Provide a door switch for the main cabinet door. When the door is opened the switch shall send a signal to the controller sufficient for the controller to log an alarm.

B.2.3 Shelves and Mounting

(1) Mount a minimum of three vertical "C" channels, compatible with Unistrut channel nuts, on each interior side wall of the cabinet for the purpose of mounting the cabinet components. The channels shall accommodate spring mounted nuts or studs. Install three vertical "C" channels or three

slotted rails on the interior back wall of the cabinet. All mounting channels and rails shall extend to within 7 inches of the top and bottom of the cabinets and shall be of sufficient strength to rigidly hold specified shelves and equipment.

(2) Provide two full-width, 11-inch deep, fully adjustable, aluminum shelves to support the controller and other equipment. Mount the lower shelf at a height above the bottom of the cabinet such that the shelf and attached drawer does not interfere with the ability to tilt the terminal facility forward on its hinges for maintenance purposes. Mount the top shelf at least 13 inches above the surface of the lower shelf.

(3) Locate the controller and MMU on the top shelf. Locate the loop detector racks and other auxiliary equipment on the lower shelf. The power supply may be mounted on either shelf. Provide an under-shelf drawer under the lower shelf. The drawer shall be approximately 20 inches wide and the full depth of the shelf. The drawer shall operate easily and smoothly and shall have a stop to prevent inadvertently pulling the drawer out of its support. Design the stop to allow purposeful complete removal of the drawer without the use of tools.

B.2.4 Auxiliary Cabinet Equipment

(1) Ventilate the cabinet by means of a 120 VAC, 60HZ, tube axial compact type fan located in the top of the cabinet plenum. The fan's free delivery airflow shall be equal to or greater than 100 cubic feet per minute. The magnetic field of the fan motor shall not affect the performance of control equipment. The fan bearings shall operate freely. The fan unit shall not crack, creep, warp, or have bearing failure within a seven year duty cycle. The maximum noise level shall be less than 40 decibels. The fan unit shall be corrosion resistant. The thermostat's turn on setting shall be adjustable from 90 to 120 degrees F. The fan shall run until the cabinet temperature decreases below the turn-on temperature setting by approximately 30 degrees F. The fan shall be fused.

(2) Mount an incandescent lamp and socket in the cabinet to sufficiently illuminate the field terminals. Wire the lamp to a 15-amp ON/OFF toggle switch mounted on the rear cover of the police panel as specified in the Cabinet Switches section of this specification.

(3) Provide a 250 watt element heater. Install the heater on the face of the aluminum, louvered air filter cover such that feed air is supplied through the cover. Provide a protective, ventilated cover over the heater. Provide a cord and twist-off plug to an electrical receptacle on the cabinet door. Provide a thermostat with an adjustable setting from 0 to 100 degrees F. Install the thermostat on the interior ceiling of the cabinet well away from the cabinet light or any heat source. Provide a thermal limit switch to prevent the heater's protective cover from exceeding 170 degrees F.

B.3 Terminals and Facilities

B.3.1 Terminal Facility

(1) The terminal facility panel shall be constructed from 5052-H32 brushed aluminum of 0.125 inches minimum thickness and formed so as to eliminate any flexing when plug- in components are installed.

(2) Mount the bottom of the terminal facility a minimum of nine inches from the bottom of the cabinet. Hinge the terminal facility at the bottom to allow easy access with simple tools to all wiring on the rear of the panel. It shall not be necessary to remove the lower shelf, the shelf drawer, or any shelf-mounted equipment to hinge down the terminal facility. Provide sufficient slack in the load bay wiring to allow for dropping the load bay.

(3) Fully wire the terminal facility with 16 load switch sockets: 8 phases of vehicular, 4 phases of pedestrian, and 4 phases of overlap operation; 8 flash transfer relay sockets; 1 flasher socket; and 2 terminal facility BIU rack slots. The use of printed circuit boards is not acceptable on the terminal facility, except printed circuit boards are acceptable for the BIU interface with the load bay. Position the 16 load switch sockets in two horizontal rows of eight sockets each. Support the load switches and flasher by a bracket or shelf extending at least three inches from the terminal facility.

(4) Label all terminals, load switches, and flash transfer relay sockets. Label reference designators by silk-screening on the front and rear of the terminal facility to match drawing designations.

(5) Provide rack mounted BIU's. Provide a dual-row, 64-pin female DIN 41612 Type B connector for each BIU rack position. Provide card guides for both edges of the BIU. Terminal and facilities BIU mounting shall be an integral part of the terminal facility.

(6) Provide one 16-channel, 8-position, TS2 detector rack, with an integrally mounted BIU mounting. The rack shall be addressable. Power the detector rack by the cabinet power supply. Fasten the loop detector rack towards the left side of the lower shelf.

(7) For BIU rack connectors, provide pre-wired address pins or jumper plugs corresponding to the requirements of the NEMA TS2 Standard. The address pins or jumper plugs shall control the BIU mode of operation. BIUs shall be capable of being interchanged with no additional programming.

(8) For the terminal facility, contain all field wires within one or two rows of horizontally- mounted Marathon heavy duty terminal blocks. Terminate all field output circuits on an unfused terminal block with a minimum rating of 10 amps. Use mechanical connector lugs rated for copper wire. Angle the lower section of the terminal block out from the back of the cabinet at approximately a 45 degree angle.

(9) Identify all field input/output (I/O) terminals by permanent alphanumeric labels. All labels shall use standard nomenclature per the NEMA TS2 Standard.

(10) All field flash sequence programming at the field terminals shall be able to be accomplished with the use of only a screwdriver.

(11) Wire field terminal blocks to use three positions per vehicle or overlap phase (green, yellow, red).

(12) Wire one RC network in parallel with each flash transfer relay coil.

(13) Permanently label all logic-level, NEMA-controller and MMU input and output terminations on the terminal facility. Identity the function of each terminal position on the cabinet drawings.

(14) Terminal blocks for DC signal interfacing shall have a number 6-32 x 7/32 inch screw as minimum. Functions to be terminated shall be as specified in the listing of Input/ Output Terminals in Section 5 of the NEMA TS2 Standard.

(15) Conform all terminal facility and cabinet wiring to the WSEC. The green/ walk, yellow, and red/don't walk load switch outputs shall be minimum 16 gauge wire. The MMU (other than AC power), controller I/O, and logic ground shall be minimum 22 gauge wire. All wire colors shall be consistent.

B.3.2 Auxiliary Panels

B.3.2.1 Vehicle Detection Interface Panel

(1) Provide a 32-position interface panel or two 16-position panels. Each interface panel shall allow for the connection of 32 or 16 independent field loops, respectively. The panels shall have barrier strip type terminals using 8-32 screws and be rated for 20 inch pounds of torque.

(2) Provide a ground bus terminal between each loop pair terminal to provide a termination for the loop lead-in cable ground wire. Secure the interface panels to a mounting plate attached to the left interior side wall of the cabinet.

(3) Provide a cable consisting of 20 AWG twisted pair wires to enable connection to and from the interface panel to a detector rack. The twisted pair wires shall be color-coded wires. Provide a cable of sufficient length to allow the detector rack to be placed on either shelf.

(4) Identify all termination points by a unique number silk screened on the panel.

B.3.2.2 Intersection Lighting

(1) Provide an intersection lighting control panel as described. The intersection lighting control panel shall consist of an aluminum panel 0.125 inches thick and approximately 5 inches by 10 inches. Determine the actual panel size by the cabinet's mounting rail placement. Attach to the panel a 2 pole-30 amp contactor-120vac coil (Square D #8910DPA32V02 or equal), and a heavy duty 6 position terminal block (Marathon DJ1606 or equal). Use wire sizes 10AWG for power and load wiring, and 16AWG for control wires. Wire the terminal strip as follows:

- Control coil
    - L1 in
    - L2 in
- Neutral in and control coil
    - L1 out
    - L2 out

(2) Protect each output by a MOV (V150LA20A) wired between the output and neutral. Include a photo control (Intermatic #K4021C or equal). Mount the photo control just above the cabinet door and approximately 12 inches from the right side of the cabinet. Wire the photo control to a 3 position terminal strip using 16AWG wire color coded to match the photo control wiring connected to the intersection lighting control panel.

B.3.3 Conductors and Cabling

(1) All conductors in the cabinet shall be copper 22 AWG or larger. All 14 AWG and smaller wire shall conform to MIL-W-16878/1, Type B, 600V, 19-strand tinned copper. The wire shall have a minimum of 0.010 inches thick PVC insulation without clear nylon jacket and rated to 105 degrees Celsius. All 12 AWG and larger wire shall be UL or NRTL listed THHN/THWN 90 degrees Celsius, 600V, 0.020 inches thick PVC insulation, and clear nylon jacketed.

(2) Provide controller and MMU cables of sufficient length to allow the units to be placed on either cabinet shelf in the operating mode. Connecting cables shall be sleeved in a braided nylon mesh. Exposed tie-wraps and interwoven cables are unacceptable.

(3) Provide the cabinet configuration with enough SDLC RS-485 Port 1 communication cables to allow full capabilities of that cabinet. Each communication cable connector shall be a 15-pin metal shell D subminiature type. The cable shall be a shielded cable suitable for RS-485 communications. Secure all connecting cables and wire runs by mechanical clamps. Stick-on type clamps are not acceptable.

(4) Pre-wire the terminal facility for a Type 16 MMU.

(5) All wiring shall be neat in appearance. Stow excess cable behind the terminal facility or below the shelves in order to allow easy access to the terminal facility and cabinet components. All cabinet wiring shall be continuous from its point of origin to its termination point. Butt type connections/splices are not acceptable.

(6) Wire the grounding system in the cabinet into three separate circuits: AC Neutral, Earth Ground, and Logic Ground.

(7) Optoisolate all pedestrian pushbutton inputs from the field to the controller through the BIU and operate at 12 VAC.

(8) Hook or loop all wire, size 16 AWG or smaller, at solder joints around the eyelet or terminal block post prior to soldering to ensure circuit integrity. Lap joint soldering is not acceptable.

B.3.4 Cabinet Switches

(1) Locate the following switches on a maintenance panel on the inside of the cabinet door:

a. Controller On/Off

b. Cabinet Light

c. Stop Time (Three Position)

d. Manual Detector Switches (Three Position)

(2) Position Switch Label Function

(3) Upper Stop Time Place stop time on the controller

(4) Center Run Remove the stop time input to the controller

(5) Lower Normal Connects the MMU to the controller stop time input

(6) Locate the following switches behind the police access door:

a. Signal/Off

b. Flash/Normal

c. Hand/ auto

d. Coiled hand control and cable

(7) The above switches shall function as follows: Off:

a. Signals Dark

b. Signal: Signals On and operating as follows:

c. Auto Hand

d. Flash: Signals Flash Signals Flash

e. Normal: Signals Normal Signals Advance by use of hand control

(8) Provide manual detector switches. Provide a minimum of 16 vehicle detector switches, and 4 pedestrian detector switches. The switches shall be spring loaded and automatically return to the center position. Wire the vehicle detector switches to detector BIU slot 1. Wire the pedestrian switches to the T&F BIU slot 1. The switches shall operate as follows:

a. Position Function Up

b. Detector Disabled

c. Center Detector Enabled

d. Down Detector Called

B.4 Power Panel

B.4.1 Power Panel Design

(1) The power panel shall consist of a separate module, securely fastened to the interior right side wall of the cabinet. Wire the power panel to provide the necessary power to the cabinet, controller, MMU, cabinet power supply, and all auxiliary equipment. Manufacture the power panel from 0.090-inch, 5052-H32 aluminum. Panel layout shall facilitate field inspection and maintenance accessibility without excessive disassembly or special tools.

(2) Provide a light, tough, transparent, weather-resistant, non-yellowing, thermoplastic cover, rigidly mounted over the full power panel, with access holes for circuit breakers and other equipment, and open on the sides for ventilation.

B.4.2 Bus Bar

(1) Provide a minimum 20-position neutral bus bar capable of connecting three #12 AWG wires per position.

B.4.3 Circuit Breakers

(1) House in the power panel the following vertically mounted, single pole, 120 volts AC, 60 Hertz, circuit breakers, with the ON position being up:

a. One 30-amp signal breaker. This breaker shall supply power for all cabinet functions not powered through one of the other breakers or fuses listed below. This breaker shall feed a signal bus supplied through a solid state bus relay and a radio interference line filter. The bus relay, in all cases, shall be a solid state contactor and shall not be jack mounted. Breakers shall be thermal magnetic type, UL or NRTL listed, with a minimum of 22,000 amp interrupting capacity.

b. One 30-amp breaker for street lighting.

c. One 15-amp auxiliary breaker. This breaker shall supply power to the fan and heater**.**

d. One 10-amp breaker. This breaker shall supply power for control equipment: controller, MMU, and cabinet power supply.

e. One 20-amp circuit breaker for future use.

(2) Power the cabinet light through the GFI fuse, not a circuit breaker.

B.4.4 Radio Interference Suppressor

(1) Equip each control cabinet with a single radio interference suppressor (RIS) of sufficient ampere rating to handle the load requirements. Install the RIS at the input power point. The RIS shall minimize interference in both the broadcast and the aircraft frequencies and shall provide a maximum attenuation of 50 DB over a frequency range from 200 KHZ to 75 MHZ, when used in connection with normal installations. The RIS shall be hermetically sealed in a substantial metal case filled with a suitable insulating compound. The terminals shall be nickel-plated brass studs of sufficient external length to provide space to connect two #8 AWG wires and shall be so mounted that they cannot be turned in the case. Ungrounded terminals shall be properly insulated from each other and shall maintain a surface leakage distance of not less than 6.35 mm between any exposed current conductor and any other metallic parts. The terminals shall have an insulation factor of 100-200 megohms dependent upon external conditions. The RIS shall be rated at minimum 50 amperes. Design the RIS for operation on 115 VAC +/- 10%, 60HZ, single phase circuits, and to meet the standards of UL or a NRTL and Radio Manufacturer's Association.

B.4.5 Bus Relay

(1) Provide a normally-open, 60 amp, solid state relay.

B.4.6 Surge Protector

(1) Install a plug-in type EDCO SHA-1250, or Atlantic/Pacific approved equal, surge protector across the load terminal of the 10-amp circuit breaker. Install a General Electric Varistor, catalog #V130PA20A, at the load terminals of the circuit breaker from the hot line to the grounded current carrying neutral conductor.

B.4.7 Power Receptacles

(1) Mount a 120 VAC 20 amp**,** NEMA 5-20R GFCl convenience outlet at each of these two locations:

- On the interior right side wall above the power panel. The outlet shall be fully operational and fuse protected.
- Near the power panel where it will not interfere with power panel maintenance**.**

This outlet is to be wired by field installation personnel.

B.4.8 Suppressors and RC Network

(1) Provide a suppressor for each 120 VAC circuit that serves an inductive device, such as a fan motor or a mechanical relay, to protect the controller's solid state devices from excessive voltage surges. Such suppressors shall be in addition to the surge protector at the input power point.

(2) Wire one RC network in parallel with each inductive device.

B.5 Auxiliary Devices

B.5.1 Load Switches

Provide solid state load switches conforming to the requirements of section 6.2 of the NEMA TS2 Standard.

B.5.2 Flashers

(1) Provide one solid state flasher conforming to the requirements of section 6.3 of the NEMA TS2 Standard.

B.5.3 Flash Transfer Relays

(1) Provide flash transfer relays conforming to the requirements of section 6.4 of the NEMA TS2 Standard.

B.5.4 Inductive Loop Detector Units

(1) Provide inductive loop detector units conforming to the requirements of section 6.5 of the NEMA TS2 Standard for 2-channel, rack mount detector units, type C.

B.5.5 Cabinet Power Supply

(1) Provide one cabinet power supply with each cabinet conforming to the requirements of section 5.3.5 of the NEMA TS2 Standard. Provide LED indicators for the 12 VDC, 12 VAC, and 24 VDC outputs. Provide jack plugs on the front panel for access to the +24 VDC for test purposes.

B.6 Bus Interface Units (BIU)

(1) Provide three BIUs conforming to the requirements of section 8 of the NEMA TS2 Standard. Provide two BIUs with the main panel and one BIU with one of the detector racks.

B.7 Malfunction Management Unit (MMU)

(1) Provide one shelf-mountable, 16 channel, solid-state MMU with Ethernet capability. The MMU shall meet the requirements of Section 4 of the NEMA TS2 Standard. The MMU shall be capable of the following:

- Detecting simultaneously active inputs of Green (Walk), Yellow, or Red (Don't Walk) on the same channel.
- Determining if the field signal input states detected as active or inactive by the MMU correspond with the data provided by the Controller Unit.
- Monitoring an optional external watchdog output from a Controller Unit or other external cabinet device.
- Monitoring an intersection with up to four approaches using the Flashing Yellow Arrow (for protected/permissive left and right turn movements).
- Event logging for the following; AC Line log, Prior/Previous Faults log, and Monitor Reset Log. All log entries shall include a date and time stamp.
- All monitor functions shall be capable of being programmed through the front panel, without the need for computers or special programs cards.
- A built-in Diagnostic Wizard shall be provided that displays detailed diagnostic information regarding the fault being analyzed. This mode shall provide a concise view of the signal states involved in the fault, pinpoint faulty signal inputs, and provide guidance on how the technician should isolate the cause of the malfunction.

(2) The MMU shall have an LCD display that allows for viewing of log files and field indications, as well as the viewing and setting of date and time and configuration parameters.

B.8 Traffic Signal Controller

Provide a fully actuated, solid state, digital microprocessor based EPAC M62 ATC controller, with the current firmware as of the date of acceptance by the engineer, capable of providing the number and sequence of phases, overlaps, and any special logic as described herein. The controller unit shall

meet and be operational for, the NEMA TS2 Standard, Section 3, specifications for the Type 1 Actuated (A1) configuration. The controller unit shall be capable of being upgraded by only a firmware/ software installation to meet and be operational for the NEMA TS2 Standard, Section 3, specifications for the Type 1 Actuated/ NTCIP (A1N, Level 2) configuration.

B.9 Shop Drawings and Manuals

(1) Submit detailed shop drawings of the control cabinet, equipment layout drawings and wiring diagrams of all equipment installed in the controller cabinet to the department for approval.

(2) At the time of the delivery, furnish the following:

- Two sets of installation, operations, and maintenance manuals per cabinet for each type of equipment and their replacement parts. The manuals shall as a minimum include the following information: a) table of contents, b) operating procedure, c) step-by-step maintenance and trouble-shooting information for the entire assembly, d) part numbers, and e) maintenance checklists.
- Two sets of cabinet wiring diagrams located in a sealable heavy-duty clear plastic envelope mounted on the inside of the front door.

B.10 Warranty

(1) The contractor shall certify that the equipment meets the required specification and shall supply a complete catalog description. Provide a warranty statement which stipulates that the cabinet and all supplied equipment are warranted for two years from the date of purchase, FOB at the factory or an Authorized Repair Depot.

(2) If a malfunction in the controller unit, or its auxiliary equipment occurs during the warranty period, the supplier shall, within 24 hours after notification (excluding Saturday and Sunday), furnish a like controller unit module, or auxiliary equipment, for use while the warranted unit is being repaired. The isolation of any malfunction during the warranty period shall be the responsibility of the supplier. After the supplier has repaired and returned the equipment, the department shall then return the spare component to the supplier.

B.11 Cabinet Testing

(1) During the installation and testing of the controller, the contractor shall provide, at his own expense, a competent representative to oversee, direct and manage the installation and testing of the controller. In the final stages of the installation and testing, the manufacturer's representative shall be available at the job site for consultation until such time as the controller operation is tested and accepted.

C Construction

Perform work according to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

All components shall be assembled, mounted, and connected in the traffic signal control cabinet per the plans. The controller shall be firmly mounted to the concrete pad. The assembled controller and cabinet shall be adjusted, tested, and demonstrated to be operating properly before acceptance.

Request a signal inspection of the completed signal installation to the engineer at least five working days prior to the time of the requested inspection. City of Beloit personnel will perform the inspection.

D Measurement

The department will measure Traffic Signal Controller and Cabinet (Location) as single lump sum unit of work, in place and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.354	Traffic Signal Controller and Cabinet STH 81 & Freeman Pkwy	LS

Payment is full compensation for furnishing and installing the signal controller and MMU together with cabinet, cabinet equipment, terminal facilities, load switches, detector amplifiers, and fittings as are necessary to assure that the controller will perform the said functions and be fully operational; and for shop drawings and manuals, warranty, signal timing installation, and testing.

148. Salvage ITS Field Cabinet, Item SPV.0105.401.

A Description

This special provision describes salvaging an existing field cabinet and any housed equipment.

B (Vacant)

C Construction

Contact WisDOT SW Region ITS Engineer, Kyle Hemp, (608) 246-5367, to perform a field review of the existing field cabinet and housed equipment to determine the condition of equipment prior to removal. The department will identify all items to be removed and salvaged or disposed. Coordinate the delivery of any salvaged items with Kyle Hemp.

Carefully remove the existing field cabinet at the location indicated on the plans. Remove all mounting hardware associated with the field cabinet and housed equipment. Remove all cables/wires connected to the field cabinet.

Storage of the salvaged materials prior to pick-up is the responsibility of the contractor and is incidental to this item.

Any materials which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

D Measurement

The department will measure Salvage ITS Field Cabinet as a single complete lump sum unit of work for each item removed, 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.0105.401	Salvage ITS Field Cabinet	LS

Payment is full compensation for removal, salvaging, transporting, and storage of the field cabinet, including housed equipment; disconnecting and disposing of all wiring connections; and for meeting with the department.

149. Salvage and Reinstall Hart Road ITS Equipment Item SPV.0105.402.

A Description

This special provision describes removing, salvaging, and reinstalling the existing ITS equipment as indicated on the plans.

B Materials

Use metallic conduit, fittings, and adapters required for the underground conduit transition point to the cabinet as part of this item. Use metallic conduit according to standard spec 652.

Provide all necessary cables and connectors to make necessary connections between devices.

C Construction

C.1 General

Prior to removing, the engineer or delegated representative shall determine if the existing ITS equipment is fully functional and inspect the equipment for damage. If the ITS equipment is found to be non-functional or damaged, contact Kyle Hemp of the department's SW Region at (608) 246-5367.

Carefully remove the existing equipment at the location indicated on the plans. Salvage all mounting hardware associated with the equipment. Salvage all cables/wires connected from each device to the next connected device. Provide cables and wires needed to make devices operational.

Storage of the salvaged materials prior to reinstallation is the responsibility of the contractor and is incidental to this item.

Any materials to be reinstalled which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

Reinstall the equipment and make operational within 7 days of removal. Reinstall the ITS equipment as indicated in the plans and per manufacturer's recommendations.

C.2 Pole Mounted Cabinet

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.

C.3 Hardwired Bluetooth Sensor

Install the hardwired Bluetooth sensor as indicated on the plans. Make connections between the hardwired Bluetooth sensor and other devices as shown on the plans, or as directed by the engineer. Mount the antenna in a way that maximizes signal strength to function as shown on the plan.

C.4 Ethernet Switch

Install Ethernet switch per standard spec 678.3.5.

C.5 Electrical Service Breaker Disconnect Box

Install Electrical Service Breaker Disconnect Box switch per standard spec 656.

D Measurement

The department will measure Salvage and Reinstall Hart Rd ITS Equipment 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.0105.402	Salvage and Reinstall Hart Rd ITS Equipment	LS

Payment is full compensation for removal, salvaging, transporting, storing, and reinstalling salvaged ITS equipment; for making all connections; and for making all systems operational.

150. Temporary ITS IH 39/90 & IH 43, Item SPV.0105.403.

A Description

This special provision describes salvaging, installing, reinstalling, maintaining, and removing the temporary ITS equipment as indicated on the plans.

B Materials

B.1 Electrical Service Disconnect Box

Furnish electrical service breaker disconnect box according to standard spec 656.2.6. The service conductor size and main breaker size is to be determined by the contractor and approved by the engineer in the field. Provide all necessary cables and connectors between devices.

B.2 Pole Mounted Cabinet

The department will furnish the type 170, size 334 field cabinet. Contact Kyle Hemp of the WisDOT SW Region at (608) 246-5367 to arrange pick-up.

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. Use metallic conduit conforming to standard spec 652.

C Construction

C.1 General

Contact Kyle Hemp of the WisDOT SW Region at (608) 246-5367 and Alliant Energy (as necessary) to arrange for connection of the service lateral of the meter housing by the electrical utility.

Prior to removing, the engineer or delegated representative shall determine if the existing ITS equipment is fully functional and inspect the equipment for damage. If the ITS equipment is found to be non-functional or damaged, contact Kyle Hemp of the department's SW Region at (608) 246-5367.

