HIGHWAY WORK PROPOSAL

Proposal Number: 1 8

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

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Rock	1005-10-71		Illinois State Line - Madison Rock River Bridges B-53-0357/0358	IH 39
Rock	1005-10-72		Illinois State Line - Madison Knutson Rd to North Rock County Line	IH 39

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 Due Date: January 12, 2016 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time August 31, 2018	
Assigned Disadvantaged Business Enterprise Goal 0 %	This contract is exempt from federal oversight.

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

(Bidder Signature)

(Print or Type Bidder Name)

(Bidder Title)

For Department Use Only

Type of Work Grading, embankment, base aggregate, concrete pavement, HMA pavement, structures B-53-357, B-53-358, B-53-359, R-53-32, R-53-33, N-53-20, S-53-97, S-53-98, S-53-99 and S-53-100, culvert pipe, storm sewer, concrete curb and gutter, permanent signing, pavement marking, ITS, lighting, and temporary traffic signals.	
Notice of Award Dated	Date Guaranty Returned

PLEASE ATTACH
PROPOSAL GUARANTY HERE

Effective with November 2007 Letting

PROPOSAL REQUIREMENTS AND CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

Effective with August 2015 Letting

BID PREPARATION

Preparing the Proposal Schedule of Items

A General

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

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

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

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

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

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

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

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

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

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

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

B Submitting Electronic Bids

B.1 On the Internet

(1) Do the following before submitting the bid:

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

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

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

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

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

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

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

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

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

Bidder

Name

BN00

Proposals: 1, 12, 14, & 22

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

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

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

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

C Waiver of Electronic Submittal

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

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

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

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

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

PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

Time Period Valid (From/To)
Name of Surety
Name of Contractor
Certificate Holder 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.

Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1005-10-71, Illinois State Line – Madison, Rock River Bridges B-53-0357/0358, IH 39, and 1005-10-72, Illinois State Line – Madison, Knutson Road to North Rock County Line, IH 39, 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, 2015 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 (20140630)

2. Scope of Work.

The work under this contract shall consist of grading, embankment, base aggregate, concrete pavement, HMA pavement, Structure B-53-357, B-53-358, B-53-359, R-53-32, R-53-33, N-53-20, S-53-97, S-53-98, S-53-99 and S-53-100, culvert pipe, storm sewer, concrete curb and gutter, permanent signing, pavement marking, ITS, lighting, temporary traffic signals, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.
104-005 (20090901)

3. Mandatory Pre-Bid Meeting.

Add the following to standard spec 102.3.1:

Prospective bidders are required to attend a mandatory pre-bid meeting at 9:00 AM – 10:30 AM, Thursday, December 10, 2015 at 111 Interstate Blvd, Edgerton, WI 53534.

No meeting minutes will be prepared. Issues discovered at the meeting will be handled by addendum.
102-010 (20041504)

4. Referenced Construction Specifications.

Construct the work enumerated below conforming to the "Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition." If there is a discrepancy or conflict between the referenced specification and the standard specifications regarding contract administration, part 1 of the standard specifications governs.

Conform to the referenced construction specifications for the following:

Adjusting Sanitary Manhole, Item SPV.0060.14

105-002 (20130615)

5. 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 article are interim and final completion dates. These dates indicate that work efforts will possibly require multiple or concurrent controlling operations to occur at the same time. This information is included to assist the contractor and its subcontractors and shall not be interpreted as a demonstration of specified means and methods or work periods other than intermediate and completion dates.

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.

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

A Freeway Work Restrictions

All lanes of the freeway shall be entirely clear and open to traffic as shown in the traffic control plans at all times except for approved lane closures or rolling closures as approved by the engineer. Single lane operation on IH 39 is only allowed during IH 39 Permitted Lane Closure Times with approval of the engineer. Lane closures shall be in accordance to the standard detail drawings (SDDs) and the traffic control plans and shall have the approval of the engineer and the Statewide Traffic Operations Center, (414) 227-2142.

The contractor shall at no time conduct construction operations in the median area or outside shoulders of IH 39 without permission of the engineer unless otherwise shown on the plan.

Work on ramps during peak traffic periods shall be restricted to working in closed shoulders as allowed by the plans or engineer. Work may be performed provided such work operations do not include the ingress or egress of vehicles and equipment that would obstruct the flow of traffic on the freeway during peak periods.

The contractor is allowed overnight ramp closures for temporary barrier installation, temporary culvert installation, and temporary ramp connections during the IH 39 Permitted Lane Closure Times defined above. Only close one ramp at a time for overnight ramp closures. A total of eight overnight ramp closures will be allowed to complete this work. These overnight ramp closures are in addition to the ramp closures specified for interim liquidated damages. An overnight ramp closure may occur concurrently with a ramp closure specified in the interim liquidated damages. If the contractor fails to open ramps to traffic by the specified times, assessments shown in the article Lane Rental Fee Assessment will be placed upon the contractor based on the hourly rental rate for the closure type and hourly definition that the noncompliant closure occurs. The total assessment to the contractor will be the summation of the separate assessments for each ramp closure violation. The contractor shall also be responsible for the Lane Rental Fee Assessment and all traffic control and detour costs that are required in excess of eight overnight ramp closures.

Do not install culvert pipes, install or remove bridge deck false work or remove existing bridge decks over, or directly adjacent to, live lanes of traffic, and provide a 6-foot desirable minimum lateral buffer between these work zones and live lanes of traffic. Provide an absolute minimum 4-foot lateral buffer between these work zones and live lanes of traffic where necessary for short durations less than two hours.

Fifteen minute rolling stop closures will be allowed on IH 39 for 8 nights for the removal and placement of girders at STH 59 and Goede Road and for 24 nights for the placement of girders on the IH 39 Rock River bridges during the Permitted Freeway Rolling Closure Times defined in the Traffic article.

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. These meetings will take place at 111 Interstate Blvd, Edgerton, WI 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 Fulton, Town of Albion, Rock County Sheriff, Dane County Sheriff, and City of Edgerton Fire Department representatives to attend the progress meetings. The meeting shall include at least one member of the IH 39 Corridor Management Team. 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.

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 shall result in the engineer holding pay requests until received.

C Work Restrictions

Keep the STH 59 ramps open to traffic at all times from the Memorial Day holiday weekend through the Labor Day holiday weekend, except for the STH 59 Southbound On Ramp, which may be closed in Stage 4C for a limited time during this period as described below in section D Interim Liquidated Damages.

Construction of a causeway to facilitate construction of Pier 2 and Pier 4 on B-53-357 and B-53-358 is allowable. Construction of a causeway for Pier 3 construction on B-53-357 and B-53-358 is not allowed. Construct Pier 3 for these bridges from a barge.

If temporary causeways are constructed within the banks of the Rock River, submit hydraulic calculations for the restricted waterway confirming that the causeway will have no adverse effect on the river flows. Intermittent openings in the causeway shall be used to allow for continued river flow without causing excessive downstream scouring. Hydraulic computations and scouring determinations for openings (size and location) shall be the responsibility of the contractor. The engineer will complete the review of the hydraulic data within 10 days of submittal.

To limit siltation in the Rock River, causeways, if constructed, shall have a minimum aggregate size that is predominately 6 inches or greater in at least one dimension and substantially free of unconsolidated overburden materials. The contractor is responsible for the design and the stability of the causeway.

Causeways, if constructed, shall remain in place during winter months for use the following year until such time that they are no longer necessary for construction. Remove the causeways in such a manner that provides the least disturbance to the riverbed. Contact the DNR prior to repairs and removal of the causeway. Causeway construction, maintenance and removal, if constructed, are incidental to the contract.

Equipment and material shall be parked or stored only at work sites approved by the engineer.

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

Access to all commercial and private properties shall be maintained at all times during the duration of this contract unless otherwise noted in the plan.

Any traffic control change requests shall be submitted to the engineer at least 48 hours prior to an actual traffic control change. A request does not constitute approval.

Limit work at the Park & Ride to grading until May 1, 2016. Thereafter, order materials and complete the Park & Ride work if authorized by the engineer.

Work under the existing overhead utility lines along Ramp EA and use caution to ensure clearance safety.

D Interim Liquidated Damages

The STH 59 Southbound On Ramp may be closed and detoured for a maximum of 14 calendar days to complete the initial ramp reconstruction and temporary ramp connections in Stage 2A2, and shall re-open prior to 12:01 AM May 26, 2016.

If the contractor fails to reopen the STH 59 Southbound On Ramp to traffic within 14 calendar days of closing or prior to 12:01 AM May 26, 2016, whichever is sooner, the department will assess the contractor $5,000 in interim liquidated damages for each calendar day contract work remains incomplete beyond 14 calendar days or after 12:01 AM May 26, 2016. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

Goede Road may be closed from North Eastman Road to Kenlyn Road for a maximum of two calendar days to complete the final connection to Kenlyn Road in Stage 2B1. The demolition of the existing Goede Road bridge over IH 39 shall not begin prior to this closure but may continue after the reconfigured Kenlyn Road is reopened to traffic. If the contractor fails to reopen the reconfigured Kenlyn Road to traffic on binder or final HMA surface within 2 calendar days of closing Goede Road, the department will assess the contractor $5,000 in interim liquidated damages for each calendar day contract work remains incomplete beyond 2 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

The STH 59 Northbound On Ramp may be closed and detoured for a maximum of 21 calendar days to complete the final ramp reconstruction connection in Stage 2C2 and all work required to open IH 39 northbound traffic to Stage 2D traffic configuration. The northbound On Ramp shall not be closed prior to 6:00 AM September 6, 2016, and shall re-open in conjunction with the IH 39 northbound traffic shift to Stage 2D traffic configuration prior to 12:01 AM October 17, 2016. If the contractor fails to reopen the STH 59 Northbound On Ramp in conjunction with the IH 39 northbound traffic shift to Stage 2D traffic configuration within 21 calendar days of closing, or prior to 12:01 AM October 17, 2016, whichever is sooner, the department will assess the contractor $5,000 in interim liquidated damages for each calendar day contract work remains incomplete beyond 21 calendar days or after 12:01 AM October 17, 2016. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

Complete the construction operations on STH 59, Goede Road, Kenlyn Road, North Richardson Springs Road, and East Richardson Springs Road including pavement, shoulders, curb and gutter, signing, pavement marking and temporary traffic signal removal in Stage 3A prior to 12:01 AM November 18, 2016. If the contractor fails to complete the construction operations on STH 59, Goede Road, Kenlyn Road, North Richardson Springs Road, and East Richardson Springs Road including pavement, shoulders, curb and gutter, signing, pavement marking and temporary traffic signal removal in Stage 3A prior to 12:01 AM November 18, 2016, the department will assess the contractor $10,000 in interim liquidated damages for each calendar day that the roadways remain incomplete after 12:01 AM, November 18, 2016. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

Complete the construction operations on IH 39 including concrete pavement, shoulders, signing, and pavement marking necessary to switch northbound IH 39 traffic to Crossover R1 in Stage 3B prior to 12:01 AM April 17, 2017. If the contractor fails to complete the construction operations on IH 39 including concrete pavement, shoulders, signing, and pavement marking necessary to switch northbound IH 39 traffic to Crossover R1 in Stage 3B prior to 12:01 AM April 17, 2017, the department will assess the contractor $20,000 in interim liquidated damages for each calendar day that the roadways remain incomplete after 12:01 AM, April 17, 2017. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

The STH 59 Southbound On Ramp may be closed and detoured for a maximum of 17 calendar days to complete the final ramp reconstruction connections in Stage 4C and all work required to open IH 39 southbound traffic to Stage 4D traffic configuration. The Southbound On Ramp shall not be closed during the Independence Day holiday work restriction period, and shall re-open in conjunction with the IH 39 southbound traffic shift to Stage 4D traffic configuration. If the contractor fails to reopen the STH 59 Southbound On Ramp in conjunction with the IH 39 southbound traffic shift to Stage 4D traffic configuration within 17 calendar days of closing, the department will assess the contractor $5,000 in interim liquidated damages for each calendar day contract work remains incomplete beyond 17 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

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

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

E Final Liquidated Damages
Replace standard spec 108.11 paragraph (3) as follows:

The department will assess the contractor $8,000 in liquidated damages for each calendar day that work remains uncompleted. An entire calendar day will be charged for any period of time within a calendar day that the work remains uncompleted beyond 12:01 AM. These liquidated damages reflect the cost of engineering, supervision, and a portion of road user costs.

F Traffic Control Deficiency Response Time Penalty
Supplement standard spec 643.3.2(8) with the following:

Upon receiving written notification from the engineer, clean, repair or replace traffic control devices not performing as intended to the satisfaction of the engineer within 12 hours. Failure to clean, repair or replace required traffic control within the time limits specified above will result in daily monetary deductions of $500 for each 24-hour period (or portion thereof starting 12 hours after time of notification) in which the traffic control deficiency exists.

G Winter Maintenance
Rock County will perform snow removal operations for IH 39, STH 59 and the interchange ramps. The Town of Fulton will perform snow removal on local streets that are open to traffic. Provide for snow removal in those areas closed to traffic as required to facilitate safe construction operations, to provide access to properties within the work area, and as required to eliminate snow melt run-off from crossing active roadways. Provide Rock County Highway Maintenance, Dane County Highway Maintenance, Rock County Sheriff's Department, Dane County Sheriff's Department, and the Town of Fulton a 24-hour emergency contact number for when maintenance is required.

During winter months remove all equipment, materials, and traffic control devices, unless directed otherwise by the engineer, from the project to prevent damage to equipment from snow plowing operations. Do not store equipment or materials within the work zone which may interfere with horizontal sight distances along IH 39.

Snow may be plowed from the traveled roadway into the work site by the maintaining authority. The contractor is responsible for any snow removal from the work site that may be required to continue work operations.

The contractor is responsible for plowing any areas which may need to be cleared of snow or ice to accommodate changes in traffic control and to facilitate construction staging during winter months. The maintaining authority will not provide snow plowing operations in areas outside of the active traveled lanes.

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

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

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

H Fish Spawning

There shall be no in-stream disturbance of the Rock River as a result of construction activity under or for this contract, from May 1 to June 30 both dates inclusive, in order to avoid adverse impacts upon the spawning of fish. Work within cofferdams is allowed.

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

I Migratory Birds

Swallow and other migratory birds' nests have been observed on or under the existing Rock River bridges. All active nests (when eggs or young are present) of migratory birds are protected under the federal Migratory Bird Treaty Act.

The nesting season for swallows and other birds is usually between May 1 and August 30. Either prevent active nests from becoming established, or apply for a depredation permit from the US Fish and Wildlife Service for work that may disturb or destroy active nests. The need for a permit may be avoided by removing the existing bridge structure prior to nest occupation by birds, or clearing nests from all structures before the nests become active in early spring. As a last resort, prevent birds from nesting by installing a suitable netting device on the remaining structure prior to nesting activity. Include the cost for preventing nesting in the cost of Removing Old Structure Over Waterway with Debris Capture System.

J Northern Long-eared Bats (*Myotis septentrionalis)*

Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees and structures (bridges, culverts, buildings). 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.

In order to avoid adverse impacts upon the NLEBs, no vegetation clearing and grubbing within the identified clearing and grubbing limits will be allowed from April 1 to September 30, both dates inclusive.

If the required clearing and removal is not completed by March 31, the department will suspend all clearing and associated work directly impacted by clearing. The department will issue a notice to proceed with clearing and associated work directly impacted by clearing after consulting with the United States Fish and Wildlife Service (USFWS).

Submit a schedule and description of Clearing and/or Grubbing 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.

Notify the Project Leader 14 days in advance of any work on box culverts or bridges between April 1 and September 30 to allow time for department to complete the Bat Presence Structure Inspection Form.

If bats or evidence of bats are not found during the inspection, construction may proceed.

If bats or evidence of bats are found during the inspection, construction activities affecting the structure's roosting potential must stop until the WisDOT Regional Environmental Coordinator completes consultation with the Wisconsin Department of Natural Resources (WDNR) and/or United States Fish and Wildlife Service (USFWS).

K Schedule of Operations

Stage 1A

IH 39

- Mill and overlay the existing rumble strips in the northbound and southbound IH 39 outside shoulders.
- Place temporary concrete barrier along the northbound and southbound IH 39 outside shoulders in select locations to allow daytime work for the new Northbound On Ramp, Southbound Off Ramp, STH 59 bridge abutments, the easterly northbound IH 39 Rock River bridge approaches, and southbound IH 39 and Ramp EC ditch outside ditch grading.
- Remove building Parcel 1 on Early Acquisition Plat 1005-10-22.

Ramps

- Place temporary concrete barrier along outside ramp shoulders in select locations to allow daytime work for temporary ditching.
- Begin off alignment construction of new ramps.

STH 59

- Begin off alignment construction on STH 59 including the new STH 59 bridge abutments.
- Begin off alignment construction of Kenlyn Road.

Rock River Bridges

- Begin construction of the easterly half of the northbound bridge.
- Begin substructure construction on the easterly half of the southbound bridge.

Stage 1B

IH 39

- Install temporary concrete barrier on the existing southbound paved inside shoulder 2' shy of the edge of the existing inside southbound lane. Install temporary concrete barrier on the existing northbound paved inside shoulder 2' shy of the edge of the existing inside northbound lane adjacent to the new STH 59 bridge pier construction. Install temporary concrete barrier prior to starting work in the median.
- Reconstruct and widen the northbound IH 39 inside paved shoulders adjacent to the existing Rock River Bridge where needed for traffic in Stage 2A.
- Reconstruct the southbound IH 39 inside paved shoulders adjacent to future traffic crossover locations for Stages 3 and 4.
- Jack and bore the permanent culvert under both northbound and southbound IH 39 at Station 1386+00.
- Open cut and install permanent culverts under IH 39 at Station 1412+00 and Station 1425+00 and permanent storm sewer under IH 39 northbound at Station 1385+75 using alternating night time single lane closures on IH 39. Place temporary HMA to repair the IH 39 roadway pavement cut.
- Grade permanent ditch (not full permanent side slope) along southbound IH 39 and along existing Southbound On Ramp from Station 1386+00'SB' to 1399+00'SB' with temporary concrete barrier along the outside edge from Station 1391+00'SB' to 1403+00'SB'.
- Grade temporary ditch from Station 1400+00'SB' to Station 1402+75'SB'.
- Grade semi-permanent ditch along southbound IH 39 from Station 1404+00'SB' to Station 1405+00'SB'. Cut material could be used for fill for new Southbound On Ramp, the STH 59 bridge embankments, and the northbound IH 39 Rock River outside bridge embankments.
- Grade ditch along southbound IH 39 from Station 1409+00'SB' to 1415+00'SB' LT.

Ramps

- Near Station 1399+50'EC' on the existing Southbound On Ramp, remove the existing 30" CMP and place a temporary culvert under a one night ramp closure. Place temporary HMA for the ramp cut.
- Near Station 1403+00'SB' LT on the existing Southbound Off Ramp, remove the existing 24" CMP and place a temporary culvert under a one night ramp closure. Place temporary HMA for the ramp cut.
- Install temporary 42" culvert pipe under Ramp ED at Station 1410+50'ED'.
- Continue off alignment construction of new ramps.

STH 59

- Place permanent culverts under Richardson Springs Rd Station 10+50'RS' and Ellendale Rd Station 15+50'ER' and place temporary HMA to repair the road cut.
- Jack and bore the permanent culvert under STH 59 at Station 39+00'F'.
- Jack and bore the permanent culvert with temporary culvert extension under STH 59 at Station 44+00'F'.

- Continue off alignment construction on STH 59 including the new STH 59 bridge abutments and median pier.
- Continue off alignment construction of Kenlyn Road.

Rock River Bridges

- Continue construction of the easterly half of northbound bridge and placement of fill for the bridge approaches.
- Continue substructure construction on the easterly half of the southbound bridge.

Stage 2A

IH 39

- Northbound IH 39 temporary widening in the median along the northbound IH 39 inside lane. **This construction operation is allowed during night time hours only.** Provide slopes 3:1 or flatter with no vertical drop offs greater than 2 inches within the 34' clear zone at the end of each work night.
- Complete the northbound temporary widening after the STH 59 bridge pier is completed such that temporary barrier can be placed on the new temporary widened northbound inside shoulder prior to removing the temporary barrier on the existing northbound inside shoulder.

Ramps

- Stage 2A1:
  - Complete new Southbound Off Ramp and new Northbound On Ramp construction including temporary ramp connections to IH 39 and STH 59 and all temporary signal installations.
- Stage 2A2
  - Complete new Northbound Off Ramp from Station 1398+50'EB' to Northbound Ramp terminal, including temporary ramp connections to IH 39 and STH 59.
  - Complete new Southbound On Ramp from Station 1400+90'EC' to Southbound Ramp terminal, including temporary ramp EC connections to IH 39 and STH 59.
- Stage 2A3
  - Complete all other Stage 2A work on STH 59.

STH 59

- Stage 2A1
  - Prioritize the STH 59 bridge pier construction to allow IH 39 northbound temporary widening to be completed.
  - Construct temporary pavement widening in select locations along the north/east side of STH 59.
  - Begin eastbound STH 59 construction between the existing ramps and temporary widening.
  - Install temporary signals at the new STH 59/southbound ramps, STH 59/northbound ramps, and STH 59/Goede Road and STH 73/northbound ramps.
  - Begin off alignment construction of North Richardson Springs Road.
  - Complete temporary widening on the west side of Goede Road.

    - Continue Kenlyn Road and Hemenway Lane construction up to existing Goede Road.
- Stage 2A2
    - Complete concrete pavement and temporary asphalt connections to STH 59 at the southbound and northbound ramp terminals necessary to open the new Northbound Off Ramp and Southbound On Ramp in Stage 2A3.
    - Continue off alignment construction of North Richardson Springs Road.
    - Begin construction of the east side of Goede Road at STH 59 and temporary widening to the east.
    - Continue Kenlyn Road and Hemenway Lane construction up to existing Goede Road.
- Stage 2A3
    - Complete the new STH 59 bridge over IH 39.
    - Complete eastbound STH 59 lanes and temporary widening.
    - Complete temporary widening on the south/west side of STH 59 near match points.
    - Complete North Richardson Springs Road with a temporary connection to existing Richardson Springs Road.
    - Complete the east side of Goede Road at STH 59 and temporary widening to the east.
    - Complete Kenlyn Road and Hemenway Lane construction up to existing Goede Road.

Rock River Bridges

- Continue construction of the easterly half of northbound bridge and placement of fill for the bridge approaches.
- Continue substructure construction on the easterly half of the southbound bridge.
- No in-stream work from May 1 to June 30.

Stage 2B

IH 39

- Install temporary concrete barrier on northbound IH 39 temporary pavement 2' shy of edge of temporary inside northbound lane in Stage 2B1.
- Install temporary concrete barrier on northbound IH 39 temporary pavement 4' shy of edge of temporary outside northbound lane following the northbound traffic switch from the existing lanes to the temporary pavement in Stage 2B3.
- Remove the existing STH 59 and Goede Road bridges over IH 39.
- Stage 2B1: Remove deck west of southbound IH 39 crown point.
- Stage 2B2: Remove deck from southbound IH 39 crown point to northbound IH 39 temporary widening.
- Stage 2B3: Remove deck east of northbound IH 39 temporary widening
- Stage 2B4: Remove girders.
- Cannot remove existing median piers until Stage 3A.
- Begin northbound IH 39 outside lanes and shoulder reconstruction following IH 39 northbound traffic switch to the temporary pavement and following temporary barrier placement along the outside shoulder in Stage 2B3.

Ramps
- See Stage 2C.

STH 59
- Complete Kenlyn Road final connection to existing Goede Road in Stage 2B1.

Rock River Bridges
- See Stage 2C.

Stage 2C

IH 39
- Complete northbound IH 39 outside lanes and shoulder reconstruction. Gap construction at northbound ramps until after Labor Day and complete work when Northbound Off Ramp traffic has been switched to the final ramp configuration and during the Northbound On Ramp closure in Stage 2C2.
- Construct temporary pavement transitions between the existing and new northbound IH 39 outside lanes at the south and north ends of the project, including temporary widening on the outside of existing northbound IH 39 pavement.
- Complete temporary widening on final northbound IH 39 outside shoulder.

Ramps
- Stage 2C1
  - Complete final Northbound Off Ramp pavement including Northbound IH 39 outside lane/shoulder up to the ramp gore.
  - Construct temporary asphalt transition between existing and proposed northbound pavement from Station 1367+44 to Station 1371+45 for Northbound Off Ramp advance exit location in Stage 2C2.
  - Construct Southbound Off Ramp westerly lane connection to STH 59 roundabout.
- Stage 2C2
  - Construct Southbound Off Ramp easterly lane and splitter island at STH 59 roundabout.

STH 59
- Complete westbound STH 59 lanes.
- Complete Goede Road at STH 59.
- Construct Goede Road/North Eastman Road reconfiguration in Stage 2C1.
- Complete North Richardson Springs Road final connection to East Richardson Springs Road in Stage 2C2 after Labor Day.
- Complete Park & Ride lot if authorized.

Rock River Bridges
- Complete construction of the easterly half of northbound bridge in Stage 2C1.
- Continue substructure construction on the easterly half of the southbound bridge.

Stage 2D

IH 39
- Place northbound IH 39 temporary barrier on new northbound pavement and align with easterly half of new northbound IH 39 Rock River bridge.

- Begin northbound IH 39 inside lanes and shoulder reconstruction; focus construction efforts on north end of project for completion of Crossover R1 in Stage 3A prior to interim completion date.

Ramps

- Complete all finishing work.

STH 59

- Stage 2D1
  - Remove temporary pavement and construct truck aprons in central islands.
  - Remove the four temporary signal installations.
- Stage 2D2
  - Remove temporary pavement from all splitter islands and install curb and gutter, except for the Northbound On Ramp splitter island.
  - Remove pavement and install C&G in median and concrete corrugated median from Station 62+43'F' to Station 65+61'F' on STH 59.
- Stage 2D3
  - Remove temporary pavement from the Northbound On Ramp splitter island and install curb and gutter.
  - Remove temporary pavement on the outside of the STH 59 eastbound lanes, install new curb and gutter and sidewalk where urban, and grade shoulder to final width where rural.
  - Remove temporary pavement on the east side of the Goede Road, install new curb and gutter, driveways, and sidewalk where urban, and grade shoulder to final width where rural.
  - Mill and overlay existing asphalt pavement from Station 62+43'F' to Station 65+61'F' on STH 59, and from Station 6+25'ORS' to Station 7+65'ORS' on East Richardson Springs Road.
  - Complete final pavement marking.
  - Complete all finishing work on STH 59 and side roads. Sidewalk and restoration work may carry over to Stage 3A.

Rock River Bridges

- Begin removal of the existing northbound IH 39 bridge.
- Continue substructure construction on the easterly half of the southbound bridge.

Stage 3A

IH 39

- Remove median bridge piers at the old STH 59 and Goede Road overpasses.
- Continue northbound IH 39 inside lanes and shoulder reconstruction.
- Complete grading and base for northbound inside lanes and shoulder on and adjacent to Crossover R1 prior to winter shutdown.
- Complete 4-lane Crossover R1 used by northbound traffic in Stage 3B prior to interim completion date. Project 1007-11-75 in Dane County cannot begin until after the northbound IH 39 traffic switch to Crossover R1 in Stage 3B.
- Begin Southbound On Ramp crossover in median for Stage 4A.
- Begin Southbound Off Ramp crossover in median for Stage 4A.

Ramps

- No work.

Rock River Bridges

- Complete removal of the existing northbound bridge.
- Begin construction on the westerly half of the northbound bridge.
- Continue substructure construction on the easterly half of the southbound bridge.
- No in-stream work from May 1 to June 30.

Stage 3B

IH 39

- Complete northbound IH 39 inside lanes and shoulder reconstruction.
- Complete temporary widening on final northbound IH 39 inside shoulder.
- Construct temporary pavement transition between the existing and new northbound IH 39 inside lanes at the south end of the project.
- Construct 2-lane Crossover R2 south of the project limits from existing southbound IH 39 lanes to the temporary transition to the new northbound IH 39 lanes for southbound IH 39 traffic in Stage 4A.
- Complete Southbound On Ramp crossover for Stage 4A.
- Complete Southbound Off Ramp crossover for Stage 4A.

Ramps

- No work.

Rock River Bridges

- Complete construction on the westerly half of the northbound bridge.
- Continue substructure construction on the easterly half of the southbound bridge.
- No in-stream work from May 1 to June 30.

Stage 4A

IH 39

- Reconfigure Crossover R1 for both northbound and southbound IH 39 traffic.
- Begin reconstruction of IH 39 southbound lanes and shoulders. Gap construction at IH 39 Southbound On Ramp and Southbound Off Ramp crossovers.

Ramps

- No work.

Rock River Bridges

- Remove existing southbound IH 39 Rock River bridge.
- Begin substructure construction on the westerly half of the southbound bridge.
- Continue substructure construction on the easterly half of the southbound bridge.

Stage 4AW (Over Winter)

IH 39

- Reconfigure Crossover R1 for southbound IH 39 traffic only.
- Continue reconstruction of IH 39 southbound lanes and shoulders. Gap construction at IH 39 Southbound On Ramp and Southbound Off Ramp crossovers.

Ramps

- No work.

Rock River Bridges

- Continue construction of southbound bridge.

Stage 4B

IH 39

- Continue reconstruction of IH 39 southbound lanes and shoulders. Gap construction at IH 39 Southbound On Ramp and Southbound Off Ramp crossovers.
- Complete IH 39 southbound lanes and shoulders adjacent to reconfigured Southbound Off ramp temporary crossover.
- Construct noise barrier.

Ramps

- Construct reconfigured Southbound Off ramp temporary crossover between new IH 39 northbound/southbound lanes and completed Ramp ED.

Rock River Bridges

- Continue construction of southbound bridge.
- No in-stream work from May 1 to June 30.

Stage 4C

IH 39

- Complete southbound IH 39 lanes and shoulders reconstruction and new Crossover R3.
- Complete reconstruction work in ramp crossover areas when Southbound Off ramp traffic has been switched to the reconfigured temporary crossover and during the Southbound On Ramp closure.
- Reconstruct Crossover R1 in permanent configuration.
- Construct temporary pavement transition between the existing and new southbound IH 39 inside lanes at the south end of the project.

Ramps

- Construct permanent IH 39 Southbound On Ramp and Southbound Off Ramp connections to IH 39.

Rock River Bridges

- Complete construction of the southbound bridge.

Stage 4D

IH 39

- Remove southbound ramp crossovers.
- Remove temporary barrier and pavement along the northbound IH 39 inside shoulder and grade to final slope.
- Finish the northbound IH 39 pavement marking for the inside lanes and then remove the temporary barrier that separated northbound and southbound IH 39 traffic in earlier stages.

STH 59

- Reconstruct Ellendale Road and Richardson Springs Road under IH 39.

Stage 4E

IH 39

- Finish the IH 39 pavement markings for the outside northbound IH 39 lanes.
- Remove the temporary pavement along the northbound IH 39 outside shoulder and grade to final slope.
- Crossover R2 to remain in place; remove with future project 1005-10-81.

Stage 4F

IH 39

- Shift traffic to final lane configuration.

L Temporary Traffic Signals

Coordinate early with the local power company to ensure timely activation of the temporary traffic signals. Be aware that recent history indicates that the utility company needs a minimum of 30 working days to get power to a new meter pedestal. This lead time needs to be considered when establishing the project's construction schedule.

Install temporary traffic signals during Stage 2A1.

Temporary traffic signals shall be activated at the following locations during the stages listed:

Intersection Location	Stages Temporary Traffic Signals in Use
STH 59/IH 39 Southbound Ramps	Stages 2A2 through 2C2
STH 59/IH 39 Northbound Ramps	Stages 2A3 through 2C1 Northbound ramps closed during Stage 2C2
STH 59/Goede Road	Stages 2A2 through 2C2
USH 51/STH 73/IH 39 Northbound Ramps	Stage 2A2 and Stage 2C2 Deactivate and cover when not in use

6. Lane Rental Fee Assessment.

A General

T This special provision describes Lane Rental Fee Assessment to enforce compliance of lane restrictions and discourage unnecessary closures.

A.1 General

The contract designates some lane closures to perform the work. No Lane Rental Fee Assessments will be charged for closing lanes during the designated working hours. If a lane is closed outside of the designated working hours, the contractor will be subject to Lane Rental Fee Assessments. If a lane is obstructed at any time due to contractor operations, it is considered a closure.

If the contractor closes lanes of traffic prior to or fails to open lanes of traffic by the specified times, then a reduction based upon 15-minute increments will be assessed to the contractor. The total reductions assessed to the contractor will be cumulative based on an escalating scale of 15-minute increments and will be the summation of separate reductions for each traffic lane and each direction of traffic in violation.

The contractor will incur a Lane Rental Fee Assessment for each lane closure outside of the designated working hours. The contractor will not incur a Lane Rental Fee Assessment for closure of lanes during the designated working hours. The designated times of lane closure are during the working hours shown in the tables below:

Permitted Lane Closure Times		
Day of the Week	**IH 39**	**STH 59/Local Roads**
Monday	12:00 AM – 5:00 AM 8:00 PM – 11:59 PM	9:00 AM – 3:00 PM
Tuesday	12:00 AM – 5:00 AM 8:00 PM – 11:59 PM	9:00 AM – 3:00 PM
Wednesday	12:00 AM – 5:00 AM 8:00 PM – 11:59 PM	9:00 AM – 3:00 PM
Thursday	12:00 AM – 5:00 AM 8:00 PM – 11:59 PM	9:00 AM – 3:00 PM
Friday	12:00 AM – 5:00 AM 10:00 PM – 11:59 PM	Not Allowed
Saturday	12:00 AM – 7:00 AM 8:00 PM – 11:59 PM	Not Allowed
Sunday	12:00 AM – 9:00 AM 9:00 PM – 11:59 PM	Not Allowed

The contractor shall submit the dates of the proposed lane, ramp, and roadway restrictions to the engineer as part of the progress schedule. The contractor will coordinate lane, ramp, and roadway closures with any concurrent operations on adjacent roadways within 3 miles of the project.

If other projects are in the vicinity of this project, the contractor shall coordinate lane closures to run concurrent with lane closures on adjacent projects when possible. When lane closures on adjacent projects extend into the limits of this project, Lane Rental Fee Assessments will only occur if the closure facilitates work under this contract.

A.2 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:

Time Period in excess of specified time	Assessment per lane of traffic and per direction of traffic	Cumulative assessment per lane of traffic and per direction of traffic
1st 15 minutes	$1,500	$1,500
2nd 15 minutes	$3,000	$4,500
3rd 15 minutes	$4,500	$9,000
4th 15 minutes	$6,000	$15,000

If the contractor fails to open lanes of traffic after 60 minutes from the specified times, a constant reduction of $6,000 for each additional 15-minute increment, for each lane and each direction of traffic, will be assessed until lanes are open to traffic.

The total reduction from monies due to the contractor shall be the summation of the separate reductions for each work restriction violation.

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

Lane Rental Fee Assessments will be made based on the applicable rate for any and all closures whether work is being performed or not. The engineer, or designated representative, will be the sole authority in determining time period length for the Lane Rental Fee Assessment.

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

B (Vacant)

C (Vacant)

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

Lane Rental Fee Assessment will be in effect from the time of the Notice to Proceed until the department issues final acceptance.

E (Vacant)

7. 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 Traffic Control/Construction Staging section of the plans, and as described in this Traffic article.

Unless detailed in the plans, do not begin or continue any work that closes traffic lanes outside the allowed time periods defined in the Permitted Lane Closure Times specified in the Prosecution and Progress article.

Submit a detailed traffic control plan to the engineer for approval if different than the traffic control plan provided in the plan set. Submit this plan ten days prior to the preconstruction conference.

Submit all traffic control change requests to the engineer at least 3 working days prior to an actual traffic control change. A request does not constitute approval.

IH 39 and STH 59 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.

Use drums and barricades to direct local vehicular and pedestrian traffic in the work zone and to protect and delineate hazards such as open excavations, abrupt drop-offs, and exposed manholes, inlets, hydrants, etc. The use of such devices shall be incidental to the operation which creates the hazard.

Place roadway and sidewalk signing and roadway temporary pavement marking as detailed on the plans and in conformance to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition. Traffic control shall be completely in place by the end of the working day of a traffic switch.

Do not deliver or store materials and equipment within open travel lanes or open side roads during any stage of construction. Temporary lane closures and/or halting of traffic within open roadways and pedestrian paths require flaggers and will only be permitted during the times defined as IH 39 Permitted Lane Closure Times or Permitted Freeway Rolling Closure Times.

Conduct operations in a manner that will cause the least interference to traffic and pedestrian movements. Maintain vehicle and pedestrian access at all times to buildings within the limits of construction.

Do not at any time conduct construction operations in the median and adjacent outside shoulder or terrace area of IH 39 or STH 59 at the same time without the permission of the engineer.

Obtain approval from the engineer for the location of any ingress or egress access points for construction vehicles.

B Traffic Operations During All Stages

- Maintain two lanes of traffic in each direction at all times on IH 39.*
- Maintain one lane of traffic in each direction at all times on STH 59 and for all sideroads.*
- Maintain traffic on ramps at all times.**
- Maintain left turn bays at intersections as shown on the plans.*
- Maintain mainline traffic on IH 39 and STH 59 on a paved concrete or hot mix asphalt surface at all times.
- Maintain a minimum paved surface lane width of 11-feet on IH 39 (16-foot minimum clear width when restricted to one lane), ramps, and STH 59; and a minimum lane width of 10-feet on all other roads, with travel surface to be either paved surface or base aggregate surface.

* Lane closures allowed as specified in the Lane and Shoulder Closures section below.

** Ramp closures allowed as specified in the Freeway Work Restrictions section of the Prosecution and Progress article and the Roadway and Ramp Closures section of this Traffic article.

C Traffic Operations by Stage

Stage 1A

IH 39

- Close the outside southbound lane of IH 39 at night using drums as separation from work zone. Southbound traffic uses the existing southbound inside lane. Re-open to two southbound lanes during the day.
- Close the outside northbound lane of IH 39 at night using drums as separation from work zone. Northbound traffic uses the existing northbound inside lane. Re-open to two northbound lanes during the day.

Ramps

- Existing ramps open to traffic.
- Northbound and southbound single overnight ramp closures required for installation of temporary barrier on ramps.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 1B

IH 39

- Close the inside southbound lane of IH 39 at night using drums as separation from work zone. Southbound traffic uses existing southbound outside lane and shoulder. Re-open to two southbound lanes during the day.
- Close the inside northbound lane of IH 39 at night using drums as separation from work zone. Northbound traffic uses the existing northbound outside lane and shoulder. Re-open to two northbound lanes during the day.
- Alternating overnight single lane closures on IH 39 for installation of culverts under IH 39 at Station 1412+00 and Station 1425+00 and permanent storm sewer under IH 39 northbound at Station 1385+75.

Ramps

- Existing ramps open to traffic.
- Single overnight southbound ramp closures required for installation of temporary culverts under the existing southbound ramps.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and Richardson Springs Road which are open to local traffic only under the IH 39 bridges.
- Close the eastbound and westbound STH 59 shoulders in select locations for off alignment construction.

Stage 2A

IH 39

- Southbound IH 39 open to two lanes on existing pavement.
- Close the outside southbound lane of IH 39 at night to complete the new southbound Off Ramp temporary connection to IH 39. Re-open to two southbound lanes during the day.
- Close the inside northbound lane of IH 39 at night to complete the northbound median temporary widening. Re-open to two northbound lanes during the day.
- Close the outside northbound lane of IH 39 at night to complete the new Northbound Off Ramp and Northbound On Ramp temporary connections to IH 39. Re-open to two northbound lanes during the day.
- Northbound and southbound IH 39 night time rolling stops to install girders for the new STH 59 bridge.
- Northbound IH 39 night time rolling stops to install girders for the new easterly half of the northbound Rock River bridge.

Ramps

- Stage 2A1
  - All existing ramps open.
- Stage 2A2
  - Switch Northbound On Ramp traffic to new Northbound On Ramp.
  - Switch Southbound Off Ramp traffic to new Southbound Off Ramp.
  - Northbound Off Ramp remains open on existing pavement; Single overnight ramp closure required to complete temporary connection from existing northbound IH 39 pavement to the new Northbound Off Ramp.

- Southbound On Ramp is closed and detoured using IH 39 northbound to the USH 51/STH 73/IH 39 Interchange to access IH 39 southbound. See Interim Liquidated Damages section of the Prosecution and Progress article for more information.
- Activate temporary signal at the STH 73/IH 39 northbound ramps intersection.

- Stage 2A3
  - Switch Northbound Off Ramp traffic to new Northbound Off Ramp with temporary connection.
  - Open new Southbound On Ramp to traffic prior to Memorial Day weekend.
  - Deactivate temporary signal at the STH 73/IH 39 northbound ramps intersection and return to stop control.

STH 59

- Stage 2A1
  - STH 59 open to traffic with existing intersection control.
  - Begin Goede Road intersection temporary signal operation after it is installed in this stage.
  - Close the eastbound and westbound shoulders in select locations for off alignment construction and temporary widening.
  - Off-peak flagging operations required for temporary widening on the west side of Goede Road.
- Stage 2A2
  - Begin temporary signal operation at the new southbound ramps intersection.
  - Shift eastbound and westbound traffic to the north side of the existing pavement.
  - Off-peak flagging operations required to complete storm sewer crossing at Station 32+03'F'.
- Stage 2A3
  - Begin temporary signal operation at the new northbound ramps intersection.
  - Off-peak flagging operations required to complete storm sewer trunk line on East Richardson Springs Road.
  - Local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges and Hemenway Lane/Kenlyn Road which are open to local traffic only.

Stage 2B1 and 2B2

IH 39

- Southbound IH 39 open to two lanes on existing pavement during the day. Night time lane closures under STH 59 and Goede Road for bridge deck removal as follows:
- Stage 2B1: Close southbound IH 39 outside travel lane.
- Stage 2B2: Close southbound IH 39 inside travel lane.
- Northbound IH 39 open to two lanes on existing pavement during the day. Night time lane closures under STH 59 and Goede Road for bridge deck removal as follows:

- Stage 2B1: Close northbound IH 39 inside travel lane as needed for temporary barrier delivery/installation.
- Stage 2B2: Close northbound IH 39 inside travel lane as needed for bridge deck removal.

Ramps
- All ramps remain open to traffic

STH 59
- Switch STH 59 to new eastbound lanes, temporary widening and new bridge.
- Adjust temporary signals at the STH 59 intersections with the southbound ramps, northbound Ramps and Goede Road.
- Close Goede Road between North Eastman Road and Kenlyn Road. Reopen to traffic after completion of reconfigured Kenlyn Road. Goede Road remains closed over IH 39 for bridge demolition. See Interim Liquidated Damages section of the Prosecution and Progress article for more information.
- All local roads open to traffic except for Ellendale Road and Richardson Springs Road which are open to local traffic only under the IH 39 bridges and Kenlyn Road at STH 59 which is open to local traffic only.

Stage 2B3

IH 39
- Southbound IH 39 open to two lanes on existing pavement
- Switch IH 39 northbound to temporary widened pavement. IH 39 northbound may be reduced to one travel lane at night as needed for the traffic switch, outside barrier placement, and remaining bridge deck removal. Restore to two northbound travel lanes on the temporary pavement during the day.
- Complete the STH 59 and Goede Road bridge removals following this IH 39 northbound traffic switch.

Ramps
- Southbound ramps open; northbound ramps remain open by gapping northbound IH 39 construction

STH 59
- STH 59 traffic open on eastbound side, temporary widening, and new bridge with temporary signals for intersection control at the southbound ramps, northbound ramps and Goede Road.
- Goede Road remains closed over IH 39 for bridge demolition.
- Local roads open except for Ellendale Road and Richardson Springs Road which are open to local traffic only under the IH 39 bridges and Kenlyn Road at STH 59 which is open to local traffic only.

Stage 2B4

IH 39
- Southbound IH 39 open to 2 lanes on existing pavement.
- Northbound IH 39 open to 2 lanes on temporary widened pavement.
- Night time rolling stops on northbound and southbound IH 39 for girder removals at STH 59 and Goede Road (up to four nights total).

Ramps

- Southbound ramps open; northbound ramps remain open by gapping northbound IH 39 construction.

STH 59

- STH 59 traffic open on eastbound side, temporary widening, and new bridge with temporary signals for intersection control at the southbound ramps, northbound ramps and Goede Road.
- Goede Road remains closed over IH 39 for bridge demolition.
- Local roads open except for Ellendale Road and Richardson Springs Road which are open to local traffic only under the IH 39 bridges and Kenlyn Road at STH 59 which is open to local traffic only.

Stage 2C

IH 39

- Southbound IH 39 open to two southbound lanes on existing pavement.
- Northbound IH 39 open to two lanes on temporary widened pavement with barrier on the left and right side to protect work zone and to protect non-traversable median slopes.

Ramps

- Stage 2C1
- Northbound On and Off Ramps remain open to traffic through Labor Day.
- Southbound On and Off Ramps remain open to traffic; Southbound Off Ramp traffic uses temporary pavement connection to STH 59.
- Stage 2C2
- Switch Northbound Off Ramp open to traffic at advance exit location via temporary crossover to completed northbound outside lanes and over the completed easterly half of the northbound Rock River bridge to the new off ramp.
- Northbound On Ramp closed after Labor Day and detoured using STH 59, USH 51 and the USH 51/STH 73/IH 39 Interchange to access northbound IH 39. See Interim Liquidated Damages section of the Prosecution and Progress article for more information. **Closure must be coordinated with remaining work in Stage 2C such that the northbound On Ramp is re-opened to traffic when northbound IH 39 traffic is switched to the completed northbound outside lanes in Stage 2D.**
- Reactivate temporary signals at the STH 73/northbound ramps for this stage.
- Southbound On and Off Ramps remain open to traffic; switch Southbound Off Ramp traffic to the completed westerly lane at STH 59.

STH 59

- STH 59 traffic open on eastbound side, temporary widening, and new bridge with temporary signals for intersection control at the southbound ramps, northbound ramps and Goede Road.
- Local roads open to local traffic except as noted below:
- North Richardson Springs Road open to traffic in Stage 2C1; open to businesses but closed to through traffic in Stage 2C2.
- East Richardson Springs Road open to traffic in Stage 2C1; open to businesses but closed to through traffic in Stage 2C2.

- Ellendale Road and East Richardson Springs Road open to local traffic only under the IH 39 bridges.
- Goede Road/North Eastman Road reconfiguration open to local traffic only in Stage 2C1; open to traffic in Stage 2C2.
- Kenlyn Road at STH 59 open to local traffic only in Stage 2C1; open to traffic in Stage 2C2.

Stage 2D

IH 39

- Southbound IH 39 open to two southbound lanes on existing pavement.
- Switch northbound IH 39 traffic to new outside northbound IH 39 lanes and new easterly half of northbound Rock River bridge. Traffic protected from work zone by temporary concrete barrier.

Ramps

- All ramps open.
- Deactivate temporary signal at the STH 73/IH 39 northbound ramps intersection and return to stop control.

STH 59

- STH 59 fully open on new pavement with roundabout intersection control at the southbound ramps, northbound ramps and Goede Road intersections.
- Stage 2D1: Shift eastbound and westbound traffic to outside of lane and temporary pavement away from the central islands.
- Stage 2D2: Shift eastbound and westbound traffic to outside of lane or shoulder away from the splitter islands.
- Stage 2D3: Shift eastbound traffic to inside of lane for work on shoulder. Shift westbound traffic outside at northbound On Ramp splitter island. Off-peak flagging operations required on STH 59 and E Richardson Springs Road for mill and overlay at east project tie in.
- Local roads open in final lane configuration except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 3A

IH 39

- Southbound IH 39 on existing lanes.
- Northbound IH 39 on new outside northbound lanes protected from work zone by temporary concrete barrier.

Ramps

- All ramps open.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 3B

IH 39

- Southbound IH 39 on existing lanes. Southbound traffic shifted to outside shoulder at north project end to allow for bi-directional traffic on temporary widened southbound lanes with Project 1007-11-75 in Dane County.
- Northbound IH 39 on new outside northbound lanes. Switch northbound IH 39 to Crossover R1 and onto temporary widening along southbound lanes at the north end of project.
- Northbound IH 39 night time rolling stops to install girders for the new westerly half of the northbound IH 39 Rock River bridge.

Ramps

- All ramps open.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 4A

IH 39

- Switch southbound IH 39 traffic to new inside northbound IH 39 lanes and new westerly half of northbound Rock River bridge. Bi-directional traffic on new northbound lanes with center temporary barrier.
- Southbound IH 39 traffic using Crossover R1 and Crossover R2.
- Northbound IH 39 traffic continues to use Crossover R1 until completion of Project 1007-11-75 in Dane County.

Ramps

- Northbound ramps open.
- Southbound ramps open using temporary ramp crossovers.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 4AW (Over winter)

IH 39

- Bi-directional traffic on new northbound IH 39 lanes with center temporary barrier.
- Southbound IH 39 using Crossover R1 and Crossover R2.
- Switch northbound traffic from Crossover R1 to new northbound lanes completed with Project 1007-11-75 in Dane County.

Ramps

- Northbound ramps open.
- Southbound ramps open using temporary ramp crossovers.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 4B

IH 39

- Bi-directional traffic on new northbound IH 39 lanes with center temporary barrier.
- Close Crossover R1; Switch southbound traffic to new northbound lanes in Dane County completed with Project 1007-11-74.
- Southbound IH 39 traffic using Crossover R2.
- Southbound IH 39 night time rolling stops to install girders for the new southbound IH 39 Rock River bridge.

Ramps

- Northbound ramps open.
- Southbound ramps open using temporary ramp crossovers.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 4C

IH 39

- Bi-directional traffic on new northbound IH 39 lanes with center temporary barrier.
- Southbound IH 39 traffic using Crossover R2.

Ramps

- Northbound ramps open.
- Southbound Off Ramp open to traffic on reconfigured temporary ramp crossover over completed southbound IH 39 lanes.
- Southbound On Ramp closed and detoured using IH 39 northbound to the USH 51/STH 73/IH 39 Interchange to access IH 39 southbound. See Interim Liquidated Damages section of the Prosecution and Progress article for more information. **Closure must be coordinated with remaining work in Stage 4C such that the Southbound On Ramp is re-opened to traffic when southbound IH 39 traffic is switched to the completed southbound lanes in Stage 4D.**

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 4D

IH 39

- Switch southbound IH 39 traffic to the new southbound outside lanes and open to two southbound lanes; lane shifts required at south end of project; temporary overnight lane closures as needed to complete removal of temporary Ramp ED.
- Southbound IH 39 using permanent Crossover R1; Traffic remains bi-directional on northbound lanes with Project 1007-11-75 in Dane County.
- Close Crossover R2.
- Northbound IH 39 to remain open to two outside northbound lanes behind temporary concrete barrier; temporary overnight lane closures as needed to complete pavement marking and removal of temporary concrete barrier.

Ramps

- All ramps open.

STH 59

- STH 59 and local roads open to traffic except for Ellendale Road and East Richardson Springs Road which are open to local traffic only under the IH 39 bridges.

Stage 4E

IH 39

- Southbound IH 39 traffic remains open to two lanes on the southbound outside lanes.
- Southbound IH 39 using permanent Crossover R1; Traffic remains bi-directional on northbound lanes with Project 1007-11-75 in Dane County.
- Shift northbound IH 39 to completed northbound inside lanes, remaining open to two lanes; temporary overnight lane closures as needed to complete pavement marking and removal of temporary pavement on the northbound IH 39 outside shoulder.

Ramps

- All ramps open.

STH 59

- STH 59 and all local roads open to traffic.

Stage 4F (Final Lane Configuration with Project 1005-10-72)

IH 39

- Southbound IH 39 traffic to remain open to only two lanes on the southbound outside lanes.
- Southbound IH 39 to remain on permanent Crossover R1.
- Shift northbound IH 39 to completed outside northbound lanes; northbound IH 39 traffic to remain open to only two lanes on the northbound outside lanes.
- Southbound IH 39 to remain opened to two lanes of traffic throughout the Project 1005-10-72 limits.
- Northbound IH 39 will be opened to three lanes of traffic by others after the completion of Project 1007-11-75 in Dane County.

Ramps

- All ramps open.

STH 59

- STH 59 and all local roads open to traffic.

Coordinate and stage all construction activities within the areas of local traffic routes, as required to maintain a traveled way conforming to all above requirements.

Do not switch traffic over to the next construction stage until all temporary barrier, signing, pavement marking, reflectors, tubular marker posts, and traffic control drums for the stage are in place, temporary signals for the stage are in place and operational, and conflicting pavement markings and signs are removed as shown in the traffic control and temporary signal plans and as directed by the engineer. Allowable exceptions to this specification are crossover and intersection areas where traffic control cannot be completed until after the switch is made.

D Definitions

The following definitions apply to this contract:

Permitted Shoulder Closure Times

Allowed anytime except on Sundays from Noon to 6:00 PM

Permitted Freeway Rolling Closure Times:

Sunday 11:00 PM to Monday 5:00 AM
Monday 11:00 PM to Tuesday 5:00 AM
Tuesday 11:00 PM to Wednesday 5:00 AM
Wednesday 11:00 PM to Thursday 5:00 AM
Thursday 11:00 PM to Friday 5:00 AM
Friday 11:00 PM to Saturday 5:00 AM
Saturday 11:00 PM to Sunday 5:00 AM

E Lane and Shoulder Closures

Single lane closures on IH 39 and STH 59 may be permitted as defined in the Lane Rental Fee Assessment article of these special provisions. 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 closures include setup and breakdown of any equipment and traffic control devices. Shoulder closures on IH 39 and STH 59 and freeway rolling closures may be permitted during the hours listed in the Definitions section of this Traffic article.

Short-term single lane flagging operations will be required on STH 59 and the local roads to accommodate storm sewer crossing construction and roadway tie-in work. Flagging operations are limited to times defined as STH 59/Local Road Permitted Lane Closure Times in the Lane Rental Fee Assessment article. Delays due to flagging may not exceed 10 minutes in any direction. The engineer will have the ability to suspend work activities beyond the periods identified in the Lane Rental Fee Assessment article in the event any undesirable traffic congestion develops that has the potential to cause lengthy motorist delay or unsafe workings conditions.

Request approval from the engineer for all lane closures in accordance 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 closures at the beginning of peak travel periods. Failure to obtain approval or reopen closed lanes at the required time shall be subject to penalties specified under the article Prosecution and Progress.

Shoulders may be closed if required by the work operation, but the right and left shoulder may not be closed in the same area at the same time.

All lane and shoulder closures shall be removed when work is not in progress. Provide arrow boards for use during all single lane closures in accordance 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 and Ramp Closures

Maintain full access at all intersections and ramps, as shown in the Traffic Control/Construction Staging section of the plans except as follows.

Closure of the STH 59 ramps will be required during various stages of construction with limitations as outlined in the Freeway Work Restrictions and Interim Liquidated Damages sections of the Prosecution and Progress article. Detour signing is provided in the plans and shall be in place in advance of the scheduled ramp closures.

Place Traffic Control Signs Portable Changeable Message for all lane and roadway closures as shown on the plans at least seven days prior to the lane or roadway closure. Obtain approval from the department for all messages for the Traffic Control Signs Portable Changeable Message. The engineer shall contact Jeff Gustafson at the Southwest Region Madison Office, (608) 516-6400. All lane closures are subject to the approval of the Region traffic engineer.

During the removal of the existing girders and placement of the new bridge girders, arrange for rolling stops to be utilized. This will involve stopping interstate traffic for a brief period and then allowing traffic to proceed behind a line of state patrol cars that will coordinate the procession with the construction crew at the bridge site. Traffic will proceed in groups timed to allow for the removal and placement of the girders overhead. The time frame for this operation shall be only during the Permitted Freeway Rolling Closure Times, with the exception of holiday work restrictions.

During girder placement operations for the new STH 59 bridge arrange for up to two nights of work with rolling stop closures on northbound IH 39 and up to two nights of work with rolling stop closures on southbound IH 39. Law enforcement will be required for the rolling stops, or at ramp intersections with STH 59, depending on the method of operation selected. The time frame for either operation shall be only during the Permitted Freeway Rolling Closure Times, with the exception of holiday work restrictions.

During removal of the existing STH 59 bridge arrange for up to two nights of work with rolling stop closures. Law enforcement will be required for the rolling stops, or at ramp intersections with STH 59, depending on the method of operation selected. The time frame for either operation shall be only during the Permitted Freeway Rolling Closure Times, with the exception of holiday work restrictions.

During removal of the existing Goede Road bridge arrange for up to two nights of work with rolling stop closures.

During girder placement operations for the new IH 39 Rock River bridges arrange for up to twelve nights of work with rolling stop closures on northbound IH 39 and up to twelve nights of work with rolling stop closures on southbound IH 39.

Contractor operations shall not require state patrol cars to stop IH 39 traffic for more than 15 minutes. The department will allow this procedure for no more than the time specified above. 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 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 or ramp at the required times shall be subject to penalties specified under the article Lane Rental Fee Assessment.

G Local Traffic Access to Project

Maintain local traffic access during the construction of STH 59. Stage construction activities as required to maintain local traffic access.

Open Kenlyn Road to local traffic prior to removing the existing Goede Road bridge over IH 39.

Complete the North Richardson Springs Road connection to the roundabout at STH 59 prior to beginning the work on East Richardson Springs Road.

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

- Number of Lanes: One lane in each direction.
- Lane Width: Minimum of 10 foot width or one lane roadway with flagging.
- Driving Surface: Acceptable driving surfaces include base aggregate dense, asphaltic surface temporary, HMA pavement, concrete pavement.

H Property Access

Maintain access to properties along the project for local residents, businesses, and emergency vehicles. Access to all driveways and parking lots where alternative access is not available shall remain open at all times, except when it is absolutely necessary to close them for underground construction. Concrete curb and gutter, concrete driveway, and concrete sidewalk construction shall be staged to maintain driveway access. Keep business entrances open by partial driveway construction or by closing only one access at a time for properties with multiple driveways. Construct temporary commercial entrances including a crushed aggregate surface within 24 hours of removal. Combine temporary commercial entrances wherever practical to minimize the number of access locations.

Inform all adjacent property owners two working days prior to closing their access(es).

Maintaining property access as described above is considered incidental to the Traffic Control (Project) bid item.

I Advance Notification

Notify the City of Edgerton Police Department, Fire Department, and Director of Public Works; Edgerton Hospital; Town of Fulton; Town of Albion; Rock County Sheriff's Department; Dane County Sheriff's Department; the Rock and Dane County Highway Commissioners; Wisconsin State Patrol through Jeff Gustafson of WisDOT Southwest Region at (608) 516-6400 or jeffrey.gustafson@dot.wi.gov; Edgerton Post Office; Edgerton Reporter; and Janesville Gazette 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.

Notify the Edgerton School District two weeks prior to construction. Also notify them one week prior to traffic switches and lane closures.

Advance notification as described above is considered incidental to the Traffic Control (Project) bid item.

J 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 temporary precast barrier. The clear zone for IH 39 is 36 feet and the clear zone for STH 59 is between 20 and 32 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 36 feet from the edge of the IH 39 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.

K 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.

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

Requested Closure or Restriction	Calendar or Business Days
Project Start	14 calendar days
Lane closures (without width, height or weight restriction)	3 business days
Lane closures (with width, height or weight restriction)	14 calendar days
Construction stage changes	14 calendar days
Full Freeway closures	14 calendar days
Detours	14 calendar days
Local Street (side road) openings/closings	7 calendar days
Intersection cross-traffic closures	14 calendar days

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.

M Portable Intelligent Transportation System
The department will be supplying and operating an intelligent transportation system during the construction of this project. The ITS system will consist of a portable video surveillance system and portable changeable message signs. These portable units will 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.

N Roadside Hazard Protection During Construction

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

O Construction Access

All construction access is subject to approval of the engineer.

Access into a work zone directly from IH 39 will only be allowed from a closed lane during the IH 39 Permitted Lane Closure Times and must follow the requirements of the Construction Detail titled ”Traffic Control Detail for Construction Access at Lane Closure” at locations approved by the engineer.

Exiting a work zone directly onto IH 39 will only be allowed from a closed lane during the IH 39 Permitted Lane Closure Times and must follow the requirements of the Construction Detail titled ”Traffic Control Detail for Construction Access at Lane Closure” at locations approved by the engineer.

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

U-turns at existing maintenance crossovers or temporary crossovers between IH 39 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 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 requiring the use of a semi-tractor and trailer shall only occur during those hours identified as IH 39 Permitted Lane Closure Times.

P Regulatory Speed Limit Reduction
Reduce the regulatory posted speed for IH 39 from 70 mph to 55 mph at the beginning of construction, and retain the 55 mph posting throughout construction, including winter months.

Reduce the regulatory posted speed for STH 59 from 55 mph to 45 mph west of the IH 39 southbound ramp terminal intersection as shown in the Traffic Control/Staging plans when work begins along STH 59 in Stage 2A. Retain the 45 mph posted speed through the completion of Stage 2D, and then post at 55 mph as shown in the Signing Plan.

Reduce the regulatory posted speed for STH 59 from 40 mph to 30 mph east of the IH 39 southbound ramp terminal intersection as shown in the Traffic Control/Staging Plans when work begins along STH 59 in Stage 2A. Retain the 30 mph posted speed through the completion of Stage 2D, and then post at 40 mph as shown in the Signing Plan.

Q River Navigation
Maintain a 30 foot wide navigational channel on the Rock River at all times as shown in the plans.

Place a steady burn white light visible for a minimum of 3 nautical miles on each corner of construction barges. Place the light as high as practical above the water level.

If temporary causeways are constructed, Warning Lights Type A shall be placed on the causeway every 50 feet around the perimeter of the causeway along with No Entry signs. Fence Safety shall be placed around the perimeter of the causeway. This work shall be incidental to the contract.

Complete a Construction Waterway Marker Permit Application for buoy placement in the Rock River. The Town of Fulton No Wake Idle Speed buoys shall be left in the Rock River for the duration of the construction project and be maintained. Obtain approval from the Wisconsin DNR. The application form is available here:
http://dnr.wi.gov/topic/Waterways/permit_apps/Waterway_Marker_Application_Permit_Form_8700-058.pdf

Q Enhanced Reference Location Signing
Maintain all existing enhanced reference location signing throughout the duration of the project as shown in the plans.

8. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying IH 39 or STH 59 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, except as detailed in the traffic control plans or as otherwise approved by the engineer during the following holiday periods:

2016

- From noon Friday, March 25, 2016 to 6:00 AM Monday, March 28, 2016 for Easter;
- From noon Friday, May 27, 2016 to 6:00 AM Tuesday, May 31, 2016 for Memorial Day;
- From noon Friday July 1, 2016 to 6:00 AM Wednesday, July 6, 2016 for Independence Day;
- From noon Friday, September 2, 2016 to 6:00 AM Tuesday, September 6, 2016 for Labor Day;
- From noon Friday, October 7, 2016 to 6:00 AM Tuesday, October 11, 2016 for Columbus Day;
- From noon Friday, November 18, 2016 to 6:00 AM Monday, November 28, 2016 for Wisconsin Gun Deer Hunting Season and Thanksgiving;
- From noon Friday, December 23, 2016 to 6:00 AM Monday, January 2, 2017 for Christmas and New Year's Day.

2017

- From noon Friday, April 14, 2017 to 6:00 AM Monday, April 17, 2017 for Easter;
- From noon Friday, May 26, 2017 to 6:00 AM Tuesday, May 30, 2017 for Memorial Day;
- From noon Friday June 30, 2017 to 6:00 AM Thursday July 6, 2017 for Independence Day;
- From noon Friday, September 1, 2017 to 6:00 AM Tuesday, September 5, 2017 for Labor Day;
- From noon Friday, October 6, 2017 to 6:00 AM Tuesday, October 10, 2017 for Columbus Day;
- From noon Friday, November 17 , 2017 to 6:00 AM Monday, November 27 , 2017 for Wisconsin Gun Deer Hunting Season and Thanksgiving.
- From noon Friday, December 22, 2017 to 6:00 AM Tuesday, January 2, 2018 for Christmas and New Year's Day.

2018

- From noon Friday, March 30, 2018 to 6:00 AM Monday, April 2, 2018 for Easter;
- From noon Friday, May 25, 2018 to 6:00 AM Tuesday, May 29, 2018 for Memorial Day;
- From noon Friday, June 29, 2018 to 6:00 AM Friday July 6, 2018 for Independence Day;
- From noon Friday, August 31, 2018 to 6:00 AM Tuesday, September 4, 2018 for Labor Day.

107-005 (20050502)

9. Utilities.

This contract comes under the provision of Administrative Rule Trans 220.
107-065 (20080501)

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 insure 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.

Alliant Energy – Electric
There are overhead and underground electrical facilities within the project limits as described below. Adjustments including directional boring of new cable prior to construction are anticipated to start in August 2015. Adjustments during construction are anticipated to occur during the first three months. Contact Jason Hogan (608) 458-4871 (office) or (608) 395-7395 (mobile) regarding the status of facility relocations and to coordinate adjustments during construction.

<u>IH-39</u>

- The existing overhead electric crossing north of the STH 59 bridge and poles at Station 1409+66'SB', 105' LT and Station 1408+20, 126' RT will remain in service and are anticipated for removal by April 2016. Coordinate grading activities with relocation of the poles and overhead electric. To replace this overhead crossing, a new underground duct will be installed crossing both IH-39 northbound and southbound lanes near Station 1431+60 in August 2015. This new line will extend to the west side of N South Eastman Road and continue approximately 3' inside the west right-of-way line to the intersection with Kenlyn Road.

- The existing overhead electric line and power poles along the northbound roadway from Station 1423+20 to Station 1428+22 RT will be removed prior to construction.

- The existing overhead electric crossing and pole at Station 1428+70 LT along the southbound roadway will be removed prior to construction.

<u>Ramp 'EA' (northbound on-ramp)</u>

- The existing power pole at Station 1407+62'EA', 62' LT and overhead electric line crossing Ramp EA will remain in service and are anticipated for removal by April 2016. Overhead lines will remain live and are not anticipated to be in direct conflict with construction equipment.

Ramp ‘ED’ (southbound off-ramp)

- The existing power pole at Station 1409+62’ED’, 45’ LT and overhead electric line crossing Ramp ED will remain in service and are anticipated for removal by April 2016. Coordinate grading activities with relocation of the pole and overhead electric.

STH 59 ‘F’

- The existing overhead electric line and power poles on the north side of the road from Station 32+33‘F’ to Station 46+60‘F’ will remain in service and are anticipated for removal by April 2016. A new pole at Station 33+50’F’, 130’ LT and underground line will be installed approximately 3’ inside the north right-of-way line of STH 59 between Station 33+50’F’ and Station 38+50’F’. Prior to construction, a temporary overhead electric line will be installed to power the existing ITS camera. If this temporary line requires removal prior to installing the permanent CCTV camera, contact Kyle Hemp at WisDOT, (608) 246-5367, for possible temporary power requirements.

- The existing overhead electric line and power poles crossing STH 59 at Station 32+33‘F’ and continuing over the proposed I90 Tires driveway will be relocated prior to construction. New poles will be placed near Station 31+60’F’, 85’ LT and Station 31+60’F’, 130’ RT with new overhead lines in between. New overhead will be placed between the poles at Station 31+60’F’, 85’ LT and Station 33+50’F’, 130’ LT. A new underground line will be placed approximately 3’ inside the I90 Tires driveway right-of-way from the pole at Station 31+60’F’, 130’ RT to Station 32+34’F’, 176’ RT. The overhead line continuing south toward the cellular tower is not anticipated to be in conflict.

- The existing underground electric line on the south side of the road from Station 32+33‘F’ to Station 33+13‘F’ RT will be relocated during construction. A new underground crossing of STH 59 near Station 33+50’F’ will be installed.

- The existing overhead electric lines and power poles on the east side of the road from Station 56+25’F’ to Station 67+06’F’ LT are not anticipated to be in conflict.

- The existing power pole at Station 63+40’F’ RT and overhead electric lines crossing STH 59 to the northeast and southeast are not anticipated to be in conflict.

Kenlyn Road ‘KL’

- The existing overhead electric line and power poles along the east side of the road from Station 10+77‘KL’ to Station 13+90‘KL’ then diagonally to Station 15+53’KL’ LT and at Station 19+00’KL’ LT will be relocated by April 2016. Existing poles at Station 17+25’KL’ LT and Station 20+65’KL’ LT will remain in place. A new pole line and overhead electric will be installed along the west right-of-way line from Station 10+75’KL’, 42’ LT to Station 13+93’KL’, 43’ LT then diagonally to Station 15+75’KL’, 41’ RT and continuing along the east right-of-way line to the N South Eastman Road intersection.

- At the farm ditch, a new pole will be installed at Station 101+45 RT and underground electric will be installed outside of the southerly farm ditch grading limits to Station 104+50 RT for residential service.

- The existing underground electric line on the east side of the road from Station 12+57‘KL’ to Station 12+81‘KL’ RT will remain in place.

- The existing power pole at Station 17+25’KL’ LT and underground electric line continuing to the west will remain in place.

Goede Road ‘GS’

- The existing power pole at Station 103+73’GS’ RT will remain in place.

- The existing power pole at Station 105+52’GS’ RT will be relocated east to the right-of-way line prior to construction and set deeper. The existing underground electric line from this pole back to Station 105+30’GS’ RT will be directionally bored deeper prior to construction. A new underground line will be installed from the pole at Station 103+73’GS’ RT to an existing pole at Station 107+95’GS’ RT.

- The existing power pole at Station 135+42, 33’ LT and overhead electric line crossing the road will be removed prior to construction.

- The existing power poles at Station 145+08’GS’, 10’ RT; Station 146+83, 38’ LT; and overhead electric lines will be relocated by April 2016.

Ellendale Road ‘ER’

- The existing overhead electric line and power pole from Station 11+00’ER’ to Station 11+21’ER’ RT will be removed prior to construction.

- The existing underground electric line from Station 11+21‘ER’ to Station 14+62‘ER’ RT will be de-energized in place and a new line placed approximately 4’ south of the Ellendale Road R/L prior to construction.

- The existing pole at Station 14+62’ER’, 22’ RT and attached overhead electric line to Station 14+82’ER’ RT and then diagonally to Station 16+29’ER’ LT will be removed prior to construction.

- Existing power poles and overhead electric lines on the property at 602 E Ellendale Road will be removed as part of the new underground installation south of the roadway R/L.

E Richardson Springs Road

- The existing overhead electric line on the north side of the road and power poles at Station 5+44‘ORS’, 47’ LT and Station 7+32‘ORS’, 49’ LT are not anticipated to be in conflict.

N Richardson Springs Road

- The existing underground electric line crossing at Station 22+70‘RS’ will be relocated to near Station 23+00’RS’ and buried deeper prior to construction. A new junction box will be installed near Station 23+00’RS’ LT.

Alliant Energy – Gas

There are underground gas facilities within the project limits as described below. Adjustments will occur prior to construction and are anticipated to start July 15, 2015 with an estimated 70 working days to complete. The contact is Jason Hogan (608) 458-4871 office or (608) 395-7395 mobile.

IH-39

- The existing underground plastic gas line along the east side of northbound IH-39 from Station 1408+10 to Station 1414+57 as well as the crossing of IH-39 at Station 1414+57 and associated valves will be de-gassed in place.

Ramp ‘EA’ (northbound on-ramp)

- The existing underground plastic gas line crossing Ramp EA at Station 1407+25‘EA’ will be de-gassed in place.

Ramp ‘ED’ (southbound off-ramp)

- The existing underground plastic gas line crossing Ramp ED at Station 1414+27‘ED’ will be de-gassed in place.

STH 59 ‘F’

- The existing underground plastic gas line crossings at Station 21+10‘F’ and Station 23+71‘F’ will be lowered in place prior to construction. The existing gas crossing at Station 33+50’F’ will be de-gassed in place.

- The existing underground plastic gas line along the south side of the road from Station 28+29’F’ to the crossing at Station 33+50’F’ will be de-gassed in place. A new gas line will be installed from Station 28+00’F’ to Station 31+50’F’ along the south right-of-way line and a new underground crossing of STH 59 at Station 31+50’F’.

- The existing gas regulation station at Station 32+18’F’, 89’ RT and supply piping will be relocated to the northeast corner of STH 59 and Sherman Road beyond the project limits.

- The existing underground plastic gas line along the north side of the I90 Tires driveway from Station 4+89 and crossing at Station 6+70 will be de-gassed in place. A new gas line will be installed 32’ south of the STH 59 R/L from Station 31+50’F’ to Station 34+20’F’ and then continue south to the I90 Tires business. The new line will be deep enough to avoid grading and culvert conflicts.

- The existing underground plastic gas line crossing at Station 63+81‘F’ will be de-gassed in place. A new gas crossing of STH 59 will be installed near Station 64+65’F’ and then crossing Mallwood Drive just east of the resurfacing limits. The new gas line will be deep enough to avoid proposed storm sewer.

- The existing underground plastic gas line from Station 63+72’F’, 68’ RT to Station 63+78’F’, 37’ RT at the northwest corner of the E Richardson Springs Road intersection will be de-gassed in place.

- The existing underground plastic gas line from Station 64+20’F’, 37’ RT to Station 65+60’F’, 36’ RT will be de-gassed in place. A new as line will be installed just west of the existing pipe and deep enough to avoid proposed storm sewer.

Kenlyn Road ‘KL’

- The existing underground plastic gas line along the east side of the road from Station 10+84‘KL’ to Station 12+75‘KL’ will be de-gassed in place. A new gas line will be installed approximately 6’ inside the west right-of-way line continuing to the intersection with N South Eastman Road. Near Station 35+50’KL’, the new gas line will cross under Kenlyn Road and continue along the south right-of-way line of N South Eastman Road to Station 84+00. The new gas line will continue east crossing under IH-39 near Station 1433+00 to Goede Road. The gas line will then continue south along the west right-of-way line of Goede Road to Station 114+00’GS’.

- The underground plastic gas line crossing at Station 10+90‘KL’ will be de-gassed in place.

Goede Road ‘GS’

- The existing underground plastic gas line from Station 104+25’GS’, 41’ RT to Station 107+06’GS’, 17’ RT will be de-gassed in place. A new gas line will be installed near the west slope intercept from Station 103+45’GS’ to Station 108+50’GS’. The existing gas service laterals at Station 105+33’GS’ RT and Station 106+74’GS’ RT will be de-gassed in place. A new gas main crossing will be installed at Station 105+20’GS’ at a depth to avoid roadway grading and proposed storm sewer.

Ellendale Road ‘ER’

- The existing gas service lateral at Station 11+00’ER’, 28’ RT will remain in place. No conflicts are anticipated.

- The existing underground steel gas line along the south side of the road from Station 11+06’ER’ to Station 16+13’ER’ and service lateral to the property at 602 E Ellendale Road will be de-gassed in place. A new gas line will be installed near the south edge of pavement and deep enough to avoid conflicts.

E Richardson Springs Road

- The existing underground plastic gas service lateral at Station 6+82’RS’, 11’ RT will remain in place. No conflicts are anticipated.

- The existing underground plastic gas line along the north side of the road from Station 5+00‘ORS’ to Station 7+75‘ORS’ and the crossing at Station 6+18‘ORS’ will be de-gassed in place. A new gas line will be installed along the south right-of-way line from Station 5+50’ORS’ RT to Station 7+75’ORS’ RT. A new gas service lateral crossing at Station 5+50’ORS’ will be installed deep enough to avoid conflicts.

N Richardson Springs Road

- The existing underground plastic gas line crossing at Station 22+37‘RS’ and extending approximately 80’ west of the roadway R/L will be de-gassed in place. A new gas line will be installed from Station 5+50’ORS’ RT, crossing N Richardson Springs Road near Station 21+60’RS’, and then continuing to Station 23+25’RS’, 80’ LT.

CenturyLink

There are underground telephone facilities within the project limits as described below. Adjustments will occur prior to construction and are anticipated to start July 15, 2015 with an estimated 2 working days to complete. The contact is Mark Murn, (262) 392-5210.

Ellendale Road ‘ER’

- The existing underground telephone line along the south side of the road from Station 11+07‘ER’ to Station 12+07‘ER’ RT will be discontinued in place. The existing cable west of Station 11+07’ER’ will be pulled back and connected to a new Frontier-owned pedestal near Station 10+92’ER’, 38’ RT.

Charter Communications

There are overhead and underground fiber optic and coax lines within the project limits as described below. Adjustments prior to construction are anticipated to start in July 2015 and require 60 working days to complete although several relocations require coordination with Alliant Energy during construction. Contact Randy Steurer (608) 373-7544 office or (608) 209-3194 mobile, to coordinate adjustments required during construction.

IH-39

- The existing overhead fiber optic and coax lines crossing north of the STH 59 bridge at Station 1408+84 are in conflict with grading due to the Alliant Energy pole conflicts. Removal of these facilities will occur with Alliant Energy pole removals. To replace this overhead crossing, new underground fiber optic will be installed in an Alliant Energy duct crossing both IH-39 northbound and southbound lanes near Station 1431+60. This new line will extend to the west side of N South Eastman Road and continue approximately 3’ inside the west right-of-way line to the intersection with Kenlyn Road. A new vault will be installed on N South Eastman Road near Station 82+50 LT.

Ramp ‘EA’ (northbound on-ramp)

- The existing overhead fiber optic and coax lines crossing at Station 1407+22’EA’are in conflict with grading due to the Alliant Energy pole conflicts. Removal of these facilities will occur with Alliant Energy pole removals.

Ramp ‘ED’ (southbound off-ramp)

· The existing overhead fiber optic and coax lines crossing at Station 1409+82’ED’ are in conflict with grading due to the Alliant Energy pole conflicts. Removal of these facilities will occur with Alliant Energy pole removals.

STH 59 ‘F’

· The existing underground fiber optic and coax lines along the north side of the road from Station 28+73’F’, crossing under Kenlyn Road at Station 10+65’KL’, to Station 32+96’F’ will be discontinued in place prior to construction. New facilities will be located on existing Alliant Energy poles.

· The existing pedestal and vault at Station 32+82’F’, 87’ LT will be removed prior to construction.

· New overhead facilities will be located on Alliant Energy poles along the west side of the I90 Tires driveway right-of-way and crossing STH 59 near Station 31+63’F’.

· The existing overhead fiber optic and coax lines along the north side of the road from Station 32+33‘F’ to Station 46+60‘F’ are in conflict with grading due to the Alliant Energy pole conflicts. Removal of these facilities will occur with Alliant Energy pole removals.

· The existing overhead coax line crossing the road on Alliant Energy poles from Station 62+97’F’ LT to Station 63+40’F’ RT are not anticipated to be in conflict.

· The existing overhead coax line crossing along the west side of the road on Alliant Energy poles from E. Richardson Springs Road and continuing south are not anticipated to be in conflict.

Kenlyn Road ‘KL’

· The existing overhead coax line along the east side of the road from Station 10+77‘KL’ to Station 13+90‘KL’ are in conflict with grading due to Alliant Energy pole conflicts. Removal of these facilities will occur with Alliant Energy pole removals.

· The existing overhead coax line attached to the Alliant Energy pole at Station 17+25’KL’, 32’ LT will remain in place.

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· New overhead facilities will be placed on new Alliant Energy poles from Station 15+75’KL’, 41’ RT and continuing along the east right-of-way line to the N South Eastman Road intersection.

· New overhead facilities will be placed on new Alliant Energy poles along the south side of the farm ditch from Station 100+25 RT to Station 101+45 RT.

Goede Road ‘GS’

- The existing overhead fiber optic and coax lines along the east side of the road from Station 103+73’GS’ RT to Station 107+06’GS’ are in conflict with grading due to the Alliant Energy pole conflicts. Adjustment of these facilities will occur with the Alliant Energy pole relocation.

Ellendale Road ‘ER’

- Prior to construction, the existing underground fiber optic and coax lines along the south side of the road will be discontinued in place and new facilities installed in Alliant Energy duct under the eastbound travel lane and below construction limits. New vaults will be installed at Station 9+69’ER’, 22’ RT and Station 16+56’ER’, 19’ RT.

- The existing overhead fiber optic and coax lines attached to a Frontier pole at Station 14+82’ER’, 42’ RT and continuing overhead to the east will be removed along with the Frontier pole removal prior to construction.

E Richardson Springs Road

- The existing underground fiber optic and coax lines along the south side of the road will be discontinued in place prior to construction. New underground facilities will be installed approximately 25’ LT of the roadway R/L and 8’ deep. New vaults will be installed at Station 6+73’RS’, 20’ LT and Station 11+00’RS’, 19’ RT.

- The existing underground fiber optic and coax lines crossing at Station 5+42’ORS’ will be discontinued in place prior to construction. A new vault will be installed at Station 21+00’RS’, 30’ RT and new underground fiber and coax crossing at Station 5+45’ORS’ at 7’ deep.

N Richardson Springs Road

- The existing underground coax line along the east side of the road from Station 20+00’RS’ to Station 21+65’RS’ may be in conflict with grading.

- The existing underground coax line crossing at Station 22+68’RS’ will be discontinued in place prior to construction. A new underground crossing will be installed near Station 22+55’RS’ at 9’ deep.

- The existing pedestal at Station 22+50’RS’, 54’ RT will remain in place.

Frontier Communications

There are overhead and underground fiber optic and telephone facilities within the project limits as described below. Adjustments prior to and during construction are anticipated to start after July 15th 2015 and require 40 working days to complete. Minor adjustments during construction are required at N Eastman Road. Contact Russ Ryan (920) 583-3275 a minimum of 5 days prior to adjustments required during construction.

IH-39

- The existing underground fiber optic line crossing IH-39 from Station 1409+60'SB' to Station 1407+75, 185' RT will be discontinued in place. Existing pedestals at Station 1409+60'SB', 121' LT; Station 1407+75, 185' RT; the pole at Station 1409+60'SB', 121' LT; and the handhole at Station 1407+75, 185' RT will be removed.

- The existing overhead telephone line attached to Alliant Energy power poles crossing IH-39 from Station 1409+66'SB', 105' LT to Station 1408+20, 126' RT will be removed.