Schedule the deactivation of the existing camera assembly so that it is operational until no less than seven days from the activation of the temporary or proposed camera assembly.

The electric service for temporary ITS is arranged for and paid for under the temporary traffic signal items.

C.2 Pole Mounted Cabinet

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 the plans show, and according to the applicable requirements of standard spec 652.

C.3 Wireless Mesh Radio Assembly

Install the wireless mesh radio assembly and reinstall the assembly at a different location during subsequent stages as shown in the plan. Configure and integrate the wireless mesh radio assembly to function as shown in the plans. Furnish and reinstall communications and power cables from the cabinet to the wireless mesh radio assembly.

C.4 Ethernet Switch

Install Ethernet switch per standard spec 678.3.5.

C.5 Electrical Service Breaker Disconnect Box

Install Electrical Service Breaker Disconnect Box switch per standard spec 656.

C.6 Video Encoder

Make the necessary electrical and communication network connections to the video encoder. Mount the video encoder in the pole mounted cabinet or field cabinet. Program the video encoder according to the manufacturer's instructions.

D Measurement

The department will measure Temporary ITS as a 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
SPV.0105.403	Temporary ITS IH 39/90 & IH 43	LS

Payment is full compensation for installing, reinstalling, salvaging, transporting, storing, maintaining, and removing temporary ITS equipment; for making all connections; and for making all systems operational throughout construction.

151. Temporary Shoring Railroad, Item SPV.0165.701.

A Description

This special provision describes furnishing and installing temporary shoring at locations alongside railroad tracks as shown in the plan and in accordance with the shoring design requirements.

B Materials

B.1 Shoring Design

Provide an effective shoring system capable of withstanding Coopers E-80 live load surcharge, and which is in compliance with OSHA and Federal Railroad Administration (FRA) requirements. For reference, use "Guidelines For Temporary Shoring" published by Union Pacific Railway Company and Burlington Northern and Santa Fe Railway (BNSF). A copy of these guidelines may be obtained from the department

at the Bureau of Railroads & Harbors, 4802 Sheboygan Avenue, Madison, Room 701. Where conflicts exist, the standard specifications, special provisions and plans shall supercede these guidelines.

Refer to standard spec 107.17(5) and (6) regarding the development and submittal of shop drawings, detailed plans, and computations for temporary construction near the UPR's tracks. Include in the submitted drawings and plans the proposed method of installation and removal of the shoring not included in the contract plans. In all calculations, take into consideration railroad surcharge loading and design the shoring to meet Coopers E-80 live loading.

C Construction

The UPR will coordinate train operations with the contractor to the extent possible, consistent with its operational requirements. The number and duration of work windows free of train operations available per day will vary depending on operational requirements. At the end of each window, leave the construction area in a condition that will allow for safe and normal train operations. Do not leave shoring extended above the top of rail within 12'-0" from the centerline of the nearest track. Train operations and available windows for work and hours available for work within windows are subject to change. Contact Jim Krieger, Manager Public Works; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 330-4555; E-mail: jim_krieger@cpr.ca. at least three working days in advance of construction operations that require implementation of the temporary shoring.

Provide, install and maintain adequate protection for people within the Dakota, Minnesota and Eastern Railroad (CP)'s right-of-way. Cover, guard, and/or protect all excavations, holes, or trenches within the UPR's right-of-way when they are not being worked on. When leaving work site areas at night and over weekends, secure the areas and leave them in a condition that will ensure that railroad employees and other personnel, who may be working or passing through the area, are protected around excavations. Install handrails that are parallel to the track and not less than 12'-0" from the centerline of the nearest track. Handrails, fences, or other barrier methods must meet OSHA and FRA requirements. Backfill all excavations as soon as possible.

Upon completion of the need for the temporary shoring, remove the shoring or cut-off the shoring at ground height. Backfill the space that is excavated but not occupied by the new permanent construction in accordance with standard spec 206.3.13.

D Measurement

The department will measure Temporary Shoring Railroad in area by the square foot, acceptably completed, and the quantity to be paid for will be the sum of the areas of exposed faces of shoring constructed at the locations shown on the plans. Area will be determined from measurements taken in the plane of the exposed face of the shoring.

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.0165.701	Temporary Shoring Railroad	SF

Payment is full compensation for providing a verified design of the shoring; providing shop drawings and detailed plans; furnishing and hauling materials to each location; installing the shoring; maintaining the shoring as needed; removing the shoring; backfilling upon completion of the need for the shoring; and for furnishing all labor, tools, equipment, materials, and incidentals needed to complete the contract work.

Temporary shoring not required by the plans and installed for the convenience of the contractor's operations shall be considered incidental to work under this contract and will not be measured and paid for under this item.

152. Polyurea Coating, Item SPV.0165.702.

A Description

This special provision describes the application of a polyurea coating system to items and surfaces scheduled, including surface preparation, bug-hole filling, prime coats and top coats.

B Materials

B.1 General

The primary coating material shall be a solvent free, fast-setting (10-45 seconds), 100% polyurea elastomeric coating and lining system formulated to be used for applications requiring a seamless, flexible, waterproof, abrasion and impact resistant surface that may be applied to concrete in low temperature and high humidity.

The polyurea coating system will consist of prime and base / finish coat system.

B.2 References and Standards

American Society for Testing and Materials (ASTM)

ASTM E-1907: Calcium Chloride Test for Moisture Vapor Transmission.

ASTM E-337: Test Method for Measuring Humidity with a Psychrometer.

ASTM D- 4541: Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.

ASTM D-4787: Standard Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates.

Society of Protective Coatings (SSPC)

SSPC SP-10: Near White Metal Blast

SSPC- VIS 1: Visual Standard for Abrasive-Blast Cleaned Steel.

SSPC SP-7: Surface Preparation Specification, Brush-Off Blast Cleaning.

SSPC TU-13: Surface Preparation of Concrete.

National Association of Corrosion Engineers (NACE)

NACE No. 2: Near-White Metal Blast Cleaning.

NACE Standard RP0188: Discontinuity (Holiday) Testing for Protective Coatings.

NACE No. 6: Surface Preparation of Concrete.

International Concrete Repair Institute (ICRI).

ICRI Technical Guidelines 03730: Surface Preparation Guidelines for the Repair of Deteriorated Concrete Resulting from Reinforced Steel Corrosion.

ICRI Technical Guidelines 03731: Guide for Selecting Application Methods for the Repair of Concrete Surfaces.

ICRI Technical Guidelines 03732: Guide for Selecting and Specifying Surface Preparation for Sealers, Coatings and Membranes.

B.3 System Performance Requirements

Material Compatibility: Provide coating, repair materials, primers, bug hole fillers, finish coat and related materials that are compatible with one another and the substrates indicated under conditions of service required as recommended by the manufacturer.

Primary coating material must contain no solvents, and material must be unaffected by cold temperatures / high humidity and be odorless.

B.4 Manufacturers

VersaFlex Incorporated

87 Shawnee Avenue
Kansas City, KS 66105
Phone: (800) 567-6191
www.versaflex.com

Chemline, Inc.
5151 Natural Bridge Road
Saint Louis, MO 63115
Phone: (314) 332-2802
http://chemline-px.rtrk.com/

or approved equivalent.

B.5 Materials

B.5.1 Primer

Isocyanate and resin blend primer for use on metal or concrete substrates. Apply at 160-200 square feet per gallon.

(Typical) 1:1 Mix Ratio Cured Film Properties	Test Method	Typical Value
Solids Content		100%
Shore A Hardness	ASTM D2240	85-92
Elongation	ASTM D412	50-60%
Tensile Strength, psi	ASTM D412	1000
Adhesion to Concrete	Elcometer	300-600 psi
Gel Time-Tack Free	Dependant on ambient temperature	45 minutes-2 hours
Working Time*	Dependent on ambient temperature	45 min/200 gm mass

*Do not exceed 45 minutes – material may appear to be workable, but polymerization has exceeded suitable working time.

B.5.2 Base / Finish Coat

100% solids, rapid curing polyurea. Install by spray. Install at 80 mils. This is minimum recommended thickness.

Cured ProProduct	Test Method	Typical Value
Solids Content		100%
Shore D Hardness	ASTM D 2240	50 D
Elongation	ASTM D 638	250%
Tensile Strength, psi	ASTM D 638	2,125
100% Modulus, psi	ASTM D 638	1,440
Tear Strength, pli, Die C	ASTM D 624	390
Tabor Abrasion, mg. Loss (1000 gms, 1000 rev, H-18)	ASTM D 4060	250
Moisture Vapor Transmission	ASTM E 96	0.025 perms
Tack Free		12-15 Seconds
Gel Time		5 Seconds
Open to Traffic		1 Hour

C Construction

C.1 Submittals

Submit manufacturer's technical data, MSDS and product literature indicating that the products comply with specified requirements. If submitted material is not as specified, submit complete test results from independent lab for all tests listed.

Where possible provide field sample on project substrate under actual field conditions to ensure appropriateness of product for the application and to provide a more accurate representation of the finished product. As a minimum submit two sample coupons (6" x 6") that are representative of the finished coating surface, texture, and color. Approved samples shall serve as basis for acceptance of the work for the duration of the project.

Submit Material Manufacturer's and Equipment Manufacturer's written certification of Approved contractor, contractor's qualifications, and list of project references.

Submit sample of manufacturer's limited warranty and warranty application procedures.

C.2 Quality Assurance

C.2.1 Single Source Responsibility:

Provide primers and undercoat materials produced by the same manufacturer, or recommended by manufacturer, to ensure compatibility, and proper chemical and mechanical bond.

The manufacturer of the specified products shall have in existence, for a minimum of five years. Manufacturer must provide five project histories with names, dates, addresses, and phone numbers of contact persons for projects of similar size, two of which have been completed at least three or more years ago.

C.2.2 Applicator Qualifications:

Engage only factory trained and qualified applicator that has successfully completed 5 years of Polyurea applications with specified material manufacture and having 10 documented projects using polyurea materials on projects of similar size.

Contractor shall have completed a training program in the use of heated plural-component equipment and the specified polymer material. Provide written confirmation from the equipment manufacturer and material manufacturer. Contractor must own and maintain their own plural-component equipment.

C.2.3 Equipment Requirements:

Correct material processing equipment is critical in achieving correct mix for the plural component system specified.

Equipment must be a plural component impingement-mixing unit capable of consistently producing 3,000 psi, 160°F, with output of 2-3 gallon per minute.

Acceptable pumps and spray gun: Gusmer H-3500, Gusmer H-20/35, Graco Reactor using GX-7 400, GX-8 or Fusion spray gun.

C.2.4 Substitutions:

Contractors or manufacturers seeking approval of products other than the specified system must supply cured samples, full product information, technical data with specifications, MSDS and certifications regarding conformity of performance properties from an independent testing laboratory. The product being submitted for approval must meet all requirements of the performance properties specified herein. Contractors seeking approval to install substitute materials shall provide documented proof of training and approved status by equipment and material manufacturers. Elastomer coating hybrids, systems containing polyols or non-amine resins, solvents, weather sensitive systems, and systems that require longer than the specified cure times will not be considered. Omission or non-conformance of any item will result in rejection of the request. Compliance with the above quality assurances must be provided in written form at least 14 days prior to the pre-construction conference.

C.3. Delivery, Storage and Handling

Deliver product in the manufacturer's original, new, unopened packages and containers, clearly marked with manufacturer's identification, printed instructions, lot numbers and shelf life expiration date for each component.

Store materials not in use in tightly covered containers in a dry, well-ventilated area at an ambient temperature between 65° - 90° F, away from sunlight, heat, or other hazards.

C.4. Project Conditions

For temperatures below 35°F, consult manufacturer.

Concrete to receive Polyurea Coating shall have been designed and installed as approved by architect / engineer to minimize random cracking and shall contain properly designed control and isolation joints as approved by architect / engineer.

Do not apply sealers or membrane curing agents to concrete. Moisture curing of concrete or the use of sodium silicate-based curing compounds is recommended.

Concrete must be sound with a minimum of 3,000 psi compressive strength, and a minimum tensile strength of 350 psi. The suitability of the concrete surface shall be determined prior to application of primer or coating by ASTM D-4541 "Standard Test Method for Pull Off Strength of Coatings Using Portable Adhesion Testers", also known as the Elcometer method. Generally, tensile strengths of >200 psi are considered suitable for the application of Polyurea coating directly to concrete.

Provide adequate ventilation, scaffolding, lighting and clean, drinkable water supply.

Surfaces shall be kept free of traffic once surface preparation has begun, and no trades shall be permitted in areas during the application and curing of the coating.

Protect adjacent surfaces from damage resulting from work of this trade. If necessary, mask and / or cover adjacent surfaces, fixtures, equipment, etc. by suitable means.

Do not apply material over frozen or ice capped surfaces.

Do not apply coating / lining system over oil soaked or chemically contaminated substrates.

C.5. Manufacturer's Warranty

The product manufacturer shall provide a one year limited warranty for the work specified against becoming unserviceable from either defective or non-conforming materials or workmanship. Warranty shall commence on the Date of Substantial Completion.

C.6 Site Inspection and Testing

Perform Calcium Chloride Tests according to ASTM E-1907.

Ensure that environmental and site conditions are suitable for application and curing. Temperature of the surface to be coated must be at least 5° above the dew point temperature of the air. Check dew point according to ASTM E-337 or by using approved digital instrument.

Polyurea coating will follow the contours of the substrate. Notification that the substrate is ready to be coated indicates the owner's acceptance of the substrates.

Inspect surfaces for contamination and other critical factors at time of installation. Surfaces to receive coatings must be structurally sound, thoroughly dry and concrete fully cured before coatings are applied. Report in writing to architect / engineer, with copy to manufacturer, of deficiencies that could impair work. Do not proceed with coating application until unsatisfactory conditions have been corrected.

C.7 Concrete / Steel Repairs

Concrete:

Concrete must be structurally sound and free of all voids and delaminations. (Refer to ICRI Technical Guidelines 03730 and 03731, or manufacturer's recommendations.)

Cracks in excess of 1/16" shall be routed and sealed according to manufacturers recommended details.

C.8 Surface Preparation

Concrete:

Degrease as necessary using high-pressure water and biodegradable detergents. Rinse thoroughly.

Remove all existing coatings and linings by best (acceptable) method available. Only well-bonded coatings and linings may remain. Consult manufacturer.

Remove all laitance, contamination and curing compounds, by shotblasting, grit blasting, or other method approved by manufacturer to achieve a profile equal ICRI concrete surface preparation CSP5. Acid etching is not an acceptable means of surface preparation.

Surface must be clean, sound, and dry prior to application.

Refer to ICRI Guide 03732 and NACE No. 6 / SSPC-SP 13.

"Key-in" all termination points not in "natural" termination points according to manufacturer's details.

Fiberwrap:

Surface must be clean, sound, and dry prior to application.

Grit blast prior to application.

C.9 Priming / Bug-Hole Filling / Sealing

Prime concrete substrates with the appropriate primer system. Follow manufacturer's recommendations and coverage rates taking care not to allow primer to puddle or fill the achieved anchor profile.

Fill bug-holes as required with manufacturer's recommended product. Press material firmly into voids.

Seal control joints, perimeter of all penetrations, supports, etc., and at all inside corners at changes in plane (i.e., wall/slab intersections) according to manufacturer's recommendations.

C.10 Installation

Apply Polyurea coating in a single application according to manufacturer's instructions and detail drawings to a total thickness of a nominal 100 mils. Spray apply only through required equipment. Maintain an even distance from surface providing a uniform application with a 50% overlap from one pass to the next.

Repairs or re-coating after recoat window:

Abrade surface to be repaired and 6" beyond the repair area to roughen and dull surface.

Soften and clean surface with MEK or acetone. Wipe substrate dry with a clean rag.

Reapply Polyurea Coating.

C.11 Cleaning

Cleanup: At the end of each workday, remove rubbish, empty containers, rags and other discarded items from the site.

C.12 Field Quality Control

Holiday Testing: Test the entire surface of protective liner by spark testing at 100 volts per dry mil of lining thickness as per NACE Standard RP0188 or ASTM D-5162 (steel) or ASTM D-4787 (concrete). Mark and repair per manufacturer's recommendations.

Adhesion Testing: Per manufacturer's recommendations following ASTM D 4541.

Mil Thickness Testing: ASTM Committee D01.23 Non-Destructive Test Method Using Ultrasonic Gauge. Mil thickness also may be verified by logging the volume of material sprayed through the automatic counter located on the special spray equipment.

D Measurement

The department will measure Polyurea Coating by the square 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.0165.702	Polyurea Coating	SF

Payment is full compensation for furnishing and applying the polyurea coating system.

153. Stay-In-Place Metal Deck Forms B-53-304, Item SPV.0165.703; Stay-In-Place Metal Deck Forms B-53-306, Items SPV.0165.704.

A Description

Work under this item applies to the use of stay-in-place (SIP) metal deck forms to construct cast-in-place bridge decks in the center girder bays of Structures B-53-304 and B-53-306 where lateral bracing is present as shown on the plans.

Use conventional forming for all other deck areas on Structures B-53-304 and B-53-306, including exterior girder bays and overhangs. SIP metal deck forms are not allowed in these areas.

B Materials

Fabricate SIP metal deck forms and supports from steel conforming to ASTM A653 having a galvanized coating designation of G210. Use any grade except Grade 50, Class 3.

Galvanize SIP metal deck form appurtenances and hardware according to ASTM A123 and A153.

C Construction

C.1 General

Provide and install SIP metal deck forms as the bottom forms for the cast-in-place concrete bridge decks in the center girder bays of Structures B-53-304 and B-53-306. The use of the SIP metal deck forms is subject to the limitations in this special provision and as indicated on the plans.

Coordinate the SIP metal deck forms and the steel shop drawings. Position the deck forms so that they do not conflict with the top flange lateral bracing.

Locate transverse steel deck form panel construction joints at the bottom of a flute. Field drill ¼-inch diameter weep holes at 12-inch maximum spacing along the joint.

Do not rest form sheets directly on the top of the girder flange or the lateral bracing members. Sheets shall be securely fastened to form supports and shall have a minimum bearing length of one inch at each end.

For all reinforcement, maintain the design concrete cover required by the plans. For reinforcement in the bottom of the deck, cover shall be measured from the top of the flutes.

Use SIP metal deck forms that provide and maintain the dimensions and configuration of the original slab in regards to minimum thickness and slope. Maintain the plan dimensions of both layers of primary deck reinforcement from the top surface of the concrete deck.

Clean and recoat all damaged steel form panel galvanizing prior to placement of deck concrete. Repair damaged galvanizing using methods described in ASTM A780. Thoroughly clean, wire brush, and paint it with two coats of galvanizing compound to the satisfaction of the engineer. Do not touch up minor heat discoloration in areas of welds.

Vibrate concrete to avoid honeycomb and voids, especially at construction joints, expansion joints, valleys and ends of form sheets. Use approved pouring sequences. The direction of concrete placement will be such that the upper layer of the form overlap is loaded first.

Do not use calcium chloride or any other admixture containing chloride salts in the concrete.

The seam between the angles / support and the beam should be caulked or grouted.

C.2 Submittals

Provide shop drawings and design calculations that are signed and sealed by a registered professional engineer licensed in the State of Wisconsin for each structure where the SIP metal deck forms are to be used. Submit three copies of the shop drawings and design calculations for review and acceptance before ordering material and starting construction. Show on the drawings the grade of steel, the physical and section properties for all deck form members and supporting elements, the method of support and grade adjustment, length size and spacing of welds, deflections, methods of end sealing against concrete or grout leaks, and the method for handling, storage and erection of the SIP metal deck panels. Do not install SIP metal deck forms until the forming system has been approved by the engineer. Review and acceptance of the installation plan by the department does not relieve the contractor of responsibility for properly designing and constructing the bridge decks with the use of SIP metal deck forms.

C.3 Design

Design SIP metal deck forms such that they in no way infringe upon the concrete outline of the slab and haunches shown on the plans.

Compute physical design properties in conformance with the requirements of the latest edition of the AISI specification for the “Design of Cold Formed Steel Structural Members.”

The maximum self-weight of the SIP metal deck forms, plus the weight of the concrete, shall not exceed 20 psf.

Design the forms on the basis of dead load of form, reinforcement, and plastic concrete plus 50 psf for construction loads.

Do not allow deflection under the weight of the forms, reinforcement and plastic concrete to exceed 1/180 of the form span, or ½-inch, whichever is less, for form spans of 10 feet or less or 1/240 of the form span or ¾ inch, whichever is less, for form spans greater than 10 feet.

Use a design span of the form equal to the clear span of the form plus 2 inches.

Design the clearance between the surface of permanent forms and any bar reinforcement to be no less than 1½-inch.

Do not consider the SIP metal deck form as lateral bracing for compression flanges of supporting structural members.

Secure forms to the supporting members by means other than welding directly to the member. Welding to the girder flanges is not allowed.

D Measurement

The department will not measure Stay-In-Place Metal Deck Forms by the square 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.0165.703	Stay-In-Place (SIP) Metal Deck Forms B-53-304	SF
SPV.0165.704	Stay-In-Place (SIP) Metal Deck Forms B-53-306	SF

Payment is full compensation for supplying a design and shop drawings; and fabricating, providing and installing SIP metal deck forms and supports.

154. Longitudinal Grooving Bridge Deck, Item SPV.0165.701.

A Description

This special provision describes providing longitudinal deck grooves parallel to the centerline of the roadway prior to opening the bridge to traffic as directed by the engineer.

B Materials

Use a grooving machine containing blades mounted on a multi-blade arbor on a self-propelled machine built for grooving hardened concrete surfaces.

Use a grooving machine with a depth control device that detects variations in the deck surface and adjusts the cutting head height to maintain a specified depth of groove.

Equip the grooving machine with a guide device to control multi-pass alignment.

C Construction

Groove the pavement longitudinally without damaging the concrete deck surface.

Complete a longitudinal grooving operation that results in a uniformly grooved deck surface.

Cut grooves continuously across the deck width to within 18 inches of the barrier rail, curb line, or median divider. If metal floor drains extend more than 18 inches from the barrier rail, curb line, or median divider, all grooves on the bridge deck surface are to end within 6 inches of the floor drain perimeter.

At skewed metal edged expansion joints in the bridge deck surface, end all grooves on the bridge deck surface within 6 inches of the joint leaving no ungrooved surface adjacent to each side of the joint greater than 6 inches in width on the deck side of the expansion joints.

Produce grooves that are continuous across construction joints or other joints in the concrete deck surface less than ½-inch wide.

Construct longitudinal grooves with the following criteria:

Width (In)	Depth (In)	Spacing C-C (In)	Width Tolerance (In)	Depth Tolerance (In)	Spacing Tolerance (In)
1/8	3/16	3/4	0 to 1/16	± 1/16	± 1/16

Collect, remove and dispose of solid material residue and liquid waste resulting from grooving operations by vacuuming in a manner satisfactory to the engineer.

D Measurement

The department will not measure Longitudinal Grooving Bridge Deck by the square foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.701	Longitudinal Grooving Bridge Deck	SF

Payment is full compensation for providing the required machinery and operators; for grooving, for collecting, removing and properly disposing of all waste materials.

(1/5/2017)

155. Wall Concrete Panel Mechanically Stabilized Earth B-53-63, Item SPV.0165.851; Wall Concrete Panel Mechanically Stabilized Earth B-53-64, Item SPV.0165.852; Wall Concrete Panel Mechanically Stabilized Earth B-53-65, Item SPV.0165.853; Wall Concrete Panel Mechanically Stabilized Earth B-53-66, Item SPV.0165.854; Wall Concrete Panel Mechanically Stabilized Earth B-53-67, Item SPV.0165.855; Wall Concrete Panel Mechanically Stabilized Earth B-53-69, Item SPV.0165.856; Wall Concrete Panel Mechanically Stabilized Earth B-53-70, Item SPV.0165.857.

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 at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design 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 shop drawings to the engineer conforming to 105.2 with electronic submittal to the fabrication library under 105.2.2. Certify that shop drawings conform to quality control standards by submitting department form DT2329 with each set of shop drawings. Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

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

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

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. 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 feet in height based on site topography subject to the approval by the Structures Design Section. The design of the steel reinforcement within the panels shall be based on one-way bending action. Design the wall panels and joints between panels to accommodate a maximum differential settlement of 1 foot over a 100-foot length, unless the plans indicate other.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. All soil reinforcement layers shall be connected to facings. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 31 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 18 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

All soil reinforcement required for the reinforced soil zone shall be connected to the face panels. The reinforcement and the reinforcement/facing connection strength shall be designed to resist maximum factored reinforcement loads according to AASHTO LRFD Section 11.10.6. Facing connection strength shall be defined as the resistance factor times the failure load, or the load at 0.5 inch deformation times 0.9, whichever is less. The nominal long term design strength in steel reinforcement and connections shall be based upon assumed conditions at the end of the design life.