- A new underground fiber optic and telephone line crossing under IH-39 will be installed from Station 1422+40'SB' LT to Station 1422+60 RT with a new handhole and pedestal at the same stations on either side of IH-39.

Ramp 'EA' (northbound on-ramp)

- The existing underground fiber optic and 2 underground telephone lines crossing at Station 1407+21'EA' will be discontinued in place.

Ramp 'ED' (southbound off-ramp)

- The existing underground fiber optic and telephone lines crossing from Station 1410+10'ED', 207' LT to a pedestal at Station 1410+00'ED', 144' RT will be discontinued in place. The pedestal will be removed.

STH 59 'F'

- The existing underground telephone line along the north side of the road from Station 28+73'F' to Station 30+65'F' and from Station 31+72'F' crossing Kenlyn Road to a pedestal and cross connect box at Station 32+90'F' will be discontinued in place. Existing pedestals at Station 28+15'F', 76' LT and Station 30+57'F', 83' LT will be relocated.

- The existing underground telephone line crossing at Station 32+94'F', continuing west to a pedestal at Station 32+27'F', 61' RT, and continuing south towards the cellular tower will be discontinued in place. The existing pedestal at Station 32+27'F', 61' RT will be removed. A new pedestal and hand hole will be installed at Station 31+65'F', 83' LT; a new pedestal at Station 31+50'F', 83' RT and new underground fiber optic and telephone lines in between the pedestals. A new underground fiber optic and telephone lines will be installed just inside the right-of-way line for the I90 Tires Trailers and Towing driveway, and a new pedestal will be installed at Station 6+62, 55' LT of the driveway R/L.

- An existing handhole at Station 32+85'F', 87' LT will be removed. Existing underground fiber optic and telephone lines from Station 32+85'F' LT to Station 43+46'F' LT will be discontinued in place.

- The existing overhead telephone line crossing from Station 62+97'F' LT to Station 63+40'F' RT is not anticipated to be in conflict.

Kenlyn Road ‘KL’

· The existing underground telephone line along the east side of the road from Station 10+88‘KL’ to Station 13+77’KL’, crossing the road to a pedestal at Station 13+95’KL’, 39’ LT will be discontinued in place. The pedestal at Station 12+58’KL’ RT will be removed.

· The existing underground telephone line along the west side of the road from Station 13+95’KL’, 39’ LT to Station 20+63’KL’, 37’ LT will be discontinued in place. New underground telephone and fiber optic lines will be installed just inside the west right-of-way line from Station 10+78’KL’, 37’ LT to Station 23+05’KL’, 40’ LT at depths of 4’-7’ deep. Pedestals at Station 13+95’KL’, 39’ LT and Station 20+63’KL’, 37’ LT will be relocated. New pedestals will be installed at Station 17+07’KL’, 36’ LT and Station 23+05’KL’, 40’ LT. New underground fiber optic and telephone lines will be installed from Station 20+63’KL’, 40’ LT and continuing east to IH-39.

· The existing underground telephone line along the east side of existing Goede Road from the existing N South Eastman Road intersection to Kenlyn Road Station 47+00’KL’ will be discontinued in place.

Goede Road ‘GS’

· Existing overhead telephone lines will be adjusted in conjunction with Alliant Energy power pole relocation at Station 105+52’GS’ RT.

· The existing underground telephone line along the east side of the road from Station 136+90’GS’ to Station 137+60’GS’ will be lowered.

N Eastman Road ‘GS’

· The existing underground telephone line along the east side of the road from Station 143+00’GS’ to Station 145+05’GS’ will be discontinued in place. A new underground telephone line will be placed just inside the east right-of-way line and a new pedestal installed at Station 145+05’GS’, 50’ RT. During construction but after culvert installations and adjacent ditch grading, a new underground telephone line will be placed from the new pedestal to Station 145+50’GS’ RT.

N South Eastman Road

· The existing underground telephone line from the pole at Station 79+85, 62’ RT to Station 85+21, 64’ RT and continuing north to the existing Goede Road intersection will be discontinued in place. An existing pedestal at Station 79+85, 54’ RT will be relocated west. A new underground telephone line will be installed from the relocated pedestal along the right-of-way line to the new pedestal at Station 1422+40’SB’ LT.

Ellendale Road ‘ER’

· The existing splice pedestal at Station 12+07’ER’, 49’ RT will be relocated west to approximately Station 10+92’ER’ RT.

- The existing underground telephone line along the south side of the road from Station 12+07'ER' to Station 14+82'ER' RT will be discontinued in place. A new underground line will be installed from Station 10+92'ER' RT to a new pedestal near Station 17+00'ER' RT at a depth of 12'.

- The existing pedestal and pole at Station 14+82'ER', 42' RT will be removed.

E Richardson Springs Road

- The existing overhead telephone line on the north side of the road from Station 5+44'ORS' to Station 7+32'ORS' and the pedestal at Station 5+48'ORS', 50' LT are not anticipated to be in conflict.

N Richardson Springs Road

- The existing underground telephone line crossing at Station 22+64'RS' will be lowered to a depth of 10', and a new pedestal will be installed at Station 23+22'RS', 65' LT.

Consolidated Koshkonong Sanitary District (CKSD)

There are gravity sanitary sewer and sanitary sewer force main facilities along Ellendale Road and Richardson Springs Road. Contact Dave Houfe (608) 774-0490 (mobile) a minimum of 3 days prior to performing work near sanitary sewer locations.

Ellendale Road 'ER'

- The top of existing 24" gravity sanitary sewer is lower than the bottom of proposed triple culvert pipes from Station 11+62'ER' to Station 11+78'ER' by approximately 1'.

- The top of existing 24" gravity sanitary sewer is lower than the bottom of proposed storm sewer pipe at Station 13+53'ER' by approximately 6".

- The top of existing 24" gravity sanitary sewer is lower than the bottom of proposed twin culvert pipes from Station 15+46'ER' to Station 15+54'ER' by approximately 6".

- The existing sanitary sewer manhole at Station 13+59'ER', 1.7' LT requires vertical adjustment during construction.

Richardson Springs Road 'RS'

- The existing 4" sanitary force main bend at Station 9+32'RS' is in conflict with northbound Rock River bridge pier #5 excavation and temporary shoring.

    - CKSD forces will adjust the force main in November 2015 and restore the disturbed pavement area with aggregate and HMA pavement to an elevation flush with the adjacent roadway.

- The top of existing 8" gravity sanitary sewer is lower than the bottom of proposed twin culvert pipes at Station 10+50'RS' by approximately 3'.

- The existing sanitary sewer manhole at Station 7+05‘RS’, 13.2’ LT requires vertical adjustment during construction.

- The existing sanitary sewer manhole at Station 9+82’RS’, 19.2’ LT requires vertical adjustment during construction.

- The existing gravity sanitary sewer lateral at Station 22+15’RS’, 3.2’ RT is expected to be lower than the bottom of proposed storm sewer pipe. Invert and slope information for the gravity sanitary sewer lateral originating from Culver’s was not available during design.

    - Perform storm sewer installation near this sanitary sewer lateral prior to or after Culver’s business hours. Contact Scott Mallon (608) 884-1800 (Culver’s) a minimum of 3 days prior to performing work near this sanitary sewer lateral.

- The existing sanitary sewer manhole at Station 22+13‘ER’, 19.9’ RT requires vertical adjustment during construction.

E Richardson Springs Road ‘ORS’

- The existing gravity sanitary sewer along the north side of the road from Station 5+18‘ORS’ to Station 8+06’ORS’ will remain in place. No conflicts are anticipated.

- The existing sanitary sewer manhole at Station 8+06’ORS’, 5.4’ RT requires vertical adjustment during construction.

Goede Road ‘GS’

- The existing gravity sanitary sewer on the east side of the road from Station 103+50‘GS’, 73’ RT to Station 105+30‘GS’, 12’ RT will remain in place. No conflicts are anticipated.

- The existing sanitary sewer manhole at Station 105+30‘GS’, 12’ RT requires vertical adjustment during construction.

Rock Energy Cooperative

The existing power pole on IH-39 Station 1340+36’SB’, 67’ LT will be moved 30’ west prior to construction. The contact is Lynn Maier, (608) 752-4550.

WisDOT Signals

There are existing traffic signals and associated equipment at the STH 59 intersection with Goede Road in conflict with grading, lighting, and ITS facilities. The WisDOT contact is Graham Heitz, (608) 246-5362.

- Removal of the existing traffic signals, conduit, loop detectors, control cabinet, and meter breaker pedestal is included in this project. See project plans for details.

WisDOT ITS
There is existing ITS equipment at the northwest corner of the STH 59 bridge in conflict with grading activities. The WisDOT contact is Kyle Hemp, (608) 246-5367.

- Removal of the existing CCTV camera, electrical service breaker boxes, poles, and overhead cable is included in this project. See project plans for details.

- New ITS conduit, cameras, vaults, and pullboxes will be installed after the proposed right-of-way fence is constructed near the completion of the project.

10. 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 and 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.

- Provide the following information about the company:
- Firm Name
- Address
- Telephone and facsimile numbers; e-mail address
- Contracting Specialties
- Years performing work in contracting specialties
- Geographic areas served
- Total Management Employees and years of service
- Project Managers
- General Superintendents
- Craft Superintendents
- Engineers
- Estimators
- CPM Schedulers

Construction Engineering

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

Subcontractors

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

Permanent Material Suppliers

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

Quality Control (where applicable)

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

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

Organization Chart

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

Work Rules

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

Maintenance of Traffic

- Provide the name of your Traffic Control Manager and qualifications indicating the firm's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).
- Attach a copy of your Preliminary Schedule indicating your approach to achieving the substantial completion schedule.
- 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

- 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 and submittal reviews. The workshop participants will at a minimum:

- Review the project special provisions.

- Categorize submittals into functional areas including but not limited to:
- MSE Retaining Walls
- Temporary Shoring
- Falsework and Formwork
- Girder Shop Drawings
- 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

- Develop a schedule for submittals.

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.

- 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)

- 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 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:

- Review contractor hiring processes for general labor positions.

- Review and listen to presentation provided by TrANS providers regarding the training program including details regarding how contractors can hire TrANS graduates.

- Review TrANS graduate availability for working on project.

- Meet one-on-one for at least two minutes with each TrANS graduate in attendance at the meeting.

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.

- 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)

- 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 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.

11. Other Contracts.

Coordinate work in accordance to standard spec 105.5.

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

It is expected that routine maintenance by the 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 the contract, unless otherwise indicated:

Project 1005-10-84
This project involves temporary widening of the northbound IH 39 bridge over Newville Road and approach roadway in 2016. Traffic control coordination with this project will be required.

Project 1007-10-78
This project involves temporary widening of the southbound IH 39 lanes north of the Dane County Line in 2016. The STH 59 interchange project is not expected to have a direct impact on this project.

Project 1007-11-75
This project involves reconstruction of the northbound IH 39 lanes north of the Dane County Line in 2017. The northbound crossover (Crossover R1) associated with the STH 59 interchange project must be completed in Stage 3B before work in Project 1007-11-75 can proceed. Coordination with this project will be required.

Project 1007-11-74
This project involves reconstruction of the southbound IH 39 lanes north of the Dane County Line in 2018. Traffic control within the reconstruction limits of the STH 59 interchange project will be taken over by Project 1007-11-74. Portions of the permanent pavement marking within the project limits will also be installed as part of Project 1007-11-74. IH 39 will be opened to three lanes northbound and three lanes southbound by others in the fall of 2018 upon completion of the work in Project 1007-11-74.

Project 1005-10-81
This project involves temporary widening of the northbound IH 39 lanes south of the STH 59 interchange project limits along IH 39 in 2018. The STH 59 interchange project is not expected to have a direct impact on this project.

Coordinate any excess waste material from projects 1005-10-71/72 with adjacent projects for potential reductions in embankment quantities.

12. Project Communication Enhancement Effort.

Use the Project Communication Enhancement Effort (PCEE) tools 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 PCEE Manual available at the department's Highway Construction Contract Information (HCCI) web site at:
http://roadwaystandards.dot.wi.gov/standards/admin/pcee-user-manual.doc
105-005 (20090901)

13. Public Convenience and Safety.

Revise standard spec 107.8(6) as follows:

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

Construction operations will be allowed at night with the exception of the following operations:

- Do not perform pile driving between 10:00 PM and 6:00 AM.

14. 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.
107-054 (20080901)

15. Environmental Protection, Aquatic Exotic Species Control.

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

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

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

- 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;
- Drain all water from boats, trailers, bilges, live wells, coolers, bait buckets, engine compartments, and any other area where water may be trapped;
- Inspect boat hulls, propellers, trailers and other surfaces. Scrape off any attached mussels, remove any aquatic plant materials (fragments, stems, leaves, seeds, or roots), and dispose of removed mussels and plant materials in a garbage can prior to leaving the area or invested waters; and
- Disinfect your boat, equipment and gear by either:
- Washing with ~212º F water (steam clean), or
- Drying thoroughly for five days after cleaning with soap and water and/or high pressure water, or
- Disinfecting with either 200 ppm (0.5 oz per gallon or 1 Tablespoon per gallon) Chlorine for 10-minute contact time or 1:100 solution (38 grams per gallon) of Virkon Aquatic for 20- to 30-minute contact time. Note: Virkon is not

registered to kill zebra mussel veligers nor invertebrates like spiny water flea. Therefore this disinfect should be used in conjunction with a hot water (>104º F) application.

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

16. Construction Over or Adjacent to Navigable Waters.

Supplement standard spec 107.19 with the following:

The Rock River is classified as a navigable waterway.
107-060 (20040415)

17. Environmental Protection, Treatment of Water Adjacent to Wetlands or Waterways.

Spoil material should be stockpiled on uplands an adequate distance from a stream, wetland, and/or any open water created by excavation. Filter fabric silt fence shall be installed between spoil material and the stream or wetland, and between the entire disturbed area and the waterway.

If dewatering is required for any reason, the water must be pumped into a properly sized and constructed settling basin before the clean/filtered water is allowed to enter any waterway or wetland. The "clean/filtered" water must be free of suspended solids and contaminants. A properly designed and constructed settling basin will take into consideration the amount of space for construction, desired pumping speed, number/size of pumps likely to be used, and the sedimentation rate of soils to be encountered. See DNR Technical Standard 1061 for method selection by soil type.

18. Archaeologically Significant Sites.

Riverview Resort is an uncatalogued burial site located approximately between Station 1383+00 and 1394+00 on the east and west sides of I-39 within the limits shown on the plans.

Leisure Estates Cemetery is a burial site located approximately between Station 1370+40'SB' and 1370+90'SB' LT on the west side of I-39 within the limits shown on the plans.

Provide notice to the Bureau of Technical Services – Environmental Process and Document Section (BTS-EPDS) at least two weeks before commencement of any ground disturbing activities at the burial sites noted. BTS-EPDS will determine if a qualified archaeologist will need to be on site during construction of this area.

BTS-EPDS can be contacted through the following representatives:

Jim Becker: (608) 261-0137
Lynn Cloud: (608) 266-0099

If human bone is discovered during construction, work activities in the area shall immediately cease and the qualified archeologist will contact the Wisconsin Historical Society at (800) 342-7834 or (608) 264-6507 for compliance with Wisconsin Statute 157.70 regarding the protection of human burial sites.

The area within the limits of the Riverview Resort and Leisure Estates Cemetery should not be used for borrow or waste disposal, and the site area not currently capped by asphalt/concrete should not be used for the staging of personnel, equipment and/or supplies.

19. 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.

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.

Dewater and regrade the partially functioning existing infiltration basin on Ramp EA Station 1416+00'EA' RT.

20. Erosion Control Structures.

Within seven calendar days after the commencement of 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 directed by the engineer. Prior to initial construction operations, place turbidity barriers, silt screens, and other temporary erosion control measures as shown on the plans, 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.
107-070 (20030820)

21. Notice to Contractor- Construction Safety.

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, 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 & 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 in accordance with 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 in accordance with 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.

Documentation and Records

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

a. Written Safety Plan for Work Activities to be Performed
b. Names of Safety Representatives and copies of their OSHA 10-Hour Occupational Safety and Health Training Course in Construction Safety and Health training cards.
c. Names of Competent Persons and Qualified Persons (if required by OSHA for the work performed).
d. Reports of inspections of the job sites, materials, and equipment [29 CFR 1926.20(b)(2)].
e. 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.
f. Project site OSHA 300 Log (no worker names)[29 CFR 1904.29]
g. Project site OSHA 301 Incident Report (no worker names) [29 CFR 1904.29]
h. Hazard Communication Program [29 CFR 1926.59]
    i. Hazardous Chemical Inventory,
    ii. Location of Safety Data Sheets (SDSs)
    iii. Hazard Warning Symbols
    iv. Information and training requirements.
i. Exposure Monitoring results (if monitoring is required under a specific OSHA standard-no worker names)
j. Crane operator certifications (if applicable)
k. Fall Protection Plan (if applicable) [29 CFR 1926.500-.503 and 1926.104]
l. Confined Space Entry Procedures (if applicable). [29 CFR 1926.1200-.1213]
m. Lockout/Tagout Procedures (if applicable). [29 CFR 1926.417 and .702]
n. Respiratory Protection Program (if applicable) [29 CFR 1926.103 and 1910.134(c)]
o. Emergency Action Plan [29 CFR 1926.35]
    v. Emergency escape procedures and emergency escape route assignments
    vi. Procedures to be followed by employees who remain to operate critical equipment before they evacuate
    vii. Procedures to account for all employees after emergency evacuation has been completed
    viii. 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.
    ix. The preferred means of reporting fires and other emergencies
    x. Prime contractor's alarm system
    xi. Names or regular job titles of persons who can be contacted for further information or explanation of duties under the plan.

p. Fire Protection Program (if applicable) [29 CFR 1926.150]
q. Fire Prevention Plan and Hot Work Permit procedures (if applicable) [29 CFR 1926.352]

22. Notice to Contractor, Asbestos Containing Materials on Structure.

James Gondek and Angela Voit License Number AII-108099 and 112673, respectively, inspected Structure B-53-69 for asbestos on December 5-7, 2005. Regulated Asbestos Containing Material (RACM) was found on this structure in the following locations and quantities: 2% and 3% chrysotile nonfriable asbestos in the gray gaskets at the guardrail attachments.

A copy of the inspection report is available from: Sharlene TeBeest, (608) 266-1476. Locations of asbestos containing material are noted on the plan set. Do not disturb any asbestos containing material. Should asbestos containing material be disturbed, 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 in accordance to standard spec 107.24. Keep material wet until it is abated.
107-120 (20120615)

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

James Gondek and Angela Voit, License Number AII-108099 and 112673, respectively, , inspected Structure B-53-71, B-53-88 and B-53-89 for asbestos on December 5-7, 2005. No regulated Asbestos Containing Material (RACM) was found on this structure. A copy of the inspection report is available from: Sharlene TeBeest, (608) 266-1476.

In accordance to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form to Sharlene TeBeest, (608) 266-1476 and DOT BTS-ESS attn: Hazardous Materials Specialist PO Box 7965, Madison, WI, 53707-7965. In addition, comply with all local or municipal asbestos requirements.

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

- Site Name: Structure B-53-71: STH 59 over IH 90; B-53-88: IH 90 eastbound over Ellendale Road and Rock River; B-53-89: IH 90 westbound over Ellendale Road and Rock River
- Site Address: B-53-71: 2.1M E JCT USH 51, Section Town Range 0104N12E, Town of Fulton, Latitude: 425010.99 Longitude: 890144.01; B-53-88: 0.1M S JCT STH 59, Section Town Range 1204N12E, Town of Fulton, Latitude: 424949.18 Longitude: 890136.19; B-53-89: 0.1M S JCT STH 59, Section

Town Range 1204N12E, Town of Fulton, Latitude: 424942.81 Longitude: 890132.51

- Ownership Information: WisDOT Transportation SW Region, 2101 Wright Street, Madison, WI 53704-2583
- Contact: Wayne Chase
- Phone: (608) 246-3859
- Age: B-53-71: 53 Years Old; B-53-88: 53 Years Old; B-53-89: 53 Years Old. This structure was constructed in B-53-71: 1961, new deck 1990, repair subStructure 1992; B-53-88: 1961, new deck 1989, epoxy overlay 2012; B-53-89: 1961, new deck 1989, epoxy overlay 2012.
- Area: B-53-71: 8,722 SF; B-53-88: 25,726 SF; B-53-89: 23,626 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 in accordance to standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

107-125 (20120615)

24. Notice to Contractor, Project Storage and Staging Areas.

Supplement standard specs 106.4(2) and 107.9 with the following:

To accommodate stage construction of the department planned contracts for the IH 39/90 Corridor program, the department will implement a review and approval process for use of storage and staging areas within the right-of-way and adjacent to the project.

Equipment and materials can be stored within the slope intercepts shown on the plan and within the footprint of the roadway or structures within the project limits. Storage of equipment and materials will not be allowed in areas which are restricted by traffic and other requirements provided in the special provisions.

Make any requests for storage and staging areas located outside of the slope intercepts or outside of the proposed roadway and structure footprints to the engineer. The request should include the anticipated date for occupying the area, the anticipated date for vacating the area, and a proposed restoration plan for the area. Review by the department does not constitute approval.

25. 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). In accordance 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 IH 39 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 seven calendar days in advance of the contractor's anticipated implementation.

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

- Johnny Gerbitz, FHWA, Johnny.Gerbitz@dot.gov
- Rich Cannon, IH 39 CMT Traffic, Richard.Cannon@dot.wi.gov
- Jeff Gustafson, IH 39 CMT Traffic, Jeffrey.Gustafson@dot.wi.gov

26. Notice to Contractor, New or Revised Temporary Construction Access to IH 39.

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 IH 39 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 IH 39 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 IH 39.
- 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 IH 39. The request will be reviewed, and if warranted, concurred with designated IH 39 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 will correspond with the following FHWA and department staff for concurrence:

- Johnny Gerbitz, FHWA, Johnny.Gerbitz@dot.gov
- Rich Cannon, IH 39 CMT Traffic, Richard.Cannon@dot.wi.gov
- Jeff Gustafson, IH 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.

27. Coordination with Businesses.

The contractor shall arrange and conduct a meeting between the contractor, the department, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Hold the first meeting prior to the start of work under this contract and hold two meetings per month thereafter.
108-060 (20030820)

28. Airport Operating Restrictions.

The nearest airport is Jana Airport (58C) 608-884-3403 located approximately 1 mile west of the project. A temporary permit is not required from the Federal Aviation Administration (FAA) for the permanent or temporary installations that are included in the plans 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 five 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

29. Clearing and Grubbing, Emerald Ash Borer.

Supplement standard spec 201.3 with the following:

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

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

- 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.

The quarantine of ash trees includes all horticultural cultivars of the species listed above.

Note that blue ash twigs are 4-sided. All other Wisconsin ash trees have round stems. Also, Mountain ash (*Sorbus americana and S. decora*) is not a true ash and is not susceptible to EAB infestation.

The contractor shall be responsible for hiring a certified arborist to identify all ash trees that will be cleared and grubbed for the project. In addition, prior to scheduled clearing and grubbing activities, the arborist shall mark all ash trees with florescent lime flagging tied around the trunk perimeter.

Follow and obey the following Wisconsin Department of Agriculture, Trade, and Consumer Protection order:

ATCP 21.17 Emerald ash borer; import controls and quarantine.

Importing or Moving Regulated Items from Infested Areas; Prohibition.
Except as provided in subparagraph (3), no person may do any of the following:

(a) Import a regulated item under sub. (2) into this state if that item originates from an emerald ash borer regulated area identified in 7CFR 301.53-3.

(b) Move any regulated item under sub. (2) out of an emerald ash borer regulated area that is identified in 7CFR 301.53-3 and located in this state.

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

Regulated Items. The following are regulated items for purposes of subparagraph (1):

The emerald ash borer, Agrilus planipennis Fairmaire in any living stage.

Ash trees.

Ash limbs, branches, and roots.

Ash logs, slabs or untreated lumber with bark attached.

Cut firewood of all non-coniferous species.

Ash chips and ash bark fragments (both composted and uncomposted) larger than one inch in diameter.

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 the disposal:

Chipped Ash Trees
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.

May be buried on site within the right-of-way in accordance to standard spec 201.3 (14).

May be buried on adjacent properties to projects within the quarantined zone with prior approval of the engineer in accordance to standard spec 201.3 (15).

May be trucked to a licensed landfill within the quarantined zone with the engineer's approval in accordance to standard spec 201.3 (15).

Burning chips is optional if in compliance with standard spec 201.3 and the Environmental Commitments – Central Segment.

Chips must be disposed of immediately if not used for project mulching and may not be stockpiled and left on site for potential transport by others. Chips may be stockpiled **temporarily** if they will be used for project mulching and **are not readily accessible to the public**.

Chipper equipment must be cleaned following post-chipping activities to ensure no spread of wood chip debris into non-quarantined counties.

Ash logs, Branches, and Roots
May be buried without chipping within the existing right-of-way or on adjacent properties in accordance to standard spec 201.3 (14)(15).

May be trucked to a licensed landfill within the quarantined zone with the engineer's approval in accordance to standard spec 201.3 (15).

Burning is optional if in compliance with standard spec 201.3 and the Environmental Commitments – Central Segment.

Ash logs, branches, and roots must be disposed of immediately and may not be stockpiled.

All additional costs will be incidental to clearing and grubbing items.

Do not bury or use mulch in an area that will be disturbed again during later phases of the project.

Anyone moving firewood or ash products from the state or these counties is subject to state and federal fines up to $1,000.00. All fines are the responsibility of the contractor. Obtain updated quarantine information at the DNR Firewood Information Line at (800) 303-WOOD.

Furnishing and Planting Plant Materials
Supplement standard spec 632.2.2 with the following:

Ash trees may be obtained from inside or outside the quarantine area and planted within the quarantined area. Ash trees from within the quarantine area may not be transported and planted into the non-quarantined area.

Updates for Compliance
Each year, as a service, the Wisconsin department of agriculture, trade and consumer protection distributes an updated federal CFR listing to nursery license holders and other affected persons in this state. More frequent updates, if any, are available on the Department of Agriculture, Trade, and Consumer Protection (DATCP) website at **www.datcp.state.wi.us** . Subsection (1) applies to new regulated areas as those areas are identified in the CFR, regardless of whether affected persons receive update notices from the DATCP. Persons may request update notices by calling (608) 224−4573, by visiting the DATCP website, or by writing to the following address:

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
P.O. Box 8911
Madison WI 53708−8911

Regulated Items
More frequent updates, if any, are available on the DATCP website at **www.datcp.state.wi.us** . Subsection (1) applies to new regulated areas as those areas are identified in the CFR, regardless of whether affected persons receive update notices from DATCP. Persons may request update notices by calling (608) 224−4573, by visiting the DATCP website, or by writing to the above address. 201-SER1 (20100401)

30. Abatement of Asbestos Containing Material B-53-69, Item 203.0210.S.001.

A Description
This special provision describes abating asbestos containing material on structures in accordance to the plans, the pertinent provisions of the standard specifications, and as hereinafter provided.

B (Vacant)

C Construction
James Gondek and Angela Voit, License Number AII-108099 and 112673, respectively, inspected Structure Structure B-53-69 for asbestos on December 5-7, 2005 Regulated Asbestos Containing Material (RACM) was found on this structure in the following locations and quantities: 2% and 3% chrysotile nonfriable asbestos in the gray gaskets at the guardrail attachments .

The RACM on this structure must be abated by a licensed abatement contractor. A copy of the inspection report is available from Sharlene TeBeest at (608) 266-1476. In accordance to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form and the abatement report to Sharlene TeBeest at (608) 266-1476 and DOT BTS-ESS attn: Hazardous Materials Specialist PO Box 7965, Madison, WI, 53707-7965. In addition, comply with all local or municipal asbestos requirements.

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

- Site Name: Structure B-53-69, Goede Road over IH 90.
- Site Address: 0.6M N JCT STH 59, Section Town Range 0104N12E, Town of Fulton, Latitude: 425039.38 Longitude: 890153.26.
- Ownership Information: WisDOT Transportation SW Region, 2101 Wright Street, Madison, WI 53704-2583
- Contact: Wayne Chase
- Phone: (608) 246-3859
- Age: 53 years. This structure was constructed in 1962, concrete overlay 1990.
- Area: 10,222 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 in accordance to standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

D Measurement

The department will measure Abatement of Asbestos Containing Material (Structure), completed in accordance to the contract and accepted, as a single complete unit of work. The contractor shall provide documentation of the ACM abatement.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
203.0210.S.001	Abatement of Asbestos Containing Material Structure B-53-69	LS

Payment is full compensation for submitting necessary forms; removing all asbestos; properly disposing of all waste materials; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

203-005 (20120615)

31. Debris Containment B-53-71, Item 203.0225.S.001.

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

Prior to starting work, submit a debris containment plan to the engineer for review. Incorporate engineer-requested modifications. Do not start work over STH 59 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:

1. Emmanuel Yartey, (608) 884-7131

D Measurement

The department will measure Debris Containment B-53-71 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.001	Debris Containment B-53-71	LS

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

203-010 (20080902)

32. Removing Old Structure Over Waterway With Debris Capture System STA 1381+73'SB', 28' LT, Item 203.0700.S.001; Station 1381+49'NB', 9' LT, Item 203.0700.S.002.

Conform to standard spec 203 as modified in this special provision

Add the following to standard spec 203:

- Removals Over Waterways and Wetlands
- Removing Old Structure Over Waterway with Debris Capture System
- Remove the existing Structure B-53-88 over the Rock River in large sections and conforming to the contractor's approved structure removal plan. Due to the very sensitive nature of the Rock River, provide a debris capture and containment system for superstructure removal that prevents all large pieces and virtually all other debris, including fine particles and slurry, from entering the waterway or wetland.

- Submit a structure removal plan as part of the erosion control implementation plan required under standard spec 107.20. Do not start work under the structure removal plan without the department's written approval of the plan. Include the following information in the structure removal plan:
- Methods and schedule to remove the structure.
- Methods to control potentially harmful environmental impacts.
- Methods to avoid or minimize the discharge of any pollutant to the waterway or wetland during superstructure removal.
- Details of the debris capture and containment system for superstructure removal including contingency plans to deal with potential failures.
- 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.

- 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
203.0700.S.001	Removing Old Structure Over Waterway With Debris Capture System STA 1381+73'SB', 28' LT	LS
203.0700.S.002	Removing Old Structure Over Waterway With Debris Capture System STA 1381+49'NB', 9' LT.	LS

203-025 (20080902)

33. Removing Septic Tanks, Item 204.0225.

Conform to the requirements of standard spec 204 except as hereinafter specified.

Disconnect and seal all piping to the tank.

Delete standard spec 204.5.1(3).

Payment for this item includes Granular Backfill Grade 1. No separate measurement or payment will be made for the backfill.

34. Removing Buildings Parcel 1, Item 204.0235.001.

Conform to the requirements of standard spec 204 and as hereinafter specified.

The department will investigate all buildings to be removed for the presence of asbestos. Any friable asbestos found will be removed by others prior to the start of construction. If any additional friable asbestos is found by the contractor during building removal, cease building removal and contact the engineer to arrange for friable asbestos removal by others.

Contact WisDOT SW Region Madison Environmental Coordinator Jenny Grimes at (608) 245-2630 or jennifer.grimes@dot.wi.gov to obtain a copy of the pre-demolition asbestos inspection reports.

Dispose of any and all materials within the buildings, including fuel oil tanks.

Contact Dave Houfe, (608) 744-0490, at the Consolidated Koshkonong Sanitary District for any sanitary sewer lateral requirements.

WisDOT (formerly Richardson) Property
Parcel 1 on Early Acquisition Plat 1005-10-22
Item 204.0235

Remove 1 story single family home including structure, attached deck and patio, and detached 10’x20’ yard shed / garage. The dwelling has 1,624 square feet of above grade living area. The first floor contains a living room, dining room, kitchen, family room, three bedrooms, a full bathroom, half bathroom and a laundry closet. The interior floors are carpet, wood and tile. The interior walls are drywall and panel. The interior trim is stained wood and the interior doors are flush-hollow core doors. The living room has a wood burning fireplace. The kitchen was remodeled 15+ years ago. The subject has a full basement, which includes the 1 car built-in garage. The basement is unfinished. It contains the subject's gas forced air furnace with central air conditioner, gas water heater, water softener, 100 amp electric service and well. The furnace is 3 to 4 years old. This property also has an uncovered deck, uncovered concrete slab patio and a 10' x 20' yard shed with wood siding. Removal of the existing modular block retaining wall is included in the bid item Site Clearance. Finished grade to include full restoration with application of salvaged topsoil, fertilizer, seed, and mulch to the areas disturbed by removal.

35. Abandoning Sewer, Item 204.0291.S.

A Description

This special provision describes abandoning existing sewer by filling it with cellular concrete according to the pertinent requirements of standard spec 204 and standard spec 501, as shown in the plans, and as hereinafter provided.

B Materials
Provide cellular concrete meeting the following specifications: 1 part cement, 1 part fly ash, 8 parts sand, or an approved equal, and water. Provide cement meeting the requirements of standard spec 501.2.1 for Type 1 Portland Cement. Provide sand meeting the requirements of standard spec 501.2.5.3 Provide water meeting the requirements of standard spec 501.2.4.

C Construction
Fill the abandoned sewer pipe with cellular concrete as directed by the engineer. In the event that the sewer cannot be completely filled from existing manholes, tap the sewer where necessary and fill from these locations.

D Measurement
The department will measure Abandoning Sewer in volume by the cubic yard, 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
204.0291.S	Abandoning Sewer	CY

Payment is full compensation for furnishing all materials and excavating and backfilling where necessary.
204-050 (20080902)

36. Removing Concrete Walls, Item 204.9035.S.001.

A Description
This special provision describes Removing Concrete Walls in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Concrete Walls in cubic yards, acceptably completed.

E Payment
Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9035.S.001	Removing Concrete Walls	CY

Payment is full compensation for removing concrete walls; and for excavating and backfilling where necessary.
204-025 (20041005)

37. Removing Private Sign Bases, Item 204.9060.S.001.

A Description
This special provision describes Removing Private Sign Bases in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Private Sign Bases as each individual unit, acceptably completed.

E Payment
Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.001	Removing Private Sign Bases	Each

204-025 (20041005)

38. Removing Drain Slotted Vane, Item 204.9090.S.001.

A Description
This special provision describes Removing Drain Slotted Vane in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Drain Slotted Vane in linear feet, acceptably completed.

E Payment
Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.001	Removing Drain Slotted Vane	SY

Payment is full compensation for removing drain slotted vane; and for : excavating and backfilling where necessary.
204-025 (20041005)

39. Removing Concrete Channel, Item 204.9180.S.001.

A Description
This special provision describes Removing Concrete Channel in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Concrete Channel in square yards, acceptably completed.

E Payment
Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9180.S.001	Removing Concrete Channel	SY

204-025 (20041005)

40. Embankment Construction.

Replace standard spec 205.3.2(4) with the following:

If placing embankment on side slopes 10-feet high or higher and steeper than one vertical to 3 horizontal, cut a minimum 2 foot horizontal bench into the existing embankment every 2 feet of vertical fill height.

41. Roadway Excavation.

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.

42. 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.

Replace standard spec 208.4 with the following:

The department will not measure embankment material from its source.

Replace standard spec 208.5 with the following:

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

43. QMP Base Aggregate.

A Description

A.1 General

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

(2) Conform to standard spec 301, standard spec 305, and standard spec 310 as modified here in this special provision. Apply this special provision to material placed under all of the Base Aggregate Dense and Base Aggregate Open Graded bid items, except do not apply this special provision to material classified as reclaimed asphaltic pavement placed under the Base Aggregate Dense bid items.

(3) Do not apply this special provision to material placed under the Aggregate Detours, Salvaged Asphaltic Pavement Base, Breaker Run, Select Crushed, Pit Run, Subbase, or Riprap bid items.

(4) Provide and maintain a quality control program, defined as all activities related to and documentation of the following:
1. Production and placement control and inspection.
2. Material sampling and testing.

(5) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm

A.2 Contractor Testing for Small Quantities

(1) The department defines a small quantity, for each individual Base Aggregate bid item, as a plan quantity of 9000 tons or less of material as shown in the schedule of items under that bid item.

(2) The requirements under this special provision apply equally to a small quantity for an individual bid item except as follows:
1. The contractor need not submit a full quality control plan but shall provide an organizational chart to the engineer including names, telephone numbers, and current certifications of all persons involved in the quality control program for material under affected bid items.
2. Divide the aggregate into uniformly sized sublots for testing as follows:

Plan Quantity	Minimum Required Testing
≤ 1500 tons	One test from production, load-out, or placement at the contractor's option[1]
> 1500 tons and ≤ 6000 tons	Two tests of the same type, either from production, load-out, or placement at the contractor's option[1]
> 6000 tons and ≤ 9000 tons	Three placement tests[2] [3]

[1] If using production tests for acceptance, submit test results to the engineer for review prior to incorporating the material into the work. Production test results are valid for a period of 3 years.

[2] For 3-inch material, obtain samples at load-out.

[3] If the actual quantity overruns 9000 tons, create overrun sublots to test at a rate of one additional placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

3. No control charts are required. Submit aggregate load-out and placement test results to the engineer within one business day of obtaining the sample. Assure that all properties are within the limits specified for each test.
4. Department verification testing is optional for quantities of 6000 tons or less.

(3) Material represented by a sublot with any property outside the specification limits is nonconforming. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B Materials

B.1 Quality Control Plan

(1) Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not place base before the engineer reviews and comments on the plan. Construct the project as that plan provides.

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

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.
3. A list of source and processing locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Test results for wear, sodium sulfate soundness, freeze/thaw soundness, and plasticity index of all aggregates requiring QC testing. Obtain this information from the region materials unit or from the engineer.
5. Descriptions of stockpiling and hauling methods.
6. Locations of the QC laboratory, retained sample storage, and where control charts and other documentation is posted.
7. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

B.2 Personnel

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

Required Certification Level:	Sampling or Testing Roles:
Aggregate Technician IPP Aggregate Sampling Technician Aggregate Assistant Certified Technician (ACT-AGG)	Aggregate Sampling[1]
Aggregate Technician IPP Aggregate Assistant Certified Technician (ACT-AGG)	Aggregate Gradation Testing, Aggregate Fractured Particle Testing, Aggregate Liquid Limit and Plasticity Index Testing

[1] Plant personnel under the direct observation of an aggregate technician certified at level one or higher may operate equipment to obtain samples.

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

B.3 Laboratory

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

Materials Management Section
3502 Kinsman Blvd.
Madison, WI 53704
Telephone: (608) 246-5388
http://www.dot.state.wi.us/business/engrserv/lab-qualification.htm

B.4 Quality Control Documentation

B.4.1 General

(1) Submit base aggregate placement documentation to the engineer within 10 business days after completing base placement. Ensure that the submittal is complete, neatly organized, and includes applicable project records and control charts.

B.4.2 Records

(1) Document all placement observations, inspection records, and control adjustments daily in a permanent field record. Also include all test results in the project records. Provide test results to the engineer within 6 hours after obtaining a sample. For 3-inch base, extend this 6-hour limit to 24 hours. Post or distribute tabulated results using a method mutually agreeable to the engineer and contractor.

B.4.3 Control Charts

(1) Plot gradation and fracture on the appropriate control chart as soon as test results are available. Format control charts according to CMM 8.30. Include the project number on base placement control charts. Maintain separate control charts for each base aggregate size, source or classification, and type.

(2) Provide control charts to the engineer within 6 hours after obtaining a sample. For 3-inch base, extend this 6-hour limit to 24 hours. Post or distribute charts using a method mutually agreeable to the engineer and contractor. Update control charts daily to include the following:

1. Contractor individual QC tests.
2. Department QV tests.
3. Department IA tests.
4. Four-point running average of the QC tests.

(3) Except as specified under B.8.2.1 for nonconforming QV tests, include only QC tests in the running average. The contractor may plot process control or informational tests on control charts, but do not include these tests, conforming QV tests, or IA tests in the running average.

B.5 Contractor Testing

(1) Test gradation, fracture, liquid limit and plasticity index during placement for each base aggregate size, source or classification, and type.

(2) Test gradation once per 3000 tons of material placed. Determine random sample locations and provide those sample locations to the engineer. Obtain samples after the material has been bladed, mixed, and shaped but before compacting; except collect 3-inch samples from the stockpile at load-out. Do not sample from material used to maintain local traffic or from areas of temporary base that will not have an overlying pavement. On days when placing only material used to maintain local traffic or only temporary base that will not have an overlying pavement, no placement testing is required.

(3) Split each contractor QC sample and identify it according to CMM 8.30. Retain the split for 7 calendar days in a dry, protected location. If requested for department comparison testing, deliver the split to the engineer within one business day.

(4) The engineer may require additional sampling and testing to evaluate suspect material or the technician's sampling and testing procedures.

(5) Test fracture for each gradation test until the fracture running average is above the lower warning limit. Subsequently, the contractor may reduce the frequency to one test per 10 gradation tests if the fracture running average remains above the warning limit.

(6) Test the liquid limit and plasticity index for the first gradation test. Subsequently, test the liquid limit and plasticity index a minimum of once per 10 gradation tests.