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

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

Wall facing units shall be installed on a concrete leveling pad. The bottom units shall be horizontal and centered on the leveling pad. The minimum thickness of the leveling pad shall be 6-inches. The minimum width of the leveling pad shall be 12-inches.

B.3 Wall System Components

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

B.3.1 Wall Facing

Wall facing shall consist of modular precast concrete face panels produced by a wet cast process and have cast-in-place concrete pads or footings. The concrete panels shall have a minimum strength of 4000 psi at 28 days. The concrete for the panels shall be air entrained, with an air content of 6% +/- 1.5%. All materials for the concrete mixture for the panels shall meet the requirements of standard spec 501. The panel edges shall be configured so as to conceal the joints. The detail shall be a shiplap, tongue and groove or other detail adequate to prevent vandalism or ultraviolet light damage to the backside of the wall joint covering. Joints between panels shall be no more than 0.75 inch. Use full wall height slip joints at points of differential settlement when detailed on the plan. Horizontal joints must be provided with a compressible bearing material to prevent concrete to concrete contact.

For cast in place concrete cap or coping, use poured concrete Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

For concrete leveling pad, use Grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

A minimum of two bearing pads shall be used per panel. The allowable bearing stress shall not exceed 900 psi. The bearing pads shall be preformed EPDM rubber conforming to ASTM D2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80, or high- density polyethylene pads with a minimum density of 0.034 lb/in^3 according to ASTM D1505.

An 18-inch wide geotextile shall be used on the backface of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

B.3.2 Backfill

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

Place backfill in a zone extending horizontally from the back face of the wall facing to 1 foot minimum beyond the end of the reinforcement and extending vertically from the top of the leveling pad to a minimum of 3 inches above the final reinforcement layer.

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

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

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

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

In addition, backfill material shall meet the following requirements.

Test	Method	Value	
		(Galvanized)	(Aluminized Type 2)
pH	AASHTO T-289	5.0-10.0	5.0 – 9.0
Sulfate content	AASHTO T-290	200 ppm max.	
Chloride content	AASHTO T-291	100 ppm max.	
Electrical Resistivity	AASHTO T-288	3000 ohm-cm min.	1500 ohm-cm min.
Organic Content	AASHTO T-267	1.0% max.	
Angle of Internal Friction	AASHTO T-236[1]	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2.)	

[1] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM D5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1” material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. For the additional required testing for every 2000 cubic yards of backfill placement, if the characteristic of the backfill and/or the source has not changed then Angle of Internal Friction tests are not included in the additional required testing. All certified reports of test results shall be less than 6 months old and performed by a certified independent laboratory.

B.3.3 Soil Reinforcement

All steel portions of the wall system exposed to earth shall be galvanized. All soil reinforcement and attachment devices shall be carefully inspected to ensure they are true size and free from defects that may impair the strength and durability. Soil reinforcement shall be galvanized or aluminized Type 2. Galvanized soil reinforcement shall be according to AASHTO M 111 or ASTM A641. Aluminized soil reinforcement shall be according to ASTM A463 Aluminized Type 2-100, SS, Grade 50, Class 2. Design of galvanized soil reinforcement shall be according to Section 11.10.6.4.2 of the current AASHTO LRFD Specifications. The design life of steel soil reinforcements shall comply with AASHTO LRFD. Aluminized soil reinforcement shall be limited 16 years of steel protection. Aluminized steel shall only be used on soil reinforcement elements and shall not be used on facing connections or any other steel portion of the wall system. Steel soil reinforcement shall be prefabricated into single or multiple elements before galvanizing.

C Construction

C.1 Excavation and Backfill

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

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

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

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

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

C.2 Compaction

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

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

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

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

C.3 Wall Components

C.3.1 General

Erect panel facing and other associated elements according to the wall manufacturer’s construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing.

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

C.3.2 Steel Layers

Place the steel reinforcement full width in one piece as shown on the plans. No splicing will be allowed. Maintain elements in position during backfilling.

C3.3 Panel Tolerances

As backfill material is placed behind a panel, maintain the panel in its proper inclined position according to the supplier specifications and as approved by the engineer. The supplier shall specify the back batter so that the final position of the wall is vertical. Vertical tolerances and horizontal alignment tolerances shall not exceed ¾-inch when measured along a 10-foot straight edge. The maximum allowable offset in any panel joint shall be ¾-inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed ½-inch per 10 feet of wall height. Erect the precast face panels to ensure that they are located within 1 inch from the contract plan offset at any location to ensure proper wall location at the top of the wall. Provide a ¾-inch joint separation between all adjacent face panels to prevent direct concrete-to-concrete contact. Maintain this gap by the use of bearing pads and/or alignment pins. Failure to meet this tolerance shall cause the engineer to require the contractor to disassemble and re-erect the affected portions of the wall. In addition, imperfect molding, honeycombing, cracking or severe chipping of panels shall be cause of panel rejection.

C.4 Quality Management Program

C.4.1 Quality Control Plan

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

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

An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.

The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.

A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.

Descriptions of stockpiling and hauling methods.

An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

Location of the QC laboratory, retained sample storage, and other documentation.

A summary of the locations and calculated quantities to be tested under this provision.

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 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

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.

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.

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

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

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.

The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

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.

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.

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)

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.

Requesting that testing personnel perform additional sampling and testing.

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

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.

Production test results, and results from other process control testing, may be considered when resolving a dispute.

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 Wall Concrete Panel Mechanically Stabilized Earth by the square foot, acceptably completed. The department will compute the measured quantity from the theoretical pay limits the contract plans show. The department will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The department will make no allowance for as-built quantities.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.851	Wall Concrete Panel Mechanically Stabilized Earth R-53-63	SF
SPV.0165.852	Wall Concrete Panel Mechanically Stabilized Earth R-53-64	SF
SPV.0165.853	Wall Concrete Panel Mechanically Stabilized Earth R-53-65	SF
SPV.0165.854	Wall Concrete Panel Mechanically Stabilized Earth R-53-66	SF
SPV.0165.855	Wall Concrete Panel Mechanically Stabilized Earth R-53-67	SF
SPV.0165.856	Wall Concrete Panel Mechanically Stabilized Earth R-53-69	SF
SPV.0165.857	Wall Concrete Panel Mechanically Stabilized Earth R-53-70	SF

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

The department will pay separately for parapets, traffic barriers, railings, and other items above the wall cap or coping.

156. Compost, Item SPV.0180.001.

A Description

This special provision describes furnishing and installing compost as shown on the plans or as directed by the engineer and as hereinafter provided.

B Materials

Provide compost that:

1. Is a well-decomposed, stable, weed-free, organic, commercially manufactured material resulting from the biological degradation and transformation of plant or animal-derived materials under controlled conditions designed to promote aerobic decomposition.
2. Is mature with regard to its suitability for serving as an erosion control Best Management Practice (BMP) as defined in the table below.
3. Is stable with regard to oxygen consumption and carbon dioxide generation does not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth.
4. Does not possess objectionable odors has a moisture content with no visible free water or dust produced when handling the material.

Compost feedstock may include, but is not limited to, yard waste, clean chipped wood, farm crop residue, farm animal manure, or vegetable food waste. Do not use materials that have been treated with chemical preservatives as a compost feedstock or as wood chips.

Test according to the United States Composting Council's “Test Methods for Examining of Composting and Compost (TMECC)”. Provide compost with the United States Composting Council's Seal of Testing Assurance Program (STA) certification and STA product label. The compost producer must be a participant in the United States Composting Council's Seal of Testing Assurance program.

Provide quality control documentation that includes the following:

1. The compost technical data sheet with the feedstock by percentage in the final compost product.
2. A certification that the compost meets federal and state health and safety regulations.
3. A copy of the producer's STA certification.
4. A certified report of tests performed by an STA-certified lab, verifying that the compost meets the requirements in the table below.

Compost must comply with the following:

PROPERTY	TEST METHOD	REQUIREMENT
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	95% passes through 3/8 inch screen.
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	5.5-8.0
Organic Matter/Ash Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	Minimum 40% organic matter and maximum 60% ash content
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal %>4mm fraction, dry mass (weight) basis	Less than 1%

Immediately remove from the project, compost not conforming to the above requirements or taken from a source other than those tested and replace the compost at no cost to the department.

The engineer reserves the right to sample compost at the jobsite.

C Construction

C.1 Compost Application

Apply compost to a uniform depth of 3 inches. Apply compost using an engineer-approved spreader unit (i.e. bulldozer, side discharge manure spreader, etc.) or preferably a pneumatic (blower) unit or other unit that propels the product directly at the soil surface. Apply compost approximately 3 feet beyond and overlapping all edges of the bare soil surfaces designated to receive the compost. Do not apply compost in the months of July and August unless approved by the engineer. Compost installations will retain solar energy, heating the compost beyond the tolerance of the seed, rendering it unviable. Reapplication of seed will be required if sufficient vegetation is not established. Rototill the compost blanket into the existing material to a depth of five inches.

C.2 Maintenance

If the compost blanket will not be subsoiled, maintain compost blanket depth until the project has been completed or directed otherwise. Routinely inspect blanket for any material dislodgement. Replace and redress any dislodged material and reseed if necessary. If rutting occurs, regrade after re-subsoiling and rototilling.

If sediment from upgradient of the infiltration area enters the infiltration basin, remove the sediment, place

three inches of compost and re-rototill the repaired area to a depth of five inches.

D Measurement

The department will measure Compost by the square yard of material, 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. 0180.001	Compost	SY

Payment is full compensation for loading, hauling, stockpiling, blending, and placing and rototilling compost.

(20180523)

157. Weed Barrier Fabric, Item SPV.0180.500.

A Description

This special provision describes furnishing and installing a geotextile fabric for groundcover around trees and plants as shown in the plans.

B Materials

Furnish geotextile fabric that is a woven polypropylene that allows air, water, and nutrients to pass through but prevents the growth of weeds and grasses. The material must be insect, rodent, mildew, and rot resistant and be delivered in a wrapping that protects it from ultraviolet radiation and from abrasion due to shipping and hauling. Keep material dry until installed. Clearly mark rolls to show material type.

The fabric must be UV resistant and have a written 5-year guarantee from the manufacturer. The geotextile must meet or exceed the following physical properties:

TEST	METHOD	VALUE
Minimum weight	ASTM D5261	3.0 oz/sy
Minimum grab tensile strength	ASTM D4632	175 lbs x 115 lbs
Minimum apparent breaking elongation	ASTM D4632	25%
Minimum puncture strength	ASTM D6241	70 lbs
Minimum trapezoid tear strength	ASTM 4533	75 lbs x 60 lbs
Minimum water permeability	ASTM 4491	15 gpm/sf
Ultraviolet exposure	ASTM D4355	70% strength after 2500 hrs xenon arc exposure

C Construction

Remove construction materials, stone, or other debris larger than 2" in length or diameter, debris, and trash from area receiving Weed Barrier Fabric. Lay the fabric flat on the smoothed soil and fit as close to the plants as possible. Provide a 4-inch overlap at adjoining sheets. Secure the fabric with T-shaped steel pin anchors sufficiently long to prevent the fabric from moving.

D Measurement

The department will measure Weed Barrier Fabric 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.0180.500	Weed Barrier Fabric	SY

Payment is full compensation for preparing the planting areas for fabric, furnishing and installing all materials.

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 6 *(number)* TrANS Apprentice(s) be utilized on this contract.

3) The maximum duration of reimbursement is two years as a TrANS graduate plus time in apprentice status.

4) If a TrANS program is not available in the contractor's area and another training program is utilized, payment of On-the-Job Training hours may be approved by the Wisconsin Department of Transportation (WisDOT) if the training program meets the established acceptance criteria. Only On-the-Job Training Hours accumulated after WisDOT approval will be reimbursed as specified under Items ASP.1T0G and ASP.1T0A. For more information, contact the Disadvantaged Business Enterprise Office at the phone numbers listed above.

5) WisDOT reserves the right to deny payments under items ASP.1T0G and ASP.1T0A if the contractor either fails to provide training or there is evidence of a lack of good faith in meeting the requirements of this training special provision.

I. RATIONALE AND SPECIAL NOTE

The $5.00 per hour now being paid for TrANS placements is intended to cover the duration of two years to allow for reaching entry-level laborer status. An additional incentive, the $5.00 rate, would promote movement into the underutilized skilled trades' apprenticeships and applies until the individual completes their apprenticeship. These incentives benefit TrANS candidates by giving them a better opportunity to enter a skilled trade; benefits contractors who will be assisted in meeting their EEO profiles and goals; and benefits the public who will see the program reinforce larger public-private employment reform in Wisconsin. The pool of TrANS graduates was created for the purpose of addressing underutilization in the skilled trades, an objective that is further reinforced by a parallel retention pilot program, known as the Companywide Reporting. *Whether or not reimbursement is involved, the WisDOT reassures contractors who are in the Companywide Program that TrANS placements still contribute toward fulfilling the new hire goal of 50% women and minorities.* Based on data administered by United States Department of Labor (US DOL), the highway skilled trades remain underutilized for women statewide (less than 6.9%); and for minorities in all counties (% varies by county).

NOTE: *Unless using other advancement strategies, contractors are encouraged to use some or all of this monetary incentive to offset the cut in hourly wages an individual may incur when entering an apprenticeship if the full general laborer hourly rate has been previously paid. No special accounting measures are required.*

II. IMPLEMENTATION

The implementation of ASP 1 is intended to cover only the amount of time it takes for underutilization to be resolved across the trades. This will be measured annually at the county and/or state levels using data administered by WisDWD in relation to goals set by the USDOL-

OFCCP. With appropriate state and federal approvals, we may also do some measurement at the company level.

It is the contractor's responsibility to note on their Certified Payrolls if their employee is a TrANS graduate or a TrANS apprentice. The District EEO Coordinators utilize the information on the Certified Payrolls to track the hours accumulated by TrANS Graduates and TrANS apprentices on WisDOT contracts. Payment under this ASP 1 is made based on the hours recorded off of the Certified Payrolls. Tracking may eventually include improved linkages with the WisDWD apprentice database, information from company and committee level sources.

TrANS is nondiscriminatory by regulation, and is a tool for optional use by contractors to address the underutilization of women and minorities as laborers and apprentices in our industry's skilled trades.

IV. *TRANS TRAINING*

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided to employees enrolled in apprenticeship and on-the-job training programs as follows:

The contractor shall provide on-the-job training aimed at developing full journey workers in the type of trade or job classifications involved. In the event the contractor subcontracts a portion of the contract work, the contractor shall determine how many, if any, of the trainees are to be trained by the subcontractor provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract.

Training and upgrading of minorities and women toward journey workers status is a primary objective of this training special provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority trainees and women trainees); to the extent such persons are available within a reasonable area of recruitment. The contractor will be given an opportunity and will be responsible for demonstrating the steps that they have taken in pursuance thereof, prior to determination as to whether the contractor is in compliance with this training special provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journey workers status or in which they have been employed as a journey worker. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the contractor's records should document the findings in each case.

V. APPRENTICESHIP TRAINING

The Federal Highway Administration's (FHWA) policy is to require full use of all available training and skill improvement opportunities to assure increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The FHWA On-the-Job Training (OJT) Program requires the State transportation agencies (STAs) to establish apprenticeships and training programs targeted to move women, minorities, and disadvantaged individuals into journey-level positions to ensure that a competent workforce is available to meet highway construction hiring needs, and to address the historical under-representation of members of these groups in highway construction skilled crafts.

The OJT Supportive Services (OJT/SS) Program was established in Title 23 Code of Federal Regulations (CFR), Part 230) to supplement the OJT program and support STA training programs by providing services to highway construction contractors and assistance to highway construction apprentices and trainees. The primary objectives of OJT/SS are:

(1) To increase the overall effectiveness of the State highway agencies' approved training programs.
(2) To seek other ways to increase the training opportunities for women, minorities, and disadvantaged individuals.

The STAs are responsible for establishing procedures, subject to the availability of Surface Transportation and Bridge Funds under 23 U.S.C. §140(b*)* (Nondiscrimination), for the provision of supportive services with respect to training programs approved under 23 CFR, Part 230(a*)* (Equal Employment Opportunity on Federal and Federal-aid Construction Contracts – including Supportive Services).

The contractor and subcontractor shall maintain records to demonstrate compliance with these apprenticeship requirements. Reasonable exemptions and modifications to and from any or all of these requirements will be determined by the Wisconsin Department of Transportation-Civil Rights Office. A request for an exemption or modification, with justification, shall be made in writing, addressed to WisDOT Civil Rights Office, 4802 Sheboygan Avenue, P.O. Box 7965, Rm. 451, Madison, WI 53707.

ADDITIONAL SPECIAL PROVISION 3

DISADVANTAGED BUSINESS ENTERPRISE [DBE] PROGRAM IMPLEMENTATION

1. Description

a. The federal DBE program requirements outlined in the Code of Federal Regulations at 49 CFR Part 26 apply to this Wisconsin Department of Transportation contract. WisDOT is a recipient of federal funds and this contract includes federal funds. United States Department of Transportation Federal DBE Program requires the following provisions:

(1) Pursuant to the federal DBE program regulation at 49 CFR Part 26, a contractor's failure to comply with any provision of the DBE regulations will be considered a material breach of contract. This is non-negotiable. If a contractor fails to carry out the DBE program and Title VI nondiscrimination requirements of its contracts, the following sanctions will be assessed depending upon the facts, reasoning, severity and remedial efforts of the contractor: termination of contract, withholding payment, assessment of monetary sanctions, assessment of liquidated damages and/or suspension/debarment proceedings that may result in the disqualification of the contractor from bidding for a designated period of time.

(2) The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains the federal fund recipient's [DOT] written consent. Unless [WisDOT] consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

b. The Wisconsin Department of Transportation [WisDOT] is committed to the compliant administration of the DBE Program. Each WisDOT Secretary affirms this commitment with his/her signed assurance. https://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: https://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:
   https://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/dbe-ucp-directory.xlsx

b. The DBE office is also available to assist at 414-438-4583 or 608-267-3849.

9. Counting DBE Participation

Assessing DBE Work

a. The department will only count the DBE usage towards the contract DBE goal if the DBE firm is certified as a DBE by one of the unified certification program agencies. If a firm becomes DBE certified before entering into a subcontract, the department may consider that DBE usage towards the contract goal. The department only counts the value of the work a DBE actually performs towards the DBE goal. The department assesses the DBE work as follows:

b. The department counts work performed by the DBE's own resources. The department includes the cost of materials and supplies the DBE obtains for the work. The department also includes the cost of equipment the DBE leases for the work. The department will not include the cost of materials, supplies, or equipment the DBE purchases or leases from the prime contractor or its affiliate, except the department will count non-project specific leases the DBE has in place before the work is advertised.

c. The department counts fees and commissions the DBE charges for providing a bona fide professional, technical, consultant, or managerial services. The department also counts fees and commissions the DBE charges for providing bonds or insurance. The department will only count costs the engineer deems reasonable based on experience or prevailing market rates.

d. If a DBE subcontracts work, the department counts the value of the subcontracted work only if the DBE's subcontractor is also a DBE.

e. The contractor shall maintain records and may be required to furnish periodic reports documenting its performance under this item.

f. It is the prime contractor’s responsibility to determine whether the work that is committed and/or contracted to a DBE certified firm can be counted for DBE credit by referencing the work type and NAICS code listed for the DBE firm on the Wisconsin UCP DBE Directory.

g. It is the prime contractor’s responsibility to assess the DBE firm’s ability to perform the work for which s/he is committing/contracting the DBE to do. Note that the department encourages the prime contractor to assist and develop DBE firms to become fully knowledgeable contractors to successfully perform on its contracts.

10. Commercially Useful Function

a. Commercially useful function is evaluated after the contract has been executed, while the DBE certified firm is performing its work items. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved.

b. The department uses Form DT1011: DBE Commercially Useful Function Review and Certification to evaluate whether the DBE is performing a commercially useful function. WisDOT counts expenditures of a DBE toward the DBE goal only if the DBE is performing a commercially useful function on that contract.

c. A DBE is performing a commercially useful function if the following conditions are met:
   (1) For contract work, the DBE is responsible for executing a distinct portion of the contract work and it is carrying out its responsibilities by actually performing, managing, and supervising that work.
   (2) For materials and supplies, the DBE is responsible for negotiating price, determining quality and quantity, ordering, and paying for those materials and supplies.

11. Credit Evaluation for Trucking

All bidders are expected to adhere to the department's current trucking policy posted on the HCCI website at https://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/trucking-utilization-policy.pdf

12. Credit Evaluation for Manufacturers, Suppliers, Brokers

The department will calculate the amount of DBE credit awarded to a prime using a DBE firm for the provisions of materials and supplies on a contract-by-contract basis. The department will count the material and supplies that a DBE provides under the contract for DBE credit based on whether the DBE is a manufacturer, supplier or broker. Generally, DBE crediting measures and evaluates the DBE owner's role, responsibility and contribution to the transaction: maximum DBE credit when the DBE manufactures materials or supplies; DBE credit decreases when the DBE solely supplies material and minimal credit is allotted when the DBE's role is administrative or transactional.

It is the bidder's responsibility to find out if the DBE is considered a supplier or a manufacturer before listing them on Commitment to Subcontract to DBE form DT1506.

a. Manufacturers
   (1) A manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.
   (2) If the materials or supplies are obtained from a DBE manufacturer, count **100%** percent of the cost of the materials or supplies toward DBE goals.

b. Regular Dealers of Material and/or Supplies
   (1) A regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
   (2) If the materials or supplies are purchased from a DBE regular dealer, count **60%** percent of the cost of the materials or supplies toward DBE goals.
   (3) At a minimum, a regular dealer must meet the following criteria to be counted for DBE credit:
      i. The DBE firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
      ii. The DBE firm must both own and operate distribution equipment for the product--bulk items such as petroleum products, steel, cement, gravel, stone, or asphalt. If some of the distribution equipment is leased, the lease agreement must accompany the DBE Commitment form for evaluation of the dealer's control before the DBE office approves the DBE credit.

c. Brokers, Transaction Expediters, Packagers, Manufacturers Representatives
   (1) No portion of the cost of the materials, supplies, services themselves will count for DBE credit; however, WisDOT will evaluate the fees or commissions charged when a prime purchases materials, supplies or services from a DBE certified firm which is neither a manufacturer nor a regular dealer, namely: brokers, packagers, manufacturers' representatives or other persons who arrange or expedite transactions.
   (2) Brokerage fees have historically been calculated as **10%** of the purchase amount.
   (3) WisDOT may count the amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site.
   (4) The evaluation will review the contract need for the item/service, review the sub-contract or invoice for the item/service, compare the fees customarily allowed for similar services to determine whether they are reasonable.

When DBE suppliers are contracted, additional documentation must accompany the DT1506 and Attachment 'A' forms. An invoice or bill-of-sale that includes the company names of the bidder and the DBE supplier and documentation of the calculations used as the basis for the purchase agreement, subcontract or invoice. *WisDOT recognizes that the amount on the Attachment 'A' form may be more or less than the amount on the invoice*. Please respond to the following questions and submit with your DBE Commitment Form.

1. What is the product or material?
2. Is this item in the prime's inventory or was the item purchased when contract was awarded?
3. Which contract line items were referenced to develop this quote?
4. What is the amount of material or product used on the project?

13. Credit Evaluation for DBE Primes

Wisconsin DOT calculates DBE credit based on the amount and type of work performed by DBE certified firms. If the prime contractor is a DBE certified firm, the department will only count the work that DBE prime contractor performs with its own forces for DBE credit. We will also calculate DBE credit for the work performed by any other DBE certified subcontractor, DBE certified supplier, DBE certified manufacturer on that contract in that DBE's approved work areas/NAICS code. Crediting for manufacturers and suppliers is calculated consistent with paragraph 12 of this document and 49 CFR Part 26.

14. Joint Venture

If a DBE performs as a participant in a joint venture, the department will only count that portion of the total dollar value of the contract equal to that portion of the work that the DBE performs with its own forces for DBE credit.

15. Mentor Protégé

a. If a DBE performs as a participant in a mentor protégé agreement, the department will count for credit the portion of the work performed by the DBE protégé firm.

b. DBE credit will be evaluated and confirmed by the DBE Office for any contracts on which the mentor protégé team identifies itself to the DBE Office as a current participant of the Mentor Protégé Program.

c. Refer to WisDOT's Mentor Protégé guidelines for guidance on the number of contracts and amount of DBE credit that can be counted on any WisDOT project.