B.6 Test Methods

B.6.1 Gradation

(1) Test gradation using a washed analysis conforming to the following as modified in CMM 8.60:

Gradation..... AASHTO T 27
Material finer than the No. 200 sieve..... AASHTO T 11

(2) For 3-inch base, if 3 consecutive running average points for the percent passing the No. 200 sieve are 8.5 percent or less, the contractor may use an unwashed analysis. Wash at least one sample out of 10. If a single running average for the percent passing the No. 200 sieve exceeds 8.5 percent, resume washed analyses until 3 consecutive running average points are again 8.5 percent passing or less.

(3) Maintain a separate control chart for each sieve size specified in standard spec 305 or standard spec 310 for each base aggregate size, source or classification, and type. Set control and warning limits based on the standard specification gradation limits as follows:

1. Control limits are at the upper and lower specification limits.
2. There are no upper warning limits for sieves allowing 100 percent passing and no lower control limits for sieves allowing 0 percent passing.

3. Dense graded warning limits, except for the No. 200 sieve, are 2 percent within the upper and lower control limits. Warning limits for the No. 200 sieve are set 0.5 percent within the upper and lower control limits.
4. Open graded warning limits for the 1-inch, 3/8-inch, and No. 4 sieves are 2 percent within the upper and lower control limits. Upper warning limits for the No. 10, No. 40, and No. 200 sieves are 1 percent inside the upper control limit.

B.6.2 Fracture

(1) Test fracture conforming to CMM 8.60. The engineer will waive fractured particle testing on quarried stone.

(2) Maintain a separate fracture control chart for each base aggregate size, source or classification, and type. Set the lower control limit at the contract specification limit, either specified in another special provision or in table 301-2 of standard spec 301.2.4.5. Set the lower warning limit 2 percent above the lower control limit. There are no upper limits.

B.6.3 Liquid Limit and Plasticity

(1) Test the liquid limit and plasticity according to AASHTO T 89 and T 90.

(2) Ensure the material conforms to the limits specified in standard spec table 301-2.

B.7 Corrective Action

B.7.1 General

(1) Consider corrective action when the running average trends toward a warning limit. Take corrective action if an individual test exceeds the contract specification limit. Document all corrective actions both in the project records and on the appropriate control chart.

B.7.2 Placement Corrective Action

(1) Do not blend additional material on the roadbed to correct gradation problems.

(2) Notify the engineer whenever the running average exceeds a warning limit. When 2 consecutive running averages exceed a warning limit, the engineer and contractor will discuss appropriate corrective action. Perform the engineer's recommended corrective action and increase the testing frequency as follows:
   1. For gradation, increase the QC testing frequency to at least one randomly sampled test per 1000 tons placed.
   2. For fracture, increase the QC testing frequency to at least one test per gradation test.

(3) If corrective action improves the property in question such that the running average after 4 additional tests is within the warning limits, the contractor may return to the testing frequency specified in B.5.3. If corrective action does not improve the property in question such that the running average after 4 additional individual tests is still in the warning band, repeat the steps outlined above starting with engineer notification.

(4) If the running average exceeds a control limit, material starting from the first running average exceeding the control limit and ending at the first subsequent running average inside the control limit is nonconforming and subject to pay reduction.

(5) For individual test results significantly outside the control limits, notify the engineer, stop placing base, and suspend other activities that may affect the area in question. The engineer and contractor will jointly review data, data reduction, and data analysis; evaluate sampling and testing procedures; and perform additional testing as required to determine the extent of potentially unacceptable material. The engineer may direct the contractor to remove and replace that material. Individual test results are significantly outside the control limits if meeting one or more of the following criteria:
   1. A gradation control limit for the No. 200 sieve is exceeded by more than 3.0 percent.
   2. A gradation control limit for any sieve, except the No. 200, is exceeded by more than 5.0 percent.
   3. The fracture control limit is exceeded by more than 10.0 percent.

B.8 Department Testing

B.8.1 General

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

B.8.2 Verification Testing

B.8.2.1 General

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in B.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests of each base aggregate size, source or classification, and type during placement conforming to the following:
   1. One non-random test on the first day of placement.
   2. At least one random test per 30,000 tons, or fraction of 30,000 tons, placed.

(3) The department will sample randomly, at locations independent of the contractor's QC work, collecting one sample at each QV location. The department will collect QV samples after the material has been bladed, mixed, and shaped but before compacting; except, for 3-inch aggregates, the department will collect samples from the stockpile at load-out. The department will split each sample, test half for QV, and retain half.

(4) The department will conduct QV tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to the specification, the department will take no further action. If QV test results are nonconforming, add the QV to the QC test results as if it were an additional QC test.

B.8.3 Independent Assurance

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

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in B.9.

B.9 Dispute Resolution

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

(2) Production test results, and results from other process control testing, may be considered when resolving a dispute.

(3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material

or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C (Vacant)

D (Vacant)

E Payment

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

(2) For material represented by a running average exceeding a control limit, the department will reduce pay by 10 percent of the contract price for the affected Base Aggregate bid items listed in subsection A. The department will administer pay reduction under the Nonconforming QMP Base Aggregate Gradation or Nonconforming QMP Base Aggregate Fracture Administrative items. The department will determine the quantity of nonconforming material as specified in B.7.2.

301-010 (20100709)

44. Base Aggregate Dense 3/4-Inch.

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.

45. Base Aggregate Dense 1 1/4-Inch.

Revise standard spec 305.2.2.1 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	2 - 12 [1], [2]

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

[2] 3 - 10 percent passing when base is ³ 50% crushed gravel.

46. Concrete Pavements.

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

Replace standard spec 501.2.5.4.1with the following:

501.2.5.4.1 General

(1) 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.

(2) 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
Chert[1]	2.0

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

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

(1) The department will ensure that Los Angeles wear testing conforms to AASHTO T 96, soundness testing conforms to AASHTO T 104 using 5 cycles in sodium sulfate solution on aggregate retained on the No. 4 sieve, and freeze-thaw soundness testing conforms to AASHTO T 103. The percent wear must not exceed 40, the weighted soundness loss must not exceed 9 percent, and the weighted freeze-thaw average loss must not exceed 12 percent.

47. Slip-Formed Pavement.

Add the following to standard spec 415.3.6.2:

(6) 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.

48. 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. The work shall conform to the plan details and as hereinafter provided.

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. Prior to 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 at no additional cost to the department. 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 ¾-inches and a minimum depth of ¾-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. Prior to sealing, dry the cleaned joints either by air-drying or by using a high capacity torch. Immediately prior to 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; furnishing and installing all materials, including sealant.

415-100 (20140630)

49. QMP Bridge Ride; Incentive IRI Ride Bridge, Item 440.5020.

A Description

(1) This special provision describes profiling bridge encounters with a non-contact profiler, locating areas of localized roughness, and determining the International Roughness Index (IRI) for each wheel path segment.

(2) Profile the final riding surface of the bridge encounters for the following structures:
B-53-357 (southbound IH 39 bridge over Rock River).

(3) The engineer may direct straightedging under standard spec 415.3.10 for areas within 25 feet past steel armored joints, in the direction of travel. Other surfaces being tested under this provision are exempt from straightedging requirements.

B (Vacant)

C Construction

C.1 Quality Control Plan

(1) Submit a written quality control plan to the engineer at or before the pre-pave and pre-pour meeting. 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 all quality control personnel.
2. The process by which quality control information and corrective action efforts will be disseminated to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.
3. The methods and timing used for monitoring and/or testing ride quality throughout the concrete placement process. Also indicate the approximate timing of acceptance testing in relation to the concrete placement operations.
4. The segment locations of each profile run used for acceptance testing.
5. Traffic control plan if deviating from contract documents.

C.2 Personnel

(1) Have a profiler operator, certified under the department's highway technician certification program (HTCP), operate the equipment, collect the required data, and analyze the results using the methods taught in the HTCP profiling course. Ensure that an HTCP-certified profiler operator supervises data entry into the department's materials reporting system (MRS).

C.3 Equipment

(1) Furnish a profile-measuring device capable of measuring IRI from the list of department-approved devices published on the department's web site at:
http://roadwaystandards.dot.wi.gov/standards/qmp/profilers.pdf

(2) Perform daily calibration verification of the profiler using test methods according to the manufacturer's recommendations. Notify the engineer before performing the calibration verification. If the engineer requests, arrange to have the engineer observe the calibration verification and operation. Maintain records of the calibration verification activities, and provide the records to the engineer upon request.

(3) Use self-propelled grinding machines with electronic depth, grade, and slope controls designed for grinding and texturing concrete.

(4) 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.

(5) Ensure that the 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. Do not use equipment that causes raveling, aggregate fractures, joint deflection, or other damage to material remaining in place.

(6) Maintain equipment in proper working order. Ensure that the match and depth control wheels are round. Stop grinding and immediately replace out-of-round wheels.

C.4 Testing

C.4.1 Run and Reduction Parameters

(1) Enter the equipment-specific department-approved filter settings and parameters given in the approved profilers list on the department's QMP ride web site.
http://roadwaystandards.dot.wi.gov/standards/qmp/profilers.pdf

C.4.2 Contractor Testing

(1) Field-locate the beginning and ending points of the bridge encounter. Define bridge encounter as 25 feet of pavement leading to and from the approach slabs, the approach slabs on both ends of the bridge, and the bridge deck.

(2) Operate profilers within the manufacturer's recommended speed tolerances. Perform all profile runs in the direction of travel. Measure the longitudinal profile of each wheel track of each lane of the bridge encounter. The wheel tracks are 6.0 feet apart and centered in the traveled way of the lane.

(3) Coordinate with the engineer to schedule profile runs for acceptance. The department may require testing to accommodate staged construction or if corrective action may be required. Complete profile runs before longitudinally grooving.

(4) Measure the profiles of each standard or partial segment. Define segments one wheel path wide and distinguished by length as follows:
1. Standard segments are 500 feet long.
2. Partial segments are greater than 250 feet and less than 500 feet long.
3. Add partial segments that are 250 feet long or less to the previous segment.

Treat partial segments as independent segments.

C.4.3 Verification Testing

(1) The department may conduct quality verification (QV) testing to validate the ride quality of the bridge encounter. An HTCP-certified profiler operator will perform the QV testing. The department will provide the contractor with a listing of the names and telephone numbers of all verification personnel for the project.

(2) The department will notify the contractor before testing so the contractor can observe the QV testing. Verification testing is performed independent of the contractor's QC work using separate equipment from the contractor's QC tests. The department will provide test results to the contractor within 1 business day after the department completes the testing.

(3) The engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's testing procedures and equipment. Both parties will document all investigative work.

(4) If the contractor does not respond to an engineer request to resolve a testing discrepancy, the engineer may suspend production until action is taken. Resolve disputes as specified in C.6.

C.4.4 Documenting Profile Runs

(1) Compute the IRI for each segment and analyze areas of localized roughness using the ProVAL software. The ProVAL software is available for download at:

http://www.roadprofile.com.

(2) Prepare the ProVAL ride quality module reports showing the IRI for each segment and areas of localized roughness exceeding 200 in/mile. Develop ride quality module reports using the following parameters:

	Fixed Interval (Segment IRI)	Continuous (Localized Roughness)
Base-length	500'	25'
Threshold	140"/mile	200"/mile

(3) As part of the profiler software outputs and ProVAL reports, document the areas of localized roughness. Field-locate the areas of localized roughness prior to the engineer's assessment for corrective actions.

Within 5 business days after completing profiling of the bridge encounter covered under this special provision, unless the engineer and contractor mutually agree to a different timeline, upload the electronic ProVAL project file containing the .ppf files for each profiler acceptance run data, and ride quality module reports in pdf format, using the MRS software available at:

http://www.atwoodsystems.com/

Notify the engineer when the profiler acceptance run data and the ride quality module report have been uploaded to the MRS system.

C.5 Corrective Actions

C.5.1 General

(1) Analyze the data from the ProVAL reports and make corrective action recommendations to the engineer. The engineer will independently assess whether a repair will help or hurt the long-term performance before deciding on corrective action. Correct the ride as the engineer directs in writing.

(2) Do not remove more than a total depth of 0.5 inches of material by corrective diamond grinding.

(3) Do not diamond-grind within 1.5 feet of steel armored expansion joint systems.

(4) Remove solid and liquid grinding residues from the roadway by vacuuming. Dispose of residue and water at an acceptable material disposal site located off the project limits and as shown in the ECIP.

(5) Complete corrective actions and all profile runs before longitudinally grooving.

C.5.2 Corrective Actions for Localized Roughness

(1) Apply localized roughness requirements to the bridge encounter, except localized roughness requirements will not be applied to the riding surface within 25 feet past steel armored joints, in the direction of travel.

(2) The engineer may direct straight-edging under standard spec 415.3.10 for riding surfaces excluded from localized roughness under C.5.2 (1).

(3) The engineer will review each individual wheel track for areas of localized roughness. The engineer will assess areas of localized roughness within 5 business days of receiving notification that the reports were uploaded. The engineer will analyze the report documenting areas that exceed an IRI of 200 in/mile and do one of the following for each location:

1. Direct the contractor to correct the area to minimize the effect on the ride.
2. Leave the area of localized roughness in place with no pay reduction.

(4) The engineer will not direct corrective action for an area of localized roughness without independent identification of that area as determined by physically riding the surface. For corrections, use only techniques the engineer approves.

(5) Re-profile to verify that the segment IRI is less than 140 in/mile after correction. Upload a revised ProVAL ride quality module report, in pdf format, to the MRS for the corrected areas to validate the results.

C.5.3 Corrective Actions for Excessive Segment IRI

(1) If an individual segment IRI exceeds 140 in/mile after correction for localized roughness, the engineer may require the contractor to correct that segment to an IRI less than 140 in/mile using one of the following two methods.

1. Continuous diamond grinding of the full lane width, if required, of the riding surface including adjustment of the adjacent lanes and shoulders.
2. Other corrective action as approved by WisDOT's Bureau of Structures.

(2) Re-profile corrected segments to verify that the final segment IRI meets the above correction limit and there are no areas of localized roughness. Enter a revised ProVAL ride quality module report, in pdf format, for the corrected areas to the MRS. Segments failing these criteria after correction are subject to the engineer's right to adjust pay for non-conforming work under standard spec 105.3.

C.6 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 testing procedures, and perform additional testing.

(2) If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming work, the department will use third party testing to resolve the dispute. The department's Quality Assurance Unit, or a mutually agreed on independent testing company, 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 tester. The department may use third party tests to evaluate the quality of questionable riding surfaces and determine the appropriate payment.

D Measurement

(1) The department will measure Incentive IRI Ride by the dollar, calculated as specified in E.2.

E Payment

E.1 Payment for Profiling

(1) Costs for furnishing and operating the profiler, and documenting profile results for the bridge encounter are incidental to the contract. Costs for correcting the final riding surface of the bridge deck and structural approach slab, if applicable, are incidental to the contract. The department will pay separately for engineer-directed corrective action performed in other areas of the bridge encounter under the Grinding for Bridge Ride administrative item.

E.2 Pay Adjustment

(1) The department will pay incentive for ride under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
440.5020	Incentive IRI Ride Bridge	DOL

(2) Incentive payment is not limited, either up or down, to the amount the schedule of items shows.

(3) The department will adjust pay for each segment based on the initial IRI for that segment.

(4) The department will adjust pay for 500-foot long standard segments nominally one wheel path wide using equation "QMP 1.05" as follows:

Initial IRI (inches/mile)	Pay Adjustment (dollars per standard segment)
0 to <80	1000
≥80 to <100	5000 - (50 x IRI)
≥100	0

(5) The department will prorate the pay adjustment for non-standard segments based on their length.

50. 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 Table 460-2 under 460.2.7 with the following:

Mixture type	E - 0.3	E - 1	E - 3	E - 10	E - 30	E - 30x	SMA
ESALs x 10^6 (20 yr design life)	< 0.3	0.3 - < 1	1 - < 3	3 - < 10	10 - < 30	>= 30	
LA Wear (AASHTO T96)							
100 revolutions (max % loss)	13	13	13	13	13	13	13
500 revolutions (max % loss)	40	40	40	40	40	40	40
Soundness (AASHTO T104) (sodium sulfate, max % loss)	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Freeze/Thaw (AASHTO T103) (specified counties, max % loss)	12	12	12	12	12	12	12
Fractured Faces (ASTM 5821) (one face/2 face, % by count)	60 / __	65 / __	75 / 60	85 / 80	98 / 90	100/100	100/90
Flat and Elongated (ASTM D4791) (max %, by weight)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	20 (3:1 ratio)
Fine Aggregate Angularity (AASHTO T304, method A, min)	40	40	43	45	45	45	45
Sand Equivalency (AASHTO T176, min)	40	40	40	45	45	50	50
Gyratory Compaction							
Gyrations for N_{ini}	6	7	7	8	8	9	8
Gyrations for N_{des}	40	60	75	100	100	125	65
Gyrations for N_{max}	60	75	115	160	160	205	160
Air Voids, $\%V_a$ ($\%G_{mm}$ N_{des})	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)
% G_{mm} N_{ini}	<= 91.5[1]	<= 90.5[1]	<= 89.0[1]	<= 89.0	<= 89.0	<= 89.0	___
% G_{mm} N_{max}	<= 98.0	<= 98.0	<= 98.0	<= 98.0	<= 98.0	<= 98.0	___
Dust to Binder Ratio[2] (% passing 0.075/P_{be})	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	1.2 - 2.0

Mixture type	E - 0.3	E - 1	E - 3	E - 10	E - 30	E - 30x	SMA
Voids filled with Binder (VFB or VFA, %)	70 - 80 [4] [5]	65 - 78[4]	65 - 75[4]	65 - 75[3] [4]	65 - 75[3] [4]	65 - 75[3] [4]	70 - 80
Tensile Strength Ratio (TSR) (ASTM 4867)							
no antistripping additive	0.70	0.70	0.70	0.70	0.70	0.70	0.70
with antistripping additive	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Draindown at Production Temperature (%)	___	___	___	___	___	___	0.30

[1] The percent maximum density at initial compaction is only a guideline.

[2] For a gradation that passes below the boundaries of the caution zone (ref. AASHTO MP3), the dust to binder ratio limits are 0.6 - 1.6.

[3] For 9.5mm nominal maximum size mixtures, the specified VFB range is 73 - 76%.

[4] For 37.5mm nominal maximum size mixes, the specified VFB lower limit is 67%.

[5] For 25.0mm nominal maximum size mixes, the specified VFB lower limit is 67%.

51. QMP HMA Pavement Nuclear Density.

A Description

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

(1) This special provision describes density testing of in-place HMA pavement with the use of nuclear density gauges. Conform to standard spec 460 as modified in this special provision.

(2) Provide and maintain a quality control program defined as all activities and documentation of the following:

1. Selection of test sites.
2. Testing.
3. Necessary adjustments in the process.
4. Process control inspection.

(3) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required procedures. Obtain the CMM from the department's web site at:

http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm

(4) The department's Materials Reporting System (MRS) software allows contractors to submit data to the department electronically, estimate pay adjustments, and print selected reports. Qualified personnel may obtain MRS software from the department's web site at:

http://www.atwoodsystems.com/mrs

B Materials

B.1 Personnel

(1) Perform HMA pavement density (QC, QV) testing using a HTCP certified nuclear technician I, or a nuclear assistant certified technician (ACT-NUC) working under a certified technician.

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

B.2 Testing

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

B.3 Equipment

B.3.1 General

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

(2) Have the gauge calibrated by the manufacturer or an approved calibration service within 12 months of its use on the project. Retain a copy of the manufacturer's calibration certificate with the gauge.

(3) Prior to each construction season, and following any calibration of the gauge, the contractor must perform calibration verification for each gauge using the reference blocks located in the department's central office materials laboratory. To obtain information or schedule a time to perform calibration verification, contact the department's Radiation Safety Officer at:

Materials Management Section
3502 Kinsman Blvd.
Madison, Wisconsin 53704
Telephone: (608) 243-5998

B.3.2 Correlation of Nuclear Gauges

B.3.2.1 Correlation 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 correlation process. The section does not have to be the same mix design.

(2) Correlate the 2 or more gauges used for density measurement (QC, QV). The QC and QV gauge operators will perform the correlation on 5 test sites jointly located. Record each density measurement of each test site for the QC, QV and back up gauges.

(3) Calculate the average of the difference in density of the 5 test sites between the QC and QV gauges. Locate an additional 5 test sites if the average difference exceeds 1.0 lb/ft^3. Measure and record the density on the 5 additional test sites for each gauge.

(4) Calculate the average of the difference in density of the 10 test sites between the QC and QV gauges. Replace one or both gauges if the average difference of the 10 tests exceeds 1.0 lb/ft^3 and repeat correlation process from B.3.2.1 (2).

(5) Furnish one of the QC gauges passing the allowable correlation tolerances to perform density testing on the project.

B.3.2.2 Correlation Monitoring

(1) After performing the gauge correlation 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 correlation 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/ft^3 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/ft^3 of its reference value established in B.3.2.2(2).

(4) Maintain the reference site test data for each gauge at an agreed location.

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

(1) A lot consists of the tonnage placed each day for each layer and target density specified in standard spec 460.3.3.1. A lot may include partial sublots.

(2) Divide the roadway into sublots. A sublot is 1500 lane feet for each layer and target density.

(3) A sublot may include HMA placed on more than one day of paving. Test sublots at the pre-determined random locations regardless of when the HMA is placed. No additional testing is required for partial sublots at the beginning or end of a day's paving.

(4) If a resulting partial quantity at the end of the project is less than 750 lane feet, include that partial quantity with the last full sublot of the lane. If a resulting partial quantity at the end of the project is 750 lane feet or more, create a separate sublot for that partial quantity.

(5) Randomly select test locations for each sublot as specified in CMM 8.15 prior to paving and provide a copy to the engineer. Locate and mark QC density test sites when performing the tests. Perform density tests prior to opening the roadway to traffic.

(6) Use Table 1 to determine the number of tests required at each station, depending on the width of the lane being tested. When more than one test is required at a station, offset the tests 10 feet longitudinally from one another to form a diagonal testing row across the lane.

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

Table 1

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

(1) A lot represents a combination of the total daily tonnage for each layer and target density.

(2) Each side road, crossover, turn lane, ramp, and roundabout must contain at least one 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.

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

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

(1) Calculate the average 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/ft^3 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/ft^3 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/ft^3, use the original QC tests for acceptance.

(6) If the QV and QC sublot averages differ by more than 1.0 lb/ft^3 after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

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

(2) The testers may use correlation 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-correlated 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) Delete standard spec 460.5.2.3.

(2) If the lot density is greater than the minimum specified in standard spec table 460-3 and all individual air voids test results for that mixture are within +1.0 percent or -0.5 percent of the design target in standard spec table 460-2, the department will adjust pay for that lot as follows:

Percent Lot Density Above Minimum	Pay Adjustment Per Ton
From -0.4 to 1.0 inclusive	$0
From 1.1 to 1.8 inclusive	$0.40
More than 1.8	$0.80

(3) The department will adjust pay under the Incentive Density HMA Pavement bid item. Adjustment under this item is not limited, either up or down, to the bid amount shown on the schedule of items.

(4) If a traffic lane meets the requirements for disincentive, the department will not pay incentive on the integrally paved shoulder.

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

460-020 (20100709)

52. 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 specs 501.4 and 501.5 with the following:

501.4 Measurement

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

501.5 Payment

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

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

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

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

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

501-010 (20150121)

53. Expansion Device Modular B-53-357, Item 502.3110.S.001; B-53-358, Item 502.3110.S.002.

A Description

This special provision describes furnishing and installing a shop-fabricated waterproof modular expansion device in accordance to standard spec 502, the plans, and as hereinafter provided. The modular expansion joint device shall seal the deck surface, curbs, gutters, and parapet walls as indicated on the plans. Any leaking or seeping of water through the joint will be cause for rejection of the modular expansion device.

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 pertinent parts of the standard specifications, 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 A325. 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 ¼-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 @ 212°F, max	35 %	D395 Method, B Modified
Ozone Resistance, after 70 hours at 100° F under 20% Strain with 100 pphm ozone	No Cracks	ASTM D1149 and D518 Method A
Mass Change in Oil 3 after 70 hours @ 212° 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 1½-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 ¾-inch.

B.6 Transverse Center Beams

Transverse center beams shall be at least of 4½-inches in height and have a minimum vertical web thickness of ¾-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 ¾-inch.

The connections between the transverse center beams and support bars shall be a full penetration weld in accordance to the details shown on the plans. 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 ½-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 shown on the plans.

B.8 Structural Steel Surfaces

Galvanize after fabrication, in accordance 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 in accordance 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 in accordance 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 ¼-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 in accordance 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.

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

Install in accordance to the plan details, the manufacturer's and supplier's approved shop drawings, and as directed by the engineer. 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 in accordance 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 prior to 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.001	Expansion Device Modular B-53-357	LS
502.3110.S.002	Expansion Device Modular B-53-358	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.
502-021 (20100709)

54. 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 Al 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 l/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 not measure Bar Steel Reinforcement HS Stainless Structures. The department will use pay plan quantity according to standard spec 109.1.1.2. Weight is 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.

E Payment

The department will pay for plan quantities according to standard spec 109.1.1.2 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.

55. Concrete Staining B-53-357, Item 517.1010.S.001; B-53-358, Item 517.1010.S.002; B-53-359, Item 517.1010.S.003; R-53-32, Item 517.1010.S.004; R-53-33, Item 517.1010.S.005.

A Description

Furnish and apply a two coat concrete stain to the exposed concrete surfaces of the structure, as detailed in the plans and as hereinafter provided.

B Materials

B.1 Mortar

Use mortar for sack rubbing the concrete surfaces as given in standard spec 502.3.7.5 or use one of the following products:

Preblended, Packaged Type II Cement:	Tri-Mix by TK Products
	Thoroseal Pearl Gray by Thoro Products

The mortar shall contain one of the following acrylic bonding admixtures mixed and applied in accordance to manufacturer's recommendations:

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

B.2 Concrete Stain

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

Tri-Sheen Concrete Surfacer, Smooth by TK Products
Tri-Sheen Acrylic by TK Products
TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products
Safe-Cure and 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 in accordance 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 in accordance to standard spec 502.3.7.5, using mortar as indicated above on concrete surfaces with open voids or honeycombing.

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

C.3 Staining Concrete Surfaces
Apply the concrete stain in accordance to the manufacturer's recommendations.

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

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

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

C.4 Test Areas
Prior to applying stain to the structure, apply the stain to sample panels measuring a minimum of 48-inches x 48-inches and constructed to demonstrate workmanship in the use of the form liner specified on the structure if applicable. Match or exceed the stain manufacturer's minimum recommended curing time of the concrete or 28 days, whichever is greater, prior to staining. Prepare the concrete surfaces of the sample panels and apply stain using the same materials and in the same manner as proposed for the structure, including staining of the joints between the stones produced by the form liner if applicable. Do not apply stain to the structure until the department approves the test panels.

C.5 Surfaces to be Coated.
Apply concrete stain to the surfaces in accordance to the plan.

D Measurement
The department will not measure Concrete Staining (Structure). The department will use pay plan quantity according to standard spec 109.1.1.2.

E Payment
The department will pay for plan quantities according to standard spec 109.1.1.2 at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.1010.S.001	Concrete Staining B-53-357	SF
517.1010.S.002	Concrete Staining B-53-358	SF
517.1010.S.003	Concrete Staining B-53-359	SF
517.1010.S.004	Concrete Staining R-53-32	SF
517.1010.S.005	Concrete Staining R-53-33	SF

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

56. Architectural Surface Treatment B-53-357, Item 517.1050.001; B-53-358, Item 517.1050.S.002; B-53-359, Item 517.1050.S.003.

A Description

Construct a concrete masonry architectural surface treatment on the exposed concrete surfaces of the structure, as detailed in the plans and as hereinafter provided.

B Materials

Use form liners that attach easily to the forming system, and do not compress more than ¼-inch when poured at a rate of 10 vertical feet/hour.

Use a release agent that is compatible with the form liner and coloring materials.

Wall ties shall have set "break-backs" at a minimum of 3/4-inches from the finished concrete surface.

C Construction

C.1 Equipment

Equipment and tools necessary for performing all parts of the work shall be satisfactory as to design, capacity, and mechanical condition for the purposes intended. Repair, improve, replace, or supplement all equipment that is not maintained in full working order, or which is proven inadequate to obtain the results prescribed.

C.2 Form Liner Preparation

Clean the form liner prior to each pour and ensure that it is free of any build-up. Visually inspect each liner for blemishes or tears, and repair if necessary per manufacturer's recommendations.

Apply form release per manufacturer's recommendations.

C.3 Form Liner Attachment

Place adjacent liners less than 1/4-inch from each other, attach liner securely to forms in accordance to the manufacturer's recommendations, and coordinate wall ties with form liner and form manufacturer, e.g., diameter, size, and frequency.

C.4 Surface Finishing

Ensure that the textured surface is free of laitance; sandblasting is not permitted.

Grind or fill pouring blemishes.

D Measurement

The department will not measure Architectural Surface Treatment (Structure). The department will use pay plan quantity according to standard spec 109.1.1.2.

E Payment

The department will pay for plan quantities according to standard spec 109.1.1.2 at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
517.1010.S.001	Architectural Surface Treatment B-53-357	SF
517.1010.S.002	Architectural Surface Treatment B-53-358	SF
517.1010.S.003	Architectural Surface Treatment B-53-359	SF

Payment is full compensation for producing the proposed architectural surface treatment including: preparing the foundation; finishing and protecting the surface treatment; and for properly disposing of surplus material.

517-150 (20110615)

57. Noise Barriers Double-Sided Sound Absorptive N-53-20, Item 531.0300.S.001.

A Description

This special provision describes designing, fabricating, transporting, and erecting double-sided sound absorptive noise barriers in accordance to the plans, applicable portions of the standard specifications, the department-approved installation specifications, and as hereinafter provided.

B Materials

All materials used in the work shall conform to the pertinent requirements of the standard specifications and as hereinafter specified.

Provide grade A, A-2, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to standard spec 501 for concrete posts and the core component of composite concrete sound absorbing panels.

B.l System Pre-Qualification

The noise wall system supplied must be pre-qualified by the department. The department maintains a list of pre-qualified systems which can be viewed at: http://www.dot.wisconsin.gov/business/engrserv/approvedprod.htm. Systems eligible for use on this project shall be pre-qualified and added to that list prior to the award of this contract.

B.2 Design

The department specifies pre-qualified double-sided sound absorptive noise barrier products on the department's approved product lists available at:

http://www.dot.wisconsin.gov/business/engrserv/approvedprod.htm

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

B.2.l Structural and Foundation Design
The structural and foundation design of the noise barrier system shall be in accordance to the current edition of "Guide Specifications for Structural Design of Sound Barriers published by the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, NW, Suite 225, Washington, DC 20001.

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

The top 3-feet of supporting soil shall be ignored in the design of ground-mounted barrier foundations.

B.2.2 Fire Hose Access Openings
Design fire hose access openings, at locations shown on the plans, with additional reinforcement and protective coating around the opening as necessary to maintain structural integrity. Detail drawings shall show the additional reinforcement and method for attaching the Fire Hydrant Location Signs to the barrier panel.

B.2.3 Barrier Profile
Unless otherwise shown on the plan or approved by the engineer, design the top of the noise barrier to be horizontal and at or above the acoustic elevation line shown on the plans. The bottom elevation of the noise barrier shall be as shown on the plans. Changes in elevation shall be accomplished by stepping sections at posts. Steps shall not exceed 3-feet in height. All joints shall be horizontal or vertical and shall be aligned with the adjacent panels.

B.2.4 Panel Orientation
Design the panels to prevent entrapment and ponding of water. Avoid inadvertently providing areas for perching, nesting of birds, or collecting of dirt and debris in the design of the noise barrier system.

B.2.5 Color and Surface Texture
Unless otherwise shown and provided for in the plans, wall pattern shall contain textures with relief features of sufficient depth and quantity to be distinguishable at an observation distance of 500-feet. The color(s) and texture(s) chosen will be within the following parameters; however, at the discretion of the engineer, a single color and/or a single texture may be selected for either side of the noise barrier.

	Freeway Side	**Residential Side**
Number of colors	2	2
In the proportion of	75:25 (±5%)	75:25 (±5%)
Number of textures	2	2
In the proportion of	75:25 (±5%)	75:25 (±5%)

The final color of the panels, posts and grout lines shall be as shown on the plans and match the Federal Standard color system list. Coating and coloring of the post and panels shall be shop applied.

Base Color – #30372
Accent Color – #30140

All individual noise barrier panels shall be the same color on both sides, unless otherwise approved by the engineer. Noise barrier posts shall be manufactured of the same materials throughout the project.

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

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

B.2.6 Sound Transmission Loss (TL)
Design the noise barrier panel material to achieve a transmission loss equal to or greater than 20 decibels in all test frequency bands.

B.2.7 Noise Reduction Coefficient (NRC)
Design the noise barrier so that at least 70 percent of the highway side of the noise barrier panels that are 2-feet above the ground shall have a minimum NRC of 0.80. The remaining noise barrier panels on the highway side that are 2-feet or more above the ground shall have a minimum NRC of 0.70. The minimum NRC for panels on the residential side, which are 2-feet above the ground shall be 0.70.

B.2.8 Structural Steel
Galvanize all structural steel after fabrication by the hot dip process in accordance to ASTM A123. Galvanize steel hardware and threaded fasteners, bolts, nuts, and washers in accordance to ASTM A153.

Shop coat all steel galvanized surfaces exposed to view with an approved paint system as hereinafter specified. Clean galvanizing surfaces to be painted per SSPC-SPI to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. The cleaned surface should then be Brush Blast Cleaned per SSPC-SP7 to create a slight angular surface profile (1.0 -1.5 mils suggested) for adhesion. Blasting should not fracture the galvanized finish or remove any dry film thickness.

After cleaning, provide a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized surface and prepare the surface for the top coat. Apply a top coat matching the finished color specified in B.2.5. Use a pre-approved top coat that is resistant to the effects of the sun, and is suitable for use in a marine environment. Exercise care so as not to damage the painted surfaces during shipment and erection of the noise barriers.

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

B.2.9 Design Coordination Producer	Coat	Products	Dry Film Minimum Thickness (mils)	Minimum Time Between Coats (hours)
Sherwin Williams 1051 Permeter Drive, Suite 710 Schaumburg, IL 60173 847-330-1562	Tie	Recoatable Epoxy Primer B67-5 Series/B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carbolin 350 Hanley Industrial St Louis, MO 63144 314-644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Top	Carboline 133 LH	4	NA
Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

B.2.9 Design Coordination

B.2.9.1 Underground Utility and Drainage Crossings

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

B.2.9.2 Proposed Structures

For noise barriers mounted behind or near proposed retaining walls, coordinate and design the noise barrier post spacing so as to not interfere with embedded portion of the proposed

retaining walls, including MSE wall soil reinforcement and tieback anchors on soldier pile and timber lagging retaining walls.

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

B.2.10 Project Submittal Requirements

Submit three copies of the following documents to the engineer for review:

- All structural and foundation design calculations.
- Detailed design/shop drawings.
- Certifications for all materials, including trade name of the products along with the name and address of the manufacturers.
- Specifications regarding installation requirements and sequence of construction, including a detailed bill of materials.
- Detailed colored plan of the aesthetic treatment for the entire noise barrier.

Submit the following documents to the Bureau of Structures Design Section:

- Three sets of design/shop drawings and one set of design calculations for review and acceptance. Any necessary revisions and/or corrections required for acceptance will be noted and returned to the contractor.

Design calculations shall be on 8½-inch x 11-inch sheets, neatly bound with a title sheet listing the complete project identification number and sound barrier designation. Design/shop drawings shall conform to the contract plans and the requirements of these special provisions. The design/shop drawings shall consist of plan and profile sheets, details, explanatory notes, erection diagrams, aesthetic treatments, and other working plans. All dimensions, sizes of material, material information and other information necessary for the complete fabrication and construction of the noise barrier should be designated on the appropriate sheets. The design/shop drawings shall be drawn to an appropriate scale on reproducible sheets 11 x 17-inches including borders. Each sheet shall carry the complete project identification number and noise barrier designation. Design/shop drawings and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

B.2.11 Review Process

All documents, including drawings, calculations and related material submitted for review and acceptance by the engineer.

It is expressly understood that the engineer's review and acceptance of the drawings, calculations, and related material, submitted by the contractor, means only an acceptance of the character and sufficiency of the details, and does not relieve the contractor from responsibility in regard to errors or omissions on said submittals.

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

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

B.3 Wall System Testing Requirements

All test reports required in section B.3 shall reference the specific facility which will be producing material for this contract. Test reports shall be representative of differing production lots on materials manufactured for this specific contract which is representative of the manufacturer's continuous production for wall systems. Panels tested or from which samples will be taken from shall be selected and appropriately marked by the engineer either at the manufactures' plant or from panels delivered to the project at the engineer's option. Test reports will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. Testing shall be conducted on panels within the first 30,000 SF of production of each lot not exceeding 100,000 SF. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage. The first set of tests conducted for projects that do not exceed 100,000 SF shall be within the first third of the total square footage of the project.

Products tested should be tested as a system under the requirements in B.3.1 and B.3.2; this includes stain intended for the supplied concrete and composite concrete components wall panels.

B.3.1 Noise Reduction Coefficient (NRC)

The noise barrier panel shall be tested in accordance to ASTM C423, and placed in accordance to ASTM E795, mounting type A, to determine the noise reduction coefficient (NRC) of the material. Submit to the engineer an independent testing laboratory test report that shows that the noise barrier panels achieve an NRC as specified for each side of the barrier.

B.3.2 Salt Scaling Resistance

All sound absorbing composite concrete and composite concrete components shall be tested for salt scaling resistance in accordance to ASTM C672 and the following modifications and/or requirements.

B.3.2.1 Test Specimens

For the purposes of the test, three specimens of a full cross section of the composite panel at least 12 inches x 12-inches shall be selected at random from the provided composite panel as defined in B.3. Sample specimens shall be from production panels as selected and marked by the engineer, representative of the manufacturer's continuous production operation.

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

B.3.2.2 Test Procedure

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

The specimens shall then be subjected to continuous freeze-thaw cycles as follows:

After each five cycles, the salt solution and particles of deteriorated concrete shall be removed from the slab and collected in a watertight container. The operation is best accomplished by tilting the slab in a funnel approximately 20-inches in diameter and washing the surface of the slab with a 3% sodium chloride solution. This washing should continue until all loose particles are removed from the concrete. The solution shall then be strained through a filter and the residue dried out at 221 degrees Fahrenheit to a constant mass condition. The residue shall be cumulatively weighed after each five cycles. This residue shall be defined as the loss of mass and expressed in pounds per square foot of exposed slab area. This is to exclude the concrete core for composite concrete panels in the calculation of the area used to express the mass loss per square foot. The loss of mass shall be calculated to the nearest 0.01 pounds per square foot. The surfaces should be rated in accordance to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After the washing of each slab, a new solution of sodium chloride (concentration 3% by mass) shall be placed in the 5 sided water tight container to fully submerge the specimen to a depth of ¼-inch above the top surface of the fully submerged test specimen.

The test shall continue until 50 freeze-thaw cycles have been completed.

During the test each specimen shall be positioned and supported to allow free circulation of the test solution under, around, and over test pieces. The bottom of the specimens shall be supported on blocks in a manner to assure movement of moisture through and around the test specimen(s).

B.3.2.3 Test Report

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

- After 50 freeze-thaw cycles the test specimens shall not exhibit excessive deterioration in the form of cracks, spalls, aggregate disintegration, delamentation, or other objectionable features.

- Compliance with the test requirements is based upon a loss of mass of not more than 0.2 pounds per square foot from the surface after 50 cycles of freezing and thawing. The measured surfaces are not to include the exposed surface of any core material of a composite concrete component.
- The report shall include the following:
- Name of manufacturer.
- Location of production.
- Production description.
- Date product sample was cast.
- Commencement date of testing.
- Specimen identification.
- 5x7-inch color photographs of the test specimens before and after the
- 50 cycles freeze-thaw test.
- A graph of the cumulative mass loss of each specimen plotted against the number of freeze-thaw cycles for 5, 10, 15, 20, 25, 30, 40, and 50 freeze-thaw cycles.
- Visual rating in accordance to 10.1.5 ASTM C672 including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

B.4 Wall Systems Material Requirement

Contractor shall provide certification of compliance to all applicable requirements in B.4. All material certifications shall reference the specific facility manufacturing the material and this contract. Certifications will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. For projects that do not exceed 100,000 SF, a minimum of 2 lots of material will represent the project, each lot representing equivalent square footage.

B.4.l Sound Transmission Loss (TL)

Submit to the engineer certification of compliance that the sound transmission loss of the panel material, when tested in accordance to ASTM Standard E90, achieves a transmission loss as specified in B.2.6.

B.4.2 Structural Steel

Submit to the engineer certification of compliance that structural steel galvanized after fabrication is in accordance to ASTM A123. Steel posts of post and panel walls shall be galvanized. Any galvanized surfaces exposed to view shall be coated with an approved paint system as referenced in B.2.8.