16. DBE Replacement or Termination

Contractual Requirement

The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains written consent from the Department's DBE Office. If the Department does not provide consent to replace or terminate a DBE firm, the prime contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

Contractor Considerations

a. A prime contractor cannot terminate and/or replace a DBE subcontractor listed on the approved Commitment to Subcontract to DBE Form [DT1506] without prior written consent from the DBE Office. This includes, but is not limited to, instances in which a prime contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

b. If a prime contractor feels it is necessary to replace or terminate a DBE firm that has been approved for DBE credit toward its contract, s/he will be required to provide reasons and documentation to support why the prime cannot fulfill the contractual commitment that it made to the Department regarding the DBE utilization.

c. Prime contractor is required to make affirmative efforts to find another DBE subcontractor to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the assigned DBE contract goal.

d. In circumstances when a DBE subcontractor fails to complete its work on the contract for any reason or is terminated from a contract, the prime contractor is expected to make affirmative efforts to maintain its commitment to the assigned DBE goal.

e. The DBE firm should communicate with the prime contractor regarding its schedule and capacity in the context of the contract. If the DBE anticipates that it cannot fulfill its subcontract, s/he shall advise the prime contractor and suggest a DBE that may replace their services or provide written consent to be released from its subcontract.

(1) Before the prime contractor can request to terminate or substitute a DBE firm; s/he must:
   i. Make every effort to fulfill the DBE commitment by working with the listed DBE to ensure that they are fully knowledgeable of your expectations for successful performance on the contract. Document these efforts in writing.
   ii. If those efforts fail, provide written notice to the DBE subcontractor of your *intent to* request to terminate and/or replace the firm including the reason(s) you want to pursue this action.
   iii. Copy the DBE Office on all correspondence related to changing a DBE firm who has been approved for DBE credit on a contract including the preparation and coordination efforts with the DBE on the contract.
   iv. Clearly state the amount of time the DBE firm has to remedy and/or respond to your notice of intent to replace/terminate their firm from the contract. The DBE shall be allowed five days to respond, in writing. **EXCEPTION:** The prime contractor must provide a verifiable reason for a response period shorter than five days. For example a WisDOT project manager must verify that waiting 5 days for a DBE performing traffic control work to respond would affect the public safety.
   v. The DBE subcontractor must forward a written response to the prime contractor and copy the DBE Office. The written response must outline why it objects to the proposed termination of its subcontract and list the reasons that WisDOT should not approve the request for their firm to be replaced or removed from the contract.

The Request to Replace or Terminate a DBE

The prime contractor must provide a written request to replace or terminate a DBE firm that has been approved for DBE credit on a WisDOT contract. The written request can be an email or printed document delivered by email or fax; at minimum, the request must contain the following:

1. Contract ID number.
2. Wisconsin DOT Contract Project Manager name and contact information.
3. DBE name and work type and/or NAICS code.
4. Contract's progress schedule.
5. Reason(s) for requesting that the DBE be replaced or terminated.
6. Attach/include all communication with the DBE to deploy/address/resolve work completion,

WisDOT will review your request and any supporting documentation that you submit to evaluate whether the circumstance and the reasons constitute a good cause for replacing or terminating the DBE that was approved for DBE credit on that contract.

Examples of Good Causes to Replace a DBE according to the federal DBE program guidelines {49 CFR part 26.53}

- The listed DBE subcontractor fails or refuses to execute a written contract.
- The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor.
- The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements.
- The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness.
- The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1,200 or applicable state law.
- You have determined that the listed DBE subcontractor is not a responsible contractor.
- The listed DBE subcontractor voluntarily withdraws from the project and provides to you written notice of its withdrawal.
- The listed DBE is ineligible to receive DBE credit for the type of work required.
- A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.

Evaluation and Response to the Request

If WisDOT determines that your reasons comply with the good cause standards; the DBE office will send the prime contractor and the WisDOT project manager an email stating that we concur with the reasons and approve the replacement or termination.

If WisDOT determines that your reasons do not comply with the good cause standards of the federal DBE program, the DBE Office will send the prime contractor an email that includes *the requirement* to utilize the committed DBE, *remedial actions* to support the completion of the contractual commitment, a list of available WisDOT support services *and administrative remedies that may be invoked* for failure to comply with federal DBE guidelines for DBE replacement.

The Wisconsin Department of transportation contact for all actions related to replacing a DBE is the DBE Program Chief and/or the DBE Program Engineer which can be reached at DBE_Alert@dot.wi.gov or by calling 608-267-3849.

17. DBE Utilization beyond the approved DBE Commitment Form DT1506

If the Prime/subcontractor increases the scope of work for a participating DBE or adds a DBE subcontractor that was not on the approved Form DT1506 at any time after contract award, s/he should follow these steps so that the participation can be accurately credited toward the DBE goal.

a. Send an email to the DBE Engineer at DBE_Alert@dot.wi.gov describing the work to be performed by the new DBE including the proposed schedule or duration, DBE name and contact information. You may also call the DBE Engineer at 414-659-0487 to notify him of the change verbally.
   If the scope change added work for a participating DBE; list the date and reason for the scope change.

b. Forward a complete, signed Attachment 'A' form to the DBE Office at DBE_Alert@dot.wi.gov. A complete Attachment A includes DBE contact information, signature, subcontract value and proper description of the work areas to be performed by the DBE.
   The DBE office will confirm the DBE participation and revise the DT1506 based on the email/discussion and attach the new/revised Attachment A to the Contract record/documentation.

18. Contract Modifications

When additional opportunity is available by contract modifications, the Prime Contractor shall utilize DBE Subcontractors that were committed to equal work items, in the original contract.

19. Payment

Costs for conforming to this Additional Special Provision (ASP) and any associated DBE requirements are incidental to the contract.

APPENDIX A
Sample Contractor Solicitation Letter Page 1
This sample is provided as a guide not a requirement

GFW SAMPLE MEMORANDUM

TO:	DBE FIRMS
FROM:	POTENTIAL PRIME CONTRACTOR OR MAJOR SUBCONTRACTOR
SUBJECT:	REQUEST FOR DBE QUOTES 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 https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/default.aspx

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 https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/default.aspx

All questions should be directed to:

Project Manager, John Doe,
Phone: (000) 123-4567
Email: Joe@joetheplumber.com
Fax: (000) 123- 4657

Sample Contractor Solicitation Letter Page 2
This sample is provided as a guide not a requirement

REQUEST FOR QUOTATION

Prime's Name: _____
Letting Date: _____
Project ID: _____

Please check all that apply

- ¨ Yes, we will be quoting on the projects and items listed below
- ¨ No, we are not interested in quoting on the letting or its items referenced below
- ¨ Please take our name off your monthly DBE contact list
- ¨ We have questions about quoting this letting. Please have someone contact me at this number

Prime Contractor 's Contact Person	DBE Contractor Contact Person
Phone:	Phone
Fax:	Fax
Email:	Email

Please circle the jobs and items you will be quoting below

Proposal No.	1	2	3	4	5	6	7
County							

WORK DESCRIPTION:

Clear and Grub	X		X	X		X	X
Dump Truck Hauling	X		X	X		X	X
Curb & Gutter/Sidewalk, Etc.	X		X	X		X	X
Erosion Control Items	X		X	X		X	X
Signs and Posts/Markers	X		X	X		X	X
Traffic Control		X	X	X		X	X
Electrical Work/Traffic Signals		X	X	X		X	
Pavement Marking		X	X	X	X	X	X
Sawing Pavement		X	X	X	X	X	X
QMP, Base	X	X		X	X	X	X
Pipe Underdrain	X			X			
Beam Guard				X	X	X	X
Concrete Staining							X
Trees/Shrubs	X						X

Again please make every effort to have your quotes into our office by time deadline prior to the letting date.

We prefer quotes be sent via SBN but prime's preferred alternatives are acceptable.

If there are further questions please direct them to the prime contractor's contact person at phone number.

APPENDIX B
BEST PRACTICES FOR PRIME CONTRACTOR & DBE SUBCONTRACTOR GOOD FAITH EFFORT

This list is not a set of requirements; it is a list of potential strategies

Primes

- Ø Prime contractor open houses inviting DBE firms to see the bid "war room" or providing technical assistance.
- Ø Participate in speed networking and mosaic exercises as arranged by DBE office.
- Ø Host information sessions not directly associated with a bid letting.
- Ø Participate in a formal mentor protégé or joint venture with a DBE firm.
- Ø Participate in WisDOT advisory committees i.e. TRANSAC, or Mega Project committee meetings.
- Ø Facilitate a small group DBE 'training session' Clarifying how your firm prepares for bid letting, evaluates subcontractors, preferred qualifications and communication methods.
- Ø Encourage subcontractors to solicit and highlight DBE participation in their quotes to you.
- Ø 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

- Ø DBE firms should contact primes as soon as possible with questions regarding their quotes or bid; seven days prior is optimal.
- Ø Continually check for contract addendums on the HCCI website through the Thursday prior to letting to stay abreast of changes.
- Ø Review the status of contracts on the HCCI website reviewing the 'apparent low bidder' list, and bid tabs at a minimum.
- Ø 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.
- Ø Participate in DBE office assessment programs.
- Ø Participate on advisory and mega-project committees.
- Ø Sign up to receive the DBE Contracting Update.
- Ø Consider membership in relevant industry or contractor organizations.
- Ø Active participation is a must. Quote as many projects as you can reasonably work on; quoting the primes and bidding as a prime with the department are the only ways to get work.

APPENDIX C
Types of Efforts considered in determining GFE
This list represents concepts being assessed; analysis requires additional steps

1. Whether the contractor attended any pre-solicitation or pre-bid meetings that were scheduled by WisDOT to inform DBEs of contracting and subcontracting opportunities.
2. Whether the contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract was being solicited, in sufficient time to allow the DBEs to participate effectively.
3. Whether the contractor followed up initial solicitations of interest by contacting DBEs to determine if the DBEs were interested; returned the phone calls of interested DBE firms.
4. Whether the contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goal.
5. Whether the contractor provided interested DBEs with adequate information about the plans, specifications and requirements of the contract.
6. Whether the contractor negotiated in good faith with interested DBEs, not rejected DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities.
7. Whether the contractor made efforts to assist interested DBEs in being more competitive.
8. Whether the contractor effectively used the services of available minority community organizations: minority contractors groups, local, state, and Federal minority business assistance offices, and other organizations that provide assistance to small businesses and DBE firms.
9. Whether Prime used CRCS to identify DBE who specialize in relevant work areas.
10. Whether the contractor used available resources including contacting the DBE office, using WisDOT's website
11. Whether the contractor returned calls of firms expressing interest in a timely manner.

APPENDIX D
Good Faith Effort Evaluation Guidance
Excerpt from Appendix A of 49 CFR Part 26

APPENDIX A TO PART 26 -- GUIDANCE CONCERNING GOOD FAITH EFFORTS

I. When, as a recipient, you establish a contract goal on a DOT assisted contract, a bidder must, in order to be responsible and/or responsive, make good faith efforts to meet the goal. The bidder can meet this requirement in either of two ways. First, the bidder can meet the goal, documenting commitments for participation by DBE firms sufficient for this purpose. Second, even if it doesn't meet the goal, the bidder can document adequate good faith efforts. This means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful.

II. In any situation in which you have established a contract goal, part 26 requires you to use the good faith efforts mechanism of this part. As a recipient, it is up to you to make a fair and reasonable judgment whether a bidder that did not meet the goal made adequate good faith efforts. It is important for you to consider the quality, quantity, and intensity of the different kinds of efforts that the bidder has made. The efforts employed by the bidder should be those that one could reasonably expect a bidder to take if the bidder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE contract goal. Mere pro forma efforts are not good faith efforts to meet the DBE contract requirements. We emphasize, however, that your determination concerning the sufficiency of the firm's good faith efforts is a judgment call: meeting quantitative formulas is not required.

III. The Department also strongly cautions you against requiring that a bidder meet a contract goal (i.e., obtain a specified amount of DBE participation) in order to be awarded a contract, even though the bidder makes an adequate good faith efforts showing. This rule specifically prohibits you from ignoring bona fide good faith efforts.

IV. The following is a list of types of actions which you should consider as part of the bidder's good faith efforts to obtain DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

A. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

B. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

C. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

D. (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

(2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a

contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

E. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non solicitation of bids in the contractor's efforts to meet the project goal.

F. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

G. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

H. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

V. In determining whether a bidder has made good faith efforts, you may take into account the performance of other bidders in meeting the contract. For example, when the apparent successful bidder fails to meet the contract goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts, the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the goal, but meets or exceeds the average DBE participation obtained by other bidders, you may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made good faith efforts.

Appendix E
Small Business Network [SBN] Overview

The Small Business Network is a part of the Bid Express® service that was created to ensure that prime bidders have a centralized online location to find subs - including small and disadvantaged business enterprises (DBEs). It is available for prime bidders to use as part of their Basic Service subscription.
Within the Small Business Network, Prime Contractors can:

1. Easily select proposals, work types and items:
    a. After adding applicable work types, select items that you wish to quote. Enter the sub-quote quantities and add comments, if desired. Adding or removing items and work types can be done quickly. If needed, you can save the sub-quote for completion at a later time.

2. Create sub-quotes for the subcontracting community:
    a. Create sub-quotes with ease using the intuitive sub-quote creator. In seven short steps, you can rapidly create a custom sub-quote directed to all subcontractors that bid on the applicable work types. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.
    b. Create a sub-quote to send to subcontractors or suppliers that lists the items in a proposal that you want quoted
    c. Create an unlimited number of sub-quotes for items you want quoted, and optionally mark them as a DBE-preferred request.
    d. Add attachments to sub-quotes.

3. View sub-quote requests & responses:
    a. After logging into the Bid Express service, you can quickly review all of your sub-quote requests and all unsolicited sub-quote requests from subcontractors. To simplify the Small Business Network home screen, sub-quote requests can be hidden with one click if they are not applicable.
    b. View or receive unsolicited sub-quotes that subcontractors have posted, complete with terms, conditions and pricing.

4. View Record of Subcontractor Outreach Effort:
    a. For each sub-quote produced, a *Record of Subcontractor Outreach Effort* is generated that shows the response statistics for a particular sub-quote. If accepted by the letting agency, this report may serve as proof of a “Good Faith” effort in reaching out to the DBE community.
    b. Easily locate pre-qualified and certified small and disadvantaged businesses.
    c. Advertise to small and disadvantaged businesses more efficiently and cost effectively.
    d. Document your interactions with subs/DBEs by producing an Outreach Report (may be accepted as proof of DBE outreach at the discretion of each agency).

The Small Business Network is a part of the Bid Express® service that was created to ensure that small businesses have a centralized area to access information about upcoming projects. It can help small businesses learn more about opportunities, compete more effectively, network with other contractors and subcontractors, and win more jobs.

1. View and reply to sub-quote requests from primes:
    a. After logging into the Bid Express service, you can quickly review all incoming sub-quote requests and all unsolicited sub-quotes created by your company. Receive notifications by selected work type. To simplify on the Small Business Network home screen, sub-quote requests can be filtered by work types relevant to your interests, or hidden with one click if they are not applicable.

2. Select items when responding to sub-quote requests from primes:
    a. You have the freedom to choose and price any number of items when responding to a sub-quote request. Quantities can be modified, and per-item comments are also available.
    b. View requests for sub-quotes for work that primes have posted for projects they are bidding, add your pricing, terms, and conditions, and submit completed sub-quotes to the requesting primes.
    c. Add attachments to a sub-quote.

3. Create and send unsolicited sub-quotes to specific contractors:
    a. Create unsolicited sub-quotes with ease using the intuitive sub-quote creator. In eight short steps, you can rapidly create a custom sub-quote directed at any number of specific vendors of your choosing. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.

4. Easily select and price items for unsolicited sub-quotes:
    a. After adding applicable work types, select items that you wish to quote. The extended price calculates automatically, cutting out costly calculation errors. Comments can be provided on a per-item basis as well.
    b. Create an unsolicited sub-quote that lists the items from a proposal that you want to quote, include pricing, terms and conditions, and send it to selected prime/plan holder.
    c. Add attachments to a sub-quote.
    d. Add unsolicited work items to sub-quotes that you are responding to.

5. Easy Access to Valuable Information
    a. Receive a confirmation that your sub-quote was opened by a prime.
    b. View Bid Tab Analysis data from past bids, including the high, average and low prices of items.
    c. View important notices and publications from DOT targeted to small and disadvantaged businesses.

6. Accessing Small Business Network for WisDOT contracting opportunities
    a. If you are a contractor not yet subscribing to the Bid Express service, go to www.bidx.com and select "Order Bid Express." The Small Business Network is a part of the Bid Express Basic Service.
    b. DBE firms can request a Bid Express Small Business Network Account at no cost by calling 414-438-4588.

ADDITIONAL SPECIAL PROVISION 4

Payment to First-Tier Subcontractors

Within 10 calendar days of receiving a progress payment for work completed by a subcontractor, pay the subcontractor for that work. The prime contractor may withhold payment to a subcontractor if, within 10 calendar days of receipt of that progress payment, the prime contractor provides written notification to the subcontractor and the department documenting "just cause" for withholding payment.

The prime contractor may also withhold routine retainage from payments due subcontractors.

Payment to Lower-Tier Subcontractors

Ensure that subcontracting agreements at all tiers provide prompt payment rights to lower-tier subcontractors that parallel those granted first-tier subcontractors in this provision.

Release of Routine Retainage

After granting substantial completion the department may reduce the routine retainage withheld from the prime contractor to 75 percent of the original total amount retained.

When the Department sends the semi-final estimate the department may reduce the routine retainage withheld from the prime contractor to 10 percent of the original total amount retained.

Within 30 calendar days of receiving the semi-final estimate from the department, submit written certification that subcontractors at all tiers are paid in full for acceptably completed work and that no routine retainage is being withheld. The department will pay the prime contractor in full and reduce the routine retainage withheld from the prime contractor to zero when the department approves the final estimate.

This special provision does not limit the right of the department, prime contractor, or subcontractors at any tier to withhold payment for work not acceptably completed or work subject to an unresolved contract dispute.

ADDITIONAL SPECIAL PROVISIONS 5

Fuel Cost Adjustment

A Description

Fuel Cost Adjustments will be applied to partial and final payments for work items categorized in Section B as a payment to the contractor or a credit to the department. ASP-5 shall not apply to any force account work.

B Categories of Work Items

The following items and Fuel Usage Factors shall be used to determine Fuel Cost Adjustments:

(1) Earthwork.		Unit	Gal. Fuel Per Unit
205.0100	Excavation Common	CY	0.23
205.0200	Excavation Rock	CY	0.39
205.0400	Excavation Marsh	CY	0.29
208.0100	Borrow	CY	0.23
208.1100	Select Borrow	CY	0.23
209.1100	Backfill Granular Grade 1	CY	0.23
209.1500	Backfill Granular Grade 1	Ton	0.115
209.2100	Backfill Granular Grade 2	CY	0.23
209.2500	Backfill Granular Grade 2	Ton	0.115
350.0102	Subbase	CY	0.28
350.0104	Subbase	Ton	0.14
350.0115	Subbase 6-Inch	SY	0.05
350.0120	Subbase 7-Inch	SY	0.05
350.0125	Subbase 8-Inch	SY	0.06
350.0130	Subbase 9-Inch	SY	0.07
350.0135	Subbase 10-Inch	SY	0.08
350.0140	Subbase 11-Inch	SY	0.09
350.0145	Subbase 12-Inch	SY	0.09

C Fuel Index

A Current Fuel Index (CFI) in dollars per gallon will be established by the Department of Transportation for each month. The CFI will be the price of No. 2 fuel oil, as reported in U.S. Oil Week, using the first issue dated that month. The CFI will be the average of prices quoted for Green Bay, Madison, Milwaukee and Minneapolis.

The base Fuel Index (BFI) for this contract is $2.15 per gallon.

D Computing the Fuel Cost Adjustment

The engineer will compute the ratio CFI/BFI each month. If the ratio falls between 0.85 and 1.15, inclusive, no fuel adjustment will be made for that month. If the ratio is less than 0.85 a credit to the department will be computed. If the ratio is greater than 1.15 additional payment to the contractor will be computed. Credit or additional payment will be computed as follows:

(1) The engineer will estimate the quantity of work done in that month under each of the contract items categorized in Section B.

(2) The engineer will compute the gallons of fuel used in that month for each of the contract items categorized in Section B by applying the unit fuel usage factors shown in Section B.

(3) The engineer will summarize the total gallons (Q) of fuel used in that month for the items categorized in Section B.

(4) The engineer will determine the Fuel Cost Adjustment credit or payment from the following formula:

$$FA = \left(\frac{CFI}{BFI} - 1\right) x\ Q\ x\ BFI$$

(plus is payment to contractor; minus is credit to the department)

Where	FA	=	Fuel Cost Adjustment (plus or minus)
	CFI	=	Current Fuel Index
	BFI	=	Base Fuel Index
	Q	=	Monthly total gallons of fuel

E Payment

A Fuel Cost Adjustment credit to the department will be deducted as a dollar amount each month from any sums due to the contractor. A Fuel Cost Adjustment payment to the contractor will be made as a dollar amount each month.

Upon completion of the work under the contract, any difference between the estimated quantities and the final quantities will be determined. An average CFI, calculated by averaging the CFI for all months that fuel cost adjustment was applied, will be applied to the quantity differences. The average CFI shall be applied in accordance with the procedure set forth in Section D.

ADDITIONAL SPECIAL PROVISION 6
ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

104.10.2 Submittal and Review of a CRI Concept

Replace paragraph two with the following effective with the July 2019 letting:

(2) The department will review the CRI concept and, within 10 business days of the contractor's initial submittal, notify the contractor in writing whether the CRI concept has merit and whether the contractor should submit it as a CRI proposal. The contractor and the department can mutually agree to extend this 10-day review requirement. The department will notify the contractor if a professional engineer registered in the state of Wisconsin should seal the CRI proposal. If the department informs the contractor to submit the CRI proposal, the department will share in the cost for developing the CRI proposal as specified in 104.10.4.1(3).

107.14 Contractor's Responsibility for Work

Replace the entire text with the following effective with the June 2019 letting:

(1) Within 107.14, the term "work" is redefined to mean "the work product that is completed in its final position and is incorporated in the project."

(2) The contractor shall maintain charge and care of the work until the engineer accepts the work as specified in 105.11. Protect the work against injury or damage caused by public traffic, the action of the elements, or from other causes, whether arising from the execution or non-execution of the work. Rebuild, repair, restore, and make good injuries or damages to work caused by the above at no additional cost to the department.

(3) The department will assume responsibility for the work as follows:

1. Costs the department assumes under 104.6.
2. Costs to repair bridge damage attributed to public traffic, if the engineer determines that damage was beyond the control of and without the fault of the contractor.

(4) The contractor shall not bear the expense for damage to the work caused by abnormal and unforeseeable occurrences beyond the control of, and without the fault or negligence of, the contractor. These abnormal and unforeseeable occurrences include but are not limited to the following:

1. Cataclysmic phenomena of nature.
2. Acts of the public enemy.
3. Acts of government authorities.

(5) Before suspending the work, take the necessary precautions to prevent damage to the project, prevent traffic accidents, and provide for normal drainage. Erect necessary temporary barrier, barricades, signs, or other facilities at no expense to the department except as specified in 104.6.

(6) The contractor is responsible for all damages to equipment and supplies regardless of the circumstances.

107.17.1 General

Replace paragraph seven with the following effective with the December 2018 letting:

(7) Have a professional engineer registered in the state of Wisconsin sign and seal the shop drawings. At least 30 calendar days before starting falsework, form, or shoring construction; submit a PDF file of shop drawings to the railroad's chief engineering officer and to the engineer. The engineer and the railroad may review the shop drawings. If the engineer or the railroad finds the shop drawings unsatisfactory, the contractor shall make the required changes. A satisfactory shop drawing review does not relieve the contractor of responsibility and liability for the structural integrity and proper functioning of the falsework, forms, or shoring.

109.1.1 General

Replace the entire text with the following effective with the January 2019 letting:

(1) The engineer will use the US standard system to measure all work completed under the contract. The engineer will determine quantities of materials the contractor furnishes and work the contractor performs using measurement methods and computations conforming to standard engineering practice, modified to meet department requirements. The engineer will document these measurements using department procedures.

(2) The engineer will measure the work as the contract measurement subsection for individual items specifies. The department will measure the actual quantities of work the contractor acceptably completes and make final payment based on those actual measured quantities except as follows:

1. If the measurement subsection for a bid item specifically restricts the quantity measured for payment or allows for use of conversion factors.
2. If the engineer executes a contract change order modifying the method of measurement for specific bid items, the engineer will measure the quantities of applicable bid items for payment using the change order methods.
3. If the engineer, under 105.3.1(2), approves a contractor-requested plan dimension change between US standard and SI metric dimensions, the engineer will measure whichever of the following is less:
   - Actual quantities constructed.
   - Quantities derived from the original plan dimensions.
4. For substitutions made under 106.2.3 between US standard and SI metric products, the engineer will measure the actual quantities of the substitute products using the original contract measuring system.