B.4.3 Accelerated Weathering

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

1. No checking when rated in accordance to ASTM D660.
2. No cracking when rated in accordance to ASTM D661.
3. No blistering when rated in accordance to ASTM D714.
4. No difference in adhesion between the unexposed control sample and an exposed sample when tested in accordance to ASTM D3359, Method A.
5. No chalking less than #7 rating when rated in accordance to ASTM D4214.
6. No color change greater than 5 NBS units when measured in accordance to ASTM D2244, using illuminant D65 and the 1964 10 degree standard observer.

B.4.4 Corrosion Resistance (Salt Fog Exposure)
Submit to the engineer certification of compliance that all coated steel components, with the exception of structural steel, has a coating system that has been tested for corrosion resistance in accordance to ASTM B 117 and comply with the following requirements:

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

B.4.5 Steel Panels
All steel panels shall be minimum nominal 20 gauge galvanized steel. The steel panels shall be free from laminations, blisters, slivers, open seams, pits from heavy rolled-in scale, ragged edges or other defects that may affect their appearance or use for the intended purpose. All shearing, cutting, and punching shall be done prior to preparation of the panels for application of coatings.

B.4.6 Aluminum Panels
All aluminum panels shall be minimum 0.063 inch nominal thickness or greater. The aluminum panels shall be free from laminations, blisters, slivers, open seams, pits from heavy rolled-in scale, ragged edges or other defects that may affect their appearance or use for the intended purpose. All aluminum panels shall conform to the thickness tolerances of the Aluminum Association, Inc. All shearing, cutting, and punching shall be done prior to preparation of the panels for application of coatings.

B.4.7 Timber Components
All lumber and timber furnished for the work shall be in accordance to the requirements of standard spec 507 and as hereinafter specified.

B.4.7.1 Species of Wood
All lumber and timber, with the exception of Glue Laminated Timber, shall be from one of the following species: Douglas Fir-Larch, Southern Pine, and Hem-Fir.

Glue laminated timber shall be Southern Pine.

B.4.7.2 Preservative Treatment
All timber components shall receive a chemical preservative treatment. The wood shall be dried to 19% or less prior to treatment. The wood shall be treated using a chromated-copper arsenate solution in accordance to standard spec 507.2.2.6. After treatment, all wood having nominal dimensions less than 3-inches by 3-inches shall be air or kiln dried to a maximum moisture content of 15%. Wood in greater dimensions shall be dried to maximum moisture content of 19%. The required Certificate of Preservative Treatment shall indicate compliance with the maximum moisture content requirement(s), in addition to requirements of the preservative treatment specifications herewith set forth. Wood shall be protected from increases in moisture content until incorporated into the work.

B.4.7.3 Glue Laminated Timber
Glue laminated timber shall contain the mark of a recognized inspection agency as being in conformance with ANSI/AITC A190.1. A wet-use adhesive suitable for use with treated wood as shown in ANSI/AITC A190.1 shall be used. Members shall be of Industrial appearance grade per AITC 110.

Lumber to be glue laminated shall be pressure preservative treated prior to gluing to a retention of 0.4 pounds per cubic foot.

B.4.7.4 Lumber
Non-laminated timber shall not exceed the proportion of six (nominal width) to one (nominal thickness) and shall be No.1 grade or better. Sound knots shall extend through members no farther than 50 percent of the cross-section width. Unsound knots are not permitted. Knots are not permitted in the fastening area of any member.

B.4.7.5 Plywood
Plywood shall be exterior type conforming to the provisions of the US Product Standards PS-l and shall bear the mark of a qualified and approved inspection and testing agency.

B.4.7.6 Sealant/Stain
All wood components of the barrier system shall be coated with a wood sealer/stain as hereinafter provided.

The manufacturer shall select a sealer/stain from one of the sources on the department's approved product list. Product data sheets shall be provided which indicate the mixing directions and recommended method(s) of application. The method and rate of application shall be as recommended by the producer.

B.4.7.7 Hardware and Fasteners
All hardware and fastening devices shall be either hot dipped galvanized steel or made of nonferrous or stainless steel. Fastening devices shall be screws; no nails or staples shall be allowed.

B.4.7.8 Mineral Fiber Material
Mineral fiber material used to increase sound absorption shall be manufactured in accordance to Federal Specification HH-1-558B and ASTM C612. Mineral fiber material

shall have a minimum density of 6 pounds per cubic foot, shall absorb less than 1 percent of water when tested in accordance to ASTM C553, be non-corrosive, and nonhygroscopic. The mineral fiber material shall be fastened to the noise barrier system in a manner to prevent sagging when in a saturated condition.

C Construction

C.l General

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

Provide a minimum ten day notice to the engineer of the date that the fabrication of the noise barrier material will commence. Certifications and test reports will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. For projects that do not exceed 100,000 SF a minimum of 2 lots of material will represent the project, each lot representing equivalent square footage.

Panels from which samples will be taken from for testing required in B.3 shall be selected and appropriately marked by the engineer either at the manufactures' plant or from panels delivered to the project at the engineer's option. Test reports will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. Testing shall be conducted on panels within the first 30,000 SF of production of each lot not exceeding 100,000 SF. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage. The first set of tests conducted for projects that do not exceed 100,000 SF shall be within the first third of the total square footage of the project.

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

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

C.2 Fire Hydrant Location Signs

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

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

C.3 Name Plates
Furnish and install name plates conforming to the requirements of standard spec 506.2.4.

Furnish and place one name plate on each noise barrier at the location indicated on the plans.

Rigidly attach each plate to the barrier by a means approved by the engineer.

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

C.4 Structure Mounted Noise Barriers
Do not erect noise barriers mounted to bridge or retaining wall structures until after the concrete masonry for bridge decks and parapets or retaining wall moment slabs and parapets have attained their specified 28-day strength.

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

C.5 Tolerances
The posts and panels comprising the noise barrier shall be installed plumb within ½-inch of vertical in 15-feet. The posts shall be located to the line and grades as shown in the plans to within +/- ¾-inch. Horizontal joints of adjacent panels shall be lined up to a vertical tolerance of ¼-inch. Where vertical adjustments are required for alignment, a mortar base or steel shims shall be used. Galvanize and prime coat steel shims in accordance to B.2.8.

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

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

ITEM NUMBER	DESCRIPTION	UNIT
531.0300.S.001	Noise Barriers Double-Sided Sound Absorptive N-53-20	SF

Payment is full compensation for providing noise barrier including coloring and aesthetic treatment on panels; for preparing the design drawings and calculations; for furnishing and delivering sample and test panels; for testing, noise barrier materials; for excavation, preparing the site, constructing foundations, erecting posts and panels, and disposing of waste materials.
531-010 (20140630)

58. Adjusting Manhole Covers.

This work shall be according to the pertinent provisions of standard spec 611, as shown on the plans, and as hereinafter provided.

Adjust manhole covers located in pavement areas in two separate operations. Initially, remove designated manhole covers along with sufficient pavement to permit installation of temporary cover plate over the opening. Fill the excavated area with asphaltic pavement mixture, which shall remain in place until contract milling and paving operations permit setting the manhole frames to grade. During the second phase, remove the asphaltic pavement mixture surrounding the manhole plus the temporary cover plate, and set the manhole cover to final grade. The department will measure and pay for the items of asphaltic pavement mixture, temporary cover plate, milling, and paving separately.

Revise standard spec 611.3.7 by deleting the last paragraph.

Set the manhole frames so that they comply with the surface requirements of standard spec 450.3.2.9. At the completion of the paving, a 6-foot straightedge shall be placed over the centerline of each manhole frame parallel to the direction of traffic. A measurement shall be made at each side of the frame. The two measurements shall be averaged. If this average is greater than 5/8 inches, reset the manhole frame to the correct plane and elevation. If this average is 5/8 inches or less but greater than 3/8 inches, the manhole frame shall be allowed to remain in place but shall be paid for at 50 percent of the contract unit price.

If the manhole frame is higher than the adjacent pavement, the two measurements shall be made at each end of the straightedge. These two measurements shall be averaged. The same criteria for acceptance and payment as above, shall apply.
611-005 (20030820)

59. Cover Plates Temporary, Item 611.8120.S.

A Description
This special provision describes furnishing, installing and removing a steel plate to cover and support asphaltic pavement and traffic loading at manholes, inlets and similar structures during milling and paving operations.

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

C (Vacant)

D Measurement
The department will measure Cover Plates Temporary, acceptably completed in place, as units.

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.
611-006 (20030820)

60. Pipe Grates, Item 611.9800.S.

A Description
This special provision describes furnishing and installing pipe grates on the ends of pipes as shown in 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 A153.

C Construction
Repair pipes, rods, angles and brackets on which the galvanized coating has been damaged in accordance to the requirements of AASHTO M36M.

D Measurement
The department will measure Pipe Grates in units of work, where one unit is one grate 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
611.9800.S	Pipe Grates	Each

Payment is full compensation for furnishing and installing all materials; and for drilling and connecting grates to pipes.
611-010 (20030820)

61. Insulation Board Polystyrene, 2-Inch, Item 612.0902.S.001.

A Description
This special provision describes furnishing and placing polystyrene insulation board as shown on the plans and as hereinafter provided.

B Materials
Provide polystyrene insulation board that conforms to the requirements for Extruded Insulation Board, AASHTO Designation M230, except as hereinafter revised.

Delete flammability requirement.

B.1 Certification
Before installation, obtain from the manufacturer a certification indicating compliance and furnish it to the engineer.

C (Vacant)

D Measurement
The department will measure Insulation Board Polystyrene (size) by area in square yards 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
612.0902.S.001	Insulation Board Polystyrene 2-Inch	SY

Payment is full compensation for furnishing all excavation; and for furnishing and placing the insulation board.
612-005 (20030820)

62. 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
Service Temperature:	-60° F to 200° (ASTM D648)
Tensile Yield:	Avg. 2000 lb. per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb. per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction
Drive posts into the ground 12 to 18 inches. Space posts at 7 feet.

Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.

Overlap two rolls at a post and secure with wire ties.

D Measurement
The department will measure Fence Safety by the linear foot along the base of the fence, center-to-center of posts, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

Payment is full compensation for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; and for removing and disposing of fence and posts at project completion.
616-030 (20070510)

63. Mulching.

Replace standard spec 627.2(1) with the following:

Mulching material for all areas except the infiltration areas, bioretention areas or other areas as specified in the plans consists of straw or hay in an air-dry condition, wood excelsior fiber, wood chips, or other suitable material of a similar nature that the engineer approves, and is substantially free of noxious weed seeds and objectionable foreign matter.

For infiltration areas, bioretention areas and other areas specified in the plans, mulch shall be certified weed-free straw. Provide the certification documentation to the engineer.

64. Blue Specific Service Signs.

Supplement standard spec 638.3.4 with the following:

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.
638-010 (20140630)

65. Traffic Control Flexible Tubular Markers Posts, Item 643.0500; Bases, Item 643.0600.

A Description
This special provision describes ownership of Traffic Control Flexible Tubular Marker Posts and Traffic Control Flexible Tubular Marker Bases upon completion of the work. Conform to standard spec 643, as modified in this special provision.

B (Vacant)

C Construction

Supplement standard spec 643.3.1(8) as follows:

Traffic Control Flexible Tubular Marker Posts and Traffic Control Flexible Tubular Marker Bases placed on I-39/90 permanent median crossovers will become the department's property upon completion of the work.

Supplement standard spec 643.3.4.1(1) as follows:

Under the Traffic Control Flexible Tubular Marker Posts bid item, furnish, install, and maintain flexible tubular marker posts with reflective sheeting.

Supplement standard spec 643.3.4.2(1) as follows:

Under the Traffic Control Flexible Tubular Marker Bases bid item, furnish, install, and maintain bases for flexible tubular marker posts.

Supplement standard spec 643.3.4.2(3) as follows:

Leave in place Traffic Control Flexible Tubular Marker Bases upon completion of the work.

D Measurement
Supplement standard spec 643.4.3(4) as follows:

The department will measure Traffic Control Flexible Tubular Marker Posts and Traffic Control Flexible Tubular Marker Bases as each individual installation, acceptably completed. The department will measure replacing damaged posts and bases by each post and base replaced, acceptably completed.

E Payment
Supplement standard spec 643.5.4(8) as follows:

Payment for Traffic Control Flexible Tubular Marker Posts is full compensation for providing, installing, and maintaining the flexible tubular marker posts.

Supplement standard spec 643.5.4(9) as follows:

Payment for Traffic Control Flexible Tubular Marker Bases is full compensation for providing, installing, maintaining the flexible tubular marker bases, and for repairing damaged pavements. The department will not pay to replace bases inadequately secured to the pavement.

66. Traffic Control Signs, Item 643.0900.

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, in accordance 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.

67. Nighttime Work Lighting-Stationary.

A Description
Provide portable lighting as necessary to complete nighttime work. Nighttime operations consist of work specifically scheduled to occur after sunset and before sunrise.

B (Vacant)

C Construction

C.1 General

This provision shall apply when providing, maintaining, moving, and removing portable light towers and equipment-mounted lighting fixtures for nighttime stationary work operations, for the duration of nighttime work on the contract.

At least 14 days prior to the nighttime work, furnish a lighting plan to the engineer for review and acceptance. Address the following in the plan:

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.

2. Specifications, brochures, and technical data of all lighting equipment to be used.

3. The details on how the luminaires will be attached.

4. Electrical power source information.

5. Details on the louvers, shields, or methods to be employed to reduce glare.

6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.

7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

Provide portable lighting that is sturdy and free standing and does not require any guy wires, braces, or any other attachments. Furnish portable lighting capable of being moved as necessary to keep up with the construction project. Position the portable lighting and trailers to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment. Provide lightning protection for the portable lighting. Portable lighting shall withstand up to 60 mph wind velocity.

If portable generators are used as a power source, furnish adequate power to operate all required lighting equipment without any interruption during the nighttime work. Provide wiring that is weatherproof and installed according to local, state, federal (NECA and OSHA) requirements. Equip all power sources with a ground-fault circuit interrupter to prevent electrical shock.

C.3 Light Level and Uniformity

Position (spacing and mounting height) the luminaires to provide illumination with an average to minimum uniformity ratio of 5:1 or less throughout the work area.

Illuminate the area as necessary to incorporate construction vehicles, equipment, and personnel activities.

C.4 Glare Control
Design, install, and operate all lighting supplied under these specifications to minimize or avoid glare that interferes with all traffic on the roadway or that causes annoyance or discomfort for properties adjoining the roadway. Locate, aim, and adjust the luminaires to provide the adequate level of illumination and the specified uniformity in the work area without the creation of objectionable glare.

Provide louvers, shields, or visors, as needed, to reduce any objectionable levels of glare. As a minimum, ensure the following requirements are met to avoid objectionable glare on the roadways open to traffic in either direction or for adjoining properties:

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.

2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

If lighting does not meet above-mentioned criteria, adjust the lighting within 24 hours.

C.5 Continuous Operation
Provide and have available sufficient fuel, spare lamps, generators, and qualified personnel to ensure that the lights will operate continuously during nighttime operation. In the event of any failure of the lighting system, discontinue the operation until the adequate level of illumination is restored. Move and remove lighting as necessary.

D (Vacant)

E Payment
Costs for furnishing a lighting plan, and for providing, maintaining, moving, and removing portable lighting, tower mounted lighting, and equipment-mounted lighting required under this special provision are incidental to the contract.
643-010 (20100709)

68. Truck or Trailer-Mounted Attenuator, Item 643.1055.S.

A Description
(1) This special provision describes protecting work operations with a truck or trailer-mounted attenuator (TMA).

B Materials
(1) Furnish and maintain a TMA conforming to NCHRP Report 350 test level 3 or to MASH crashworthiness criteria. Submit written certification from the manufacturer that the host vehicle/attenuator configuration provided conforms to crashworthiness criteria. Include the federal-aid reimbursement eligibility letter with that submittal.

(2) Provide a host vehicle and mount the attenuator conforming to the attenuator manufacturer's specifications. Provide the engineer a copy of the manufacturer's specifications and installation instructions.

C Construction

(1) Coordinate with the engineer at least 72 hours before its intended use so the engineer can determine if the work operation requires TMA protection.

(2) Position the attenuator at a manufacturer-recommended location in advance of a stationary work operation. Position and maintain the attenuator consistently at the manufacturer-recommended distance from a mobile work operation. Ensure that an operator stays with the host vehicle while protecting a mobile work operation.

D Measurement

(1) The department will measure Truck or Truck-Trailer-Mounted Attenuator by the day, acceptably completed, measured to the 1/2-day based on the engineer-determined time the attenuator is required to protect work operations. The department will measure 4 or less hours per calendar day as a half day and over 4 hours as a full day.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
643.1055.S	Truck or Trailer-Mounted Attenuator	DAY

(2) Payment is full compensation for providing the portable attenuator, host vehicle, and operator.

643-015 (20140630)

69. 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 amber light. The flashing amber 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.

70. Removing Pavement Marking.

Perform this work in accordance to standard spec 646.3.4 and as hereinafter provided.

Pavement markings required to be removed on non-permanent concrete pavement shall be removed by grinding or sand blasting methods, unless otherwise directed by the engineer.

Pavement markings required to be removed on all hot mix asphalt pavements shall be removed by grinding or sand blasting methods.

Pavement markings required to be removed on permanent concrete pavement (pavement that will remain at the completion of the contract) shall be removed by a water blasting or hydroblasting method. Grinding or sand blasting the markings off the pavement will not be allowed. Payment for hydroblasting will be under a separate special provision.

71. Pavement Marking Outfall, Item 646.0805.S.

A Description
This special provision describes furnishing and installing Pavement Marking Outfall according to standard spec 646, as shown on the plans, and as hereinafter provided. Pavement Marking Outfall shall consist of furnishing and installing white non-reflectorized markings of the specified material.

B Materials
Furnish paint that conforms to requirements of standard spec 646.2.2.

C Construction
Apply the paint a minimum thickness of 15 mils and position it on the pavement centered on the centerline of the outfall.

D Measurement
The department will measure Pavement Marking Outfall in place as units.

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0805.S	Pavement Marking Outfall	Each

Payment is full compensation for furnishing all materials; preparing the surface; and for applying and protecting the work.
646-035 (20030820)

72. Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch, Item 646.0841.S; 8-Inch, Item 646.0843.S.

A Description

This special provision describes furnishing, grooving and installing preformed wet reflective pavement marking contrast tape for grooved applications as shown on the plans, according to standard spec 646, and as hereinafter provided.

B Materials

Furnish wet reflective pavement marking contrast tape and adhesive material, per manufacturer's recommendation if required, from the department's approved products list.

Furnish a copy of the manufacturer's recommendations to the engineer before preparing the pavement marking grooves.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of pavement marking contrast tape.

Plane the grooved lines according to details in the plan and per manufacturer's recommendations. Use grooving equipment with a free-floating, independent cutting head. Plane a minimum number of passes to create a grooved surface per manufacturer's recommendations.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ± 10 mils from the pavement surface or, if tined, from the high point of the tined surface. To measure the depth, the contractor may use a depth plate placed in the groove and a straightedge placed across the plate and groove, or the contractor may use a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Longitudinal Markings

Cut the groove one-inch wider than the width of the tape.

C.4 Groove Position

Position the groove edge according to plan details. Groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the tape segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with high-pressure

water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the adhesive, and the pavement marking tape. Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt
Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt
Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.6 Tape Application
Apply the tape when both the air and surface temperature are 40 degrees F and rising.

Apply tape in the groove as per manufacturer's recommendations. If manufacturer's recommendations require surface preparation adhesive

- For the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee:

- Apply SPA-60 during May 1 to September 30, both dates inclusive due to Volatile Organic Compound Limitations..

- Apply P-50 during October 1 to April 30, both dates inclusive. –

- For the remainder counties:

- Apply either adhesive.

Refer to the manufacturer's instructions for determining when the surface preparation adhesive is set.

Tamp the wet reflective pavement marking contrast tape with a tamper cart roller, with a minimum of a 200-lb load, cut to fit the groove. Tamp a minimum of three complete cycles (6 passes) with grooved modified tamper roller cart.

D Measurement
The department will measure Pavement Marking Grooved Wet Reflective Contrast Tape (Width) for grooved applications in length by the linear foot of tape placed according to the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF
646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for removing temporary pavement marking, if necessary.
646-022 (20120615)

73. Pavement Marking Late Season, Item 646.0900.S.

A Description
This special provision describes providing and maintaining late season pavement marking as specified in standard spec 646.3.1.4.

B Materials
Use any pavement marking material from the department's approved products list.

C Construction
Provide and maintain late season marking conforming to standard spec 646.3.1.

D Measurement
The department will measure Pavement Marking Late Season by the linear foot of 4-inch wide line acceptably completed. The department will not measure work required because of delays that are not the department's responsibility under standard spec 108.10.3.

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0900.S	Pavement Marking Late Season	LF

Payment for Pavement Marking Late Season is full compensation for providing, maintaining, and removing late season temporary marking; and for resealing areas of protective surface treatment on structures as required in 646.3.1.1. All costs for late season marking required because of delays that are not the department's responsibility under standard spec 108.10.3 are incidental to the contract.
646-010 (20110615)

74. Locating No-Passing Zones, Item 648.0100.

For this project, the spotting sight distance in areas with a 55 mph posted speed limit is 0.21 miles (1108 feet).
648-005 (20060512)

75. General Requirements for Electrical Work.

Amend standard spec 651.2, Materials, by adding the following paragraphs:

(7) The approved products list is located at:
http://www.dot.wisconsin.gov/business/engrserv/electric/index.htm

76. Electrical Service Meter Breaker Pedestal CB100, Item 656.0200.001; CB200, Item 656.0200.002.

This article describes modifications to chapter 656.

Replace standard spec 656.2.3, Meter Breaker Pedestal Service, to read as follows:

- 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 two 100 A 2-pole main breakers for any meter with shared ITS uses which are intended to provide electrical service for a WisDOT street lighting system as well as ITS. 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.

- Furnish and install 2-inch rigid metallic conduit, fittings, and other required materials in conformance with standard spec 652 at the location shown on the plans.
-
- Feeder wire between meter pedestal and main panel board shall be routed through the bottom of the cabinet enclosure and within conduit. Entry through the side of the cabinet enclosure is not allowed.

Replace standard spec 656.3.2, Service Lateral, to read as follows:

- The local utility will furnish and install a 100 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.

- Ensure that electrical service is installed and energized a minimum of one week prior to the lighting system activation deadline.

Dena Dramm, WisDOT SW Region, 608.246.5360, will apply for and obtain the electrical service.

77. Anchor Assemblies Light Poles on Structures, Item 657.6005.S.

A Description
This special provision describes furnishing and installing anchor bolt assemblies for light poles as shown on the plans, and as hereinafter provided.

B Materials
Furnish anchors of the size and spacing as given on the plans, and that conform to ASTM A449 or AASHTO M314 GR 55. The upper 8 inches of the bolts, nuts, and washers shall be hot-dipped galvanized in accordance to ASTM A153, Class C. Provide enlarged threads on nuts for proper fit after galvanizing.

C Construction
Provide two nuts and two washers per anchor bolt, and install per light standard manufacturer's recommendations.

D Measurement
The department will measure Anchor Assemblies Light Poles on Structures as a unit for each individual anchor bolt assembly, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
657.6005.S	Anchor Assemblies Light Poles on Structures	Each

Payment is full compensation for furnishing and installing the anchorages.
657-060 (20100709)

78. Lighting Control Cabinet 120/240 30-Inch, Item 659.2130.

This article describes modifications to standard spec 659.

Replace standard spec 659.2, Materials, to read as follows:

- Furnish lighting components from the department's approved products list.

- Furnish a 120/240 volt - single phase Lighting Control Cabinet from the WisDOT qualified electrical products list. Add the following components, per the control cabinet schematic in the plans, to the lighting control cabinet:

- 4 – 15 Amp single pole circuit breakers

- Furnish necessary wiring, miscellaneous accessories, and hardware as required for a complete and fully operational unit.

Replace standard spec 659.3.5, Lighting Control Cabinet, to read as follows:

- Provide lighting and ramp gate control cabinet together with the circuit wiring connections, hardware and fittings the plans show.

79. Temporary Traffic Signals for Intersections I-39 SB Off-Ramp and STH 59, Item 661.0200.001; I-39 NB On-Ramp and STH 59, Item 661.0200.002; STH 59 and Goede Rd, Item 661.0200.003; I-39 NB Ramps and USH 51/STH 73, Item 661.0200.004.

Append standard spec 661.2.1 with the following:

(5) All traffic signal controllers shall be EPAC M30 series (or later) or Econolite ASC-2 series (or later) and capable of operating with time-based coordination.

Append standard spec 661.2.1.1 with the following:

(7) Furnish poles of sufficient length to allow for grading operations to occur as construction progresses, while providing working clearances to surrounding surfaces at all times.

Append standard spec 661.2.1.2 with the following:

(3) Furnish aerial cable rated for power distribution and sized to deliver the necessary voltage when temporary traffic signal installations are located beyond the electrical service point. The overhead service conductor assembly includes a messenger cable, insulated conductor wires, ground wires, a jacket, and conductor lashing as shown in the plan details. All wiring shall be sized and rated to accommodate tension and loading requirements. Provide copper binder tape for lashing the conductor assembly.

Append standard spec 661.3.1 with the following:

(4) Deactivate and reactivate traffic signals between various stages of construction as shown in the plans. Cover and uncover traffic signal heads depending on operation of traffic signal as shown in the plans. When covered, traffic signal indications shall not be visible to the traveling public. When temporary signals are not in use for a period longer than five consecutive months, signal heads and tether wire shall be removed until signals are deactivated.

(5) Contractor shall identify a route for the overhead power distribution line which provides for minimal interference with staged construction activities. Coordinate the route planning with all items of work associated with the project.
Contractor shall stake out the planned overhead power distribution route in the field and notify the engineer for approval prior to starting work.

Append standard spec 661.3.1.2 with the following:

(7) Assemble and install the conductor assembly as shown in the plan details.

Replace standard spec 661.5 (2) with the following:

Payment for Temporary Traffic Signals for Intersections is full compensation for providing, operating, maintaining, and repairing the complete temporary installation; and for removal. Payment also includes the following:

- Providing replacement equipment.
- All utility charges for installation, disconnection, and energy service through project completion.
- The cost of delivery and pick-up of the cabinet assemblies for department testing.
- Furnishing and installing aerial power distribution cables; and for overhead route planning, approval and staking.

80. Ramp Closure Gates Hardwired 26-FT, Item 662.1026.S; Ramp Closure Gates Hardwired 28-FT, Item 662.1028.S; Ramp Closure Gates Hardwired 30-FT, Item 662.1030.S.

A Description

This special provision describes providing hardwired freeway on-ramp closure gates on type 6 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 6 steel poles designed to carry twin 15-foot luminaire arms and conforming to standard spec 657 and with dimensions for acceptable installation of the ramp gate hardware as shown on the detail. Ensure a contiguous pole by eliminating the hand hole near base of pole, thus allowing uninhibited mounting of the gate pivot assembly.

Furnish galvanized steel nuts and bolts conforming to ASTM A307 except where designated as high strength (HS), conform to ASTM A325. For the ramp closure gate locking mechanism, furnish a handle nut to fit on a 3/4-inch.

Furnish grade A36 steel for the gate supports, gate pivot assembly, and associated hardware galvanized after fabrication by either a mechanical or hot-dip process. Grind welded connections, rough edges, and burrs smooth before galvanizing to ensure a finished appearance. Ensure that the galvanized coating conforms to ASTM A 153.

Provide aluminum/fiberglass gate arms of the nominal length the bid item indicates and conforming to plan dimensions. Cover gate arms on two sides with alternating red and white shop-applied type H reflective from the department's approved products list. Also provide a shear pin base that is the manufacturer’s “permanent pivot” style. Obtain components from:

B&B Roadway
15191 Hwy 243
Russellville, AL 35654
Tel: (888) 560-2060

Gate arm: model MU605

Furnish a worm gear winch with a single line vertical lift capacity of 2000 lbs. Ensure that the winch has hardened steel gears, a handgrip, permanently lubricated bearings, a reinforced arc-welded reel assembly, and mounting plate. Ensure that the winch can be mounted to the winch mount plate shown on the construction details and the handgrip can be operated without conflict with the pole or ramp gate assembly. Furnish a 2-inch outdoor rated, rot resistant polyester strap for the connection between the worm gear winch and the gate arm pivot assembly.

Furnish hardwire power system and connections conforming to the following:

1. Cabinet
   Furnish cabinet assemblies, power wire terminal strips, and power supplies for the on-ramp closure gate systems.

   The cabinet shall be the following dimensions: 9-inches wide, 15-inches high, and 5-inches deep.

   Minimum wall thickness of the aluminum castings shall be 3/16-inch.

   Cabinet body shall have a cast rain hood over the top of the door opening.

   Hinges shall consist of 3/6-inch diameter pins in cast hinge bosses that allow door to swing no less than 180º when open.

   Cabinet shall be capable of being field prepared for top, bottom, or rear mounting and wire entrance holes.

   Set screws shall be stainless steel.

   Assembly shall be water resistant by the door flange in full contact with and compressing a neoprene gasket held by an adhesive to a groove cast into the cabinet body.

   The cabinets shall consist of a cabinet body, door, and latch cast from aluminum alloy 319 or approved equivalent The door lock shall be a standard police lock reinforced with a steel plat which is keyed the same as the standard traffic control cabinets. The cast shall be free of voids, pits, dents, molding sand, and excessive foundry grinding marks. All radii shall be smooth and intact. Exterior and interior surfaces shall be smooth and cosmetically acceptable, free of molding fins, cracks, and other blemishes.

   The aluminum shall meet the following minimum requirements:
   - Yield Strength – 18 ksi
   - Tensile Strength – 27 ksi
   - Brinell Hardness – 70
   - Elongation (% in 2 inches) – 2

   The assembly shall have an alodine conversion coating to provide corrosion resistance and a proper base for paint adhesion.

   Furnish a stainless steel or anodized steel mounting adapter plate to mount the cabinet to a pole with stainless steel banding straps.

2. Power Converter
   Furnish the cabinet with a 120 VAC to 12 VDC power converter.

   Furnish the cabinet with a 10 position terminal block for the 12 VDC power distribution. Power wire terminal strips 10 position feed-through terminal blocks UL recognized for No. 22 AWG wire through No. 16 AWG wire and UL rated for 15 amps. The terminals shall be tin-plated brass with brass clips and clamps.

Furnish gate flasher assemblies conforming to the following:

1. A 2-conductor connector, rated 12 volts at 5 amps minimum.

2. A 2-amp weather resistant in-line fuse and fuse holder.

3. Wiring harness made from 6-conductor 14 AWG stranded insulated control cable.

4. A 12 V flasher controller, capable of providing LED flashers with 5% to 100% duty cycle at a one-second pulse repetition rate.

5. A 4-conductor male/female electrical connector pair, 10 amp capacity for each connection, weather resistant, and mounted to allow rapid gate arm replacement.

6. A 5-amp mercury switch with less than 3 ohms "on" resistance and a 20 to 30 degree activation angle. Mount the switch on the gate arm to activate the flashers when the gate arm is lowered more than 45 degrees from vertical.

7. Furnish red LED flashers meeting the requirements of the MUTCD and/or AREMA standards for hue and brightness.

Power consumption	0.45 amp @ 10.5 V
Life expectancy	100,000 hrs
Directionality	0-degree cone orthogonal to face of flasher
Compliance temperature	-40° C to +70° C

Furnish electrical wires with jackets conforming to the following color scheme throughout the ramp closure gate system:

- Hot = Black or Red
- Neutral = White
- Ground = Green

Furnish a weatherproof hardened steel padlock with a minimum 2 1/4-inch shackle height and user programmable 4-digit combination.

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 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 cabinet with power supply, flasher controller, and other components. Connect the 120 VAC to 12 VDC power supply to the circuit breaker in the breaker disconnect box. Connect the 120 VAC to 12 VDC power supply to the 10-position terminal block and connect the 12 VDC components to the terminal block.

Connect the 12 VDC terminal strip to the wiring harness through the female side of a 2-terminal polarized electrical connector. Connect male side of this connector to the flasher controller and the female side of a weatherproof polarized 4-conductor electrical connector.

Attach the male side of the 4 conductor electrical connector, mercury switch, wiring harness, and the three LED flasher units to the portion of the flasher assembly mounted on the breakaway portion of the gate arm. Adjust mercury switch so that as the gate arm is lowered to a maximum of 45 degrees from the vertical, the gate flasher assembly is energized, and the LEDs begin to flash. Ensure that when the gate arm is raised to a minimum of 15 degrees from vertical, the mercury switches the gate flasher assembly off.

Furnish and install structure identification plaques in the location the plan details show. Structure identification plaques shall be considered incidental to the Ramp Closure Gates Hardwired (length) bid item. Coordinate with Dena Dramm, WisDOT SW Region, (608) 246-5360 for number issuance.

D Measurement

The department will measure the Ramp Closure Gates Hardwired 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
662.1026.S	Ramp Closure Gates Hardwired 26-FT	Each
665.1028.S	Ramp Closure Gates Hardwired 28-FT	Each
662.1030.S	Ramp Closure Gates Hardwired 30-FT	Each

Payment for the Ramp Closure Gate Hardwired bid items is full compensation for providing ramp closure gates including support poles; for gate arm assemblies including guides, collars, and gate arms; for cabinets, wiring, and power converters; for structure identification plaques; for gate flashers; and for padlock.

81. Intelligent Transportation Systems (ITS) – Control of Materials.

Standard spec 106.2 – Supply Source and Quality
Supplement standard spec 106.2 with the following:

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) 50-FT Camera Pole (including anchor bolts)
(2) Microwave Detector

Contact Dean Beekman, State Traffic Operations Center (STOC), 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 and cameras from the department's Statewide Traffic Operations Center (STOC), 433 W. St. Paul Ave., Milwaukee, WI 53203 at a mutually agreed upon time during normal state office hours. Contact the department's STOC at (414) 227-2166 to coordinate pick-up of equipment.

Large department-furnished equipment, such as camera poles, will be delivered by the supplier to a contractor-controlled site within Rock or Dane 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
Supplement standard spec 106.3 with the following:

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:

- Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.
- 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.

82. 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:

- The project includes working on cables and equipment that are carrying data between roadside equipment and the department's Statewide Traffic Operations Center (STOC). Interruption of this service is not expected to perform this work. If an interruption is determined necessary, it must be done on a weekend, and must be done in a way that minimizes communication outages for the existing equipment. Notify the department's STOC at least 48 hours in advance of the planned interruption.
- The department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment prior to installing it.

A.2 Surge Protection

Equip every ungrounded conductor wire entering or leaving any equipment cabinet with a surge protector. For purposes of this section, multiple cabinets on a single pole or foundation are considered a single cabinet.

B Materials

B.1 General

Only furnish equipment and component parts for this work that are new and have high quality workmanship. All controls, indicators, and connectors shall be clearly and permanently labeled in a manner approved by the engineer. All equipment of each type shall be identical.

All electrical equipment shall conform to the standards and requirements of the Wisconsin Electrical Code, the National Electrical Manufacturers Association (NEMA), National Electric Safety Council (NESC), Underwriter's Laboratory Inc. (UL) or the Electronic

Industries Association (EIA), when applicable. All materials and workmanship shall conform to the requirements of the National Electrical Code (NEC), Rural Electrification Administration (REA), Standards of the American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), requirements of the plans these special provisions, the standard specifications, and to any other codes, standards, or ordinances that may apply. All system wiring, conduit, grounding hardware and circuit breakers shall be in conformance with the National Electrical Code. Whenever reference is made to any of the standards mentioned, the reference shall be considered to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

B.2 Outdoor Equipment

All conductive connectors, pins (except pins connected by soldering), and socket contacts shall be gold plated. Acrylic conformal coating shall protect each circuit board side that has conductive traces. Except for integrated circuits containing custom firmware, all components shall be soldered to the printed circuit board.

To prevent galvanic corrosion, all connections between dissimilar metals shall incorporate a means of keeping moisture out of the connection. Where the connection need not conduct electricity, interpose a non-absorbing, inert material or washer between the dissimilar metals. Use nonconductive liners and washers to insulate fasteners from dissimilar metals. Where the connection must conduct electricity, use a conductive sealant between the dissimilar metals. Alternatively, use an insulating gasket and a bond wire connecting the two metal parts.

B.3 Custom Equipment

Equipment that is not part of the manufacturer's standard product line, or that is made or modified specifically for this project, shall conform to the following requirements:

Where practical, electronics shall be modular plug-in assemblies to facilitate maintenance. Such assemblies shall be keyed to prevent incorrect insertion of modules into sockets.

All components shall be available from multiple manufacturers as part of the manufacturers' standard product lines. All must be clearly labeled with the value, part number, tolerance, or other information sufficient to enable a technician to order an exact replacement part.

Lamps used for indicator purposes shall be light-emitting diodes.

The printed circuit boards shall be composed of "two-ounce" copper on 1/16-inch thick fiberglass epoxy or equivalent type construction. Holes that carry electrical connections from one side of the boards to the other shall be completely plated through. Multilayer printed circuit boards shall not be used. The name or reference number used for the board in the drawings and maintenance manuals supplied to the department shall be permanently affixed to each board.

All components shall be mounted so that the identifying markings are visible without moving or removing any part, if practical.

B.4 Environmental Conditions

Equipment shall continue to operate as specified under the following ranges of environmental conditions, except as noted in the specifications for individual pieces of equipment.

1. **Vibration and Shock:** Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. **Duty Cycle:** Continuous
3. **Electromagnetic Radiation:** The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. **Electrical Power:**
    a. **Operating power:** The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.
    b. **High frequency interference:** The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.
    c. **Line voltage transients:** The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.
5. **Temperature and Humidity:**
    a. **Field equipment:** Equipment in the field shall meet the temperature and humidity requirements of NEMA Standard TS-2. Liquid crystal displays shall be undamaged by temperatures as high as 165 degrees F, and shall produce a usable display at temperatures up to 120 degrees F.
    b. **Equipment in Controlled Environments** shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

B.5 Patch Cables and Wiring

All cables and wiring between devices installed in a single cabinet, or in separate cabinets sharing a single concrete base, will be considered incidental to the installation of the devices and no separate payment will be made for them. It is anticipated that this will include fiber optic patch cables between termination panels and Ethernet switches, 10 / 100 MBPS Ethernet cables, RS-232 cables between individual devices and terminal

servers, and power cables between individual devices and power sources within the cabinets.

B.6 Surge Protection

Low-voltage signal pairs, including twisted pair communication cable(s) entering each cabinet shall be protected by two-stage, plug-in surge protectors and shall be installed on both ends of camera control cables. The protectors shall meet or exceed the following minimum requirements:

- The protectors shall suppress a peak surge current of up to 10k amps.
- The protectors shall have a response time less than one nanosecond.
- 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.
- The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.
- The protector shall also contain a resettable fuse (PTC) to protect against excessive current.
- There shall be no more than two pairs per protector.
- It shall be possible to replace the protector without using tools.

Cables carrying power to curve signs shall be protected at the cabinet by grounded metal oxide varistors of appropriate voltages. The varistors must be at least 0.8 inch in diameter.

C Construction

C.1 Thread Protection

Provide rust, corrosion, and anti-seize protection at all thread assemblies of metallic parts by coating (non-spray) the mating surfaces with an approved compound. Failure to use an approved compound will result in no payment for the items to which coating was to have been applied.

C.2 Cable Installation

When installing new cables into conduits containing existing cables, remove the existing cables and reinstall the existing cables simultaneously with the new cables. Take every precaution necessary to protect the existing cables. In the event of avoidable damage to the existing cables, replace all damaged cables, in-kind, at no additional expense to the department. When cables are pulled into conduit, use a cable pulling lubricant approved by the cable manufacturer. Submit documentation supporting manufacturer approval of the lubricant to the engineer.

C.3 Wiring

Every conductor, except a conductor contained entirely within a single piece of equipment, must terminate either in a connector or on a terminal block. Provide and install the connectors and terminal blocks where needed, without separate payment. Use approved splice kits instead of connectors and terminal blocks for underground power cable splices.

Permanently label and key connectors to preclude improper connection. Obtain prior engineer approval for the labeling method(s) prior to use.

Terminal blocks must be affixed to panels that permanently identify the block and what wire connects to each terminal. This may be accomplished by silk screening or by installing a laminated printed card under the terminal block, with the labels on portions of the card that extend beyond the block. Installation of terminal blocks by drilling holes in the exterior wall of the cabinet is not acceptable.

Use barriers to protect personnel from accidental contact with all dangerous voltages.

Do not install conductors carrying AC power in the same wiring harness as conductors carrying control or communication signals.

Arrange wiring, including fiber optic pigtails, so that any removable assembly can be removed without disturbing wiring that is not associated with the assembly being removed.

Communication and control cables may not be spliced underground, except where indicated on the plans.

Cables in the Statewide Traffic Operations Center or in communication hubs, which are not contained within a single cabinet, shall have at least 10 feet of slack.

C.4 System Operations
If the contractor's operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

C.5 Surge Protection
Arrange the equipment and cabinet wiring to minimize the distance between each conductor's point of entry and its protector. Locate the protector as far as possible from electronic equipment. Ensure that all wiring between the surge protectors and the point of entry is free from sharp bends.

D Measurement
No separate measurement will be made for the work described in this article.

E Payment
No separate payment will be made for the work described in this article. All work described in this article shall be included under the ITS items in the contract.
670-010 (20100709)

83. Intelligent Transportation Systems – Conduit.

Supplement standard spec 671.2 with the following:

671.2.4 Locate Wire
Furnish and install a No. 14 AWG stranded copper wire for future locate purposes through each conduit run. Connect the locate wire by using a wire nut at each pull box, manhole, or other access point. Alternatively, use a single wire through the access points. All material furnished under this item shall meet the requirements of standard spec 655.
671-005 (20100630)

84. Install Pole Mounted Cabinet, Item 673.0225.S.

A Description
This special provision describes installing aluminum enclosures on poles for intelligent transportation systems equipment.

B Materials
The pole mounted cabinet will be salvaged from the project and include attached plaques sequence identification and electrical service breaker disconnect box.

Use stainless steel bolts, nuts, and washers unless otherwise specified.

All conductors, terminals, and parts that could be hazardous to maintenance personnel shall be protected with suitable insulating material.

The cabinet will be equipped with service panels. Two panels shall be provided and mounted on the cabinet sidewalls. The left side panel shall be designated as "Input/Communications," and the right side panel shall be designated as the "Service Panel."

The service panel will be equipped with a four-outlet handi-box. Wire the handi-box to the series portion of the filtering surge protector.

Use metallic conduit, fittings, and adapters required from the underground conduit transition point to the cabinet as part of this item. A typical installation requires on 2-inch conduit. Use metallic conduit according to standard spec 652.

C Construction
Fasten the field cabinet securely onto a pole. Provide bolted stainless steel connections with lock washers, locking nuts, or other engineer-approved means to prevent the connection nuts from backing off. Isolate dissimilar materials from one another using stainless steel fittings. Make all power connections to the cabinet as specified in standard spec 656.

Drill and tap the cabinet, as necessary, to mount the terminal blocks and other attachments to the service panel, to provide an entrance on the back of the cabinet for cable from the pole mounted intelligent transportation systems equipment, and to mount the service panel to the cabinet as shown in the details. Remove all sharp edges or burrs, or both, caused by the cutting or drilling process. Seal all openings to prevent water from entering the cabinet. Mount the surge protector to the service panel.

Install metallic conduit on the exterior of the pole (for entrance to the cabinet from the ground) as shown in the plans, and according to the applicable requirements of standard spec 652.

D Measurement
The department will measure Install Pole Mounted Cabinet as each individual assembly, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
673.0225.S	Install Pole Mounted Cabinet	Each

Payment is full compensation for installing the pole mounted cabinet, including the attached plaques sequence identification and electrical service breaker disconnect box; for making all connections and conduit/wire entrances; and for furnishing all testing.

85. Install Ethernet Switch, Item 675.0400.S.

A Description
This special provision describes installing an Ethernet switch, and providing all necessary associated wiring.

B Materials
The Ethernet switch will be salvaged from the project. Provide all necessary cables between the Ethernet switch and terminal server or other device.

C Construction
Install the Ethernet switch in the salvaged pole mounted cabinet. Connect it to devices as shown on the plans, or as directed by the engineer.

D Measurement
The department will measure Install Ethernet Switch by each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
675.0400.S	Install Ethernet Switch	Each

Payment is full compensation for installing an Ethernet switch; furnishing all necessary incidental hardware; making all necessary connections; and for testing..

86. Install Video Encoder, Item 677.0300.S.

A Description
This special provision describes installing a salvaged video encoder in a pole mounted cabinet as shown on the plans and as hereinafter provided.

B Materials
Provide Category 5 or better Ethernet cable to connect the Ethernet video encoder to the Ethernet switch.

C Construction
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 Install Video Encoder by each individual assembly, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
677.0300.S	Install Video Encoder	Each

Payment is full compensation for installing the video encoder in a pole mounted cabinet or field cabinet; for making all connections; and for furnishing all programming.

87. 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.

Add the following to standard spec table 701-2:

TEST	TEST STANDARD
Flexural Strength of Concrete	AASHTO T97

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:*

(2) 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 5 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 1 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 accept or reject concrete on a sublot-by-sublot basis using 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 2 QC strength specimens to test at 28 days for percent within limits (PWL). Compare the strengths of the 2 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 2 QC specimens.
- If the lower strength divided by the higher strength is less than 0.9, break one additional specimen and average the 2 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.

(2) The sublot pavement is conforming if the compressive strengths of all cores from the sublot are 2500 psi or greater or the engineer does not require coring.

(3) The sublot pavement is nonconforming if the compressive strengths of any core from the sublot is less than 2500 psi. The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in 106.5.

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.

88. Seismograph B-53-357, Item 999.1000.S.001; B-53-358, Item 999.1000.S.002.

A Description

This special provision describes furnishing a seismograph and employing trained operators to continuously monitor building vibration.

B Material
Use seismographs that are in accordance to ILHR 7.63, and are continuous strip recorders supplied with all the accessories necessary for making seismographic observations.

C Construction
Monitoring procedures shall be in accordance to ILHR 7.64 and the following: Take seismograph readings prior to construction activities to establish an ambient index.

Place the seismograph to continuously monitor all construction activities or as directed by the engineer. If construction activities generate ground vibration in excess of the Peak Particle Velocity Limits as shown in ILHR 7.64, stop the construction operation in progress and consider and implement alternate construction methods.

D Measurement
The department will measure Seismograph as a single complete unit of work.

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

ITEM NUMBER	DESCRIPTION	UNIT
999.1000.S.001	Seismograph B-53-357	LS
999.1000.S.002	Seismograph B-53-358	LS

Payment is full compensation for furnishing and operating a seismograph, an operator, and accessories.
999-005 (20030820)

89. Crack and Damage Survey B-53-357, Item 999.1500.S.001; B-53-358, Item 999.1500.S.002.

A Description
This special provision describes conducting a crack and damage survey of the residences located at 618 E. Ellendale Road, 458 E. Richardson Springs Road, 454 E. Richardson Spring Road.

This Crack and Damage Survey shall consist of two parts. The first part, performed prior to construction activities, shall include a visual inspection, photographs, and a written report describing the existing defects in the building(s) being inspected. The second part, performed after the construction activities, shall also include a visual inspection, photographs, and written report describing any change in the building's condition.

B (Vacant)

C Construction
Prior to any construction activities, thoroughly inspect the building structures for existing defects, including interior and exterior walls. Submit a written report of the inspector's

name, date of inspection, descriptions and locations of defects, and photographs. The intent of the written report and photographs is to procure a record of the general physical condition of the building's interior and exterior walls and foundation. The report shall be typed on bond paper and be in text form.

The photographs shall be taken by a professional photographer capable of producing sharp, grain free, high-contrast colored pictures with good shadow details. The photographs shall be 3½ inch by 5 inch color prints, glossy, and mounted in protective storage pages with clear slip-in pockets and clear background. Each sheet shall hold four prints. The back of each photograph shall contain the following information:

ID _____
Building Location _____
View looking _____
Date _____
Photographer _____

Prior to the start of any construction activities pertinent to this survey, submit a copy of the written report and photographs to the engineer.

After the construction activities are complete, conduct another survey in the same manner, take photographs, and submit another written report to the engineer.

In lieu of photographs, a professional videographer may be hired to use a video camera capable of producing a video with the clarity required to perform this work.

D Measurement
The department will measure Crack and Damage Survey as single complete unit of work.

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

ITEM NUMBER	DESCRIPTION	UNIT
999.1500.S.001	Crack and Damage Survey B-53-357	LS
999.1500.S.002	Crack and Damage Survey B-53-358	LS

Payment is full compensation for providing the before and after written reports, and for photographs or video.
999-010 (20130615)

90. Bicycle Rack Asphalt or Concrete-Mounted, Item 999.1950.S.

A Description
Furnish and install a bicycle rack on an asphaltic or concrete surface, as shown on the plans and as hereinafter provided.

B Materials

B.1 General

Provide a steel bicycle rack that has been manufactured specifically for use as a bicycle parking rack.

The bicycle rack shall be hot-dipped galvanized, or TGIC (triglycidyl isocyanurate) powder-coated, or plastic-coated. Steel anchors, and miscellaneous hardware shall be hot-dipped galvanized. For powder-coated or plastic-coated racks, provide one of the following colors: midnight blue, black, hunter green, forest green, Lexington blue, patriot blue, RAL 5005, RAL 3003, or RAL 6005.

The bicycle rack base shall have flanges, rails, or tubes that allow the rack to stand upright and can be bolted or screwed in place.

B.2 Hanger Style Racks

B.2.1 Bicycle Racks Loaded from Two Sides

The hanger-style bicycle rack shall be designed to park at least five bicycles with arms offset, or centered, in such a manner so that the rack will be loaded from two sides by bicyclists. Pad shall accommodate space on both sides of rack according to the manufacturer's specification to allow bikes to be locked to both sides of rack and for bicyclists to access both sides of rack when racks are full of bikes. This typically requires 8-feet to 9-feet on both sides of the rack measured from the center post (the post to which the hangers are attached).

Furnish a bike rack from one of the manufacturers listed: The Saris City Rack, Dero Campus Rack or Madrax Spartan Rack.

C Construction

Install rack with enough clearance to allow bicyclists to load their bikes from one side or both sides, based on style of rack, and according to the manufacturer's specifications.

Secure the rack to asphalt surface with anchor bolts or screws according to the manufacturer's recommendations.

D Measurement

The department will measure Bicycle Rack Asphalt or Concrete-Mounted by the unit in place, acceptably furnished and installed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
999.1950.S	Bicycle Rack Asphalt or Concrete Mounted	Each

Payment is full compensation for furnishing and installing the bicycle rack including all mounting hardware.
999-150 (20080902)

91. Roadway Embankment, Item SPV.0035.001.

A Description
Conform to standard spec 207 unless modified by this special provision.

Replace standard spec 207.1(1) with the following:

This section describes placing, in embankments and in miscellaneous backfills, material obtained under the bid items in the roadway and drainage excavation, or excavation for structure sections; and 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:

- 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 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 forming, compacting, shaping, sloping, trimming, finishing, and maintaining the embankments.

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 standard spec 628.5.1.

92. 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 specs 501, 502 and 509, as modified in this special provision. Conform to standard spec 715 for QMP Concrete Pavement and Structures.

MODIFY THE STANDARD SPECIFICATIONS AS FOLLOWS:

501.2.5.4.1 General
Replace the entire text with the following:

Use clean, hard, durable crushed limestone with 100% fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

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
Chert[1]	1.0

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

501.2.5.4.3 Physical Properties
Replace paragraph one with the following:

The department will ensure that Los Angeles wear testing conforms to AASHTO T 96, soundness testing conforms to AASHTO T 104 using 5 cycles in sodium sulfate solution on aggregate retained on the No. 4 sieve, and freeze-thaw soundness testing conforms to AASHTO T 103. The percent wear must not exceed 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
Replace the entire text with the following:

Do not place concrete for bridge decks when the ambient air temperature is above 80° F.

For concrete placed in bridge decks, 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 without the engineer's written acceptance of that evaporation control plan. Perform the work as outlined in the evaporation control plan.

If predicting a concrete surface moisture evaporation rate exceeding 0.15 pounds per square foot per hour, do not place concrete for bridge decks.

Provide evaporation rate predictions to the engineer 24 hours prior to each bridge deck pour.

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.

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, 14 and 15.

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, provide longitudinal grooving according to the provision included 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.

93. 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 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
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.

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, 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. Summary activities may have durations greater than 28 calendar days (20 business days).
- Submit three copies of the IWP Schedule, including the P6 native data file (XER) and an electronic file (PDF) on three separate CD-ROM's.
- 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:

- 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:

- 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.
- Provide activities as necessary to depict administrative work, including submittals, reviews, procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar days (20 business days).
- 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.
- 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.
- With the exception of the Project Start Milestone and Project Completion Milestone, all activities must have predecessors and successors. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish- to-Finish relationship with succeeding activities. Do not use Start-to-Finish relationships. Do not use Finish-to-Start relationships with a lag unless the engineer accepts requested exceptions. Include and discuss request for exceptions in the schedule narrative provided with each schedule submittal.
- Schedule activities shall include the following:
- 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.
- Codes for Contract ID / WisDOT Project ID, Responsibility, Stage, and Area. The department may provide additional codes for use within department reporting.
- Activities shall carry a single Responsibility assignment.
- 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. 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.
- Using the bid quantities and unit prices, develop an anticipated cash-flow curve for the project, based on the Baseline CPM.

- Provide three hard copies (11” x 17”) of the CPM schedule depicting the CPM network. Organize the logic diagram by grouping related activities, based on the activity codes in the CPM.

- 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:
- The basis for activity durations in terms of production rates for each major type of work (number of shifts per day and number of hours per shift), and equipment usage and limitations.
- Use of constraints.
- Use of calendars.
- Estimated number of adverse weather days on a monthly-basis.
- Scheduling of permit and environmental constraints, and coordination of the schedule with other contractors, utilities, and public entities.

- Submit three copies of the Baseline CPM schedule including the P6 native data file (XER) and an electronic file (PDF) on three separate CD-ROM’s.

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:

- 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 three copies of each CPM Schedule update, including the P6 native data file (XER) and an electronic file (PDF) on three separate CD-ROM's.
- 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:

- 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:

- Provide data on the following items by the units specified:
- Underground Facilities – LF per week

- Retaining Walls – SF per week
- MSE Walls
- Other Wall Types

- Bridge Construction
- Foundation Pile – EACH per week
- Foundation/Substructure Concrete – CY per week
- Structural Steel Girders – EACH per week
- Prestressed Concrete Girders – EACH per week
- Deck Formwork – SF per week

- Roadway Excavation – CY per week

- Roadway Embankment – CY per week

- Roadway Structural Section
- Grading/Subgrade Preparation – SY per week
- Base Material Placement – TON per week
- Base Material Subgrade Preparation – SY per week
- Asphaltic Base – TON per week
- Asphaltic and HMA Pavements – TON per week
- Concrete Pavement – SY per week
- Concrete Pavement – CY per week

- 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 ten 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:

- The forecast completion date is scheduled to occur more than 14 calendar days after the contract completion date.

- An intermediate milestone is scheduled to occur more than 14 calendar days after the date required by the contract.

- The engineer determines that the progress of the work differs significantly from the current schedule.

- 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

To request a time extension to an intermediate milestone date or the contract completion date associated with changes to the work, provide a narrative detailing the work added or deleted and the other activities affected, based on the latest accepted CPM Monthly Update. For added work, submit a proposed fragnet of activities to be added or revised in the CPM schedule, indicating how the fragnet is to be tied to the CPM schedule.

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:

- 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.

- 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.

- 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, 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.

94. Mobilizations Emergency Pavement Repair, Item SPV.0060.003.

A Description
Furnish and mobilize personnel, equipment, traffic control, and materials to the project site to repair the existing pavement or Asphaltic Surface Temporary on an emergency basis as the engineer directs.

B (Vacant)

C Construction
Mobilize with sufficient personnel, equipment, traffic control, materials and incidentals on the jobsite within 4 hours of the engineer's written order to repair the existing pavement on an emergency basis.

An emergency is a sudden occurrence of a serious and urgent nature, beyond normal maintenance of the existing pavement or the Asphaltic Surface Temporary. Under this definition, an emergency mobilization requires immediate action to move necessary personnel, equipment, and materials to the emergency site followed by immediate repairs of the existing pavement or the Asphaltic Surface Temporary.

D Measurement
The department will measure Mobilizations Emergency Pavement Repair as each individual mobilization, acceptably completed. The department will not include delivering and installing pavement repair or maintenance materials provided for in specific contract bid items. All traffic control items used for each Mobilization will be considered incidental to the Mobilization.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.003	Mobilizations Emergency Pavement Repair	Each

Payment is full compensation for the staged moving of personnel, moving equipment, setting up and removing traffic control, traffic control materials, and moving materials. The department will pay separately for delivery and installation of pavement repair

materials under the other bid items in this contract. The department will not pay separately for traffic control items even though they may be included in other bid items in this contract and will consider them incidental to each Mobilization.
SEF Rev. 091124

95. Salvage Terminal High-Tension Cable TL-3, Safence, Item SPV.0060.004; Salvage High-Tension Cable TL-3, Socketed, Safence, Item SPV.0090.004.

A Description

This special provision describes salvaging terminals for high-tension cable guard TL-3, Safence, and salvaging high-tension cable guard TL-3, socketed, Safence.

B (Vacant)

C Construction

Remove the terminals for high-tension cable guard and high-tension cable guard in a manner that prevents damage to all salvageable materials. Salvageable materials are those materials above grade and not embedded in concrete. Any damaged materials shall be replaced at the cost of the contractor. Stockpile the salvaged materials in an engineer-approved location on the project. Provide terminals for high-tension cable guard and high-tension cable guard to Rock County. Stockpile surplus materials in an engineer-approved location on the project. The length of salvageable high-tension cable guard is estimated in the plan.

Remove all components. Remove all footings to a depth of at least 2 feet below subgrade or where there is a conflict with future construction. Dispose of all materials not designated for salvage as specified for disposing of materials under standard spec 203.3.4. Removal and disposal of these components is incidental to the work.

D Measurement

The department will measure Salvage Terminal High-Tension Cable TL- 3, Safence as each individual unit, acceptably completed.

The department will measure Salvage High-Tension Cable TL- 3, Socketed, Safence by the linear foot, acceptably completed, measured as the length from end of terminal to end of terminal and rounded to the nearest linear foot.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.004	Salvage Terminal High-Tension Cable TL-3, Safence	Each
SPV.0090.004	Salvage-Tension Cable TL-3, Socketed, Safence	LF

Payment is full compensation for removing, handling, storing and transporting the existing terminals for high-tension cable guard and high-tension cable guard materials; for disposing of any damaged materials; and for replacing contractor-damaged material.

96. Terminal High-Tension Cable Guard TL-3, Gibraltar, Item SPV.0060.005; High-Tension Cable Guard TL-3, Socketed, Gibraltar, Item SPV.0090.005.

A Description

Provide socketed high-tension TL-3 cable guard meeting the National Cooperative Highway Research Program (NCHRP) Report 350, Test Level 3.

B Materials

Materials are to be acquired from the manufacturer below:

Gibraltar
320 Southland Road Burnet,
TX 78611
Contact: Jay Winn
Phone: (800) 495-8957 Ext 212
(512) 756-1426 (main)
(512) 756-1575 (fax)
Email: jwinn@gibraltartx.com
Web: gibraltartx.com

Furnish Grade A concrete in accordance to standard spec 501.

Furnish steel reinforcement in accordance to standard spec 505.

Furnish cable and all cable connection components with a minimum breaking strength of 39,000 lbs per ASTM A741-98.

Furnish zinc-coated hardware as specified in AASHTO M232.

B.1 Design Requirements

Thirty days before installation provide the engineer with two sets of manufacturer prepared design calculations, approval letters, documentation, notes, plan details, and construction specifications. Provide required information in a PDF format or other in electronic format that the department can review information.

Obtain prior approval from the Bureau of Project Development (Erik Emerson at (608) 266-2842) for all hardware substitutions before delivering the hardware on the project.

Provide a system that has been formally accepted by Federal Highway Administration as meeting the crash test requirements in NCHRP Report 350, for a Test Level 3 system.

Provide a system to have a maximum deflection of 15 feet. Provide design documentation on how post spacing and radius of curve influences barrier deflection.

Provided design details for concrete socketed line post footing with a maximum line post spacing of 15 feet. Minimum depth of for concrete socketed line post is 48 inches for non-rock installations.

Provide concrete anchors with minimum of 60 inches for non-rock installations

Provide design details for non-rock installations of socketed line post and concrete anchors.

Specify the required 28-day concrete compressive strength values for socketed concrete line post and anchor footings.

Ensure that concrete line post design has 6 inches of clear cover (distance from outside of concrete in the line post footing to steel sleeve) or manufacture provides documentation that the concrete line post footing will not become cracked or large pieces of concrete can not fly into the air during a TL-3 truck impact.

Provide engineering analysis sealed by a Wisconsin licensed professional engineer that the line post footings and concrete anchorages are designed for the soils conditions presented in the contract. Analysis includes but is not limited to: design loads used for terminal and anchor posts, foundation design methodology used, factors of safety values, soil type, soil conditions, temperature ranges

Soils boring information is located on the plan sheets.

C Construction

A representative of the manufacture is to be on site at all times during the installation of the terminals and the high-tension cable guard. Manufacturer's representative will provide engineer signed documentation that the contractor has installed the socketed high-tension TL-3 cable guard according to manufacturer's recommendations.

Construct concrete in accordance to standard spec 501.

Construct steel reinforcement in accordance to standard spec 505.

Construct terminal units at each end of a run of cable guard as shown in the plans. The contractor may determine the location of anchors subject to the engineer's approval.

Set steel posts in socketed concrete foundations according to the manufacturer's recommendations. Line post must be easily removed from sleeve, plumb, and hold cables at proper elevations.

Tension the cable according to the manufacturer's recommendations at the time of installation, and then check and adjust approximately 3 weeks after installation. If system is not maintaining proper tension, adjust tension and return 3 weeks later. Provide engineer documentation of date, time, location, tension value, and who checked the tension for each barrier run.

Use only one-half the available adjustment in each turnbuckle or tension adjustment connection to achieve manufacture’s recommend tension values.

The engineer will allow the contractor to open the roadway to traffic or remove traffic control devices if concrete attains manufacture’s compressive strength. Without compressive strength information, the engineer may allow the contractor to remove traffic control devices 14 equivalent curing days. Equivalent curing days are defined in standard spec. 415.3

Install reflective delineators at even post spacing intervals close to 100 feet.

D Measurement

The department will measure Terminal High-Tension Cable Guard TL- 3 as each individual unit, acceptably completed.

The department will measure High-Tension Cable Guard TL- 3 Socketed by the linear foot, acceptably completed, measured as the length from end of terminal to end of terminal and rounded to the nearest linear foot.

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	Terminal High-Tension Cable Guard TL-3, Gibraltar	Each
SPV.0090.005	High-Tension Cable Guard TL-3, Socketed, Gibraltar	LF

Payment is full compensation for furnishing all materials, including posts, paint, concrete, steel reinforcement, sockets, cables, anchors, tension assemblies, fittings, and incidentals; for initial tensioning and subsequent adjustment of tension; for furnishing all excavating and backfilling; for removal of temporary anchors; for restoring of disturbed slope; delineation; engineering; and for properly disposing of excess material.

97. Salvage Terminal High-Tension Cable TL-3, Gibraltar, Item SPV.0060.006; Salvage High-Tension Cable TL-3, Socketed, Gibraltar, Item SPV.0090.006.

A Description

This special provision describes savaging terminals for high-tension cable guard TL-3, Gibraltar, and salvaging high-tension cable guard TL-3, socketed, Gibraltar.

B (Vacant)

C Construction

Remove the terminals for high-tension cable guard and high-tension cable guard in a manner that prevents damage to all salvageable materials. Salvageable materials are those materials above grade and not embedded in concrete. Any damaged materials shall be replaced at the cost of the contractor. Stockpile the salvaged materials in an engineer-approved location on the project. Provide terminals for high-tension cable guard and high-tension cable guard to Rock County. Stockpile surplus materials in an engineer-approved location on the project. The length of salvageable high-tension cable guard is estimated in the plan.

Remove all components. Remove all footings to a depth of at least 2 feet below subgrade or where there is a conflict with future construction. Dispose of all materials not designated for salvage as specified for disposing of materials under standard spec 203.3.4. Removal and disposal of these components is incidental to the work.

D Measurement

The department will measure Salvage Terminal High-Tension Cable TL- 3, Gibraltar as each individual unit, acceptably completed.

The department will measure Salvage High-Tension Cable TL- 3, Socketed, Gibraltar by the linear foot, acceptably completed, measured as the length from end of terminal to end of terminal and rounded to the nearest linear foot.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.006	Salvage Terminal High-Tension Cable TL-3, Gibraltar	Each
SPV.0090.006	Salvage-Tension Cable TL-3, Socketed, Gibraltar	LF

Payment is full compensation for removing, handling, storing and transporting the existing terminals for high-tension cable guard and high-tension cable guard materials; for disposing of any damaged materials; and for replacing contractor-damaged material.

98. Reinstall Terminal High-Tension Cable TL-3, Safence, Item SPV.0060.007.

A Description

Provide socketed high-tension TL-3 cable guard meeting the National Cooperative Highway Research Program (NCHRP) Report 350, Test Level 3.

B Materials

Materials are to be acquired from the manufacturer below:

Safence, Inc.
Gregory Industries
4100 13th Street SW
Canton Ohio 447100
Contact: Tom Close
Phone: (330) 477-4800 Ext:165
Email: tclose@gregorycorp.com
Web: www.gregorycorp.com

Furnish Grade A concrete in accordance to standard spec 501.

Furnish steel reinforcement in accordance to standard spec 505.

Furnish cable and all cable connection components with a minimum breaking strength of 39,000 lbs per ASTM A741-98.

Furnish zinc-coated hardware as specified in AASHTO M232.

B.1 Design Requirements

Thirty days before installation provide the engineer with two sets of manufacturer prepared design calculations, approval letters, documentation, notes, plan details, and construction specifications. Provide required information in a PDF format or other in electronic format that the department can review information.

Obtain prior approval from the Bureau of Project Development (Erik Emerson at (608) 266-2842) for all hardware substitutions before delivering the hardware on the project.

Provide a system that has been formally accepted by Federal Highway Administration as meeting the crash test requirements in NCHRP Report 350, for a Test Level 3 system.

Provide a system to have a maximum deflection of 15 feet. Provide design documentation on how post spacing and radius of curve influences barrier deflection.

Provided design details for concrete socketed line post footing with a maximum line post spacing of 15 feet. Minimum depth of for concrete socketed line post is 48 inches for non-rock installations.

Provide concrete anchors with minimum of 60 inches for non-rock installations.

Provide design details for non-rock installations of socketed line post and concrete anchors.

Specify the required 28-day concrete compressive strength values for socketed concrete line post and anchor footings.

Ensure that concrete line post design has 6 inches of clear cover (distance from outside of concrete in the line post footing to steel sleeve) or manufacture provides documentation that the concrete line post footing will not become cracked or large pieces of concrete cannot fly into the air during a TL-3 truck impact.

Provide engineering analysis sealed by a Wisconsin licensed professional engineer that the line post footings and concrete anchorages are designed for the soils conditions presented in the contract. Analysis includes but is not limited to: design loads used for terminal and anchor posts, foundation design methodology used, factors of safety values, soil type, soil conditions, temperature ranges

Soils boring information is located in the plan sheet.

C Construction

A representative of the manufacture is to be on site at all times during the installation of the terminals and the high-tension cable guard. Manufacturer's representative will provide engineer signed documentation that the contractor has installed the socketed high-tension TL-3 cable guard according to manufacturer's recommendations.

Construct concrete in accordance to standard spec 501.

Construct steel reinforcement in accordance to standard spec 505.

Construct terminal units at each end of a run of cable guard as shown in the plans. The contractor may determine the location of anchors subject to the engineer's approval.

Set steel posts in socketed concrete foundations according to the manufacturer's recommendations. Line post must be easily removed from sleeve, plumb, and hold cables at proper elevations.

Tension the cable according to the manufacturer's recommendations at the time of installation, and then check and adjust approximately 3 weeks after installation. If system is not maintaining proper tension, adjust tension and return 3 weeks later. Provide engineer documentation of date, time, location, tension value, and who checked the tension for each barrier run.

Use only one-half the available adjustment in each turnbuckle or tension adjustment connection to achieve manufacture's recommend tension values.

The engineer will allow the contractor to open the roadway to traffic or remove traffic control devices if concrete attains manufacture's compressive strength. Without compressive strength information, the engineer may allow the contractor to remove traffic

control devices 14 equivalent curing days. Equivalent curing days are defined in standard spec 415.3

Install reflective delineators at even post spacing intervals close to 100 feet.

D Measurement
The department will measure Reinstall Terminal High-Tension Cable TL-3, Safence 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.0060.007	Reinstall Terminal High-Tension Cable TL-3, Safence	Each

Payment is full compensation for furnishing all materials, including posts, paint, concrete, steel reinforcement, sockets, cables, anchors, tension assemblies, fittings, and incidentals; for initial tensioning and subsequent adjustment of tension; for furnishing all excavating and backfilling; for removal of temporary anchors; for restoring of disturbed slope; delineation; engineering; and for properly disposing of excess material.

99. Access Gate 6-FT, Item SPV.0060.009.

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 will 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 in accordance 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 in accordance 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-Foot 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.0060.009	Access Gate 6-Foot	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.

100. Emergency Access Gate, Item SPV.0060.010.

A Description
This special provision describes furnishing and erecting emergency access gates per the plan detail at locations shown on the plans or as directed by the engineer, and hereinafter provided.

Perform this work in accordance to standard specs 616, 634, and 637, except as herein after modified.

B Materials
Furnish all fence and gate materials in accordance to standard spec 616 and in accordance to the details shown in the plan. Gates and fence materials shall be chain link and in accordance to standard specs 616.2.1 and 616.2.3.

Latch Chains shall be ASTM A413/A413M, Grade 30. The chain shall be galvanized, 2'-0" in length, and have size requirements consistent with 3/8" regular link. All latch chains used on keeper posts shall have an attached 'S' link attached to the end of the chain as shown in the plans.

Keeper posts shall be furnished in accordance to standard spec 634.

Furnish new signs as shown in the plan and in accordance to standard spec 637. Furnish and install sign connections as shown in the plans.

C Construction
Construct the gate as shown in the plan and in accordance to standard spec 616.3.1 and standard spec 616.3.3.

Attach each sign to the face of the chain link gate as shown in the plan.

D Measurement
The department will measure Emergency Access Gate in units for each emergency access gate, acceptably installed and completed. Each Emergency Access Gate consists of the 8 feet of fencing on each side of the gate area, the gate, signs, latch chains, and keeper posts.

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	Emergency Access Gate	Each

Payment is full compensation for furnishing and installing all materials including excavation and removing all excess excavation; for setting posts including placing concrete; for erecting and tensioning all fencing components; for providing the gate; for signs; for keeper posts; for latch chains and 'S' hooks; and for furnishing all bolts, hardware, and other connection pieces found in the plan.

101. Landmark Reference Monuments Special, Item SPV.0060.011.

A Description
This special provision describes preserving the location and constructing new reference monuments for existing Public Land Survey System (PLSS) section corner monuments within the proposed construction limits.

B Materials
Provide Type A, cast-in-place landmark reference monuments with department furnished monument markers at four witness monuments for the disturbed section corner.

C Construction
Complete the work in accordance to the pertinent requirements of standard spec 621.3 and as follows:

Engineering staff shall contact the Rock County Surveyor, Jason Houle, (608) 757-5658, houle@co.rock.wi.us, five working days prior to the removal and again after the replacement of the monuments. This will serve to provide him notice of the disturbance, an opportunity to provide customized monuments or preferences, verification of their replacement, and notice that existing and horizontal controls on these monuments are no longer valid and will need to be updated.

Set witness monuments near the highway right-of-way limits with survey marker signs to help with the future preservation of these monuments.

Obtain existing tie sheets from the Rock County Surveyor. Locate and verify existing PLSS monuments and ties. Furnish, and install if necessary, temporary and/or permanent ties. Provide a temporary tie sheet to the department and the Rock County Surveyor, for use by the public during the construction phase of the project and before the final monumentation is complete.

Perpetuate and/or reset all PLSS monuments and witnesses under the direction of a State of Wisconsin Licensed Professional Land Surveyor. Prepare the temporary and final PLSS monument records in accordance to the Wisconsin Administrative Code Chapter AE-7. Prepare and File new monument records with the Rock County Surveyor in accordance to AE-7 and provide a copy of the same to the WisDOT SW Region-Madison Survey Coordinator. This work shall be overseen and completed by a State of Wisconsin Licensed Professional Land Surveyor.

D Measurement
The department will measure Landmark Reference Monuments Special 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.0060.011	Landmark Reference Monuments Special	Each

Payment is full compensation for furnishing a Professional Land Surveyor; obtaining existing PLSS monument record tie sheet(s); preparing, providing and filing temporary/final PLSS monument record tie sheet(s) from a Professional Land Surveyor; all survey work related to the perpetuation process; the furnishing and placing of all PLSS survey monuments; the furnishing and placement of any necessary witness ties; the removal of the existing monument(s) if necessary; and for excavating for the placement of the new monument(s) if necessary.

102. Reinforced Concrete Endwalls and Grates, 19x30-Inch Special, Item SPV.0060.012; 24x38-Inch Special, Item SPV.0060.013.

A Description
Construct Reinforced Concrete Endwalls and Grates in accordance to standard specs 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 in accordance to ASTM A123

Furnish angles and brackets galvanized in accordance to ASTM A123

Furnish required hardware galvanized in accordance to ASTM

C Construction
Repair pipes, rods, angles, and brackets on which the galvanized coating has been damaged in accordance to the requirements of AASHTO M36M.

D Measurement
The department will measure Reinforced Concrete Endwalls and Grates (Size) 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 items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.012	Reinforced Concrete Endwalls and Grates, 19x30-Inch Special	Each
SPV.0060.013	Reinforced Concrete Endwalls and Grates, 24x38-Inch Special	Each

Payment is full compensation for constructing the endwalls including the grates; for furnishing all excavating, including forming bed; and for furnishing all backfill.

103. Adjusting Sanitary Manhole, Item SPV.0060.014.

A Description
This work includes adjusting sanitary manholes to an elevation as determined by the engineer as well as installing an internal/external seal, in accordance to the Standard Specifications for Sewer and Water Construction in Wisconsin, and as hereinafter provided. Masonry adjusting rings and mortar shall be added or removed as needed. This item applies to those structures that must be lowered less than 6 inches or raised less than 12 inches.

B Materials
B.1 Adjusting Rings
Adjustment rings shall be concrete with steel reinforcement in conformance with ASTM C-478. Precast concrete rings shall have an inside diameter to match the manhole opening, be not less than 2 inches nor more than 6 inches high, and have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. Do not use any cracked or broken rings. The top of precast manhole cones shall be set a maximum of 18 inches lower than established grade in unimproved areas, with the top of the manhole cover being ringed up flush with the existing ground. The minimum number of adjusting rings shall be one 2-inch ring. The maximum height of adjusting rings shall be 8 inches in paved areas. All joints between the adjusting rings shall be filled with grout or mortar, including between the cone and the adjusting ring and the adjusting ring and the frame. Where necessary, rings shall be grooved to receive a step.

B.2 Manhole
Precast manholes and tops shall conform to ASTM Specifications, C478, latest revision.

B.3 Manhole Seal
Sanitary manhole seal – internal/external, as shown in the construction details on the plans, shall meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the Standard Specifications for Sewer and Water Construction, latest edition.

C Construction
The approximate location of existing sanitary manholes to be adjusted is indicated on the plans. Adjust these items as necessary to proper placement according to the plans and construction details.

Engineer must approve prior to beginning work, any method of adjustment of sanitary manhole other than that indicated on the plans or construction details.

Build up manholes so that the frames and cover when placed will be at the established required grade; remove and reinstall the existing frame and cover.

Install seals in accordance to the manufacturer's recommended installation procedures.

Furnish and use Granular Backfill conforming to section 6.43.4 of the Standard Specifications for Sewer and Water Construction in Wisconsin in the manhole excavation area; compact the backfill using mechanical vibration to achieve uniform consolidation in conformance with section 2.6.14(b).

D Measurement
The department will measure Adjusting Sanitary Manhole as a unit per each adjustment, 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	Adjusting Sanitary Manhole	Each

Payment is full compensation for furnishing all materials including adjusting rings, masonry, and internal/external seals; excavating, backfilling, and compacting; disposing of surplus materials; cleaning out and restoring the structure; and for furnishing all labor, tools, equipment, and incidentals necessary for the adjustment of each structure.

104. Fixed Message Sign Portable Support, Item SPV.0060.200.

A Description
This special provision describes the construction of portable sign supports for fixed message 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 in accordance to the detail on the plans.

D Measurement
The department will measure Fixed Message Sign Portable Support 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.0060.200	Fixed Message Sign Portable Support	Each

Payment is full compensation for furnishing and installing fixed message sign portable supports; and for removing the portable supports at the completion of the work.
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105. Traffic Control Barricades Type III with Sign, Permanent, Item SPV.0060.201.

A Description
Perform this work in accordance to standard spec 643, except as herein after modified. The barricades, base supports, signs, and tires shall become the department's property at the completion of the project.

B Materials
Deliver barricades to the location provided below including the base supports, and signs. The barricades shall be 8 feet long and a minimum of 5 feet tall. The horizontal pieces on the barricades shall be constructed with corrugated plastic. The upright pieces and base supports on the barricades shall be constructed using hot rolled high carbon steel. The base support dimensions shall be 5 feet long and be constructed with a square tube receiver that is of adequate size to fit the upright pieces. The upright pieces and base supports are to be painted.

Furnish new signs as shown in the plan and in accordance to standard specifications.

The tires shall be sidewalls cut from existing tires. The sidewalls shall weigh a minimum of 20 pounds per each sidewall. Tires shall have a minimum inside diameter of 12-inches and a maximum outside diameter of 36-inches.

C Construction

Attach each sign prior to delivery to the project as shown in the plan and in accordance to standard specifications. Provide half of the barricades with the rail stripes and signs set up for barricades placed on the left side of the roadway and provide the remaining half of the barricades with the rail stripes and signs set up for the barricades placed on the right side of the roadway.

Deliver all items pre-assembled to the Rock County Storage Shed located at 3715 Newville Road, Janesville, WI 53545. Notify Neil Pierce at (608) 295-2614 at least one week prior to delivery of the material. Deliver base supports and tires at the same time the pre-assembled barricades are delivered.

D Measurement

The department will measure Traffic Control Barricades Type III with Sign, Permanent in units for each barricade, acceptably completed. Each barricade consists of the barricade with uprights, two base supports, one sign, and four tire sidewalls.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.201	Traffic Control Barricades Type III with Sign, Permanent	Each

Payment is full compensation for furnishing and delivering to the specified location; the barricades, base supports, signs, and tires.

106. Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 1, Item SPV.0060.300; Arrows Type 2, Item SPV.0060.301; Arrows Type 3, Item SPV.0060.302; Arrows Type 3R, Item SPV.0060.303; Arrows Type 5, Item SPV.0060.304; Words, Item SPV.0060.305; Crosswalk 6-Inch, Item SPV.0090.300.

A Description

This special provision describes grooving the pavement surface, and furnishing and installing contrast preformed thermoplastic pavement marking as shown on the plans, in accordance to standard spec 647, and as hereinafter provided.

B Materials

Furnish 125 mils preformed thermoplastic pavement marking from the department's approved products list. If required, furnish sealant material recommended by the manufacturer.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of preformed thermoplastic pavement marking.

Plane the grooved lines in accordance to the plan details. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ±10 mils deep from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Linear Markings

Cut the groove 1-inch wider than the width of the thermoplastic.

C.4 Groove Position

Position the groove edge in accordance to the plan details.

C.4.1 Linear Marking

Groove at a minimum of 4-inches, but not greater than, 12-inches from both ends of the line segment. Achieve straight alignment with the grooving equipment.

C.4.2 Special Marking

Groove at a minimum of 4-inches from the perimeter of the special marking. Groove separate areas for Word Items.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and prior to pavement marking application. Clean and dry the groove for proper application of the sealant, and placement of the pavement marking. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 Asphalt

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

C.6 Preformed Thermoplastic Application

Preheat the surface if necessary based on manufacturer's recommendation.

Apply preformed thermoplastic in the groove as per manufacturer's recommendations. If manufacturer's recommendations require a sealant, apply a sealant lower than 91g/l VOC during the following period of time due to Volatile Organic Compound Limitations:

May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee.

Use any sealant in the remainder counties and for the remainder of the year. The sealant must be wet.

D Measurement

The department will measure Pavement Marking Grooved Contrast Preformed Thermoplastic (Type) by each individual unit, acceptably completed, or in length by the linear foot of tape, 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.0060.300	Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 1	Each
SPV.0060.301	Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 2	Each
SPV.0060.302	Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 3	Each
SPV.0060.303	Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 3R	Each
SPV.0060.304	Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 5	Each
SPV.0060.305	Pavement Marking Grooved Contrast Preformed Thermoplastic Words	Each
SPV.0090.300	Pavement Marking Grooved Contrast Preformed Thermoplastic Crosswalk 6-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface, and for furnishing and installing the material.

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107. Concrete Bases Type 6 Tall, SPV.0060.350.

A Description
This special provision describes constructing Concrete Base Type 6 Tall for street lights. This work shall be in accordance to the requirements of standard spec 654, the plans, standard detail drawings, and as hereinafter provided.

B Materials
In accordance to the plans and standard spec 654.2.

C Construction
In accordance to the plans and standard spec 654.3.

D Measurement
The department will measure Concrete Bases Type 6 Tall as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.350	Concrete Bases Type 6 Tall	Each

Payment for the Bases bid item is full compensation for providing concrete bases; for embedded conduit and electrical components; for anchor rods, nuts and washers; for bar steel reinforcement; for excavating, backfilling, restoring asphaltic surfaces, and disposing of surplus materials.