205.5.2 Excavation

Replace the entire text with the following effective with the April 2019 letting:

205.5.2.1 General

(1) Payment for the Excavation bid items under this section is full compensation for work specified for those excavation classes under 205 with no separate contract bid items; for hauling; and for constructing and removing temporary drainage installations as specified under 205.3.3.

(2) Payment also includes removing walls, foundations, etc. with no separate contract bid items; for disposal of resulting material; and for backfilling basements or openings resulting from removing walls, foundations, etc.

205.5.2.2 Associated Work

(1) The department will pay separately for removing concrete structures under the 203 and 204 bid items.

(2) The department will pay separately for granular backfill the contract or engineer requires under the Backfill Granular bid items.

(3) The department will pay separately for erosion control, fertilizing, and seeding of material disposal sites as specified for material disposal sites in 628.5.1.

(4) If the contract does not include the Excavation Rock bid item, the department will pay 5 times the contract bid price of the Excavation Common bid item to remove boulders having volumes of one cubic yard or more. The department will pay for these boulder removals under the Removing Large Boulders administrative item.

205.5.2.3 Excavation Below Subgrade

205.5.2.3.1 General

(1) The department will only pay for engineer-approved EBS to correct problems beyond the contractor's control.

205.5.2.3.2 Quantity Overruns

(1) The department will provide additional compensation for EBS quantity overruns if the following conditions are met:

- The quantity of engineer-approved EBS, calculated exclusive of work covered under 205.5.2.3.3 or 301.5, exceeds the total contract EBS quantity the earthwork summary sheet shows by more than 25 percent.
- The material exceeding that 25 percent threshold cannot be disposed of within the project right-of-way.

(2) The department will pay 2 times the contract unit price, up to $25,000, for the quantity of EBS meeting the above conditions. After exceeding $25,000 per contract, the department will pay for additional EBS as determined under 109.4.

205.5.2.3.3 Subgrade Correction

(1) Work performed under 105.3 to correct unacceptable work is the contractor's responsibility. For EBS work performed where the engineer did not approve the subgrade for subsequent operations, the department will pay for EBS at the contract price under the pertinent excavation and backfill bid items, or absent those bid items as extra work. For EBS work performed where the engineer approved the underlying layers for subsequent operations, the department will pay for EBS as follows:

1. Up to a maximum of $25,000 per contract, the department will pay as follows:
   - 1.1 For excavation: 3 times the contract unit price for the Excavation Common bid item under the EBS Post Grading administrative item.
   - 1.2 For backfill with the materials the engineer directs: at the contract unit price for the bid items of each material used to fill the excavation.
   - 1.3 For excavation or backfill without contract bid items: as extra work.
2. After exceeding $25,000 per contract, the department will pay for additional EBS in engineer-approved areas as determined under 109.4.

305.2.1 General

Replace paragraph two with the following effective with the December 2018 letting:

(2) Where the contract specifies or allows 1 1/4-inch base, do not place reclaimed asphalt, reprocessed material, or blended materials below virgin aggregate materials unless the contract specifies or the engineer allows in writing. The department will allow virgin aggregate above reclaimed asphalt, reprocessed material, or blended materials in shoulder areas adjacent to concrete pavement.

420.3.2.1 General

Replace paragraph one with the following effective with the December 2018 letting:

(1) Use self-propelled grinding machines with depth, grade, and slope controls designed for grinding and texturing concrete. Equip grinding machines with diamond blades and a vacuuming system capable of removing liquid and solid residue from the ground surface. Shroud the machine to prevent discharging loosened material into adjacent work areas or live traffic lanes. Provide the specified effective wheelbase, defined as the center of the front to center of the rear main support wheels.

420.3.2.2 Continuous Grinding

Replace paragraph one with the following effective with the December 2018 letting:

(1) Under the Continuous Diamond Grinding Concrete Pavement bid item, ensure that the grinding machine, including the grinding head, weighs 35,000 pounds or more, will grind a strip at least 4 feet wide, and has an effective wheel base of 25 feet or more. For pavements with a design speed less than 40 miles per hour and areas difficult to access, the contractor may use equipment with an effective wheel base of 12 feet or more.

450.3.2.8 Jointing

Replace paragraphs three through five with the following effective with the December 2018 letting:

(3) Construct notched wedge longitudinal joints for mainline paving if the pavement thickness conforms to the minimums specified in 460.3.2, unless the engineer directs or allows an alternate joint. Construct the wedge using a slope no steeper than 3:1. Extend the wedge 12 inches beyond the normal lane width, or as the engineer directs. Ensure that the wedge for all layers directly overlaps and slopes in the same direction.

(4) Locate the joint at the pavement centerline for 2-lane roadways, or at lane lines if the roadway has more than 2 lanes. Construct a vertical notch 1/2-inch to 3/4-inch high on the centerline or lane line at the top of each wedge. Place a 1/2-inch to 3/4-inch notch at the outside bottom edge of the wedge after compacting each layer. Align the finished longitudinal joint line of the upper layer with the centerline or lane line.

(5) Construct the wedge for each layer using an engineer-approved strike-off device that will provide a uniform slope and will not restrict the main screed. Shape and compact the wedge with a weighted steel side roller wheel the same width as the wedge. Apply a tack coat to the wedge surface and both notches before placing the adjacent lane.

455.2.4.3 Emulsified Asphalts

Replace paragraph two with the following effective with the December 2018 letting:

(2) The bill of lading for emulsified asphalts shall indicate the asphalt content of the original emulsion and dilution rate of the additional water added to the original emulsion. If undiluted samples are not available, test the diluted material and modify AASHTO M140, M208, or M316 to reflect properties resulting from dilution of the asphalt.

460.2.8.3.1.4 Department Verification Testing Requirements

Replace paragraph three with the following effective with the December 2018 letting:

(3) The department will perform testing conforming to the following standards:

Bulk specific gravity (G_{mb}) of the compacted mixture according to AASHTO T166.

Maximum specific gravity (G_{mm}) according to AASHTO T209.

Air voids (V_a) by calculation according to AASHTO T269.

VMA by calculation according to AASHTO R35.

Asphalt content by ignition oven according to AASHTO T308 as modified in CMM 8-36.6.3.6, chemical extraction according to AASHTO T-164, or Asphalt Analyzer™ according to manufacturer recommendations.

460.2.8.3.1.6 Acceptable Verification Parameters

Replace paragraph one with the following effective with the December 2018 letting:

(1) The engineer will provide test results to the contractor within 2 mixture-production days after obtaining the sample. The quality of the product is acceptably verified if it meets the following limits:

- Va is within a range of 2.0 to 4.3 percent. For SMA, Va is within a range of 2.7 to 5.3 percent.
- VMA is within minus 0.5 of the minimum requirement for the mix design nominal maximum aggregate size.
- Asphalt content is within minus 0.3 percent of the JMF.

460.2.8.3.1.7 Dispute Resolution

Replace paragraph one with the following effective with the December 2018 letting:

(1) When QV test results do not meet the specified limits for 100 percent pay, the bureau's AASHTO accredited laboratory and certified personnel will referee test the retained portion of the QV sample and the retained portion of the required forward and backward QC retained samples according to CMM 8-36.

460.5.2.1 General

Replace paragraphs five and six with the following effective with the December 2018 letting:

(5) The department will reduce pay for nonconforming QMP HMA mixtures as specified in 460.2.8.2.1.7, starting from the stop point to the point when the running average of 4 is back inside the warning limits. The engineer will determine the quantity of material subject to pay reduction based on the testing data and an inspection of the completed pavement. The department will reduce pay as follows:

PAYMENT FOR MIXTURE[1] [2] [3]

ITEM	PRODUCED WITHIN WARNING BANDS	PRODUCED OUTSIDE JMF LIMITS
Gradation	90%	75%
Asphalt Content[4]	___	___
Air Voids	70%	50%
VMA	90%	75%

[1] For projects or plants where the total production of each mixture design requires less than 4 tests refer to CMM 8-36.

[2] Payment is in percent of the contract unit price for the HMA Pavement bid item. The department will reduce pay based on the nonconforming property with lowest percent pay. If the quantity of material subject to pay adjustment based on the running average of 4 is also subject to pay adjustment resulting from dispute resolution in accordance with 460.2.8.3.1.7, the department will apply the single pay adjustment resulting in the lowest percent pay.

[3] In addition to any pay adjustment listed in the table above, the department will adjust pay for nonconforming binder under the Nonconforming QMP Asphaltic Material administrative item. The department will deduct 25 percent of the contract unit price of the HMA Pavement bid item per ton of pavement placed with nonconforming PG binder the engineer allows to remain in place.

[4] The department will not adjust pay based on a running average of 4 asphalt content tests; however, corrective action will be applied to nonconforming material according to 460.2.8.2.1.7.

(6) If during a QV dispute resolution investigation the department discovers unacceptable mixture defined by one or more of the following:

- Va greater than 5.0 or less than 1.5.
- VMA more than 1.0 below the minimum allowed in table 460-1.
- AC more than 0.5 % below the JMF target.

Remove and replace the material, or if the engineer allows the mixture to remain in place, the department will pay for the quantity of affected material at 50 percent of the contract price.

501.3.8.2.1 General

Replace paragraph two with the following effective with the April 2019 letting:

(2) If the concrete temperature at the point of placement exceeds 90 F, do not place concrete under the following structure and concrete barrier bid items:

Concrete Masonry Bridges	Concrete Masonry Retaining Walls
Concrete Masonry Bridges HES	Concrete Masonry Retaining Walls HES
Concrete Masonry Culverts	Concrete Masonry Endwalls
Concrete Masonry Culverts HES	Concrete Masonry Overlay Decks
Concrete Barrier Single-Faced 32-Inch	Concrete Barrier (type)
Concrete Barrier Double-Faced 32-Inch	Concrete Barrier Fixed Object Protection (type)
Concrete Barrier Transition Section 32-Inch	Concrete Barrier Transition (type)

506.3.2 Shop Drawings

Replace paragraph four with the following effective with the December 2018 letting:

(4) Ensure that the fabricator submits a PDF file of shop drawings for railroad structures to the railroad company's chief engineering officer upon contract completion.

603.3.1.1 General

Replace paragraph three with the following effective with the April 2019 letting:

(3) Cast permanent barrier and transitions in place. Use construction methods conforming to 502 and conform to the hot weather placement requirements of 501.3.8.2. Use forms or engineer-approved slip form methods for barrier. Use forms for transitions. Construct barrier on horizontal curves as a series of 12-foot or shorter chords.

646.3.1.2 Liquid Marking

Replace paragraph five with the following effective with the June 2019 letting:

(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
Epoxy	SMA, seal coats, and polymer overlays	25	25
Epoxy	all other	20	22.5
Wet Reflective Epoxy	all	20	[1]

[1] Use the product specific bead application rate for wet reflective epoxy specified on the department's APL.

646.3.2.3.2 Wet Reflective Epoxy

Replace paragraph one with the following effective with the June 2019 letting:

(1) Apply wet reflective epoxy binder in a grooved slot. and provide a double drop bead system as follows:

1. Wet reflective/recoverable elements at the application rate specified in the department's APL.
2. Glass beads conforming to 646.2.2 at the application rate specified in the department’s APL.

650.3.1 General

Replace the entire text with the following effective with the December 2018 letting:

(1) Department and contractor responsibilities for construction staking are specified in 105.6. Conform to 105.6 and the additional requirements specified here in 650.3 for the individual contractor-staking bid items the contract includes.

(2) Protect and preserve known property and survey marks and land monuments as specified in 107.11.3. The contract may require related work under the 621 bid items.

(3) Obtain or calculate benchmark data, grades, and alignment from plan information. The engineer will furnish data for the horizontal and vertical control points, control point ties, horizontal alignments, profiles, and elevations. Reestablish, set additional, and maintain the horizontal and vertical control points and control point ties, as needed for bid items.

(4) Check horizontal and vertical information including but not limited to alignments, locations, elevations, and dimensions, that either the plans show or the engineer provides, for compatibility with existing field conditions. Conduct similar compatibility checks and accuracy checks of horizontal and vertical positions either the department or the contractor establishes in the field.

(5) Perform survey work using conventional methods, or AMG methods capable of achieving the lines and grades the plans show for the work in question. Establish additional benchmarks and control points as necessary to support the method of operation.

650.3.1.1 Staking

(1) Furnish, set, reference, and maintain stakes and markings necessary to establish the alignment, location, benchmarks, elevations, and continuous profile-grades for road and structure work as needed for bid items. Supervise and coordinate construction staking.

(2) Maintain neat, orderly, and complete survey notes, drawings, and computations used in establishing the lines and grades. Make the survey notes and computations available to the engineer within 24 hours, upon request, as the work progresses.

(3) Furnish surveying equipment, stakes, flags, pins, lath, whiskers, and other materials necessary to perform this work, subject to the engineer’s approval.

650.3.1.2 Automated Machine Guidance

650.3.1.2.1 General

(1) The contractor may substitute AMG for conventional staking on all or part of the work under the individual staking bid items. Coordinate with the engineer throughout the course of construction to ensure that work performed using AMG conforms to the contract tolerances and that the methods employed conform to the contractor's AMG work plan and accepted industry standards. Revert to

conventional staking methods for all or part of the work at any point during construction if AMG is producing unacceptable results.

650.3.1.2.2 AMG Work Plan

(1) Submit a comprehensive written AMG work plan for department review at least 5 business days before the preconstruction conference. In that plan discuss how AMG technology will be integrated into other technologies employed on the project. List the staking bid items that will have work performed using AMG and, for each bid item listed, include the following:

1. Designate which portions of the contract will be done using AMG and which portions will be done using conventional staking.
2. Designate a single staff person as the primary contact for AMG technology issues.
3. List and map the primary and secondary control points required under 105.6.2 enveloping the site.
4. Describe the contractor's quality control procedures. Include the frequency and type of checks performed to ensure that the work conforms to the contract plans.

(2) The engineer will review the plan to determine if it conforms to the contract. Do not perform AMG work until the engineer approves the governing portion of the AMG workplan. Perform the work as the contractor's AMG work plan provides. Update the plan as necessary.

650.3.1.2.3 Geometric and Surface Information

650.3.1.2.3.1 Department Responsibilities

(1) At any time after the contract is awarded the contractor may request the contractor data packet. The department will provide the packet within 5 business days of receiving the contractor's request.

650.3.1.2.3.2 Contractor Responsibilities

(1) Develop and maintain a contractor construction model for areas of the project employing AMG. Confirm that the resulting model agrees with the contract plans.

(2) If the engineer requests, provide the construction model to the department in LandXML or other engineer-approved format.

650.3.1.2.4 Managing and Updating Information

(1) Notify the department of any errors or discrepancies in department-provided information. The department will determine what revisions may be required. The department will revise the contract plans, if necessary, to address errors or discrepancies that the contractor identifies. The department will provide the best available information related to those contract plan revisions.

(2) Revise the construction model as required to support construction operations and to reflect any contract plan revisions the department makes. Perform checks to confirm that the revised construction model agrees with the contract plan revisions. If the engineer requests, provide construction model updates to the engineer. The department will pay for costs incurred to incorporate contract plan revisions as extra work.

650.3.1.2.5 Construction Checks

(1) Check the work against the plan elevation at randomly selected points on cross-sections located at stations evenly divisible by 100 at the frequency the engineer approved as a part of the AMG work plan. Submit the results of these random checks to the engineer daily. Notify the engineer immediately if a check exceeds the tolerances specified in 650.3.1.2.6 below.

(2) Check the work at additional points as the engineer directs. The department may conduct periodic independent checks.

650.3.1.2.6 Construction Tolerances

(1) Ensure that the finished work vertically matches existing or other completed features. Ensure that the work conforms to revised plan elevations as follows:

- Subgrade : +/- 0.10 feet.
- Base : within the tolerance specified in 301.3.4.1(2).

650.3.3 Subgrade

Retitle and replace the entire text with the following effective with the December 2018 letting:

650.3.3 Subgrade Staking

(1) Set construction stakes or marks at intervals of 100 feet, or more frequently, for rural sections and at intervals of 50 feet, or more frequently, for urban sections. Include additional stakes at each cross-section as necessary to match the plan cross-section, achieve the required accuracy, and to support construction operations. Also set and maintain stakes as necessary to establish the horizontal and vertical positions of intersecting road radii, auxiliary lanes, horizontal and vertical curves, and curve transitions. Locate stakes to within 0.25 feet horizontally and establish the grade elevation to within 0.03 feet vertically.

Errata

520.3.3 Laying Pipe

Correct errata by replacing "sections" with "joints" to clarify the intent that the last 3 joints need ties.

(5) Provide joint ties on the upstream and downstream ends of circular and horizontal elliptical concrete culvert and concrete cattle pass installations. Tie the next 3 pipe joints or, if using apron endwalls, the endwall joint and the last 2 pipe joints. Ties are not required on culverts with masonry endwalls unless the plans show otherwise.

608.3.3 Laying Pipe

Correct errata by replacing "sections" with "joints" to clarify the intent that the last 3 joints need ties.

(5) Provide joint ties on concrete storm sewer system infall and outfall pipes. Tie the last 3 pipe joints or, if using apron endwalls, the endwall joint and the next 2 pipe joints. Ties are not required on installations with masonry endwalls unless the plans show otherwise.

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:

https://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payments-sublets-manual.pdf

Effective January 2019 Letting ASP 9

ADDITIONAL SPECIAL PROVISION 9
Electronic Certified Payroll or Labor Data Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to electronically submit certified payroll reports for contracts with federal funds and labor data for contracts with state funds only. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at:

https://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/default.aspx

(2) Ensure that all tiers of subcontractors, including all trucking firms, either submit their weekly certified payroll reports (contracts with federal funds) or labor data (contracts with state funds only) electronically through CRCS. These payrolls or labor data are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin their submittals. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Paul Ndon at (414) 438-4584 to schedule the training.

(4) The department will reject all paper submittals for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll/labor 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:

https://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payroll-manual.pdf

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

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

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

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

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

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

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

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

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

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

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Non-discrimination Provisions

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

a. Withholding payments to the contractor under the contract until the contractor complies; and/or
b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

SEPTEMBER 2002

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Employment Practices" and "Equal Opportunity Clause" set forth in the Required Contract Provisions, FHWA 1273.

2. The goals and timetables for minority and female participation expressed in percentage terms for the contractor's aggregate work force in each trade, on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade:

County	%	County	%	County	%
Adams	1.7	Iowa	1.7	Polk	2.2
Ashland	1.2	Iron	1.2	Portage	0.6
Barron	0.6	Jackson	0.6	Price	0.6
Bayfield	1.2	Jefferson	7.0	Racine	8.4
Brown	1.3	Juneau	0.6	Richland	1.7
Buffalo	0.6	Kenosha	3.0	Rock	3.1
Burnett	2.2	Kewaunee	1.0	Rusk	0.6
Calumet	0.9	La Crosse	0.9	St. Croix	2.9
Chippewa	0.5	Lafayette	0.5	Sauk	1.7
Clark	0.6	Langlade	0.6	Sawyer	0.6
Columbia	1.7	Lincoln	0.6	Shawano	1.0
Crawford	0.5	Manitowoc	1.0	Sheboygan	7.0
Dane	2.2	Marathon	0.6	Taylor	0.6
Dodge	7.0	Marinette	1.0	Trempealeau	0.6
Door	1.0	Marquette	1.7	Vernon	0.6
Douglas	1.0	Menominee	1.0	Vilas	0.6
Dunn	0.6	Milwaukee	8.0	Walworth	7.0
Eau Claire	0.5	Monroe	0.6	Washburn	0.6
Florence	1.0	Oconto	1.0	Washington	8.0
Fond du Lac	1.0	Oneida	0.6	Waukesha	8.0
Forest	1.0	Outagamie	0.9	Waupaca	1.0
Grant	0.5	Ozaukee	8.0	Waushara	1.0
Green	1.7	Pepin	0.6	Winnebago	0.9
Green Lake	1.0	Pierce	2.2	Wood	0.6

Goals for female participation for each trade: 6.9%

These goals are applicable to all the contractor's construction work, (whether or not it is federal or federally assisted), performed in the covered area. If the contractor performs construction work in the geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The contractor's compliance with the Executive Order and the Regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the Regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

   As referred to in this section, the Director means:

   Director
   Office of Federal Contract Compliance Programs
   Ruess Federal Plaza
   310 W. Wisconsin Ave., Suite 1115
   Milwaukee, WI 53202

   The "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

4. As used in this notice, and in the contract resulting from solicitation, the "covered area" is the county(ies) in Wisconsin to which this proposal applies.

APRIL 2013

ADDITIONAL FEDERAL-AID PROVISIONS

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidding collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

Effective August 2015 letting

BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or $2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this “Buy America” provision.

https://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:

https://wisconsindot.gov/hcciDocs/contracting-info/ws4567.doc

Effective February 2016 letting

Cargo Preference Act Requirement

All Federal-aid projects shall comply with 46 CFR 381.7 (a) – (b) as follows:

(a) *Agreement Clauses.* "Use of United States-flag vessels:"

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590."

(b) *Contractor and Subcontractor Clauses.* "Use of United States-flag vessels: The contractor agrees—"

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

Effective with December 2017 Letting

WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION AND SYSTEM DEVELOPMENT

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS
FOR PROJECTS WITH FEDERAL AID

I. PREVAILING WAGE RATES

The attached U.S. Department of Labor (Davis-Bacon Minimum Wage Rates) furnishes the minimum prevailing wage rates pursuant to the Davis-Bacon and Related Acts. The wage rates shown are the minimum rates required by the contract to be paid during its life, however this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price will be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

II. COVERAGE OF TRUCK DRIVERS

Truck drivers are covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Drivers of a contractor or subcontractor for time spent working on the site of the work.
- Drivers of a contractor or subcontractor for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimis. https://www.dol.gov/whd/FOH/FOH_Ch15.pdf
- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract where a significant portion of such building or work is constructed and the physical place where the building or work called for in the contract will remain.

Truck drivers are not covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Material delivery truck drivers while off the site of the work.
- Drivers of a contractor or subcontractor traveling between a Davis-Bacon job and a commercial supply facility while they are off the site of the work."
- Truck drivers whose time spent on the site of the work is de minimis, such as only a few minutes at a time merely to pick up or drop off materials or supplies.

Details are available online at:
https://www.dol.gov/whd/recovery/pwrb/Tab9.pdf
https://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/trckng.aspx

III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the department, the contractor shall post the following in at least one conspicuous and accessible place at the site of work:

a. A copy of the contractor's Equal Employment Opportunity Policy.

All required documents shall be posted by the first day of work and be accurate and complete. Postings must be readable, in an area where they will be noticed, and maintained until the last day of work.

IV. RESOURCES

Required information regarding compliance with federal provisions is found in the following resources:

- FHWA-1273 included in this contract
- U.S. Department of Labor Prevailing Wage Resource Book
- U.S. Department of Labor Field Operations Handbook
- U.S. Code of Federal Regulations
- Any applicable law, Act, or Executive Order enacted by the federal government at the time of the letting of this contract

General Decision Number: WI190010 05/17/2019 WI10

Superseded General Decision Number: WI20180010

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 $10.60 for calendar year 2019 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 $10.60 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 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate,if it is higher than the conformed wage rate). 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	01/04/2019
1	02/22/2019
2	05/17/2019

BRWI0001-002 06/01/2018

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.06	22.65

BRWI0002-002 06/01/2018

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.87	21.26

BRWI0002-005 06/01/2018

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	$ 35.39	21.46

BRWI0003-002 06/01/2018

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.44	22.27

BRWI0004-002 06/01/2018

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.66	23.35

BRWI0006-002 06/01/2018

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE,
ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER	$ 34.30	21.41

BRWI0007-002 06/01/2018

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 34.82	22.59

BRWI0008-002 06/01/2018

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.03	22.55

BRWI0011-002 06/01/2018

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.44	22.27

BRWI0019-002 06/01/2018

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN,
PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.97	22.74

BRWI0034-002 06/01/2018

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 34.80	22.61

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, TREMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER		
CARPENTER	$ 33.56	18.00
MILLWRIGHT	$ 35.08	18.35
PILEDRIVER	$ 34.12	18.00

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 05/01/2018

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 36.15	20.43

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 06/04/2018

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Maryville, Colby, Unity, Sherman, Fremont, Lynn & Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST CROIX, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes
Electricians:	$ 34.21	20.46

ELEC0014-007 06/05/2018

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer		
Installer/Technician	$ 26.25	13.92

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 06/04/2018

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE (East of a ine 6 miles West of the West boundary of Oconto

County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES

	Rates	Fringes
Electricians:	$ 32.50	19.68

ELEC0159-003 06/01/2018

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:	$ 39.04	21.56

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 05/16/2018

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 36.85	26.17

ELEC0388-002 06/03/2018

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:	$ 32.55	19.02

ELEC0430-002 01/01/2019

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 38.78	21.59

ELEC0494-005 06/01/2018

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 39.31	24.69

ELEC0494-006 06/01/2018

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 33.40	22.08

ELEC0494-013 06/01/2018

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	$ 19.56	15.78
Technician	$ 28.99	16.25

Installation, testing, maintenance, operation and servicing of all sound, intercom, telephone interconnect, closed circuit TV systems, radio systems, background music systems, language laboratories, electronic carillion, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

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ELEC0577-003 06/01/2018

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:	$ 32.18	18.59

ELEC0890-003 06/01/2018

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE,

RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 34.15	19.63

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 06/04/2018

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 40.72	22.10
Group 2	$ 40.22	22.10
Group 3	$ 39.72	22.10
Group 4	$ 39.46	22.10
Group 5	$ 39.17	22.10
Group 6	$ 33.27	22.10

HAZARDOUS WASTE PREMIUMS:
EPA Level "A" protection - $3.00 per hour
EPA Level "B" protection - $2.00 per hour
EPA Level "C" protection - $1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, tower cranes, and derricks with or without attachments with a lifting capacity of over 100 tons; or cranes, tower cranes, and derricks with boom, leads and/or jib lengths measuring 176 feet or longer.

GROUP 2: Cranes, tower cranes and derricks with or without attachments with a lifting capacity of 100 tons or less; or cranes, tower cranes, and derricks with boom, leads, and/or jibs lengths measuring 175 feet or under and Backhoes (excavators) weighing 130,000 lbs and over; caisson rigs; pile driver; dredge operator; dredge engineer; Boat Pilot.

GROUP 3: Mechanic or welder - Heavy duty equipment; cranes with a lifting capacity of 25 tons or under; concrete breaker (manual or remote); vibratory/sonic concrete breaker; concrete laser screed; concrete slipform paver; concrete batch plant operator; concrete pvt. spreader - heavy duty (rubber tired); concrete spreader & distributor; automatic subgrader (concrete); concrete grinder & planing machine; concrete slipform curb & gutter machine; slipform concrete placer; tube finisher; hydro blaster (10,000 psi & over); bridge paver; concrete conveyor system; concrete pump; Rotec type Conveyor; stabilizing mixer (self-propelled); shoulder widener; asphalt plant engineer; bituminious paver; bump cutter & grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer & scarifier; Backhoes (excavators) weighing under 130,000 lbs; grader or motor patrol; tractor (scraper, dozer,

pusher, loader); scraper - rubber tired (single or twin engine); endloader; hydraulic backhoe (tractor type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller over 5 tons; percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches & A-frames; post driver; material hoist.

GROUP 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self propelled; tractor (mounted or towed compactors & light equipment); shouldering machine; self- propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint sawer (multiple blade) belting machine; burlap machine; texturing machine; tractor endloader (rubber tired) - light; jeep digger; forklift; mulcher; launch operator; fireman, environmental burner

GROUP 5: Air compressor; power pack; vibrator hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; Concrete proportioning plants; generators; mudjack operator; rock breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator; Oiler, pump (over 3 inches); Drilling Machine Tender.

GROUP 6: Off-road material hauler with or without ejector.

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* IRON0008-002 06/03/2018

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER	$ 32.98	27.47

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

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* IRON0008-003 06/03/2018

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 34.88	27.72

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

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* IRON0383-001 06/01/2018

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	$ 35.00	25.22

IRON0498-005 06/01/2016

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

	Rates	Fringes
IRONWORKER	$ 36.29	30.77

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* IRON0512-008 05/01/2018

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 37.10	10.10

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* IRON0512-021 05/01/2018

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 32.64	10.10

LABO0113-002 06/04/2018

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 27.88	21.76
Group 2	$ 28.03	21.76
Group 3	$ 28.23	21.76
Group 4	$ 28.38	21.76
Group 5	$ 28.53	21.76
Group 6	$ 24.37	21.76

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter

(Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagperson; traffic control person

LABO0113-003 06/04/2018

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 27.13	21.76
Group 2	$ 27.23	21.76
Group 3	$ 27.28	21.76
Group 4	$ 27.48	21.76
Group 5	$ 27.33	21.76
Group 6	$ 24.22	21.76

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated);

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson and Traffic Control Person

LABO0113-011 06/04/2018

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 26.94	21.76
Group 2	$ 27.09	21.76
Group 3	$ 27.29	21.76
Group 4	$ 27.26	21.76
Group 5	$ 27.59	21.76
Group 6	$ 24.08	21.76

LABORERS CLASSIFICATIONS:

GROUP 1: General laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and

Utility Man); Batch Truck Dumper or Cement Handler; Bituminous worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagman; traffic control person

LABO0140-002 06/04/2018

ADAMS, ASHLAND, BARRON, BAYFIELD, BROWN, BUFFALO, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DOUGLAS, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IRON, JACKSON, JUNEAU, IOWA, JEFFERSON, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILLAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 31.80	17.20
Group 2	$ 31.90	17.20
Group 3	$ 31.95	17.20
Group 4	$ 32.15	17.20
Group 5	$ 32.00	17.20
Group 6	$ 28.43	17.20

LABORER CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bitminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator, Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk and Pavement); Strike Off Man

GROUP 4: Line and Grade Secialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson; Traffic Control

LABO0464-003 06/04/2018

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 32.08	17..20
Group 2	$ 32.18	17..20
Group 3	$ 32.23	17..20
Group 4	$ 32.43	17..20
Group 5	$ 32.28	17..20
Group 6	$ 28.43	17..20

LABORERS CLASSIFICATIONS:

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminious Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; Powderman

GROUP 6: Flagperson and Traffic Control Person

PAIN0106-008 05/01/2017

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, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
PAINTER	$ 22.03	12.45

PAIN0781-002 06/01/2018

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Painters:		
Bridge	$ 31.60	23.51
Brush	$ 31.55	23.51
Spray & Sandblast	$ 32.30	23.51

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, TREMPEALEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

TEAM0039-001 06/01/2018

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 28.12	21.20
3 or more Axles; Euclids Dumptor & Articulated, Truck Mechanic	$ 28.27	21.20
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.

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END OF GENERAL DECISION

August 2018

NOTICE TO BIDDERS
WAGE RATE DECISION

The wage rate decision of the Department of Labor which has been incorporated in these advertised specifications is incomplete in that the classifications may be omitted from the Department of Labor's decision.

Since the bidder is responsible, independently, for ascertaining area practice with respect to the necessity, or lack of necessity, for the use of these classifications in the prosecution of the work contemplated by this project, no inference may be drawn from the omission of these classifications concerning prevailing area practices relative to their use. Further, this omission will not, per se, be construed as establishing any governmental liability for increased labor cost if it is subsequently determined that such classifications are required.

There may be omissions and/or errors in the federal wage rates. The bidder is responsible for evaluating and determining the correct applicable rate.

If a project includes multiple types of construction (highway, bridge over navigable water, sanitary sewer and water main, building) and there is not a separate wage determination for this type of work included in the proposal, use the wage determination that is in the proposal.

If a project includes multiple types of construction, different wage rate determinations may be inserted into the contract (WI10/Highway = in all WisDOT highway contracts, WI15/Heavy = bridge over navigable water per USDOL and US Coast Guard designation, WI8/Heavy (Sewer & Water Line & Tunnel) = sanitary sewer and water main if the cost is more than 20% of the contract and/or at least $1,000,000, and Building). If multiple wage rate determinations are inserted into the contract, use the classification in the wage determination for the work being done. Use WI15 wage rates when working on the bridge and/or structure from bank to bank. Use WI8 wage rates when working on any sanitary sewer or water main work. Use Building wage rates for all work done within the footprint of the building. Use WI10 wage rates for all other highway work in the contract and approaches to structures. For example, if a laborer is working within the footprint of a building, use the Laborer rate in the Building wage determination inserted in the contract. If a laborer is working on a bridge/structure within the banks, use the Laborer rate in the WI15/Heavy wage determination if inserted in the contract. If the laborer is working on the highway, use the Laborer rate in the WI10/Highway wage determination.

Proposal ID: 20190709001 **Project(s):** 1003-10-80

Federal ID(s): WISC 2019496

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	109.000 STA	_____.____	_____.____
0004	201.0120 Clearing	70.000 ID	_____.____	_____.____
0006	201.0205 Grubbing	109.000 STA	_____.____	_____.____
0008	201.0220 Grubbing	70.000 ID	_____.____	_____.____
0010	203.0100 Removing Small Pipe Culverts	50.000 EACH	_____.____	_____.____
0012	203.0200 Removing Old Structure (station) 701. 33+00 MW	LS	LUMP SUM	_____.____
0014	203.0200 Removing Old Structure (station) 702. 33+00 ME	LS	LUMP SUM	_____.____
0016	203.0225.S Debris Containment (structure) 701. B-53-48	LS	LUMP SUM	_____.____
0018	203.0225.S Debris Containment (structure) 702. B-53-51	LS	LUMP SUM	_____.____
0020	203.0600.S Removing Old Structure Over Waterway With Minimal Debris (station) 701. 203+41'SB'	LS	LUMP SUM	_____.____
0022	203.0600.S Removing Old Structure Over Waterway With Minimal Debris (station) 702. 203+81'SB'	LS	LUMP SUM	_____.____
0024	204.0100 Removing Pavement	221,985.000 SY	_____.____	_____.____
0026	204.0105 Removing Pavement Butt Joints	533.000 SY	_____.____	_____.____
0028	204.0120 Removing Asphaltic Surface Milling	533.000 SY	_____.____	_____.____

Proposal ID: 20190709001 **Project(s):** 1003-10-80

Federal ID(s): WISC 2019496

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0030	204.0150 Removing Curb & Gutter	1,759.000 LF	_____.____	_____.____
0032	204.0165 Removing Guardrail	7,325.000 LF	_____.____	_____.____
0034	204.0170 Removing Fence	25,835.000 LF	_____.____	_____.____
0036	204.0190 Removing Surface Drains	1.000 EACH	_____.____	_____.____
0038	204.0195 Removing Concrete Bases	70.000 EACH	_____.____	_____.____
0040	204.0220 Removing Inlets	59.000 EACH	_____.____	_____.____
0042	204.0245 Removing Storm Sewer (size) 001. 12-inch	168.000 LF	_____.____	_____.____
0044	204.0245 Removing Storm Sewer (size) 002. 15-INCH	960.000 LF	_____.____	_____.____
0046	204.0245 Removing Storm Sewer (size) 003. 18-INCH	288.000 LF	_____.____	_____.____
0048	204.0245 Removing Storm Sewer (size) 004. 24-INCH	1,053.000 LF	_____.____	_____.____
0050	204.0245 Removing Storm Sewer (size) 005. 30-INCH	257.000 LF	_____.____	_____.____
0052	204.0245 Removing Storm Sewer (size) 006. 36-INCH	979.000 LF	_____.____	_____.____
0054	204.0245 Removing Storm Sewer (size) 007. 48-INCH	279.000 LF	_____.____	_____.____
0056	204.0255 Abandoning Catch Basins	1.000 EACH	_____.____	_____.____
0058	204.9060.S Removing (item description) 001. Pipe Cover or Cover Plate	37.000 EACH	_____.____	_____.____

Proposal ID: 20190709001 **Project(s):** 1003-10-80

Federal ID(s): WISC 2019496

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0060	204.9060.S Removing (item description) 002. Inlet Covers	4.000 EACH	_____.____	_____.____
0062	205.0100 Excavation Common	616,576.000 CY	_____.____	_____.____
0064	206.1000 Excavation for Structures Bridges (structure) 701. B-53-300	LS	LUMP SUM	_____.____
0066	206.1000 Excavation for Structures Bridges (structure) 702. B-53-302	LS	LUMP SUM	_____.____
0068	206.1000 Excavation for Structures Bridges (structure) 703. B-53-303	LS	LUMP SUM	_____.____
0070	206.1000 Excavation for Structures Bridges (structure) 704. B-53-304	LS	LUMP SUM	_____.____
0072	206.1000 Excavation for Structures Bridges (structure) 705. B-53-305	LS	LUMP SUM	_____.____
0074	206.1000 Excavation for Structures Bridges (structure) 706. B-53-306	LS	LUMP SUM	_____.____
0076	206.1000 Excavation for Structures Bridges (structure) 707. B-53-307	LS	LUMP SUM	_____.____
0078	206.5000 Cofferdams (structure) 701. B-53-300	LS	LUMP SUM	_____.____
0080	208.1100 Select Borrow	56,500.000 CY	_____.____	_____.____
0082	209.0300.S Backfill Coarse Aggregate (size) 001. No. 1	7.000 CY	_____.____	_____.____
0084	209.2100 Backfill Granular Grade 2	5,038.000 CY	_____.____	_____.____
0086	210.1500 Backfill Structure Type A	3,680.000 TON	_____.____	_____.____

Proposal ID: 20190709001 **Project(s):** 1003-10-80

Federal ID(s): WISC 2019496

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0088	213.0100 Finishing Roadway (project) 001. 1003-10-80	1.000 EACH	_____.____	_____.____
0090	305.0110 Base Aggregate Dense 3/4-Inch	8,757.000 TON	_____.____	_____.____
0092	305.0120 Base Aggregate Dense 1 1/4-Inch	219,215.000 TON	_____.____	_____.____
0094	312.0110 Select Crushed Material	302,635.000 TON	_____.____	_____.____
0096	415.0080 Concrete Pavement 8-Inch	30,236.000 SY	_____.____	_____.____
0098	415.0085 Concrete Pavement 8 1/2-Inch	22,466.000 SY	_____.____	_____.____
0100	415.0100 Concrete Pavement 10-Inch	42,324.000 SY	_____.____	_____.____
0102	415.0110 Concrete Pavement 11-Inch	28,017.000 SY	_____.____	_____.____
0104	415.0130 Concrete Pavement 13-Inch	204,477.000 SY	_____.____	_____.____
0106	415.0410 Concrete Pavement Approach Slab	1,304.000 SY	_____.____	_____.____
0108	415.6000.S Rout and Seal	7,260.000 LF	_____.____	_____.____
0110	416.0160 Concrete Driveway 6-Inch	185.000 SY	_____.____	_____.____
0112	416.0610 Drilled Tie Bars	2,499.000 EACH	_____.____	_____.____
0114	416.0620 Drilled Dowel Bars	511.000 EACH	_____.____	_____.____
0116	416.1010 Concrete Surface Drains	25.000 CY	_____.____	_____.____
0118	416.1110 Concrete Shoulder Rumble Strips	49,903.000 LF	_____.____	_____.____

Proposal ID: 20190709001 **Project(s):** 1003-10-80

Federal ID(s): WISC 2019496

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0120	455.0605 Tack Coat	2,698.000 GAL	_____.____	_____.____
0122	460.2000 Incentive Density HMA Pavement	20,400.000 DOL	1.00000	20,400.00
0124	460.5223 HMA Pavement 3 LT 58-28 S	2,907.000 TON	_____.____	_____.____
0126	460.5224 HMA Pavement 4 LT 58-28 S	12,032.000 TON	_____.____	_____.____
0128	460.6223 HMA Pavement 3 MT 58-28 S	903.000 TON	_____.____	_____.____
0130	460.6224 HMA Pavement 4 MT 58-28 S	847.000 TON	_____.____	_____.____
0132	460.7223 HMA Pavement 3 HT 58-28 S	9,025.000 TON	_____.____	_____.____
0134	460.7624 HMA Pavement 4 HT 58-28 V	6,013.000 TON	_____.____	_____.____
0136	465.0120 Asphaltic Surface Driveways and Field Entrances	220.000 TON	_____.____	_____.____
0138	465.0310 Asphaltic Curb	969.000 LF	_____.____	_____.____
0140	465.0315 Asphaltic Flumes	72.000 SY	_____.____	_____.____
0142	465.0400 Asphaltic Shoulder Rumble Strips	9,833.000 LF	_____.____	_____.____
0144	501.1000.S Ice Hot Weather Concreting	201,279.000 LB	_____.____	_____.____
0146	502.0100 Concrete Masonry Bridges	6,594.000 CY	_____.____	_____.____
0148	502.3110.S Expansion Device Modular (structure) 701. B-53-304	LS	LUMP SUM	_____.____
0150	502.3110.S Expansion Device Modular (structure) 702. B-53-305	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0152	502.3110.S Expansion Device Modular (structure) 703. B-53-306	LS	LUMP SUM	_____.____
0154	502.3200 Protective Surface Treatment	7,808.000 SY	_____.____	_____.____
0156	502.3210 Pigmented Surface Sealer	5,543.000 SY	_____.____	_____.____
0158	502.4105 Adhesive Anchors 5/8-inch	492.000 EACH	_____.____	_____.____
0160	503.0146 Prestressed Girder Type I 45W-Inch	344.000 LF	_____.____	_____.____
0162	503.0155 Prestressed Girder Type I 54W-Inch	7,707.000 LF	_____.____	_____.____
0164	504.0500 Concrete Masonry Retaining Walls	423.000 CY	_____.____	_____.____
0166	505.0400 Bar Steel Reinforcement HS Structures	406,090.000 LB	_____.____	_____.____
0168	505.0600 Bar Steel Reinforcement HS Coated Structures	2,508,270.000 LB	_____.____	_____.____
0170	505.0800.S Bar Steel Reinforcement HS Stainless Structures	11,750.000 LB	_____.____	_____.____
0172	505.0911 Bar Couplers No. 11	212.000 EACH	_____.____	_____.____
0174	506.0605 Structural Steel HS	8,100,757.000 LB	_____.____	_____.____
0176	506.2605 Bearing Pads Elastomeric Non-Laminated	128.000 EACH	_____.____	_____.____
0178	506.3020 Welded Stud Shear Connectors 7/8x7-Inch	40,293.000 EACH	_____.____	_____.____
0180	506.4000 Steel Diaphragms (structure) 701. B-53-300	36.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0182	506.4000 Steel Diaphragms (structure) 702. B-53-302	32.000 EACH	_____.____	_____.____
0184	506.4000 Steel Diaphragms (structure) 703. B-53-303	40.000 EACH	_____.____	_____.____
0186	506.4000 Steel Diaphragms (structure) 704. B-53-307	6.000 EACH	_____.____	_____.____
0188	509.5100.S Polymer Overlay	21,577.000 SY	_____.____	_____.____
0190	511.1200 Temporary Shoring (structure) 701. B-53-302	1,050.000 SF	_____.____	_____.____
0192	511.1200 Temporary Shoring (structure) 702. B-53-303	1,400.000 SF	_____.____	_____.____
0194	511.1200 Temporary Shoring (structure) 703. B-53-304	8,700.000 SF	_____.____	_____.____
0196	511.1200 Temporary Shoring (structure) 704. B-53-305	3,345.000 SF	_____.____	_____.____
0198	511.1200 Temporary Shoring (structure) 705. B-53-306	400.000 SF	_____.____	_____.____
0200	511.1200 Temporary Shoring (structure) 706. B-53-300	1,600.000 SF	_____.____	_____.____
0202	513.4091 Railing Tubular Screening	2,056.000 LF	_____.____	_____.____
0204	514.0450 Floor Drains Type WF	10.000 EACH	_____.____	_____.____
0206	514.2608 Downspout 8-Inch	515.000 LF	_____.____	_____.____
0208	516.0500 Rubberized Membrane Waterproofing	287.000 SY	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0210	517.0600 Painting Epoxy System (structure) 701. B-53-304	LS	LUMP SUM	_____.____
0212	517.0600 Painting Epoxy System (structure) 702. B-53-305	LS	LUMP SUM	_____.____
0214	517.0600 Painting Epoxy System (structure) 703. B-53-306	LS	LUMP SUM	_____.____
0216	517.1010.S Concrete Staining (structure) 701. B-53-302	10,770.000 SF	_____.____	_____.____
0218	517.1010.S Concrete Staining (structure) 702. B-53-303	11,430.000 SF	_____.____	_____.____
0220	517.1010.S Concrete Staining (structure) 703. B-53-304	50,930.000 SF	_____.____	_____.____
0222	517.1010.S Concrete Staining (structure) 704. B-53-305	11,315.000 SF	_____.____	_____.____
0224	517.1010.S Concrete Staining (structure) 705. B-53-306	24,110.000 SF	_____.____	_____.____
0226	517.1010.S Concrete Staining (structure) 706. B-53-307	4,090.000 SF	_____.____	_____.____
0228	517.1010.S Concrete Staining (structure) 707. R-53-63	4,420.000 SF	_____.____	_____.____
0230	517.1010.S Concrete Staining (structure) 708. R-53-64	8,500.000 SF	_____.____	_____.____
0232	517.1010.S Concrete Staining (structure) 709. R-53-65	2,085.000 SF	_____.____	_____.____
0234	517.1010.S Concrete Staining (structure) 710. R-53-66	3,160.000 SF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0236	517.1010.S Concrete Staining (structure) 711. R-53-67	1,170.000 SF	_____.____	_____.____
0238	517.1010.S Concrete Staining (structure) 712. R-53-69	3,480.000 SF	_____.____	_____.____
0240	517.1010.S Concrete Staining (structure) 713. R-53-70	2,150.000 SF	_____.____	_____.____
0242	520.8000 Concrete Collars for Pipe	88.000 EACH	_____.____	_____.____
0244	521.0448 Apron Endwalls for Culvert Pipe Sloped Cross Drains Steel 48-Inch 6 to 1	1.000 EACH	_____.____	_____.____
0246	521.1012 Apron Endwalls for Culvert Pipe Steel 12-Inch	1.000 EACH	_____.____	_____.____
0248	521.2005.S Surface Drain Pipe Corrugated Metal Slotted (inch) 001. 12-Inch	928.000 LF	_____.____	_____.____
0250	521.3112 Culvert Pipe Corrugated Steel 12-Inch	15.000 LF	_____.____	_____.____
0252	522.0112 Culvert Pipe Reinforced Concrete Class III 12-Inch	11.000 LF	_____.____	_____.____
0254	522.0115 Culvert Pipe Reinforced Concrete Class III 15-Inch	24.000 LF	_____.____	_____.____
0256	522.0118 Culvert Pipe Reinforced Concrete Class III 18-Inch	609.000 LF	_____.____	_____.____
0258	522.0124 Culvert Pipe Reinforced Concrete Class III 24-Inch	1,426.000 LF	_____.____	_____.____
0260	522.0130 Culvert Pipe Reinforced Concrete Class III 30-Inch	178.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0262	522.0136 Culvert Pipe Reinforced Concrete Class III 36-Inch	247.000 LF	_____.____	_____.____
0264	522.0142 Culvert Pipe Reinforced Concrete Class III 42-Inch	89.000 LF	_____.____	_____.____
0266	522.0148 Culvert Pipe Reinforced Concrete Class III 48-Inch	1,464.000 LF	_____.____	_____.____
0268	522.0160 Culvert Pipe Reinforced Concrete Class III 60-Inch	503.000 LF	_____.____	_____.____
0270	522.0415 Culvert Pipe Reinforced Concrete Class IV 15-Inch	160.000 LF	_____.____	_____.____
0272	522.0430 Culvert Pipe Reinforced Concrete Class IV 30-Inch	168.000 LF	_____.____	_____.____
0274	522.0460 Culvert Pipe Reinforced Concrete Class IV 60-Inch	313.000 LF	_____.____	_____.____
0276	522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	7.000 EACH	_____.____	_____.____
0278	522.1015 Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	35.000 EACH	_____.____	_____.____
0280	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	22.000 EACH	_____.____	_____.____
0282	522.1021 Apron Endwalls for Culvert Pipe Reinforced Concrete 21-Inch	2.000 EACH	_____.____	_____.____
0284	522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	38.000 EACH	_____.____	_____.____
0286	522.1030 Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	10.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0288	522.1036 Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	3.000 EACH	_____.____	_____.____
0290	522.1042 Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	3.000 EACH	_____.____	_____.____
0292	522.1048 Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	12.000 EACH	_____.____	_____.____
0294	522.1054 Apron Endwalls for Culvert Pipe Reinforced Concrete 54-Inch	1.000 EACH	_____.____	_____.____
0296	522.1060 Apron Endwalls for Culvert Pipe Reinforced Concrete 60-Inch	6.000 EACH	_____.____	_____.____
0298	522.2338 Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 38x60-Inch	511.000 LF	_____.____	_____.____
0300	550.0020 Pre-Boring Rock or Consolidated Materials	1,305.000 LF	_____.____	_____.____
0302	550.1120 Piling Steel HP 12-Inch X 53 Lb	13,600.000 LF	_____.____	_____.____
0304	550.1140 Piling Steel HP 14-Inch X 73 Lb	20,755.000 LF	_____.____	_____.____
0306	601.0409 Concrete Curb & Gutter 30-Inch Type A	23,177.000 LF	_____.____	_____.____
0308	601.0411 Concrete Curb & Gutter 30-Inch Type D	1,621.000 LF	_____.____	_____.____
0310	601.0551 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type A	2,676.000 LF	_____.____	_____.____
0312	601.0553 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	710.000 LF	_____.____	_____.____
0314	601.0557 Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	574.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0316	602.0410 Concrete Sidewalk 5-Inch	14,022.000 SF	_____.____	_____.____
0318	602.0505 Curb Ramp Detectable Warning Field Yellow	452.000 SF	_____.____	_____.____
0320	603.1142 Concrete Barrier Type S42	44,842.000 LF	_____.____	_____.____
0322	603.1156 Concrete Barrier Type S56	280.000 LF	_____.____	_____.____
0324	603.8000 Concrete Barrier Temporary Precast Delivered	54,060.000 LF	_____.____	_____.____
0326	603.8125 Concrete Barrier Temporary Precast Installed	132,132.000 LF	_____.____	_____.____
0328	604.0400 Slope Paving Concrete	3,904.000 SY	_____.____	_____.____
0330	604.0500 Slope Paving Crushed Aggregate	1,487.000 SY	_____.____	_____.____
0332	606.0100 Riprap Light	36.000 CY	_____.____	_____.____
0334	606.0200 Riprap Medium	306.000 CY	_____.____	_____.____
0336	606.0300 Riprap Heavy	460.000 CY	_____.____	_____.____
0338	608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	1,610.000 LF	_____.____	_____.____
0340	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	2,730.000 LF	_____.____	_____.____
0342	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	1,728.000 LF	_____.____	_____.____
0344	608.0321 Storm Sewer Pipe Reinforced Concrete Class III 21-Inch	119.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0346	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	984.000 LF	_____.____	_____.____
0348	608.0330 Storm Sewer Pipe Reinforced Concrete Class III 30-Inch	148.000 LF	_____.____	_____.____
0350	608.0342 Storm Sewer Pipe Reinforced Concrete Class III 42-Inch	561.000 LF	_____.____	_____.____
0352	608.0348 Storm Sewer Pipe Reinforced Concrete Class III 48-Inch	232.000 LF	_____.____	_____.____
0354	608.0354 Storm Sewer Pipe Reinforced Concrete Class III 54-Inch	341.000 LF	_____.____	_____.____
0356	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	299.000 LF	_____.____	_____.____
0358	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	1,715.000 LF	_____.____	_____.____
0360	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	774.000 LF	_____.____	_____.____
0362	608.0421 Storm Sewer Pipe Reinforced Concrete Class IV 21-Inch	204.000 LF	_____.____	_____.____
0364	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	939.000 LF	_____.____	_____.____
0366	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	351.000 LF	_____.____	_____.____
0368	608.0436 Storm Sewer Pipe Reinforced Concrete Class IV 36-Inch	143.000 LF	_____.____	_____.____
0370	611.0430 Reconstructing Inlets	2.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0372	611.0530 Manhole Covers Type J	10.000 EACH	_____.____	_____.____
0374	611.0606 Inlet Covers Type B	3.000 EACH	_____.____	_____.____
0376	611.0610 Inlet Covers Type BW	113.000 EACH	_____.____	_____.____
0378	611.0612 Inlet Covers Type C	1.000 EACH	_____.____	_____.____
0380	611.0615 Inlet Covers Type F	3.000 EACH	_____.____	_____.____
0382	611.0624 Inlet Covers Type H	123.000 EACH	_____.____	_____.____
0384	611.0627 Inlet Covers Type HM	18.000 EACH	_____.____	_____.____
0386	611.0642 Inlet Covers Type MS	36.000 EACH	_____.____	_____.____
0388	611.0654 Inlet Covers Type V	3.000 EACH	_____.____	_____.____
0390	611.2003 Manholes 3-FT Diameter	1.000 EACH	_____.____	_____.____
0392	611.2004 Manholes 4-FT Diameter	7.000 EACH	_____.____	_____.____
0394	611.2006 Manholes 6-FT Diameter	1.000 EACH	_____.____	_____.____
0396	611.2007 Manholes 7-FT Diameter	2.000 EACH	_____.____	_____.____
0398	611.2008 Manholes 8-FT Diameter	2.000 EACH	_____.____	_____.____
0400	611.3004 Inlets 4-FT Diameter	44.000 EACH	_____.____	_____.____
0402	611.3220 Inlets 2x2-FT	3.000 EACH	_____.____	_____.____
0404	611.3225 Inlets 2x2.5-FT	73.000 EACH	_____.____	_____.____