108. Fiber Tracer Marker Post, SPV.0060.401.

A Description
This special provision describes furnishing and installing a fiber tracer marker post.

B Materials
Furnish fiber tracer marker post constructed from high-impact polycarbonate, with stainless steel hardware, five standard terminals, terminal enclosure for cathodic protection, an anchor bar, white and orange in color, fade resistant, ultraviolet stable, a minimum of 62 inches long, 3.5 inch outside diameter, vandalism resistant, and labeled with WARNING FIBER OPTIC CABLE BELOW on the top of the marker molded into the marker and not separately surface applied.

Furnish conduit rigid non-metallic 1-inch for connection into the communications vault.

C Construction
Provide installation at locations shown on the plans and as directed by the engineer. Install so that marker cannot be pulled out or removed manually.

Install conduit rigid non-metallic 1-inch into the communications vault. Connect locate wire to fiber tracer maker post terminal. Follow all manufacturer's recommended installation procedures.

D Measurement
The department will measure Fiber Tracer Marker Post as each individual fiber tracer marker 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.0060.401	Fiber Tracer Marker Post	Each

Payment is full compensation furnishing and installing the fiber tracer marker posts.

109. Install Cellular Modem, Item SPV.0060.402.

A Description
This special provision describes installing a cellular modem assembly salvaged from the project.

B Materials
The cellular modem assembly will be salvaged from the project.

Provide all necessary cables and connectors between the cellular modem assembly and other communication devices.

C Construction
Install the cellular modem assembly as indicated on the plans. Make connections between the cellular modem and antenna as well as other communication devices. The contractor shall mount the antenna in a way that maximizes signal strength.

D Measurement
The department will measure Install Cellular Modem by each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.402	Install Cellular Modem	Each

Payment is full compensation for installation of the cellular modem assembly, furnishing and installing all necessary hardware, making all necessary connections, testing the cellular modem, and making the cellular modem fully operational.

110. Remove Poles Wood, Item SPV.0060.403.

A Description
This special provision describes removing an existing wood pole and all attached equipment (that is not being salvaged or relocated by the project).

B Materials
Provide all tools and equipment necessary to remove the existing wood pole and all attached equipment (that is not being salvaged or relocated by the project).

C Construction
Carefully remove the existing wood pole and all attached equipment (that is not being salvaged or relocated by the project) at the location indicated on the plans.

Dispose of removed materials off of department right-of-way.

D Measurement
The department will measure Remove Poles Wood as each individual wood pole, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.403	Remove Poles Wood	Each

Payment is full compensation for removing the wood pole and all attached equipment (that is not being salvaged or relocated by the project).

111. Decorative Medallion B-53-359, Item SPV.0060.500.

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 Edgerton will supply the decorative medallion form liner. Contact City of Edgerton public works director Tom Hartzell at (608) 884-4811.

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 in accordance to the manufacturer's installation instructions.

Place concrete masonry bridges and bar steel reinforcement HS coated bridges in accordance to standard specs 502 and 505, respectively.

After removing the form liner, clean and return the form liner to the City of Edgerton.

D Measurement
The department will measure Decorative Medallion B-53-359 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.0060.500	Decorative Medallion B-53-359	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 Edgerton, for constructing the top curved portion and other irregular shaped portions of the Decorative Medallion, and for all concrete masonry bridges and bar steel reinforcement HS coated bridges as required by the plans for the Decorative Medallion.

112. Medallion Concrete Staining B-53-359, Item SPV.0060.501.

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 Edgerton 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 in accordance 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 in accordance 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 in accordance 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 Edgerton 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 Edgerton.

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.0060.501	Medallion Concrete Staining B-53-359	Each

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

113. Seeding No Mow Fescue, Item SPV.0085.001.

A Description
This special provision describes preparing seed beds, and furnishing and sowing no mow fescue seeds in conformance with standard spec 630 and as shown on the plans in the roundabout central islands.

B Materials
B.1 General
Provide a slow growing fescue seed mix rated for drought tolerance and a maximum height of 6 inches tall when fully established. Furnish and handle seed in accordance to standard spec 630.2.

B.2 Seed Mixture
Furnish a no mow fescue mixture composed of all of the following seed types:

Common Name	Botanical Name	Percentage of Mix
Hard Fescue	Festuca longifolia	20
Sheep Fescue	Festuca ovina	15
Chewings Fescue	Festuca rubra var. commutate	25
Creeping Red Fescue	Festuca rura var. rubra	25
Dawson Red Fescue	Festuca rubra var. trichyoplyla	15

A seed mixture showing the proportions of each of the above seed types shall be submitted to the engineer at least seven days prior to placement of the seed mixture.

C Construction
C.1 Preparation of Seed Bed
Prepare the seed bed in conformance with standard spec 630.3.2. Place a seed bed consisting of 6 inches of Salvaged Topsoil prior to sowing in the designated areas. The Salvaged Topsoil shall have a pH range of 5.5 to 7.4. The contractor shall test the pH of the soil and provide test data to the engineer. If the pH is outside of the acceptable range, the contractor shall use lime or other means necessary to move the pH into the acceptable range. Fertilizer shall not be placed on Seeding No Mow Fescue areas.

C.2 Sowing
Sow the seed mixture in accordance to standard spec 630.3 unless otherwise described hereinafter. Seed shall be dispersed in two directions, at right angles to each other, sowing evenly at the rate given by the manufacturer. Do not sow seed in windy conditions.

Sow seed in one of the following seasonal periods:
August 20 to September 30 (preferred)
March 15 to May 15

If sowing cannot be accomplished during one of these seasonal periods, dormant seeding after November 15 is acceptable, but the acceptance and establishment periods in this specification still apply.

C.3 Seeding Rates
Seed shall be applied at a rate of 5 pounds per 1,000 square feet unless otherwise specified by the manufacturer. Obtain the approval of the engineer for any application other than 5 pounds per 1,000 square feet at least seven days prior to the placement of the seed mixture.

Also apply Seeding Nurse Crop to the areas designated for Seeding No Mow Fescue in accordance to standard spec 630.3.3.5.1. A mix containing a nurse crop annual seed may be substituted in lieu of the separate bid item “Seeding Nurse Crop” with approval by the engineer.

C.4 Covering
Seeding No Mow Fescue areas shall be covered by Erosion Mat Class 1 Type A.

C.5 Watering Requirements
Water the seed bed two to three times per week until the seed germinates and the seedlings are one inch high. Provide supplemental water if rainfall is less than 1-inch per week to maintain soil moisture content.

C.6 Acceptance of Seed Installation
The seed areas shall be inspected by the engineer once the seedlings reach a height of at least one inch. Bare spots larger than 1 square foot or areas without uniform coverage shall be re-seeded.

Take care to protect the seed bed from construction traffic once the seed is sowed. Repairs to damaged areas are incidental to construction.

D Measurement
The department will measure Seeding No Mow Fescue by the pound, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0085.001	Seeding No Mow Fescue	LB

Payment is full compensation for providing, handling, and storing all seed; for providing the required culture and inoculating seed as specified and as needed; for testing and providing soil pH data to the engineer and correcting pH if outside acceptable values; for preparing the seed bed, sowing, covering and firming the seed; for watering as specified; and for furnishing and installing all materials, including but not limited to seed.

Salvaged Topsoil, Erosion Mat and Seeding Nurse Crop will be paid under their respective items.

114. Concrete Curb and Gutter 4-Inch Sloped 60-Inch Type A, Special, Item SPV.0090.001; 6-Inch Sloped 24-Inch Type A, Special, Item SPV.0090.002.

A Description
This special provision describes furnishing all materials and constructing a cast-in-place concrete curb and gutter section as shown on the plans, in accordance to standard spec 601, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Concrete Curb and Gutter (Inch) Sloped (Inch) Type A Special 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.0090.001	Concrete Curb and Gutter 4-Inch Sloped 60-Inch Type A, Special	LF
SPV.0090.002	Concrete Curb and Gutter 6-Inch Sloped 24-Inch Type A, Special	LF

Payment is full compensation for excavating and preparing the foundation; for providing all materials, including concrete, and expansion joints; placing, finishing, protecting and curing concrete.

115. Concrete Curb and Gutter OSOW, Item SPV.0090.003.

A Description
This item shall be in accordance to the pertinent requirements of standard spec 601 and Quality Management Program (QMP) sections of the standard specifications and shall conform to the construction detail shown in the plans.

B Materials
The concrete curb and gutter shall be in accordance to the pertinent materials of standard spec 601.

C Construction
Perform work in accordance to standard spec 601.

D Measurement
The department will not measure Concrete Curb and Gutter OSOW. The department will use pay plan quantity according to standard spec 109.1.1.2.

E Payment
The department will pay for plan quantities according to standard spec 109.1.1.2 at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.003	Concrete Curb and Gutter OSOW	LF

Payment is full compensation for excavating and preparing the foundation; for providing all materials, including concrete, and expansion joints; placing, finishing, protecting and curing concrete; and for sawing joints.

116. Pipe Boring and Jacking 36-Inch, Item SPV.0090.007; 42-Inch, Item SPV.0090.008; 48-Inch, Item SPV.0090.009.

A Description

This special provision describes boring and jacking Culvert Pipe Reinforced Concrete Class V (Size) shown on the plans and details as hereinafter provided.

B Materials

The materials shall meet the requirements of standard specs 607 and 608.

C Construction

The pipe jacking operations shall begin within two days after excavating the bore and/or receiving pits. Failure to begin pipe jacking operations within two days after excavating the bore and/or receiving pits shall be subject to penalties specified under the article Prosecution and Progress. Any pits that result in a drop-off greater than 2 feet and steeper than 3 horizontal to 1 vertical shall be separated from live traffic lanes by Concrete Barrier Temporary Precast as shown on the plans and directed by the engineer, unless the drop-off is located more than 34 feet from the nearest edge of a live traffic lane. All construction methods including ordering pipe, excavating the bore and receiving pits, setting the horizontal boring machine, boring and jacking of pipe, and removal of the boring machine shall be done in accordance to the boring machine and reinforced concrete pipe manufacturers' recommendations. Jack Culvert Pipe Reinforced Concrete Class V (Size), in place beneath the roadway at the location, elevation, and grade shown on the plans. Jack pipe in place without disturbing the roadway above the pipe. Do not carry the excavation ahead of the pipe so far as to cause caving. Two rails or sills shall be set or secured on a rigid base on the bottom of the jack pit to keep the pipe at the established grade. Design bracing, backstops, and use jacks of sufficient rating for continuous jacking without stoppage, except for adding pipe sections and as conditions permit, to minimize tendency of ground material to "freeze" around casing pipe. If jacking the reinforced concrete culvert pipe directly, fit the leading edge with a cutter or shoe to protect the pipe. Protect the pipe ends and joints from crushing due to jacking pressures. The first and last two pipe sections shall have joint ties installed prior to jacking. Joint ties shall conform to the plan details. After the pipe is in final position, joints shall be pointed with cement mortar meeting the requirements of standard specs 519.2.3 and 607. Pointing is not required when rubber type gasket joints are used. In soft unstable soil, use an auger of slightly smaller diameter than the inside diameter of the pipe so as not to create a void between the pipe and the soil. Take care to ensure that the developed thrust pressures do not disturb existing utilities in or around the bore pit area. Dispose of all excess soil material.

Backfilling of the pits shall take place within two days after pipe jacking has been completed and shall meet the requirements of standard spec 607.3.5. Restore areas disturbed by jacking process to original condition after jacking is completed by grading, shaping, seeding and mulching.

D Measurement
The department will measure Pipe Boring and Jacking (Size) 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.0090.007	Pipe Boring and Jacking 36-Inch	LF
SPV.0090.008	Pipe Boring and Jacking 42-Inch	LF
SPV.0090.009	Pipe Boring and Jacking 48-Inch	LF

Payment for Pipe Boring and Jacking (Size) is full compensation for jacking equipment, casing (if utilized), excavation, drainage, dewatering, concrete, grout, safety devices, and backfilling; for disposing of excess materials; and for obtaining any easements for installing long sections of pipe. The items of Culvert Pipe Reinforced Concrete Class V (Size) and Concrete Barrier Temporary Precast will be measured and paid as a separate unit of work to complete the contract.

117. Temporary Pavement Marking Wet Reflective Removable Tape 4-Inch, Item SPV.0090.010.

A Description
This special provision describes furnishing and applying Temporary Pavement Marking Wet Reflective Removable Tape 4-Inch in compliance with the pertinent requirements of standard spec 649, as shown the plans, and as hereinafter provided.

B Materials
Furnish material that complies with ASTM specification E 2176 for continuous wetting.

Temporary Pavement Marking Wet Reflective Removable Tape shall comply with reflectivity requirements specified in standard spec 646.3.3.4 under continuous wet conditions.

C Construction
Apply when air and pavement temperature minimums are 50 degrees and rising. Do not overlap tape ends. Perform temporary pavement marking tape application in accordance to manufacturer recommendations or as directed by the engineer, including surface preparation.

D Measurement
The department will measure Temporary Pavement Marking Wet Reflective Removable Tape 4-Inch by the linear foot of temporary pavement removable tape line, 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.0090.010	Temporary Pavement Marking Wet Reflective Removable Tape 4-Inch	LF

Payment is full compensation for preparing the surface; for providing all markings including reflectorization and adhesive; for replacing failed or deteriorating marking; and for marking removal.

118. Decorative Railing, Item SPV.0090.011.

A Description

This special provision describes work consisting of fabricating, painting, delivering and installing railings in turf areas where the sidewalk or multi-purpose path is located near a steep slope as shown on the plans.

B Materials

B.1 General

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

- Steel Railings: Standard spec 513.2
- Welding Materials: Standard spec 513.3.6
- Painting: Standard specs 517.2 and 517.3

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

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

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

B.2 Painting

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

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

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

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

B.2 Color
Provide a finished color for the coating system for railing matching Federal Color 30140.

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

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

engineer's inspection. Any damage to the railing after the acceptable delivery will be the responsibility of the installation contractor.

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

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

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

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

D Measurement
The department will measure Decorative Railing, 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.0090.011	Decorative Railing	LF

Payment is full compensation for providing, fabricating, transporting and erecting the railing; for providing and placing shims, masonry anchor bolts and concrete base; and for coating and painting.

119. Drain Slotted Vane Longitudinal, Item SPV.0090.100; Temporary, Item SPV.0090.101.

A Description
This special provision describes furnishing and installing Drain Slotted Vane Longitudinal and Drain Slotted Vane Longitudinal Temporary, as shown on the plans, in accordance to standard specs 501, 505, 607, and 611, and as hereinafter provided.

B Materials
The pipe that the vane drain casting rests in shall be 18-inch diameter SDR-35 polyvinylchloride (PVC) sewer pipe.

C Construction
Prior to encasing the pipe in concrete, cover the upper end of the slotted drain as shown on the plans, or as approved by the engineer.

Prior to construction operations adjacent to the slotted area of the slotted vane drain pipe, cover the slots on the top of the drain. Remove any material entering the pipe at contractor expense.

Exercise care to avoid damage to the slotted vane drain pipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drain pipe at contractor expense.

Remove Drain Slotted Vane Longitudinal Temporary prior to constructing the roadway to its final condition. Repair opening in drainage structure at connection to Drain Slotted Vane Longitudinal Temporary. Submit method of repair to the engineer for approval.

D Measurement

The department will measure Drain Slotted Vane Longitudinal and Slotted Vane Longitudinal Temporary in length by 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.0090.100	Drain Slotted Vane Longitudinal	LF
SPV.0090.101	Drain Slotted Vane Longitudinal Temporary	LF

Payment is full compensation for furnishing all materials including PVC pipe and end cap, slotted vane drain castings, concrete masonry and reinforcement: adjusting bricks: drilling inlet or manhole cover to accommodate connection bolts to vane drain: hauling and placing the pipe: making connections to existing inlets: cleaning out and restoring site of work: removing and disposing of all materials for Drain Slotted Vane Longitudinal Temporary; and for repairing opening of drainage structure.

120. Concrete Barrier Temporary Precast Left In Place, Item SPV.0090.200.

A Description

This special provision describes leaving in place temporary precast reinforced concrete barrier conforming to the shape, dimensions, and details the plans show and in accordance to the pertinent provisions of standard spec 603, these special provisions, and as hereinafter provided.

Concrete Barrier Temporary Precast Contractor Left In Place becomes property of the department after final acceptance by the engineer.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Concrete Barrier Temporary Precast Left In Place by the linear foot, acceptably completed, measured along the base of the barrier after final installation in its left-in-place location.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.200	Concrete Barrier Temporary Precast Left In Place	LF

Payment is full compensation for leaving Concrete Barrier Temporary Precast on the project site.

Furnishing concrete barrier temporary, initial delivery, installation, reinstallation, trucking between worksites, transitions between temporary and permanent barriers, and anchoring will be paid for separately under the bid items provided for in the contract.

121. Traffic Control Glare Screen Furnished, Item SPV.0090.201; and Traffic Control Glare Screen Installed, Item SPV.0090.202.

A Description
This special provision describes furnishing and installing traffic control glare screen on concrete barrier as a traffic control device and removal upon completion of the project.

B Materials
Furnish polymeric or fiberglass; green or black; lightweight; traffic control glare screen from one of the following suppliers or approved equal:

- Carsonite Composites – Modular Guidance System
- Safe-Hit, A Division of Energy Absorption Systems, Inc. – Safe-Hit Glarescreen
- Flexstake Inc. – GS Series Glare Screen
- Plasticade® – Modular Glare Screen

Each screen section shall include blade paddles 24-inches in height, mounted at minimum 2-foot intervals on a continuous rail bolted to the top of the concrete barrier. The minimum 2-foot interval shall be maintained between sections of concrete barrier. Each paddle shall be capable of being removed individually by hand.

Furnish and install mounting hardware and glare screen according to manufacturer's/ suppliers directions.

C Construction

Furnish and deliver traffic control glare screen to worksites within the project. Install the glare screen in accordance to manufacturer's recommendations at contract-identified locations or as the engineer directs.

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 have any 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 Glare Screen Delivered by the linear foot, acceptably delivered to the project site.

The department will measure Traffic Control Glare Screen Installed by the linear foot, acceptably completed, along the base of the screen 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 contractor's means and methods or to accommodate winter shutdowns or winter work not in the plans. Moving the screen from one barrier to another, removing and reinstalling the screen on the same barrier, or moving to storage and then moving to a barrier are included in the installation and will not be measured separately for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.201	Traffic Control Glare Screen Furnished	LF
SPV.0090.202	Traffic Control Glare Screen Installed	LF

Payment for Traffic Control Glare Screen Delivered 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 Glare 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.

122. Traffic Control Gawk Screen Furnished, Item SPV.0090.203; and Traffic Control Gawk Screen Installed, Item SPV.0090.204.

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's/ suppliers 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 screen to worksites within the project. Install the screen in accordance 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 Delivered 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, along the base of the screen 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 contractor's means and methods or to accommodate winter shutdowns or winter work not in the plans. Moving the screen from one barrier to another, removing and reinstalling the screen on the same barrier, or moving to storage and then moving to a barrier are included in the initial installation and will not be measured separately for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.203	Traffic Control Gawk Screen Furnished	LF
SPV.0090.204	Traffic Control Gawk Screen Installed	LF

Payment for Traffic Control Gawk Screen Delivered 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.

123. Pavement Marking Grooved Contrast Preformed Thermoplastic 8-Inch, Item SPV.0090.301.

A Description

This special provision describes grooving the pavement surface, and furnishing and installing contrast preformed thermoplastic pavement marking as shown on the plans, in accordance to standard spec 646 of the standards specifications, and as hereinafter provided.

B Materials

Furnish 125 mils contrast preformed thermoplastic pavement marking from the department's approved products list. If required, furnish sealant material recommended by the manufacturer.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of preformed thermoplastic pavement marking.

Plane the grooved lines in accordance to the plan details. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ±10 mils deep from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Linear Markings

Cut the groove 1-inch wider than the width of the thermoplastic.

C.4 Groove Position

Position the groove edge in accordance to the plan details.

C.4.1 Linear Marking

Groove at a minimum of 4-inches, but not greater than, 12-inches from both ends of the line segment. Achieve straight alignment with the grooving equipment.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of pavement marking tape.

Plane the grooved lines in accordance to details in the plan. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

C.2 Groove Depth
Cut the groove to a depth of 120 mils ±10 mils from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Longitudinal Markings
Cut the groove one-inch wider than the width of the tape.

C.4 Groove Position
Position the groove edge in accordance to plan details. Groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the tape segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning
C.5.1 Concrete
Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and prior to pavement marking application. Clean and dry the groove for proper application of the adhesive, and placement of the pavement marking. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt
If opening to traffic an asphalt lane that is not grooved, place temporary pavement marking. For asphalt lanes not open to traffic, temporary pavement marking is not required.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt
Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.6 Preformed Thermoplastic Application
Preheat the surface if necessary based on manufacturer's recommendation.

Apply contrast preformed thermoplastic in the groove as per manufacturer's recommendations. If manufacturer's recommendations require a sealant, apply a sealant lower than 91g/l VOC during the following period of time due to Volatile Organic Compound Limitations:

May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee.

Use any sealant in the remainder counties and for the remainder of the year. The sealant must be wet.

D Measurement
The department will measure Pavement Marking Grooved Preformed Thermoplastic in length by the linear foot of tape placed, 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.0090.301	Pavement Marking Grooved Contrast Preformed Thermoplastic 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for furnishing, placing, and removing temporary pavement marking, if necessary.

124. Pavement Marking Grooved Preformed Thermoplastic 18-Inch, Item SPV.0090.302.

A Description
This special provision describes This special provision describes grooving the pavement surface, and furnishing and installing preformed thermoplastic pavement marking as shown on the plans, in accordance to standard spec 647 of the standards specifications, and as hereinafter provided.

B Materials
Furnish 125 mils preformed thermoplastic pavement marking from the department's approved products list. If required, furnish sealant material recommended by the manufacturer.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of preformed thermoplastic pavement marking.

Plane the grooved lines in accordance to the plan details. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ±10 mils deep from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Linear Markings

Cut the groove 1-inch wider than the width of the thermoplastic.

C.4 Groove Position

Position the groove edge in accordance to the plan details.

C.4.1 Linear Marking

Groove at a minimum of 4-inches, but not greater than, 12-inches from both ends of the line segment. Achieve straight alignment with the grooving equipment.

C.4.2 Special Marking

Groove at a minimum of 4-inches from the perimeter of the special marking. Groove separate areas for Word Items.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and prior to pavement marking application. Clean and dry the groove for proper application of the sealant, and placement of the pavement marking. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 Asphalt

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

C.6 Preformed Thermoplastic Application
Preheat the surface if necessary based on manufacturer's recommendation.

Apply preformed thermoplastic in the groove as per manufacturer's recommendations. If manufacturer's recommendations require a sealant, apply a sealant lower than 91g/l VOC during the following period of time due to Volatile Organic Compound Limitations:

May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee.

Use any sealant in the remainder counties and for the remainder of the year. The sealant must be wet.

D Measurement
The department will measure Pavement Marking Grooved Preformed Thermoplastic in length by the linear foot of tape placed, 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.0090.302	Pavement Marking Grooved Preformed Thermoplastic 18-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface, and fpr furnishing and installing the material.

125. Removing Longitudinal Pavement Markings Water Blasting Concrete Pavement, Item SPV.0090.303.

A Description
This special provision describes removing pavement markings using high pressurized water spray from locations shown on the plans or as the engineer directs. Conform to standard specs 646 and 647 as modified in this special provision.

B Materials
Provide necessary materials to remove the marking completely.

C Construction
Pavement markings required to be removed on permanent concrete pavement (pavement that will remain at the completion of the contract) shall be removed by a water blasting or

hydroblasting method. Grinding or sand blasting the markings off the pavement will not be allowed.

Remove pavement marking using a high pressurized water spray with a vacuum recovery system to provide a clean, dry surface, without the use of a secondary cleanup process when pavement or ambient air temperature is 36 degrees F and rising. Remove all markings in their entirety. Provide equipment with a storage system that contains wastewater and debris. Control blast head at all times.

Obtain approval from engineer to perform alternative removal process when either restricted from using water blasting or water blasting alone was unsuccessful. Grind markings off only if water blasting does not achieve full removal. Obtain engineer approval of the removal.

D Measurement
The department will measure Removing Longitudinal Pavement Markings Water Blasting Concrete Pavement 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.0090.303	Removing Longitudinal Pavement Markings Water Blasting Concrete Pavement	LF

Payment is full compensation for removal; for repairing associated damage including resealing bridge decks; and for disposal of residue.
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126. Survey Project 1005-10-71, Item SPV.0105.001; Survey Project 1005-10-72, Item SPV.0105.002.

A Description
Perform construction conforming to standard spec 105.6 and 650.

Standard specs 105.6 and 650 are modified 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 in accordance to all pertinent requirements of standard spec 650 and shall include all other miscellaneous survey required to layout and construct all work under this contract.

D Measurement
The department will measure Survey Project 1005-10-71 and Survey Project 1005-10-72 as a single lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.001	Survey Project 1005-10-71	LS
SPV.0105.002	Survey Project 1005-10-72	LS

Payment is full compensation for performing all survey work required to layout and construct all work under this contract.

127. Concrete Pavement Joint Layout, Item SPV.0105.003.

A Description
This special provision describes designing the joint layout and staking the location of all joints on the project, 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 the project, 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 in accordance 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 in accordance 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.0105.003	Concrete Pavement Joint Layout	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.

128. Electrical Service Meter Breaker Pedestal Special, Item SPV.0105.350.

A Description
This special provision describes installing Electrical Service Meter Breaker Pedestal Special. This work shall be done in accordance to the requirements of standard spec 656, the plans, standard detail drawings, and as hereinafter provided.

B Materials
In accordance to the plans and standard spec 656.2 and as hereinafter provided:

Add the following to standard spec 656.2.3, Meter Breaker Pedestal Service:

- Furnish meter pedestal with provisions for a minimum of one 30A double-pole lighting breaker, one 15A single-pole receptacle breaker and one 15A single-pole spare breaker in a water-tight outdoor rated enclosure.

- Furnish stainless steel square tubing, concrete masonry and steel reinforcement as the plans show for rigidly mounting the meter pedestal.

- Furnish lighting controls integral with the meter pedestal enclosure.

C Construction
In accordance to the plans and standard spec 656.3 and as hereinafter provided:

Obtain all necessary inspections and permits prior to performing any work. Pay all permit fees under this item.

Ensure that electrical service is installed and energized a minimum of one week prior to the system activation deadline.

Dena Dramm, WisDOT SW Region, 608.246.5360, will apply for and obtain the electrical service.

D Measurement
The department will measure the Electrical Service Meter Breaker Pedestal Special bid item as a single lump sum unit of work for each service, 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.0105.350	Electrical Service Meter Breaker Pedestal Special	LS

Payment is full compensation for furnishing and installing all materials; for excavation, backfill, and disposal of surplus materials.

129. Relocate Solar-Powered Bluetooth Sensor, Item SPV.0105.401.

A Description
This special provision describes relocating an existing solar-powered Bluetooth sensor and wood pole as indicated on the plans.

B Materials
Provide all tools and equipment necessary to relocate the existing solar-powered Bluetooth sensor and wood pole.

C Construction
Prior to relocating, the Field System Integrator must determine if the solar-powered Bluetooth sensor is fully functional. If any part of the solar-powered Bluetooth sensor is found to not meet original manufacturer's specifications, contact Kyle Hemp of the WisDOT SW Region at (608) 246-5367.

Carefully relocate the existing solar-powered Bluetooth sensor and wood pole as indicated on the plans. Relocate all mounting hardware and cables/wires associated with the solar-powered Bluetooth sensor and wood pole. Reinstall the wood pole with 6 feet of the pole length below ground or deeper as required by soil conditions. Remount the antenna to maximize signal strength. Furnish and install ground rods, wiring, and other components per National Electric Code.

Relocate and make operational the solar-powered Bluetooth sensor within seven days.

Storage of relocated materials during the relocation process is the responsibility of the contractor and is incidental to this item.

Any relocation materials which are damaged during the relocation process will be repaired or replaced at the expense of the contractor.

D Measurement
The department will measure Relocate Solar-Powered Bluetooth Sensor, completed in accordance 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.0105.401	Relocate Solar-Powered Bluetooth Sensor	LS

Payment is full compensation for relocating the solar-powered Bluetooth sensor and wood pole.

130. Relocate CCTV Camera, Item SPV.0105.402.

A Description
This special provision describes relocating a CCTV camera, wood pole, and all associated equipment as indicated on the plans.

B Materials
Provide all tools and equipment necessary to relocate the CCTV camera, wood pole, and all associated equipment. Associated equipment includes all existing items at the CCTV camera site, including but not limited to, pole-mounted cabinet, CCTV assembly, video encoder, Ethernet switch, cellular modem, mounting hardware, and cables/wires.

C Construction
Prior to relocating, the Field System Integrator must determine if the CCTV camera is fully functional. If any part of the CCTV camera is found to not meet original manufacturer's specifications, contact Kyle Hemp of the WisDOT SW Region at (608) 246-5367.

Carefully relocate the existing CCTV camera, wood poles, and associated equipment as indicated on the plans. Reinstall the wood pole with 10 feet of the pole length below ground or deeper as required by soil conditions. Furnish and install ground rods, wiring, and other components per National Electric Code.

Relocate and make operational the CCTV camera within seven days.

Storage of relocated materials during the relocation process is the responsibility of the contractor and is incidental to this item.

Any relocation materials which are damaged during the relocation process will be repaired or replaced at the expense of the contractor.

D Measurement
The department will measure Relocate CCTV Camera, completed in accordance 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.0105.402	Relocate CCTV Camera	LS

Payment is full compensation for relocating the CCTV camera, wood pole, and associated equipment.

131. Temporary Power Connection for ITS Equipment, Item SPV.0105.403.

A Description
This special provision describes providing a temporary power connection from a temporary electric service to ITS equipment.

B Materials
Furnish aerial cable rated for power distribution and sized to deliver the necessary voltage when temporary ITS equipment is located beyond the electrical service point.

Furnish poles of sufficient length to allow for construction operations to safely occur without impacting the temporary power connection to the ITS equipment.

Furnish messenger wire, grounding equipment, and all other tools and equipment necessary to provide the temporary power connection.

C Construction
Install ground rods, wiring, and other components per National Electric Code.

Coordinate the temporary power connection route to minimize interface with staged construction activities. Stake the proposed route in the field and notify the engineer for approval prior to starting work.

Maintain and relocate the temporary power connection as necessary to maintain power to the ITS equipment throughout construction. Ensure the ITS equipment is not without power for more than seven days.

Once the temporary power connection is no longer needed, carefully remove the temporary power connection including all power cables and wood poles. Dispose of removed materials off of department right-of-way.

D Measurement

The department will measure Temporary Power Connection for ITS Equipment, completed in accordance 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.0105.403	Temporary Power Connection for ITS Equipment	LS

Payment is full compensation for providing the temporary power connection for ITS equipment.

132. Salvage ITS Equipment, Item SPV.0105.404.

A Description

This special provision describes salvaging existing ITS equipment as indicated on the plans.

B Materials

Provide all tools and equipment necessary to salvage the existing ITS equipment.

C Construction

Prior to salvaging, the Field System Integrator must determine if the ITS equipment is fully functional. If any part of the ITS equipment is found to not meet original manufacturer's specifications, contact Kyle Hemp of the WisDOT SW Region at (608) 246-5367.

Carefully salvage the existing ITS equipment at the location indicated on the plans. Salvage all mounting hardware and cables/wires associated with the ITS equipment.

Reinstallation of the ITS equipment, as indicated on the plans or as directed by the engineer, including any new materials required (cables or mounting hardware for example) will be paid for under other bid items.

Reinstall and make operational the ITS equipment within seven days of salvaging.

Storage of salvaged materials prior to reinstallation is the responsibility of the contractor and is incidental to this item.

Any salvaged materials which are damaged during salvaging, transport, or the reinstallation process will be repaired or replaced at the expense of the contractor.

D Measurement
The department will measure Salvage ITS Equipment, completed in accordance 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.0105.404	Salvage ITS Equipment	LS

Payment is full compensation for salvaging the ITS equipment.

133. Temporary Vehicle Detection I-39 SB Off-Ramp and STH 59, Item SPV.0105.450; I-39 NB On-Ramp and STH 59, Item SPV.0105.451; STH 59 and Goede Rd, Item SPV.0105.452; I-39 NB Ramps and USH 51/STH 73, Item SPV.0105.453.

A Description
This special provision describes furnishing, installing, and maintaining temporary non-intrusive vehicle detection systems at the following intersections:

- STH 59 and I-39 Southbound Off-Ramp
- STH 59 and I-39 Northbound On-Ramp (Proposed)
- STH 59 and Goede Road
- USH 51/STH 73 and I-39 Northbound Ramps

The desired temporary vehicle detection zones are as shown on the plans.

B Materials
With prior approval of the engineer and the department's Electrical Field and Traffic Signal Design Units, select the non-intrusive vehicle detection technology best suited for the site conditions and the anticipated construction work zones and activities. The engineer reserves the right to request a demonstration of any or all temporary vehicle detection technologies prior to said approval. Vehicle detection technologies considered shall include, but are not necessarily limited to, microwave detection and video detection. Damage to new pavement for any temporary vehicle detection equipment shall not be allowed.

Provide all necessary equipment for the approved temporary non-intrusive vehicle detection system.

C Construction

The temporary non-intrusive vehicle detection system, as shown in the temporary traffic signal plans or as directed by the engineer, shall be complete in place, tested, and in full operation during each stage and sub-stage of construction.

Install the temporary non-intrusive vehicle detection system as shown in the plans and according to the manufacturer's recommendations. Determine a suitable location for the temporary vehicle detection sensors for each stage and sub-stage of construction. Relocate the temporary vehicle detection sensor to a suitable location if construction activities and/or construction staging changes impede the sensor operation.

All cables associated with the temporary non-intrusive vehicle detection system shall be routed to the cabinet. Each lead shall be appropriately marked as to which street or avenue and traffic signal phase it is associated.

Maintain all temporary non-intrusive vehicle detection zones as the plans show or as the engineer directs. The temporary non-intrusive vehicle detection zones shall be set near the vicinity and within the approximate distance from the stop bar as shown on the plans. Check temporary vehicle detection zones on a bi-weekly basis and at the opening of each stage of temporary traffic signal operation to ensure that they are working and are aimed properly. Periodic adjustment of the detection zones and/or moving of the temporary vehicle detection sensors may be required due to changes in traffic control, staging, or other construction operations.

Ensure that the temporary vehicular detection system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

D Measurement

The department will measure Temporary Vehicle Detection System (Location), as a single complete lump sum unit of work per intersection, 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.0105.450	Temporary Vehicle Detection I-39 SB Off-Ramp and STH 59	LS
SPV.0105.451	Temporary Vehicle Detection I-39 NB On-Ramp and STH 59	LS
SPV.0105.452	Temporary Vehicle Detection STH 59 and Goede Rd	LS
SPV.0105.453	Temporary Vehicle Detection I-39 NB Ramps and USH 51/STH 73	LS

Payment is full compensation for demonstrating and selecting the temporary vehicle detector system; for furnishing and installing all required equipment, cables, materials, and supplies; for checking and/or adjusting the temporary detection zones on a bi-weekly

basis; for maintaining and changing the temporary detection zones to match the plans, traffic control, and construction staging; for relocating the temporary detection sensors due to construction activities, if required; for periodically cleaning all temporary vehicle detector equipment; for removing the temporary vehicle detector system; and for cleaning up and properly disposing of waste.

134. Remove Traffic Signals STH 59 and Goede Rd, Item SPV.0105.454.

A Description

This special provision describes removing existing traffic signals in accordance 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 the department at least seven (7) days prior to the removal of the traffic signals. For the purposes of this contract the primary point of contact for the department's Southwest Region Office will be Graham Heitz. graham.heitz@dot.wi.gov, (608) 246-5362, 2101 Wright Street, Madison, WI. Complete the removal work as soon as possible following shut down of this equipment.

The department assumes the traffic signal cabinet 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 cabinet equipment to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department.

Remove all standards and poles per plan from their concrete footings and place out of traffic. Removal of these items also includes all transformer bases, signal heads, mast arms, luminaires, wiring/cabling, and traffic signal mounting devices attached to each signal standard, arm or pole. Remove all underground signal cable, internal wires and street lighting cable. Properly dispose of all traffic signal equipment (except the traffic signal cabinet) off the state right-of-way.

Department forces will remove the signal cabinet from the footing. The signal cabinet and associated signal cabinet equipment will be removed from the site by department forces and will remain the property of the department.

D Measurement

The department will measure Remove Traffic Signals (Location) 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.0105.454	Remove Traffic Signals STH 59 and Goede Rd	LS

Payment is full compensation for removing and properly disposing of specified traffic signal equipment and for coordinating traffic signal cabinet equipment pickup with the department.

135. Remove Loop Detector Wire and Lead-In Cable STH 59 and Goede Rd, Item SPV.0105.455.

A Description

This special provision describes removing loop detector wire and lead-in cable. Removal shall be in accordance to standard spec 204, as shown in the plans, and as hereinafter provided.

B (Vacant)

C Construction

Notify the department at (608) 246-5362 at least seven days prior to the removal of the loop detector wire and lead-in cable.

Remove and dispose of detector lead-in cable and loop wire for abandoned loops. Detector lead-in cable and loop wire shall become property of the contractor and shall be disposed of outside the right-of-way.

D Measurement

The department will measure Remove Loop Detector Wire and Lead-in Cable (Location) 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.0105.455	Remove Loop Detector Wire and Lead-In Cable STH 59 and Goede Rd	LS

Payment is full compensation for removing loop detector wire and lead-in cable; for scrapping of some materials; and for disposing of scrap material.

136. Longitudinal Grooving Bridge Deck, Item SPV.0165.701.

A Description

Provide longitudinal deck grooves parallel to the centerline of the roadway prior to opening the bridge to traffic as directed by the engineer.

B Materials

The grooving machine shall contain blades mounted on a multi-blade arbor on a self-propelled machine built for grooving hardened concrete surfaces.

The grooving machine shall have a depth control device that detects variations in the deck surface and adjusts the cutting head height to maintain a specified depth of groove.

The grooving machine shall have a guide device to control multi-pass alignment.

C Construction

Perform longitudinal grooving operation in a manner to preclude any damage to the concrete deck surface.

Longitudinal grooving operation shall result 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, all grooves on the bridge deck surface are to end 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.

Grooves shall be 1/8-inch wide and 3/16-inch deep. The longitudinal groove shall be spaced at ¾ inches center-to-center. Tolerance for groove width shall be +1/16 inch to -0 inch. Tolerance for groove depth shall be ± 1/16 inch. Tolerance for groove spacing shall be ± 1/16 inch.

Collect, remove and dispose of solid material residue and liquid waste resulting from grooving operations by vacuuming in a manner satisfactory to the engineer.

D Measurement

The department will not measure Longitudinal Grooving Bridge Deck. The department will use pay plan quantity according to standard spec 109.1.1.2. The quantity has been determined by multiplying the grooved width by the total length grooved.

E Payment

The department will pay for plan quantities according to standard spec 109.1.1.2 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, and for removing and properly disposing of all waste materials.

137. 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
(800) 567-6191
www.versaflex.com

Chemline, Inc.
5151 Natural Bridge Road
Saint Louis, MO 63115
(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 2 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 5 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 3 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 in accordance 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 in accordance 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 in accordance 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 shot blasting, 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 in accordance 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) in accordance to manufacturer's recommendations.

C.10 Installation
Apply Polyurea coating in a single application in accordance 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.

138. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, Item SPV.0165.850.

A Description
This special provision describes designing, furnishing materials and erecting a permanent earth retention system in accordance to the lines, dimension, elevations and details as

shown on the plans and provided in the contract. The design life of the 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. The contractor may obtain the CMM from the department's web site at:

http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Concrete Panel Mechanically Stabilized Earth Wall systems (Concrete Panel MSE Walls). 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 name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the concrete panels shall be furnished to the engineer at least 14 days prior to the start of panel production.

The department maintains a list of pre-approved Concrete Panel MSE Wall systems. 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 in accordance to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau

of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

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

The design of the Concrete Panel MSE Wall shall be in compliance with the *AASHTO LRFD Bridge Design Specifications 6th Edition 2012*, (AASHTO LRFD) 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 in accordance with Table 11.5.7-1 LRFD.

Design and construct the walls in accordance to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. Where walls or wall sections intersect with an included angle of 130 degrees or less, a vertical corner element separate from the standard panel face shall abut and interact with the opposing standard panels. The corner element shall have ground reinforcement connected specifically to that panel and shall be designed to preclude lateral spread of the intersecting panels. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf in accordance with 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 Concrete Panel MSE Wall by the Contractor shall consider the internal and compound stability of the wall mass in accordance with 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.