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0406	611.3230 Inlets 2x3-FT	94.000 EACH	_____.____	_____.____
0408	611.3253 Inlets 2.5x3-FT	3.000 EACH	_____.____	_____.____
0410	611.3901 Inlets Median 1 Grate	22.000 EACH	_____.____	_____.____
0412	611.3902 Inlets Median 2 Grate	8.000 EACH	_____.____	_____.____
0414	611.8110 Adjusting Manhole Covers	4.000 EACH	_____.____	_____.____
0416	611.8115 Adjusting Inlet Covers	27.000 EACH	_____.____	_____.____
0418	611.8120.S Cover Plates Temporary	21.000 EACH	_____.____	_____.____
0420	612.0106 Pipe Underdrain 6-Inch	41,223.000 LF	_____.____	_____.____
0422	612.0206 Pipe Underdrain Unperforated 6-Inch	911.000 LF	_____.____	_____.____
0424	612.0212 Pipe Underdrain Unperforated 12-Inch	148.000 LF	_____.____	_____.____
0426	612.0406 Pipe Underdrain Wrapped 6-Inch	4,687.000 LF	_____.____	_____.____
0428	612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	10.000 EACH	_____.____	_____.____
0430	614.0150 Anchor Assemblies for Steel Plate Beam Guard	10.000 EACH	_____.____	_____.____
0432	614.0200 Steel Thrie Beam Structure Approach	336.000 LF	_____.____	_____.____
0434	614.0800 Crash Cushions Permanent	11.000 EACH	_____.____	_____.____
0436	614.0905 Crash Cushions Temporary	42.000 EACH	_____.____	_____.____

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0438	614.0930 Salvaged Crash Cushions	1.000 EACH	_____.____	_____.____
0440	614.2300 MGS Guardrail 3	10,238.000 LF	_____.____	_____.____
0442	614.2500 MGS Thrie Beam Transition	694.000 LF	_____.____	_____.____
0444	614.2610 MGS Guardrail Terminal EAT	29.000 EACH	_____.____	_____.____
0446	614.2620 MGS Guardrail Terminal Type 2	14.000 EACH	_____.____	_____.____
0448	616.0100 Fence Woven Wire (height) 001. 4-FT	15,508.000 LF	_____.____	_____.____
0450	616.0206 Fence Chain Link 6-FT	15,975.000 LF	_____.____	_____.____
0452	616.0700.S Fence Safety	6,000.000 LF	_____.____	_____.____
0454	618.0100 Maintenance And Repair of Haul Roads (project) 001. 1003-10-80	1.000 EACH	_____.____	_____.____
0456	619.1000 Mobilization	1.000 EACH	_____.____	_____.____
0458	620.0300 Concrete Median Sloped Nose	416.000 SF	_____.____	_____.____
0460	624.0100 Water	3,393.000 MGAL	_____.____	_____.____
0462	625.0500 Salvaged Topsoil	500,000.000 SY	_____.____	_____.____
0464	627.0200 Mulching	500,000.000 SY	_____.____	_____.____
0466	628.1504 Silt Fence	8,150.000 LF	_____.____	_____.____
0468	628.1520 Silt Fence Maintenance	16,300.000 LF	_____.____	_____.____

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0470	628.1905 Mobilizations Erosion Control	15.000 EACH	_____.____	_____.____
0472	628.1910 Mobilizations Emergency Erosion Control	20.000 EACH	_____.____	_____.____
0474	628.1920 Cleaning Sediment Basins	250.000 CY	_____.____	_____.____
0476	628.2004 Erosion Mat Class I Type B	174,469.000 SY	_____.____	_____.____
0478	628.2006 Erosion Mat Urban Class I Type A	1,000.000 SY	_____.____	_____.____
0480	628.6505 Soil Stabilizer Type A	50.000 ACRE	_____.____	_____.____
0482	628.6510 Soil Stabilizer Type B	50.000 ACRE	_____.____	_____.____
0484	628.7005 Inlet Protection Type A	26.000 EACH	_____.____	_____.____
0486	628.7010 Inlet Protection Type B	310.000 EACH	_____.____	_____.____
0488	628.7504 Temporary Ditch Checks	1,855.000 LF	_____.____	_____.____
0490	628.7555 Culvert Pipe Checks	34.000 EACH	_____.____	_____.____
0492	628.7560 Tracking Pads	20.000 EACH	_____.____	_____.____
0494	629.0205 Fertilizer Type A	200.000 CWT	_____.____	_____.____
0496	630.0110 Seeding Mixture No. 10	1,250.000 LB	_____.____	_____.____
0498	630.0120 Seeding Mixture No. 20	2,000.000 LB	_____.____	_____.____
0500	630.0130 Seeding Mixture No. 30	6,500.000 LB	_____.____	_____.____
0502	630.0200 Seeding Temporary	1,500.000 LB	_____.____	_____.____

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0504	632.0101 Trees (species) (size) (root) 001. Oak, Eastern White, B&B, 2-Inch Cal.	37.000 EACH	_____.____	_____.____
0506	632.0101 Trees (species) (size) (root) 002. Oak, Bur, B&B, 2-Inch Cal.	120.000 EACH	_____.____	_____.____
0508	632.0101 Trees (species) (size) (root) 003. Oak, Red, B&B, 2-Inch Cal.	61.000 EACH	_____.____	_____.____
0510	632.0101 Trees (species) (size) (root) 004. Oak, Northern Pin, B&B, 2-Inch Cal.	35.000 EACH	_____.____	_____.____
0512	632.0101 Trees (species) (size) (root) 005. Oak Swamp White, B&B, 2-1/2-Inch Cal.	112.000 EACH	_____.____	_____.____
0514	632.0101 Trees (species) (size) (root) 006. Hackberry, Common, B&B, 2-1/2-Inch Cal.	71.000 EACH	_____.____	_____.____
0516	632.0101 Trees (species) (size) (root) 007. Maple, Freeman Marmo, B&B, 2-1/2 Inch Cal.	18.000 EACH	_____.____	_____.____
0518	632.0101 Trees (species) (size) (root) 008. Maple, Sugar, B&B, 2 1/2-Inch Cal.	30.000 EACH	_____.____	_____.____
0520	632.0101 Trees (species) (size) (root) 009. Hickory, Shagbark, B&B, 2-1/2-Inch Cal.	65.000 EACH	_____.____	_____.____
0522	632.0101 Trees (species) (size) (root) 010. Walnut, Black, B&B, 2-Inch Cal.	32.000 EACH	_____.____	_____.____
0524	632.0101 Trees (species) (size) (root) 011. Ginkgo, Magyar, B&B, 2 1/2-Inch Cal.	51.000 EACH	_____.____	_____.____
0526	632.0101 Trees (species) (size) (root) 012. Maple, Red Sunset, B&B, 2 1/2-Inch Cal.	30.000 EACH	_____.____	_____.____
0528	632.0101 Trees (species) (size) (root) 013. Honeylocust, Skyline, B&B, 2-1/2-Inch Cal.	3.000 EACH	_____.____	_____.____

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0530	632.0101 Trees (species) (size) (root) 014. Maple, Autumn Blaze, B&B, 2-1/2 Inch Cal.	57.000 EACH	_____.____	_____.____
0532	632.0101 Trees (species) (size) (root) 015. Planetree, Exclamation, B&B, 2-Inch Cal.	17.000 EACH	_____.____	_____.____
0534	632.0101 Trees (species) (size) (root) 016. Aspen, Quaking, B&B, 2-1/2 Inch Cal.	11.000 EACH	_____.____	_____.____
0536	632.0101 Trees (species) (size) (root) 017. Coffeetree, Kentucky 'Espresso', B&B, 2-Inch Cal.	40.000 EACH	_____.____	_____.____
0538	632.0101 Trees (species) (size) (root) 018. Pine, Austrian, B&B, 8-Foot Ht.	333.000 EACH	_____.____	_____.____
0540	632.0101 Trees (species) (size) (root) 019. Baldcypress, Shawnee Brave, B&B, 8-Foot Ht.	27.000 EACH	_____.____	_____.____
0542	632.0101 Trees (species) (size) (root) 020. Cedar, Eastern Red, B&B, 8-Foot Ht.	166.000 EACH	_____.____	_____.____
0544	632.0101 Trees (species) (size) (root) 021. Arborvitae Eastern, B&B, 8-Foot Ht.	72.000 EACH	_____.____	_____.____
0546	632.0101 Trees (species) (size) (root) 022. Hawthorn, Thornless Cockspur, B&B, 6-FOOT HT.	82.000 EACH	_____.____	_____.____
0548	632.0101 Trees (species) (size) (root) 023. Crabapple, Redbud, B&B, 6-Foot Ht.	34.000 EACH	_____.____	_____.____
0550	632.0101 Trees (species) (size) (root) 024. Birch, Paper, B&B, 6-Foot Ht.	74.000 EACH	_____.____	_____.____
0552	632.0101 Trees (species) (size) (root) 025. Lilac, Chinese Tree, B&B, 8-Foot Ht.	19.000 EACH	_____.____	_____.____

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0554	632.0101 Trees (species) (size) (root) 026. Lilac, Japanese Tree, B&B, 8-Foot Ht.	30.000 EACH	_____.____	_____.____
0556	632.0101 Trees (species) (size) (root) 027. Ash, Showy Mountain B&B, 6-Foot Ht.	16.000 EACH	_____.____	_____.____
0558	632.0201 Shrubs (species) (size) (root) 001. Juniper, Oldfield Common, Container, 3-Foot HT. #5	139.000 EACH	_____.____	_____.____
0560	632.0201 Shrubs (species) (size) (root) 002. Currant, American Black, Container, 3-Foot HT. #5	168.000 EACH	_____.____	_____.____
0562	632.0201 Shrubs (species) (size) (root) 003. Snowberry, White, Container, 3-Foot HT. #5	92.000 EACH	_____.____	_____.____
0564	632.0201 Shrubs (species) (size) (root) 004. Sumac, Staghorn, Container, 3-Foot HT. #5	183.000 EACH	_____.____	_____.____
0566	632.0201 Shrubs (species) (size) (root) 005. Viburnum, Blue Muffin Arrowwood, Container, 3-Foot Ht. #5	76.000 EACH	_____.____	_____.____
0568	632.9101 Landscape Planting Surveillance and Care Cycles	26.000 EACH	_____.____	_____.____
0570	633.0100 Delineator Posts Steel	282.000 EACH	_____.____	_____.____
0572	633.0500 Delineator Reflectors	902.000 EACH	_____.____	_____.____
0574	633.1000 Delineators Barrier Wall	546.000 EACH	_____.____	_____.____
0576	634.0614 Posts Wood 4x6-Inch X 14-FT	74.000 EACH	_____.____	_____.____
0578	634.0616 Posts Wood 4x6-Inch X 16-FT	98.000 EACH	_____.____	_____.____

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0580	634.0618 Posts Wood 4x6-Inch X 18-FT	49.000 EACH	_____.____	_____.____
0582	634.0620 Posts Wood 4x6-Inch X 20-FT	17.000 EACH	_____.____	_____.____
0584	635.0200 Sign Supports Structural Steel HS	5,629.000 LB	_____.____	_____.____
0586	636.0100 Sign Supports Concrete Masonry	289.800 CY	_____.____	_____.____
0588	636.0500 Sign Supports Steel Reinforcement	634.000 LB	_____.____	_____.____
0590	636.1500 Sign Supports Steel Coated Reinforcement HS	39,700.000 LB	_____.____	_____.____
0592	637.1220 Signs Type I Reflective SH	5,287.530 SF	_____.____	_____.____
0594	637.2210 Signs Type II Reflective H	2,838.330 SF	_____.____	_____.____
0596	637.2220 Signs Type II Reflective SH	85.500 SF	_____.____	_____.____
0598	637.2230 Signs Type II Reflective F	480.500 SF	_____.____	_____.____
0600	638.2101 Moving Signs Type I	14.000 EACH	_____.____	_____.____
0602	638.2102 Moving Signs Type II	99.000 EACH	_____.____	_____.____
0604	638.2601 Removing Signs Type I	59.000 EACH	_____.____	_____.____
0606	638.2602 Removing Signs Type II	229.000 EACH	_____.____	_____.____
0608	638.3000 Removing Small Sign Supports	240.000 EACH	_____.____	_____.____
0610	638.3100 Removing Structural Steel Sign Supports	26.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0612	638.3150 Removing Overhead Sign Supports Cantilever (structure) 001. S-53-010	1.000 EACH	_____.____	_____.____
0614	638.3150 Removing Overhead Sign Supports Cantilever (structure) 002. S-53-012	1.000 EACH	_____.____	_____.____
0616	638.3150 Removing Overhead Sign Supports Cantilever (structure) 003. S-53-014	1.000 EACH	_____.____	_____.____
0618	638.3155 Removing Overhead Sign Supports Full Span (structure) 001. S-53-022	1.000 EACH	_____.____	_____.____
0620	638.3155 Removing Overhead Sign Supports Full Span (structure) 002. S-53-013	1.000 EACH	_____.____	_____.____
0622	638.3155 Removing Overhead Sign Supports Full Span (structure) 003. S-53-015	1.000 EACH	_____.____	_____.____
0624	638.3155 Removing Overhead Sign Supports Full Span (structure) 004. S-53-005	1.000 EACH	_____.____	_____.____
0626	638.4000 Moving Small Sign Supports	114.000 EACH	_____.____	_____.____
0628	641.1200 Sign Bridge Cantilevered (structure) 001. S-53-132	LS	LUMP SUM	_____.____
0630	641.1200 Sign Bridge Cantilevered (structure) 002. S-53-117	LS	LUMP SUM	_____.____
0632	641.6600 Sign Bridge (structure) 009. S-53-129	LS	LUMP SUM	_____.____
0634	641.6600 Sign Bridge (structure) 116. S-53-116	LS	LUMP SUM	_____.____
0636	641.6600 Sign Bridge (structure) 118. S-53-118	LS	LUMP SUM	_____.____
0638	641.6600 Sign Bridge (structure) 119. S-53-119	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0640	641.6600 Sign Bridge (structure) 120. S-53-120	LS	LUMP SUM	_____.____
0642	641.6600 Sign Bridge (structure) 121. S-53-121	LS	LUMP SUM	_____.____
0644	641.6600 Sign Bridge (structure) 122. S-53-122	LS	LUMP SUM	_____.____
0646	641.6600 Sign Bridge (structure) 123. S-53-123	LS	LUMP SUM	_____.____
0648	641.6600 Sign Bridge (structure) 130. S-53-130	LS	LUMP SUM	_____.____
0650	641.6600 Sign Bridge (structure) 133.. S-53-133	LS	LUMP SUM	_____.____
0652	642.5401 Field Office Type D	1.000 EACH	_____.____	_____.____
0654	643.0300 Traffic Control Drums	326,672.000 DAY	_____.____	_____.____
0656	643.0420 Traffic Control Barricades Type III	20,134.000 DAY	_____.____	_____.____
0658	643.0500 Traffic Control Flexible Tubular Marker Posts	20.000 EACH	_____.____	_____.____
0660	643.0600 Traffic Control Flexible Tubular Marker Bases	20.000 EACH	_____.____	_____.____
0662	643.0705 Traffic Control Warning Lights Type A	28,770.000 DAY	_____.____	_____.____
0664	643.0715 Traffic Control Warning Lights Type C	63,271.000 DAY	_____.____	_____.____
0666	643.0800 Traffic Control Arrow Boards	3,167.000 DAY	_____.____	_____.____
0668	643.0900 Traffic Control Signs	158,499.000 DAY	_____.____	_____.____
0670	643.0910 Traffic Control Covering Signs Type I	21.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0672	643.0920 Traffic Control Covering Signs Type II	39.000 EACH	_____.____	_____.____
0674	643.1000 Traffic Control Signs Fixed Message	660.000 SF	_____.____	_____.____
0676	643.1050 Traffic Control Signs PCMS	2,520.000 DAY	_____.____	_____.____
0678	643.5000 Traffic Control	1.000 EACH	_____.____	_____.____
0680	645.0111 Geotextile Type DF Schedule A	21,684.000 SY	_____.____	_____.____
0682	645.0120 Geotextile Type HR	1,920.000 SY	_____.____	_____.____
0684	645.0130 Geotextile Type R	24.000 SY	_____.____	_____.____
0686	646.1020 Marking Line Epoxy 4-Inch	45,459.000 LF	_____.____	_____.____
0688	646.1040 Marking Line Grooved Wet Ref Epoxy 4-Inch	218,742.000 LF	_____.____	_____.____
0690	646.1555 Marking Line Grooved Contrast Permanent Tape 4-Inch	41,808.000 LF	_____.____	_____.____
0692	646.3020 Marking Line Epoxy 8-Inch	8,867.000 LF	_____.____	_____.____
0694	646.3555 Marking Line Grooved Contrast Permanent Tape 8-Inch	17,787.000 LF	_____.____	_____.____
0696	646.5020 Marking Arrow Epoxy	106.000 EACH	_____.____	_____.____
0698	646.5120 Marking Word Epoxy	19.000 EACH	_____.____	_____.____
0700	646.5220 Marking Symbol Epoxy	33.000 EACH	_____.____	_____.____
0702	646.5520 Marking Outfall Epoxy	10.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0704	646.6120 Marking Stop Line Epoxy 18-Inch	573.000 LF	_____.____	_____.____
0706	646.6464 Cold Weather Marking Epoxy 4-Inch	5,000.000 LF	_____.____	_____.____
0708	646.6468 Cold Weather Marking Epoxy 8-Inch	3,000.000 LF	_____.____	_____.____
0710	646.7120 Marking Diagonal Epoxy 12-Inch	277.000 LF	_____.____	_____.____
0712	646.7220 Marking Chevron Epoxy 24-Inch	1,239.000 LF	_____.____	_____.____
0714	646.7420 Marking Crosswalk Epoxy Transverse Line 6-Inch	1,184.000 LF	_____.____	_____.____
0716	646.8120 Marking Curb Epoxy	82.000 LF	_____.____	_____.____
0718	646.8220 Marking Island Nose Epoxy	10.000 EACH	_____.____	_____.____
0720	646.9000 Marking Removal Line 4-Inch	43,350.000 LF	_____.____	_____.____
0722	646.9010 Marking Removal Line Water Blasting 4-Inch	134,088.000 LF	_____.____	_____.____
0724	646.9100 Marking Removal Line 8-Inch	1,530.000 LF	_____.____	_____.____
0726	646.9110 Marking Removal Line Water Blasting 8-Inch	8,200.000 LF	_____.____	_____.____
0728	646.9200 Marking Removal Line Wide	273.000 LF	_____.____	_____.____
0730	649.0105 Temporary Marking Line Paint 4-Inch	491,520.000 LF	_____.____	_____.____
0732	649.0150 Temporary Marking Line Removable Tape 4-Inch	41,295.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0734	649.0155 Temporary Marking Line Removable Contrast Tape 4-Inch	15,742.000 LF	_____.____	_____.____
0736	649.0205 Temporary Marking Line Paint 8-Inch	8,085.000 LF	_____.____	_____.____
0738	649.0505 Temporary Marking Arrow Paint	6.000 EACH	_____.____	_____.____
0740	649.0605 Temporary Marking Word Paint	5.000 EACH	_____.____	_____.____
0742	649.0760 Temporary Marking Raised Pavement Marker Type I	1,140.000 EACH	_____.____	_____.____
0744	649.0805 Temporary Marking Stop Line Paint 18-Inch	699.000 LF	_____.____	_____.____
0746	652.0125 Conduit Rigid Metallic 2-Inch	64.000 LF	_____.____	_____.____
0748	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	18,250.000 LF	_____.____	_____.____
0750	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	14,074.000 LF	_____.____	_____.____
0752	652.0700.S Install Conduit into Existing Item	14.000 EACH	_____.____	_____.____
0754	652.0800 Conduit Loop Detector	2,146.000 LF	_____.____	_____.____
0756	653.0164 Pull Boxes Non-Conductive 24x42-Inch	153.000 EACH	_____.____	_____.____
0758	653.0220 Junction Boxes 18x6x6-Inch	4.000 EACH	_____.____	_____.____
0760	653.0222 Junction Boxes 18x12x6-Inch	6.000 EACH	_____.____	_____.____
0762	653.0905 Removing Pull Boxes	28.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0764	654.0101 Concrete Bases Type 1	26.000 EACH	_____.____	_____.____
0766	654.0102 Concrete Bases Type 2	4.000 EACH	_____.____	_____.____
0768	654.0105 Concrete Bases Type 5	47.000 EACH	_____.____	_____.____
0770	654.0106 Concrete Bases Type 6	42.000 EACH	_____.____	_____.____
0772	654.0110 Concrete Bases Type 10	1.000 EACH	_____.____	_____.____
0774	654.0113 Concrete Bases Type 13	7.000 EACH	_____.____	_____.____
0776	654.0217 Concrete Control Cabinet Bases Type 9 Special	3.000 EACH	_____.____	_____.____
0778	654.0230 Concrete Control Cabinet Bases Type L30	3.000 EACH	_____.____	_____.____
0780	654.1180 Concrete Bases Camera Pole 80-FT	1.000 EACH	_____.____	_____.____
0782	654.1239 Concrete Control Cabinet Bases ITS	1.000 EACH	_____.____	_____.____
0784	655.0230 Cable Traffic Signal 5-14 AWG	5,350.000 LF	_____.____	_____.____
0786	655.0240 Cable Traffic Signal 7-14 AWG	1,763.000 LF	_____.____	_____.____
0788	655.0260 Cable Traffic Signal 12-14 AWG	2,627.000 LF	_____.____	_____.____
0790	655.0290 Cable Traffic Signal 21-14 AWG	377.000 LF	_____.____	_____.____
0792	655.0320 Cable Type UF 2-10 AWG Grounded	1,653.000 LF	_____.____	_____.____
0794	655.0515 Electrical Wire Traffic Signals 10 AWG	13,747.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0796	655.0610 Electrical Wire Lighting 12 AWG	30,155.000 LF	_____.____	_____.____
0798	655.0615 Electrical Wire Lighting 10 AWG	48,489.000 LF	_____.____	_____.____
0800	655.0620 Electrical Wire Lighting 8 AWG	11,678.000 LF	_____.____	_____.____
0802	655.0625 Electrical Wire Lighting 6 AWG	20,056.000 LF	_____.____	_____.____
0804	655.0630 Electrical Wire Lighting 4 AWG	150.000 LF	_____.____	_____.____
0806	655.0635 Electrical Wire Lighting 2 AWG	600.000 LF	_____.____	_____.____
0808	655.0645 Electrical Wire Lighting 1/0 AWG	2,589.000 LF	_____.____	_____.____
0810	655.0700 Loop Detector Lead In Cable	8,631.000 LF	_____.____	_____.____
0812	655.0800 Loop Detector Wire	10,495.000 LF	_____.____	_____.____
0814	656.0200 Electrical Service Meter Breaker Pedestal (location) 001. STH 81 Lighting	LS	LUMP SUM	_____.____
0816	656.0200 Electrical Service Meter Breaker Pedestal (location) 002. I-39/90 NB & STH 81 Signal	LS	LUMP SUM	_____.____
0818	656.0200 Electrical Service Meter Breaker Pedestal (location) 003. I-39/90 SB & STH 81	LS	LUMP SUM	_____.____
0820	656.0200 Electrical Service Meter Breaker Pedestal (location) 004. STH 81 & Freeman Pkwy	LS	LUMP SUM	_____.____
0822	656.0200 Electrical Service Meter Breaker Pedestal (location) 005. Hart Road	LS	LUMP SUM	_____.____

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0824	656.0500 Electrical Service Breaker Disconnect Box (location) 001. I-39/90 NB & STH 81 Signal	LS	LUMP SUM	_____.____
0826	656.0500 Electrical Service Breaker Disconnect Box (location) 002. I-39/90 & STH 81 Lighting	LS	LUMP SUM	_____.____
0828	656.0500 Electrical Service Breaker Disconnect Box (location) 003. I-39/90 SB & STH 81 Signal	LS	LUMP SUM	_____.____
0830	656.0500 Electrical Service Breaker Disconnect Box (location) 004. STH 81	LS	LUMP SUM	_____.____
0832	657.0100 Pedestal Bases	26.000 EACH	_____.____	_____.____
0834	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	53.000 EACH	_____.____	_____.____
0836	657.0315 Poles Type 4	4.000 EACH	_____.____	_____.____
0838	657.0322 Poles Type 5-Aluminum	7.000 EACH	_____.____	_____.____
0840	657.0327 Poles Type 6-Aluminum	46.000 EACH	_____.____	_____.____
0842	657.0350 Poles Type 10	1.000 EACH	_____.____	_____.____
0844	657.0355 Poles Type 12	3.000 EACH	_____.____	_____.____
0846	657.0360 Poles Type 13	4.000 EACH	_____.____	_____.____
0848	657.0420 Traffic Signal Standards Aluminum 13-FT	18.000 EACH	_____.____	_____.____
0850	657.0425 Traffic Signal Standards Aluminum 15-FT	5.000 EACH	_____.____	_____.____

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0852	657.0430 Traffic Signal Standards Aluminum 10-FT	3.000 EACH	_____.____	_____.____
0854	657.0525 Monotube Arms 25-FT	1.000 EACH	_____.____	_____.____
0856	657.0535 Monotube Arms 35-FT	5.000 EACH	_____.____	_____.____
0858	657.0540 Monotube Arms 40-FT	1.000 EACH	_____.____	_____.____
0860	657.0545 Monotube Arms 45-FT	1.000 EACH	_____.____	_____.____
0862	657.0609 Luminaire Arms Single Member 4-Inch Clamp 6-FT	4.000 EACH	_____.____	_____.____
0864	657.0610 Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	2.000 EACH	_____.____	_____.____
0866	657.0614 Luminaire Arms Single Member 4-Inch Clamp 8-FT	1.000 EACH	_____.____	_____.____
0868	657.0615 Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT	4.000 EACH	_____.____	_____.____
0870	657.0704 Luminaire Arms Truss Type 4-Inch Clamp 10-FT	1.000 EACH	_____.____	_____.____
0872	657.0705 Luminaire Arms Truss Type 4 1/2-Inch Clamp 10-FT	41.000 EACH	_____.____	_____.____
0874	657.0710 Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT	2.000 EACH	_____.____	_____.____
0876	657.0810 Luminaire Arms Steel 10-FT	1.000 EACH	_____.____	_____.____
0878	657.0812 Luminaire Arms Steel 12-FT	4.000 EACH	_____.____	_____.____
0880	657.6005 Anchor Assemblies Light Poles on Structures	4.000 EACH	_____.____	_____.____

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0882	658.0173 Traffic Signal Face 3S 12-Inch	28.000 EACH	_____.____	_____.____
0884	658.0416 Pedestrian Signal Face 16-Inch	8.000 EACH	_____.____	_____.____
0886	658.0500 Pedestrian Push Buttons	22.000 EACH	_____.____	_____.____
0888	658.5069 Signal Mounting Hardware (location) 001. (STH 81 & Freeman Pkwy)	LS	LUMP SUM	_____.____
0890	658.5069 Signal Mounting Hardware (location) 002. (I-39/90 SB & STH 81)	LS	LUMP SUM	_____.____
0892	658.5069 Signal Mounting Hardware (location) 003. (I-39/90 NB & STH 81)	LS	LUMP SUM	_____.____
0894	659.1115 Luminaires Utility LED A	4.000 EACH	_____.____	_____.____
0896	659.1120 Luminaires Utility LED B	54.000 EACH	_____.____	_____.____
0898	659.2130 Lighting Control Cabinets 120/240 30-Inch	1.000 EACH	_____.____	_____.____
0900	661.0200 Temporary Traffic Signals for Intersections (location) 001. STH 81 & Freeman Pkwy	LS	LUMP SUM	_____.____
0902	661.0200 Temporary Traffic Signals for Intersections (location) 002. I-39/90 SB & STH 81 - STAGE 2A Phase 1 to 3B	LS	LUMP SUM	_____.____
0904	661.0200 Temporary Traffic Signals for Intersections (location) 003. I-39/90 SB & STH 81 - STAGE 3C to 3F	LS	LUMP SUM	_____.____
0906	661.0200 Temporary Traffic Signals for Intersections (location) 004. I-39/90 SB & STH 81 - STAGE 3F to 5	LS	LUMP SUM	_____.____

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0908	661.0200 Temporary Traffic Signals for Intersections (location) 005. I-39/90 NB & STH 81 - Stage 2A Phase 1 to 3F	LS	LUMP SUM	_____.____
0910	661.0200 Temporary Traffic Signals for Intersections (location) 006. I-39/90 NB & STH 81 - Stage 4A to 5	LS	LUMP SUM	_____.____
0912	662.1024.S Ramp Closure Gates 24-FT	4.000 EACH	_____.____	_____.____
0914	670.0100 Field System Integrator	LS	LUMP SUM	_____.____
0916	670.0200 ITS Documentation	LS	LUMP SUM	_____.____
0918	671.0132 Conduit HDPE 3-Duct 2-Inch	15,095.000 LF	_____.____	_____.____
0920	671.0232 Conduit HDPE Directional Bore 3-Duct 2-Inch	340.000 LF	_____.____	_____.____
0922	673.0110 Communication Vault Type Round	7.000 EACH	_____.____	_____.____
0924	673.0200 Tracer Wire Marker Posts	7.000 EACH	_____.____	_____.____
0926	673.0200.S Install ITS Field Cabinet	1.000 EACH	_____.____	_____.____
0928	674.0200 Cable Microwave Detector	23,260.000 LF	_____.____	_____.____
0930	675.0300 Install Mounted Controller Microwave Detector Assembly	12.000 EACH	_____.____	_____.____
0932	677.0180 Install Camera Pole 80-FT	1.000 EACH	_____.____	_____.____
0934	677.0200 Install Camera Assembly	1.000 EACH	_____.____	_____.____
0936	677.9051.S Removing 50-FT Camera Pole	1.000 EACH	_____.____	_____.____

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SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0938	678.0012 Install Fiber Optic Cable Outdoor Plant 12-CT	3,245.000 LF	_____.____	_____.____
0940	678.0072 Install Fiber Optic Cable Outdoor Plant 72-CT	35,840.000 LF	_____.____	_____.____
0942	678.0200 Fiber Optic Splice Enclosure	4.000 EACH	_____.____	_____.____
0944	678.0300 Fiber Optic Splice	160.000 EACH	_____.____	_____.____
0946	678.0400 Fiber Optic Termination	28.000 EACH	_____.____	_____.____
0948	678.0500 Communication System Testing	LS	LUMP SUM	_____.____
0950	678.0600 Install Ethernet Switches	3.000 EACH	_____.____	_____.____
0952	690.0150 Sawing Asphalt	665.000 LF	_____.____	_____.____
0954	690.0250 Sawing Concrete	30,950.000 LF	_____.____	_____.____
0956	715.0415 Incentive Strength Concrete Pavement	190,127.000 DOL	1.00000	190,127.00
0958	715.0502 Incentive Strength Concrete Structures	81,014.000 DOL	1.00000	81,014.00
0960	740.0440 Incentive IRI Ride	53,800.000 DOL	1.00000	53,800.00
0962	801.0117 Railroad Flagging Reimbursement	5,000.000 DOL	1.00000	5,000.00
0964	999.1000.S Seismograph	LS	LUMP SUM	_____.____
0966	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	2,350.000 HRS	5.00000	11,750.00
0968	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	4,000.000 HRS	5.00000	20,000.00

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0970	SPV.0005 Special 500. Subsoiling	10.600 ACRE	_____.____	_____.____
0972	SPV.0005 Special 501. Pre-Planting Vegetation Treatment	139.100 ACRE	_____.____	_____.____
0974	SPV.0005 Special 502. Seed Bed Preparation	70.000 ACRE	_____.____	_____.____
0976	SPV.0035 Special 001. Roadway Embankment	1,657,976.000 CY	_____.____	_____.____
0978	SPV.0035 Special 002. Abandoning Culvert Pipe	169.000 CY	_____.____	_____.____
0980	SPV.0035 Special 501. Topsoil Special	6,650.000 CY	_____.____	_____.____
0982	SPV.0035 Special 701. High Performance Concrete (HPC) Masonry Structures	8,574.000 CY	_____.____	_____.____
0984	SPV.0060 Special 001. Baseline CPM Progress Schedule	1.000 EACH	_____.____	_____.____
0986	SPV.0060 Special 002. CPM Schedule Updates and Accepted Revisions	27.000 EACH	_____.____	_____.____
0988	SPV.0060 Special 004. Test Pits	15.000 EACH	_____.____	_____.____
0990	SPV.0060 Special 005. Roadway Cleanup	10.000 EACH	_____.____	_____.____
0992	SPV.0060 Special 006. Emergency Response to Traffic Incident Involving Guardrail or EAT	3.000 EACH	_____.____	_____.____
0994	SPV.0060 Special 007. Emergency Response to Traffic Incident Involving Concrete Barrier Temporary	3.000 EACH	_____.____	_____.____
0996	SPV.0060 Special 008. Emergency Response to Traffic Incident Involving Crash Cushions	3.000 EACH	_____.____	_____.____

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SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0998	SPV.0060 Special 010. Install Department Furnished Crash Cushion Low Maintenance	2.000 EACH	_____.____	_____.____
1000	SPV.0060 Special 011. Repair State Owned Crash Cushion Low Maintenance	2.000 EACH	_____.____	_____.____
1002	SPV.0060 Special 012. Repair State Owned EAT	2.000 EACH	_____.____	_____.____
1004	SPV.0060 Special 013. Repair State Owned Crash Cushion	2.000 EACH	_____.____	_____.____
1006	SPV.0060 Special 014. Temporary Sign Support Type I	18.000 EACH	_____.____	_____.____
1008	SPV.0060 Special 015. Sealing Structures	6.000 EACH	_____.____	_____.____
1010	SPV.0060 Special 016. Access Gate (6-FT)	4.000 EACH	_____.____	_____.____
1012	SPV.0060 Special 018. Covering Storm Sewer	35.000 EACH	_____.____	_____.____
1014	SPV.0060 Special 019. Uncover Signs	5.000 EACH	_____.____	_____.____
1016	SPV.0060 Special 020. Reinforced Concrete Endwall and Grate 38x60-Inch	3.000 EACH	_____.____	_____.____
1018	SPV.0060 Special 023. Inlets 5-FT Diameter	16.000 EACH	_____.____	_____.____
1020	SPV.0060 Special 024. Inlets 6-FT Diameter	2.000 EACH	_____.____	_____.____
1022	SPV.0060 Special 025. Inlets 7-FT Diameter	1.000 EACH	_____.____	_____.____
1024	SPV.0060 Special 026. Emergency Response to Pavement Repairs	5.000 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
1026	SPV.0060 Special 350. Salvage And Reinstall Single Decorative Light Pole Assembly	24.000 EACH	_____.____	_____.____
1028	SPV.0060 Special 351. Salvage And Reinstall Twin Decorative Light Pole Assembly	4.000 EACH	_____.____	_____.____
1030	SPV.0060 Special 352. Decorative Luminaire Fixture	25.000 EACH	_____.____	_____.____
1032	SPV.0060 Special 353. Decorative Light Pole	12.000 EACH	_____.____	_____.____
1034	SPV.0060 Special 354. Decorative Luminaire Arm 6-Ft	23.000 EACH	_____.____	_____.____
1036	SPV.0060 Special 355. Salvage And Reinstall Lighting Control Cabinet 120/240	1.000 EACH	_____.____	_____.____
1038	SPV.0060 Special 356. Lighting Control Cabinet 120/240 30-Inch Special	1.000 EACH	_____.____	_____.____
1040	SPV.0060 Special 357. Traffic Signal Face 3S 12-Inch Black Housing	12.000 EACH	_____.____	_____.____
1042	SPV.0060 Special 358. Traffic Signal Face 4S 12-Inch Black Housing	8.000 EACH	_____.____	_____.____
1044	SPV.0060 Special 359. Pedestrian Signal Face 16-Inch Black Housing	8.000 EACH	_____.____	_____.____
1046	SPV.0060 Special 360. Transporting and Installing State Furnished Video Detection Camera	2.000 EACH	_____.____	_____.____
1048	SPV.0060 Special 361. Transporting and Installing State Furnished Microwave Veh Detection System	2.000 EACH	_____.____	_____.____
1050	SPV.0060 Special 401. Remove Pole Type 5	1.000 EACH	_____.____	_____.____

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SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1052	SPV.0060 Special 402. Remove Wood Pole	3.000 EACH	_____.____	_____.____
1054	SPV.0060 Special 403. Remove Electrical Service Meter Breaker Pedestal	2.000 EACH	_____.____	_____.____
1056	SPV.0060 Special 404. Salvage Wireless Mesh Radio Assembly	4.000 EACH	_____.____	_____.____
1058	SPV.0060 Special 405. Salvage Microwave Detector Assembly	1.000 EACH	_____.____	_____.____
1060	SPV.0060 Special 406. Salvage Cellular Modem	1.000 EACH	_____.____	_____.____
1062	SPV.0060 Special 407. Salvage Camera Assembly	1.000 EACH	_____.____	_____.____
1064	SPV.0060 Special 408. Salvage and Reinstall DMS Controller	1.000 EACH	_____.____	_____.____
1066	SPV.0060 Special 409. Salvage ITS Pole Mounted Cabinet	2.000 EACH	_____.____	_____.____
1068	SPV.0060 Special 506. Native Seed Surveillance and Care Cycles	16.000 EACH	_____.____	_____.____
1070	SPV.0060 Special 507. Delineator Post Steel Modified	160.000 EACH	_____.____	_____.____
1072	SPV.0060 Special 508. Planting Living Snow Fence	43,671.000 EACH	_____.____	_____.____
1074	SPV.0060 Special 701. Decorative Medallion B-53-302	3.000 EACH	_____.____	_____.____
1076	SPV.0060 Special 702. Decorative Medallion Staining B-53-302	3.000 EACH	_____.____	_____.____
1078	SPV.0060 Special 703. Decorative Medallion B-53-303	3.000 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
1080	SPV.0060 Special 704. Decorative Medallion Staining B-53-303	3.000 EACH	_____.____	_____.____
1082	SPV.0060 Special 705. Bearings High-Load Multi-Rotational Fixed B-53-304	16.000 EACH	_____.____	_____.____
1084	SPV.0060 Special 706. Bearings High-Load Multi-Rotational Guided B-53-304	32.000 EACH	_____.____	_____.____
1086	SPV.0060 Special 707. Bearings High-Load Multi-Rotational Fixed B-53-305	4.000 EACH	_____.____	_____.____
1088	SPV.0060 Special 708. Bearings High-Load Multi-Rotational Guided B-53-305	16.000 EACH	_____.____	_____.____
1090	SPV.0060 Special 709. Bearings High-Load Multi-Rotational Fixed B-53-306	8.000 EACH	_____.____	_____.____
1092	SPV.0060 Special 710. Bearings High-Load Multi-Rotational Guided B-53-306	16.000 EACH	_____.____	_____.____
1094	SPV.0060 Special 711. Pile Dynamic Analyzer (PDA) Testing	46.000 EACH	_____.____	_____.____
1096	SPV.0060 Special 712. Pile Dynamic Analyzer (PDA) Restrikes	46.000 EACH	_____.____	_____.____
1098	SPV.0060 Special 713. Case Pile Wave Analysis Program (CAPWAP) Evaluation	23.000 EACH	_____.____	_____.____
1100	SPV.0085 Special 509. Seeding Native Mix N1	50.000 LB	_____.____	_____.____
1102	SPV.0085 Special 510. Seeding Native Mix N2	1,245.000 LB	_____.____	_____.____
1104	SPV.0085 Special 511. Seeding Native Mix N3	170.000 LB	_____.____	_____.____
1106	SPV.0085 Special 512. Seeding Native Mix N4	234.000 LB	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1108	SPV.0090 Special 001. Repair State Owned Guardrail	100.000 LF	_____.____	_____.____
1110	SPV.0090 Special 002. Compost Tube	2,500.000 LF	_____.____	_____.____
1112	SPV.0090 Special 003. Repair State Owned Concrete Barrier Temporary Precast	100.000 LF	_____.____	_____.____
1114	SPV.0090 Special 004. Traffic Control Gawk Screen Furnished	1,750.000 LF	_____.____	_____.____
1116	SPV.0090 Special 005. Traffic Control Gawk Screen Installed	1,750.000 LF	_____.____	_____.____
1118	SPV.0090 Special 006. Bore and Jack Culvert Pipe Reinforced Concrete Class III 48-INCH	392.000 LF	_____.____	_____.____
1120	SPV.0090 Special 007. Bore and Jack Culvert Pipe Reinforced Concrete Class III 60-INCH	152.000 LF	_____.____	_____.____
1122	SPV.0090 Special 008. Remove Left in Place Concrete Barrier Temporary Precast Barrier Wall	1,495.000 LF	_____.____	_____.____
1124	SPV.0090 Special 350. Install State Furnished CAT-5E Cable	680.000 LF	_____.____	_____.____
1126	SPV.0090 Special 351. Conduit Loop Detector 1-1/4-Inch	689.000 LF	_____.____	_____.____
1128	SPV.0090 Special 701. Abutment Anchorage	242.000 LF	_____.____	_____.____
1130	SPV.0105 Special 001. Survey Project 1003-10-80 with Optional AMG for Concrete Pavement and Base	LS	LUMP SUM	_____.____
1132	SPV.0105 Special 002. Concrete Pavement Joint Layout 1003-10-80	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
1134	SPV.0105 Special 350. Remove and Transport Salvaged Traffic Signals STH 81 & Freeman Pkwy	LS	LUMP SUM	_____.____
1136	SPV.0105 Special 351. Furnish and Install Iteris Video Detection System STH 81 & Freeman Pkwy	LS	LUMP SUM	_____.____
1138	SPV.0105 Special 352. Removing Lighting Control Cabinet STH 81 Lighting	LS	LUMP SUM	_____.____
1140	SPV.0105 Special 353. Traffic Signal and Lighting Equipment Painting STH 81 & Freeman Pkwy	LS	LUMP SUM	_____.____
1142	SPV.0105 Special 354. Traffic Signal Controller and Cabinet STH 81 & Freeman Pkwy	LS	LUMP SUM	_____.____
1144	SPV.0105 Special 401. Salvage ITS Field Cabinet	LS	LUMP SUM	_____.____
1146	SPV.0105 Special 402. Salvage and Reinstall Hart Road ITS Equipment	LS	LUMP SUM	_____.____
1148	SPV.0105 Special 403. Temporary ITS IH 39/90 & IH 43	LS	LUMP SUM	_____.____
1150	SPV.0165 Special 701. Longitudinal Grooving Bridge Deck	12,510.000 SF	_____.____	_____.____
1152	SPV.0165 Special 702. Polyurea Coating	1,870.000 SF	_____.____	_____.____
1154	SPV.0165 Special 703. Stay-In-Place Metal Deck Forms B-53-304	18,080.000 SF	_____.____	_____.____
1156	SPV.0165 Special 704. Stay-In-Place Metal Deck Forms B-53-306	7,600.000 SF	_____.____	_____.____
1158	SPV.0165 Special 750. Temporary Shoring Railroad	1,614.000 SF	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1160	SPV.0165 Special 851. Wall Concrete Panel Mechanically Stabilized Earth R-53-63	3,420.000 SF	_____.____	_____.____
1162	SPV.0165 Special 852. Wall Concrete Panel Mechanically Stabilized Earth R-53-64	6,820.000 SF	_____.____	_____.____
1164	SPV.0165 Special 853. Wall Concrete Panel Mechanically Stabilized Earth R-53-65	1,680.000 SF	_____.____	_____.____
1166	SPV.0165 Special 854. Wall Concrete Panel Mechanically Stabilized Earth R-53-66	2,785.000 SF	_____.____	_____.____
1168	SPV.0165 Special 855. Wall Concrete Panel Mechanically Stabilized Earth R-53-67	1,020.000 SF	_____.____	_____.____
1170	SPV.0165 Special 856. Wall Concrete Panel Mechanically Stabilized Earth R-53-69	3,580.000 SF	_____.____	_____.____
1172	SPV.0165 Special 857. Wall Concrete Panel Mechanically Stabilized Earth R-53-70	2,185.000 SF	_____.____	_____.____
1174	SPV.0180 Special 001. Compost	33,100.000 SY	_____.____	_____.____
1176	SPV.0180 Special 500. Weed Barrier Fabric	77,715.000 SY	_____.____	_____.____

Section: 0001 **Total:** _____.____

Total Bid: _____.____

PLEASE ATTACH SCHEDULE OF ITEMS HERE