Facing panels shall be designed in accordance with AASHTO LRFD 11.10.2.3. The Facing panels shall also be designed to resist compaction stresses that occur during the wall erection. The minimum thickness of the facing panel shall be 5.5 inches. The surface area of a standard single panel cannot exceed 60 square feet. The maximum height of a standard panel shall be 5 feet. The top and bottom panels may exceed 5 foot in height based on site topography subject to the approval by the Structures Design Section. The design of the steel reinforcement within the panels shall be based on one-way bending action. Design the wall panels and joints between panels to accommodate a maximum differential settlement of 1 foot over a 100-foot length, unless the plans indicate other.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. All soil reinforcement layers shall be connected to facings. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 31 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 18 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

All soil reinforcement required for the reinforced soil zone shall be connected to the face panels. The reinforcement and the reinforcement/facing connection strength shall be designed to resist maximum factored reinforcement loads in accordance with 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 MSE wall shall be 1 foot 6 inches, or as given on the contract plan. 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. The leveling pad's steps shall keep the bottom of the wall within one half the panel heights of the minimum embedment i.e. the minimum embedment plus up to one half the height of one panel. Additional embedment may be detailed by the contractor, but will not be measured for payment.

Wall facing panels shall be installed on concrete leveling pads. The minimum cross section of the leveling pad shall be 6-inches deep by 1-foot wide.

B.3 Wall System Components

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

B.3.1 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.

A minimum of two bearing pads shall be used per panel. The allowable bearing stress shall not exceed 900 psi. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80, or high- density polyethylene pads with a minimum density of 0.034 lb/in^3 in accordance with ASTM 1505.

An 18-inch wide geotextile shall be used on the backface of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile Fabric, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

B.3.2 Backfill

Furnish and place backfill for Concrete Panel MSE Walls 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)	Value (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*	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2.)	

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

may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests (except Angle of Internal Friction test), are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. All certified report of 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 insure 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 in accordance with AASHTO M 111 or ASTM A641. Aluminized soil reinforcement shall be in accordance with ASTM A463 Aluminized Type 2-100, SS, Grade 50, Class 2. Design of galvanized soil reinforcement shall be in accordance 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.

B.3.4 Miscellaneous

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.

Use a wall leveling pad that consists of poured concrete, Grade A, A-FA, A-S, A-T, A-IS A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

C Construction

C.1 Excavation and Backfill

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

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.

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. 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), or as modified as follows. If the gradation of the granular backfill is such that the P-200 material is less than 7% and the P-40 is less than 30%, a one-point Proctor test can be conducted in place of the 5-point Proctor. To complete this one-point test, compact the sample at a moisture content of 6%, then compute the actual (as-tested) sample moisture after completion of the test. Use Method B or D, and perform this test without removing oversize particles and without correction for coarse particles, as per AASHTO T224. The one-point as-tested moisture content represents the optimum moisture, and the measured one-point density represents the maximum wet density of the material. From these values, the maximum dry density can be computed.

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.

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 insure that they are located within 1 inch from the contract plan offset at any location to insure 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. Insure that the plan provides the following elements:

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

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at the each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density (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 insure 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. Insure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at http://www.atwoodsystems.com/materials. Insure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D 6938 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department

C.4.4 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 data into the applicable materials reporting system (MRS) software within 5 business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

C.4.5 Quality Control (QC) Testing

Perform compaction testing on the backfill. Conform to CMM 8.15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof in each lift. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

(1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers

of all QV and IA personnel for the project, and provide test results to the contractor within 2 business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

(4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

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

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

(2) Production test results, and results from other process control testing, may be considered when resolving a dispute.

(3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Geotechnical Information

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

D Measurement

The department will measure Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP by the square foot, acceptably completed, measured as the vertical area within the pay limits the contract plans show. No other measurement of quantities shall be made in the field. Unless the Engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

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

ITEM NUMBER	DECRIPTION	UNIT
SPV.0165.850	Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP	SF

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

Parapets, railings, abutment bodies and other items above the wall cap or coping will be paid for separately. Vehicle barrier and its support will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively.
(20150824)

139. Removing Rumble Strips, Item SPV.0180.001.

A Description

Remove existing rumble strips located in existing concrete shoulders along IH 39, as shown on the plans, and in accordance to the pertinent provisions of standard spec 204, and as hereinafter provided. The diamond ground area shall be filled with Asphaltic Surface Temporary.

B Materials

Furnish Asphaltic Surface Temporary that is in accordance to the pertinent provisions of this contract and standard spec 465.

C Construction

The existing rumble strips shall be diamond ground to a 1.0-inch minimum depth below the lowest corrugation. Clean the diamond ground area prior to placement of tack coat. Fill the ground area with Asphaltic Surface Temporary to provide a smooth driving surface as directed by the engineer.

D Measurement

The department will measure Removing Rumble Strips by the square yard of existing rumble strip, prior to removal by diamond grinding, 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	Removing Rumble Strips	SY

Payment is full compensation for diamond grinding existing rumble strips; cleaning and tacking; furnishing, placing and compacting Asphaltic Surface Temporary; and for disposal of all materials.

140. Subsoiling Special Infiltration Ditch, Item SPV.0180.002.

A Description

This special provision describes subsoiling special infiltration ditch per the plan detail, as directed by the engineer, and as hereinafter provided.

B (Vacant)

C Construction

Subsoil the special infiltration ditch after topsoil placement. Schedule a 50-foot test and demonstrate competence to the engineer prior to continuing operations. The engineer shall identify the test area. Loosen subsoiled areas to a depth of 20 inches of the in-place material and topsoil. After obtaining approval by the engineer that the equipment and methods are sufficient to perform the work, complete the subsoiling operation. Work done without the engineer's approval will be considered as unauthorized work.

For linear ditch segments, complete subsoiling in two passes. For non-linear infiltration ditch areas, perform the subsoiling in two sets of passes to form a two-directional (90°) grid. Create channels by a commercially available, multi shanked implement attached to track type equipment. 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 a minimum 20 inches. 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..

On erodible slopes greater than 1 vertical to 6 horizontal, work at right angles to the direction of surface drainage whenever practical.

Upon completion and acceptance of the subsoiled area, grade topsoil as described in standard spec 625.3.3, except that only light-weight equipment with a track pressure no greater than 4.5 psi, as approved by the engineer, may be used to place and spread topsoil and to break down clods and lumps. Drive no other equipment over the subsoiled area after the topsoil is finish-graded. Any subsoiled areas that are re-compacted must be subsoiled and finish-graded at no expense to the department.

D Measurement

The department will measure Subsoiling Special Infiltration Ditch 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.0180.002	Subsoiling Special Infiltration Ditch	SY

Payment is full compensation for furnishing and subsoiling special infiltration ditch.

141. Geogrid Reinforcement, Item SPV.0180.003.

A Description

(1) Furnish and install geogrids for subgrade stabilization, base reinforcement, or pavement structure applications in accordance to the plans, standard spec 645 and as hereinafter provided.

B Materials

(1) Provide geogrid that consists of either single or joined multiple layers of a uniform rectangular grid of bonded, formed, or fused polymer tensile strands crossing with a nominal right angle orientation. The polymer shall consist of polyester, polypropylene, polyamide, or polyetheylene. The grid shall maintain dimensional stability during handling, placing, and installation. The geogrid shall be insect, rodent, mildew, and rot resistant. Minimum geogrid width shall be 6.0 feet.

(2) Provide geogrid that complies with the following physical properties:

Test	Method	Value[1]
Tensile Strength at 5% Strain, Both Principal Directions (lb/ft)	ASTM D 4595[2]	450 min.
Flexural Rigidity Both Principal Directions (mg-cm)	ASTM D 1388[3]	150,000 min.
Aperture Area (in^2)	Inside Measurement[4]	5.0 max.
Aperture Dimension (in)	Inside Measurement[4]	0.5 min.

[1]All numerical values represent minimum/maximum average roll values, i.e. the average minimum test results on any roll in a lot shall meet or exceed the minimum specified value.

[2]The tensile strength (T) of a joined multi-layered geogrid shall be computed using the following equation:

$$T = n(f)\,t$$

where

n = the number of individual layers in the joined multi-layered geogrid,

t = the tensile strength of a single layer of geogrid as determined using testing method ASTM D4595, and

f = reduction factor based on the number of layers comprising the multi-layered system and determined by the equation $f=1.00 – [0.04(n-1)]$

[3]Values shall be determined by Option "A" (Cantilever Test) of testing method ASTM D1388 using test specimens that are 36 inches ±0.04 inch long. Test specimen widths for differing geogrids shall be variable and equal to 1 element plus 1/2 the aperture width on both sides of the element. An element is defined as the minimum number of parallel strands that form a distinguishable repeating pattern.

[4]Aperture Area and Aperture Dimension for joined multi-layered geogrids shall be determined based on measurement of a single layer of geogrid.

(3) Protect the geogrid from ultraviolet radiation and from damage due to shipping and handling. Keep the geogrid dry until it is installed. The geogrid rolls shall be clearly marked to identify the material contained.

(4) Deliver a sample of the geogrid material to the engineer at least 10 days prior to its incorporation into the work. At the same time, furnish a manufacturer's Certified Report of Test or Analysis that verifies that the geogrid delivered for use on the work meets the above requirements. Samples of geogrid for test purposes will be obtained from the job site for each 10,000 square yards or portions thereof used on the contract.

C Construction

(1) Prior to placement of the geogrid, bring the indicated placement surface to the required lines, grades, and dimensions as shown on the plans. Smooth and shape the surface to eliminate any rocks, clods, roots, or other items that may cause damage to the geogrid during placement or covering.

(2) Place the geogrid on the prepared surface at the locations and to the limits as shown on the plans. After placement, pull the geogrid taut and secure it using pins, clips, staples, or other devices to prevent movement or displacement. Place parallel strips of geogrid with a minimum overlap of 6 inches. Lap butt joints between roll ends a minimum of 12 inches. Fasten all lapped sections together by using ties, straps, clips, or other devices to develop a secure joint that meets the approval of the engineer. No vehicles or construction equipment shall be permitted to operate directly on the geogrid.

(3) Cover small rips, tears, or defects in the geogrid with an additional section of geogrid; secure the additional geogrid in place so that it overlaps the damaged area by at least 3 feet in all directions. Remove and replace geogrid sections with large rips, tears, defects, or other damage at the direction of the engineer. All costs to repair or replace damaged or defective geogrid shall be the responsibility of the contractor.

(4) After placement, cover the geogrid to the indicated depth with the type of material required on the plans or in the special provisions. Placing, spreading, and compacting of this material shall comply with the applicable sections of the standard specifications or special provisions except that the initial lift of material placed on the geogrid must be at least 4 inches. Place, spread, and compact the required backfill material so that the geogrid is not displaced or damaged. The engineer may require changes in equipment and/or operations to prevent such damage or displacement.

D Measurement

(1) The department will measure Geogrid Reinforcement by the square yard of surface area upon which the geogrid has been placed, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.003	Geogrid Reinforcement	SY

(2) Payment is full compensation for furnishing, transporting, and installing the geogrid; furnishing and installing all devices and materials necessary to join or secure the geogrid in place.

142. Geotextile Fabric Type FF, Item SPV.0180.004.

A Description

(1) Furnish, install, and remove geotextile fabric and fabric hold down systems for filtering storm water as shown in the plans.

B Materials

(1) Use type FF geotextile fabrics conforming to standard spec 645.2 except use a woven polypropylene fabric. Furnish type FF geotextile fabrics selected from the department's erosion control product acceptability list (PAL). Obtain copies of the erosion control PAL and prequalification procedure from the bureau of highway construction.

C Construction

(1) Meet the pertinent requirements as set forth in standard spec 645.3 and as follows:

(2) Install in accordance to the plan details for the intended use in such a manner to preclude ripping and tearing of the fabric, or otherwise rendering the fabric or assembly ineffective for its intended use.

D Measurement

(1) The department will measure Geotextile Fabric Type FF by the square yard of surface area of the fabric placed, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.004	Geotextile Fabric Type FF	SY

(2) Payment is full compensation for furnishing, transporting, installing and removing the fabric and fabric hold down systems.

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
209.0100	Backfill Granular	CY	0.23
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
SPV.0035.001	Roadway Embankment	CY	0.23

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 $1.90 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:

550.5.2 Piling

Add the following as paragraph three effective with the December 2015 letting:

(3) The department will not entertain a change order request for a differing site condition under 104.2.2.2 or for a quantity change under 104.2.2.4.3 for the Piling bid items. Instead the department will adjust pay under the Piling Quantity Variation administrative item if the total driven length of each size is less than 85 percent of, or more than 115 percent of the contract quantity as follows:

Percent of Contract Length Driven	Pay Adjustment
< 85	(85% contract length - driven length) x 20% unit price
> 115	(driven length - 115% contract length) x 5% unit price

643.2.1 General

Replace paragraph two with the following effective with the December 2015 letting:

(2) Use reflective sheeting from the department's approved products list on barricades, drums, and flexible tubular marker posts.

Errata

Make the following corrections to the standard specifications:

641.2.9 Overhead Sign Supports

Correct errata adding back accidentally deleted paragraphs one through three.

(1) Provide commercially fabricated overhead sign supports conforming to AASHTO design and fabrication standards for structural supports for highway signs, luminaires, and traffic signals. Use a design life of 50 years with a wind importance factor of 1.00. Design to withstand a 3 second gust wind speed of 90 mph. Do not use the methods of appendix C of those AASHTO standards.

(2) Design structures, listed as applicable structure types in the AASHTO standards, to the fatigue category criteria as follows:

1. Structures carrying variable message signs:
   - Category I criteria for structures over all roadway types.
2. Structures carrying type II or III signs:
   - Category I criteria for structures used over highways and free flow ramps.
   - Category II criteria for structures with arms greater than 30 feet used over local roads and city streets.
   - Category III criteria for structures with arms 30 feet or less used over local roads and city streets.

(3) Use the posted speed limit of the roadway beneath the structure for truck-induced gusts.

(4) Submit shop drawings identified by structure number, design computations, and material specifications, to the engineer before erecting sign supports. Provide tightening procedures for mast arm or luminaire arm to pole shaft connections on the shop drawings. Have a professional engineer registered in the state of Wisconsin sign, seal, and date the shop drawings and certify that the design conforms to AASHTO standards and the contract.

(5) Provide steel pole shafts and mast arms zinc coated according to ASTM A123. Provide tapered pole and arm shafts with a minimum taper of 0.14 inch per foot for single-member vertical and single-member horizontal structure components. Provide bolts and other hardware conforming to 641.2.2.

ADDITIONAL SPECIAL PROVISION 7

A. Reporting 1st Tier and DBE Payments During Construction

1. Comply with reporting requirements specified in the department's Civil Rights Compliance, Contractor's User Manual, Sublets and Payments.
2. Report payments to all DBE firms within 10 calendar days of receipt of a progress payment by the department or a contractor for work performed, materials furnished, or materials stockpiled by a DBE firm. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.
3. Report payments to all first tier subcontractor relationships within 10 calendar days of receipt of a progress payment by the department for work performed. Report the payment as specified in A(1) for all work satisfactorily performed.
4. All tiers shall report payments as necessary to comply with the DBE payment requirement as specified in A(2).
5. 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.

ADDITIONAL SPECIAL PROVISION 9
Electronic Certified Payroll Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to submit certified payrolls electronically. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/default.aspx

(2) Ensure that all tiers of subcontractors, as well as all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Tess Mulrooney at 608-267-4489 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator send several sample electronic files to Tess two months before a payroll needs to be submitted. Not every contractor's payroll system is capable of producing export files. For details, see pages 17-22 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payroll-manual.pdf

Effective August 2015 letting

BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or $2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this “Buy America” provision.

http://wisconsindot.gov/rdwy/cmm/cm-02-28.pdf

Upon completion of the project certify to the engineer, in writing using department form WS4567, that all steel, iron, and coating processes for steel or iron incorporated into the contract work conform to these "Buy America" provisions. Attach a list of exemptions and their associated costs to the certification form. Department form WS4567 is available at:

http://wisconsindot.gov/rdwy/worksheets/ws4567.doc

Effective with September 2004 Letting

WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS AND TRANSPORTATION FACILITIES

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

I. WAGE RATES, HOURS OF LABOR AND PAYMENT OF WAGES

The schedule of "Minimum Wage Rates" attached hereto and made a part hereof furnishes the prevailing wage rates that have been determined pursuant to Section 103.50 of the Wisconsin Statutes. These wage rates are the minimum required to be paid to the various laborers, workers, mechanics and truck drivers employed by contractors and subcontractors on the construction work embraced by the contract and subject to prevailing hours and wages under Section 103.50, Stats. If necessary to employ laborers, workers, mechanics or truck drivers whose classification is not listed on the schedule, they shall be paid at rates conformable to those listed for similar classifications. Apprentices shall be paid at rates not less than those prescribed in their state indenture contacts.

While the wage rates shown are the minimum rates required by the contract to be paid during its life, this in 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 shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

Pursuant to Section 103.50 of the Wisconsin Statutes, the prevailing hours of labor have been determined to be up to 10 hours per day and 40 hours per calendar week Monday through Friday. If any laborer, worker, mechanic or truck driver is permitted or required to work more than the prevailing number of hours per day or per calendar week on this contract, they shall be paid for all hours in excess of the prevailing hours at a rate of at least one and one-half (1 1/2) times their hourly rate of pay. All work on Saturday, Sunday and the following holidays is to be paid at time and a half: (1) January 1, (2) the last Monday in May, (3) July 4, (4) the first Monday in September, (5) the fourth Thursday in November, (6) December 25, (7) the day before if January 1, July 4 or December 25 falls on a Saturday and (8) the day following if January 1, July 4 or December 25 falls on a Sunday.

All laborers, workers, mechanics and truck drivers shall be paid unconditionally not less often than once a week. Persons who own and operate their own trucks must receive the prevailing truck driver rate for the applicable type of truck (i.e. 2 axle, 3 or more axle, articulated, eculid or dumptor) he or she operates, plus an agreed upon amount for the use of his or her truck. Every owner-operator MUST be paid separately for their driving and for the use of their truck.

For those projects subject to the requirements of the Davis-Bacon Act, the Secretary of Labor will also have determined "Minimum Wage Rates" for work to be performed under the contract. These rates are, for all or most of the labor, worker, mechanic or truck driver classifications, identical to those established under Section 103.50 of the Wisconsin Statutes. In the event the rates are not identical, the higher of the two rates will govern.

II. PAYROLL REQUIREMENTS

All contractors and subcontractors must submit weekly Certified Payrolls and Compliance Statement verifying that all laborers, workers, mechanics and truck drivers working on the project have been paid the prevailing wage rates for all work performed under the contract required by Section 103.50 of the Wisconsin Statutes.

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 place at the site of work:

a. "NOTICE TO EMPLOYEES," which provides information required to be posted by the provisions of Section 103.50 of the Wisconsin Statutes.

b. A copy of the State of Wisconsin Minimum Wages Rates. (Four pages.)

c. A copy of the contractor's Equal Employment Opportunity Policy.

d. On any project involving federal aid, in addition to the furnished postings, the contractor shall post a copy of the "Davis-Bacon Act, Minimum Wage Rates". (Three pages.)

IV. WAGE RATE REDISTRIBUTION

The amount specified as the hourly basic rate of pay and the amount(s) specified as the fringe benefit contribution(s), for all classes of laborers, workers, mechanics or truck drivers may be redistributed, when necessary, to conform to those specified in any applicable collective bargaining agreement, provided that both parties to such agreement

request and receive the approval for any such redistribution from both the Department of Transportation and the Department of Workforce Development prior to the implementation of such redistribution.

V. ADDITIONAL CLASSIFICATIONS

Any unlisted laborer or mechanic classification that is needed to perform work on this project, and is not included within the scope of any of the classifications listed in the application prevailing wage rate determination, may be added after award only if all of the following criteria have been met:

1. The affected employer(s) must make a written request to WisDOT Central Office to utilize the unlisted classification on this project.

2. The request must indicate the scope of the work to be performed by the unlisted classification and must indicate the proposed wage/fringe benefit package that the unlisted classification is to receive.

3. The work to be performed by the unlisted classification must not be performed by a classification that is included in the applicable prevailing wage rate determination.

4. The unlisted classification must be commonly employed in the area where the project is located.

5. The proposed wage/fringe benefit package must bear a reasonable relationship to those set forth in the applicable prevailing wage rate determination.

6. The request should be made prior to the actual performance of the work by the unlisted classification.

7. DWD must approve the use of the unlisted classification and the proposed wage/fringe benefit package. USDOL also must approve the use of the unlisted classification and the proposed wage/fringe benefit package on federal aid projects.

8. WisDOT and DWD may amend the proposed wage/fringe benefit package, as deemed necessary, and may set forth specific employment ratios and scope of work requirements in the approval document.

The approved wage/fringe benefit package shall be paid to all laborers, workers, mechanics or truck drivers performing work within the scope of that performed by the unlisted classification, from the first day on which such work is performed. In the event that work is performed by the unlisted classification prior to approval, the wage/fringe benefit package to be paid for such work must be in conformance with the wage/fringe

benefit package approved for such work. Under this arrangement a retroactive adjustment in wages and/or fringe benefits may be required to be made to the affected laborers, workers, mechanics or truck drivers by the affected employer(s).

ANNUAL PREVAILING WAGE RATE DETERMINATION
FOR ALL STATE HIGHWAY PROJECTS
ROCK COUNTY

Compiled by the State of Wisconsin - Department of Workforce Development
for the Department of Transportation
Pursuant to s. 103.50, Stats.
Issued on May 1, 2015

CLASSIFICATION: Contractors are required to call the Department of Workforce Development if there are any questions reqarding the proper trade or classification to be used for any worker on a public works project.

OVERTIME: Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

FUTURE INCREASE: If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

PREMIUM PAY: If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

SUBJOURNEY: Wage rates may be available for some of the classifications indicated below. Any employer that desires to use any subjourney classification on a project MUST request the applicable wage rate from the Department of Workforce Development PRIOR to the date such classification is used on such project. Form ERD-10880 is available for this purpose and can be obtained by writing to the Department of Workforce Development, Equal Rights Division, P.O. Box 8928, Madison, WI 53708.

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Bricklayer, Blocklayer or Stonemason	32.14	17.99	50.13
Carpenter	32.72	16.00	48.72
Future Increase(s): Add $1.42/hr on 6/1/2015; Add $1.42/hr on 6/1/2016.			
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Cement Finisher	35.18	16.78	51.96
Future Increase(s): Add $1.87 on 6/1/15; Add $1.75 on 6/1/16.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Electrician	33.93	22.77	56.70
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Fence Erector	23.73	4.79	28.52
Ironworker	36.29	31.83	68.12
Future Increase(s): Add $2.10/hr on 6/1/15; Add $2.30/hr on 6/1/16			
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sundaty, New Year's Day,Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Line Constructor (Electrical)	39.50	19.15	58.65
Painter	26.65	13.10	39.75
Pavement Marking Operator	29.22	24.68	53.90
Piledriver	33.24	16.00	49.24
Future Increase(s): Add $1.44/hr on 6/1/2015; Add $1.44/hr on 6/1/2016.			
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Roofer or Waterproofer	39.20	14.67	53.87
Teledata Technician or Installer	22.25	12.33	34.58
Tuckpointer, Caulker or Cleaner	23.60	7.10	30.70
Underwater Diver (Except on Great Lakes)	35.40	15.90	51.30
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	35.55	15.57	51.12
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	31.60	15.43	47.03
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.65	13.44	41.09
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.68	12.83	38.51
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.97	34.72
TRUCK DRIVERS			
Single Axle or Two Axle	25.18	18.31	43.49
Future Increase(s): Add $1.15/hr on 6/1/2015. Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Three or More Axle	25.28	18.31	43.59
Future Increase(s): Add $1.15/hr on 6/1/2015. Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Articulated, Euclid, Dumptor, Off Road Material Hauler	30.27	21.15	51.42
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Pavement Marking Vehicle	23.16	17.13	40.29
Shadow or Pilot Vehicle	24.37	17.77	42.14
Truck Mechanic	24.52	17.77	42.29
LABORERS			
General Laborer	30.13	15.14	45.27
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: Add $.10/hr for topman, air tool operator, vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add $.15/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add $.20/hr for blaster and powderman; Add $.25/hr for bottomman; Add $.35/hr for line and grade specialist; Add $.45/hr for pipelayer. DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Asbestos Abatement Worker	22.05	17.61	39.66
Landscaper	30.13	15.14	45.27
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination			

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Flagperson or Traffic Control Person	26.76	15.14	41.90
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.33	13.65	31.98
Railroad Track Laborer	14.50	3.93	18.43
HEAVY EQUIPMENT OPERATORS			
Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Traveling Crane (Bridge Type).	37.72	21.15	58.87
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs., & Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver.	37.22	21.15	58.37
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boatmen (NOT Performing Work on the Great Lakes); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, VIbratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane WIth a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub	36.72	21.15	57.87

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A- Frames. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or WIthout Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.	36.46	21.15	57.61
Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.	36.17	21.15	57.32
Fiber Optic Cable Equipment.	28.89	17.95	46.84

SCHEDULE OF ITEMS REVISED:

CONTRACT:	PROJECT(S):	FEDERAL ID(S):
20160112018	1005-10-71	N/A
	1005-10-72	N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 Contract Items					
0010	201.0105 Clearing	206.000 STA		.		.
0020	201.0120 Clearing	28.000 ID		.		.
0030	201.0205 Grubbing	206.000 STA		.		.
0040	201.0220 Grubbing	28.000 ID		.		.
0050	203.0100 Removing Small Pipe Culverts	40.000 EACH		.		.
0060	203.0200 Removing Old Structure (station) 001. STA 45+44'F'	LUMP	LUMP			.
0070	203.0200 Removing Old Structure (station) 002. STA 1436+00 Goede Road, B-53-69	LUMP	LUMP			.
0080	203.0210.S Abatement of Asbestos Containing Material (structure) 001. B-53-69	LUMP	LUMP			.
0090	203.0225.S Debris Containment (structure) 001. B-53-71	LUMP	LUMP			.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0100	203.0700.S Removing Old Structure Over Waterway With Debris Capture System (station) 001. 1381+73'SB', 28' LT	LUMP	LUMP			.
0110	203.0700.S Removing Old Structure Over Waterway With Debris Capture System (station) 002. 1381+49'NB', 9' LT	LUMP	LUMP			.
0120	204.0100 Removing Pavement	82,083.000 SY		.		.
0130	204.0105 Removing Pavement Butt Joints	532.000 SY		.		.
0140	204.0110 Removing Asphaltic Surface	21,705.000 SY		.		.
0150	204.0120 Removing Asphaltic Surface Milling	12,210.000 SY		.		.
0160	204.0130 Removing Curb	373.000 LF		.		.
0170	204.0150 Removing Curb & Gutter	613.000 LF		.		.
0180	204.0155 Removing Concrete Sidewalk	207.000 SY		.		.
0190	204.0157 Removing Concrete Barrier	950.000 LF		.		.

SCHEDULE OF ITEMS REVISED:

CONTRACT:	PROJECT(S):	FEDERAL ID(S):
20160112018	1005-10-71	N/A
	1005-10-72	N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0200	204.0165 Removing Guardrail	11,556.000 LF		.		.
0210	204.0170 Removing Fence	22,692.000 LF		.		.
0220	204.0180 Removing Delineators and Markers	130.000 EACH		.		.
0230	204.0195 Removing Concrete Bases	10.000 EACH		.		.
0240	204.0220 Removing Inlets	24.000 EACH		.		.
0250	204.0225 Removing Septic Tanks	1.000 EACH		.		.
0260	204.0235 Removing Buildings (parcel) 001. Parcel 1	LUMP	LUMP			.
0270	204.0240 Site Clearance (parcel) 001. Parcel 1	LUMP	LUMP			.
0280	204.0245 Removing Storm Sewer (size) 001. 12-Inch	116.000 LF		.		.
0290	204.0245 Removing Storm Sewer (size) 002. 15-Inch	104.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0300	204.0245 Removing Storm Sewer (size) 003. 18-Inch	326.000 LF		.		.
0310	204.0245 Removing Storm Sewer (size) 004. 24-Inch	289.000 LF		.		.
0320	204.0245 Removing Storm Sewer (size) 005. 36-Inch	172.000 LF		.		.
0330	204.0265 Abandoning Wells	1.000 EACH		.		.
0340	204.0270 Abandoning Culvert Pipes	2.000 EACH		.		.
0350	204.0291.S Abandoning Sewer	127.000 CY		.		.
0360	204.9035.S Removing (item description) 001. Concrete Walls	3.000 CY		.		.
0370	204.9060.S Removing (item description) 001. Private Sign Bases	2.000 EACH		.		.
0380	204.9090.S Removing (item description) 001. Drain Slotted Vane	779.000 LF		.		.
0390	204.9180.S Removing (item description) 001. Concrete Channel	1,614.000 SY		.		.
0400	205.0100 Excavation Common	691,689.000 CY		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0410	205.0200 Excavation Rock	50.000 CY		.		.
0420	205.0300 Excavation Stone Piles and Stone Fences	14.000 CY		.		.
0430	206.1000 Excavation for Structures Bridges (structure) 001. B-53-357	LUMP	LUMP			.
0440	206.1000 Excavation for Structures Bridges (structure) 002. B-53-358	LUMP	LUMP			.
0450	206.1000 Excavation for Structures Bridges (structure) 003. B-53-359	LUMP	LUMP			.
0460	206.3000 Excavation for Structures Retaining Walls (structure) 001. R-53-33	LUMP	LUMP			.
0470	206.5000 Cofferdams (structure) 001. B-53-357	LUMP	LUMP			.
0480	206.5000 Cofferdams (structure) 002. B-53-358	LUMP	LUMP			.
0490	209.0100 Backfill Granular	150.000 CY		.		.
0500	210.0100 Backfill Structure	1,446.000 CY		.		.

SCHEDULE OF ITEMS REVISED:

CONTRACT:	PROJECT(S):	FEDERAL ID(S):
20160112018	1005-10-71	N/A
	1005-10-72	N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0510	213.0100 Finishing Roadway (project) 001. 1005-10-72	1.000 EACH		.		.
0520	214.0100 Obliterating Old Road	5.000 STA		.		.
0530	305.0110 Base Aggregate Dense 3/4-Inch	16,808.000 TON		.		.
0540	305.0120 Base Aggregate Dense 1 1/4-Inch	177,390.000 TON		.		.
0550	305.0130 Base Aggregate Dense 3-Inch	82,605.000 TON		.		.
0560	305.0500 Shaping Shoulders	8.000 STA		.		.
0570	310.0110 Base Aggregate Open Graded	5,797.000 TON		.		.
0580	312.0110 Select Crushed Material	210,898.000 TON		.		.
0590	405.0100 Coloring Concrete Red	1,233.000 CY		.		.
0600	415.0080 Concrete Pavement 8-Inch **P**	1,143.000 SY		.		.
0610	415.0085 Concrete Pavement 8 1/2-Inch **P**	22,726.000 SY		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0620	415.0095 Concrete Pavement 9 1/2-Inch **P**	9,150.000 SY		.		.
0630	415.0120 Concrete Pavement 12-Inch **P**	89,438.000 SY		.		.
0640	415.0210 Concrete Pavement Gaps	25.000 EACH		.		.
0650	415.0410 Concrete Pavement Approach Slab **P**	506.000 SY		.		.
0660	415.1085 Concrete Pavement HES 8 1/2-Inch	1,751.000 SY		.		.
0670	415.1095 Concrete Pavement HES 9 1/2-Inch	1,159.000 SY		.		.
0680	415.1120 Concrete Pavement HES 12-Inch	29,710.000 SY		.		.
0690	415.6000.S Rout and Seal	25,804.000 LF		.		.
0700	416.0160 Concrete Driveway 6-Inch **P**	473.000 SY		.		.
0710	416.0508 Concrete Roundabout Truck Apron 8-Inch	1,675.000 SY		.		.
0720	416.0610 Drilled Tie Bars	976.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0730	416.0620 Drilled Dowel Bars	600.000 EACH	.		.	
0740	416.1110 Concrete Shoulder Rumble Strips	13,894.000 LF	.		.	
0750	416.1715 Concrete Pavement Repair SHES	350.000 SY	.		.	
0760	440.4410 Incentive IRI Ride	26,480.000 DOL	1.00000		26480.00	
0770	440.5020 Incentive IRI Ride Bridge	5,600.000 DOL	1.00000		5600.00	
0780	455.0105 Asphaltic Material PG58-28	1,437.000 TON	.		.	
0790	455.0120 Asphaltic Material PG64-28	762.000 TON	.		.	
0800	455.0605 Tack Coat	6,515.000 GAL	.		.	
0810	460.1100 HMA Pavement Type E-0.3	4,160.000 TON	.		.	
0820	460.1101 HMA Pavement Type E-1	9,218.000 TON	.		.	
0830	460.1103 HMA Pavement Type E-3	3,237.000 TON	.		.	

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0840	460.1130 HMA Pavement Type E-30	23,284.000 TON		.		.
0850	460.2000 Incentive Density HMA Pavement	24,450.000 DOL	1.00000		24450.00	
0860	460.4000 HMA Cold Weather Paving	4,179.000 TON		.		.
0870	465.0120 Asphaltic Surface Driveways and Field Entrances	349.000 TON		.		.
0880	465.0125 Asphaltic Surface Temporary	6,484.000 TON		.		.
0890	465.0310 Asphaltic Curb	515.000 LF		.		.
0900	465.0315 Asphaltic Flumes	213.000 SY		.		.
0910	465.0400 Asphaltic Shoulder Rumble Strips	16,430.000 LF		.		.
0920	501.1000.S Ice Hot Weather Concreting	68,905.000 LB		.		.
0930	502.0100 Concrete Masonry Bridges **P**	4,609.000 CY		.		.
0940	502.1100 Concrete Masonry Seal	1,748.000 CY		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0950	502.3110.S Expansion Device Modular (structure) 001. B-53-357	LUMP	LUMP			.
0960	502.3110.S Expansion Device Modular (structure) 002. B-53-358	LUMP	LUMP			.
0970	502.3200 Protective Surface Treatment **P**	12,230.000 SY		.		.
0980	502.3210 Pigmented Surface Sealer	1,733.000 SY		.		.
0990	502.6105 Masonry Anchors Type S 5/8-Inch	624.000 EACH		.		.
1000	503.0146 Prestressed Girder Type I 45W-Inch **P**	1,638.000 LF		.		.
1010	503.0155 Prestressed Girder Type I 54W-Inch **P**	12,874.000 LF		.		.
1020	505.0400 Bar Steel Reinforcement HS Structures **P**	151,130.000 LB		.		.
1030	505.0600 Bar Steel Reinforcement HS Coated Structures **P**	1,652,790 LB		.		.
1040	505.0800.S Bar Steel Reinforcement HS Stainless Structures **P**	6,802.000 LB		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1050	505.0904 Bar Couplers No. 4 **P**	53.000 EACH		.		.
1060	505.0905 Bar Couplers No. 5 **P**	2,099.000 EACH		.		.
1070	505.0906 Bar Couplers No. 6 **P**	146.000 EACH		.		.
1080	505.0908 Bar Couplers No. 8 **P**	39.000 EACH		.		.
1090	505.0909 Bar Couplers No. 9 **P**	135.000 EACH		.		.
1100	505.0910 Bar Couplers No. 10 **P**	9.000 EACH		.		.
1110	506.2605 Bearing Pads Elastomeric Non-Laminated	140.000 EACH		.		.
1120	506.4000 Steel Diaphragms (structure) 001. B-53-357 **P**	96.000 EACH		.		.
1130	506.4000 Steel Diaphragms (structure) 002. B-53-358 **P**	96.000 EACH		.		.
1140	506.4000 Steel Diaphragms (structure) 003. B-53-359 **P**	28.000 EACH		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1150	506.6000 Bearing Assemblies Expansion (structure) 001. B-53-357	54.000 EACH		.		.
1160	506.6000 Bearing Assemblies Expansion (structure) 002. B-53-358	54.000 EACH		.		.
1170	511.1100 Temporary Shoring	23,100.000 SF		.		.
1180	511.1200 Temporary Shoring (structure) 001. B-53-357	1,474.000 SF		.		.
1190	511.1200 Temporary Shoring (structure) 002. B-53-358	1,403.000 SF		.		.
1200	511.1200 Temporary Shoring (structure) 003. R-53-32	140.000 SF		.		.
1210	511.1200 Temporary Shoring (structure) 004. R-53-33	140.000 SF		.		.
1220	513.4091 Railing Tubular Screening (structure) 001. B-53-359	488.000 LF		.		.
1230	513.4091 Railing Tubular Screening (structure) 002. R-53-32	180.000 LF		.		.
1240	513.4091 Railing Tubular Screening (structure) 003. R-53-33	190.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1250	514.0450 Floor Drains Type WF	46.000 EACH		.		.
1260	514.2608 Downspout 8-Inch	254.000 LF		.		.
1270	516.0500 Rubberized Membrane Waterproofing	112.000 SY		.		.
1280	517.1010.S Concrete Staining (structure) 001. B-53-357 **P**	38,726.000 SF		.		.
1290	517.1010.S Concrete Staining (structure) 002. B-53-358 **P**	38,181.000 SF		.		.
1300	517.1010.S Concrete Staining (structure) 003. B-53-359 **P**	10,344.000 SF		.		.
1310	517.1010.S Concrete Staining (structure) 004. R-53-32 **P**	2,245.000 SF		.		.
1320	517.1010.S Concrete Staining (structure) 005. R-53-33 **P**	2,715.000 SF		.		.
1330	517.1050.S Architectural Surface Treatment (structure) 001. B-53-357 **P**	4,766.000 SF		.		.
1340	517.1050.S Architectural Surface Treatment (structure) 002. B-53-358 **P**	4,615.000 SF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1350	520.1012 Apron Endwalls for Culvert Pipe 12-Inch	2.000 EACH		.		.
1360	520.1015 Apron Endwalls for Culvert Pipe 15-Inch	3.000 EACH		.		.
1370	520.1018 Apron Endwalls for Culvert Pipe 18-Inch	14.000 EACH		.		.
1380	520.1024 Apron Endwalls for Culvert Pipe 24-Inch	9.000 EACH		.		.
1390	520.1030 Apron Endwalls for Culvert Pipe 30-Inch	1.000 EACH		.		.
1400	520.1036 Apron Endwalls for Culvert Pipe 36-Inch	8.000 EACH		.		.
1410	520.1042 Apron Endwalls for Culvert Pipe 42-Inch	1.000 EACH		.		.
1420	520.4015 Culvert Pipe Temporary 15-Inch	32.000 LF		.		.
1430	520.4018 Culvert Pipe Temporary 18-Inch	10.000 LF		.		.
1440	520.4024 Culvert Pipe Temporary 24-Inch	280.000 LF		.		.
1450	520.4030 Culvert Pipe Temporary 30-Inch	40.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1460	520.4036 Culvert Pipe Temporary 36-Inch	356.000 LF		.		.
1470	520.4042 Culvert Pipe Temporary 42-Inch	8.000 LF		.		.
1480	520.8000 Concrete Collars for Pipe	13.000 EACH		.		.
1490	521.0112 Culvert Pipe Corrugated Steel 12-Inch	20.000 LF		.		.
1500	521.0118 Culvert Pipe Corrugated Steel 18-Inch	222.000 LF		.		.
1510	521.0124 Culvert Pipe Corrugated Steel 24-Inch	18.000 LF		.		.
1520	521.0342 Apron Endwalls for Culvert Pipe Sloped Cross Drains Steel 42-Inch 4 to 1	1.000 EACH		.		.
1530	521.0442 Apron Endwalls for Culvert Pipe Sloped Cross Drains Steel 42-Inch 6 to 1	2.000 EACH		.		.
1540	521.1228 Apron Endwalls for Pipe Arch Steel 28x20-Inch	4.000 EACH		.		.
1550	521.1502 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 15-Inch 4 to 1	2.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1560	521.1503 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 18-Inch 4 to 1	8.000 EACH		.		.
1570	521.1505 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 24-Inch 4 to 1	2.000 EACH		.		.
1580	521.1506 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 30-Inch 4 to 1	5.000 EACH		.		.
1590	521.1515 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 15-Inch 6 to 1	5.000 EACH		.		.
1600	521.1518 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 18-Inch 6 to 1	2.000 EACH		.		.
1610	521.1524 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 24-Inch 6 to 1	8.000 EACH		.		.
1620	521.1530 Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 30-Inch 6 to 1	3.000 EACH		.		.
1630	522.0115 Culvert Pipe Reinforced Concrete Class III 15-Inch	148.000 LF		.		.
1640	522.0124 Culvert Pipe Reinforced Concrete Class III 24-Inch	62.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1650	522.0130 Culvert Pipe Reinforced Concrete Class III 30-Inch	943.000 LF		.		.
1660	522.0142 Culvert Pipe Reinforced Concrete Class III 42-Inch	235.000 LF		.		.
1670	522.0324 Culvert Pipe Reinforced Concrete Class IV 24-Inch	112.000 LF		.		.
1680	522.0536 Culvert Pipe Reinforced Concrete Class V 36-Inch	230.000 LF		.		.
1690	522.0542 Culvert Pipe Reinforced Concrete Class V 42-Inch	363.000 LF		.		.
1700	522.0548 Culvert Pipe Reinforced Concrete Class V 48-Inch	252.000 LF		.		.
1710	522.1015 Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	5.000 EACH		.		.
1720	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	5.000 EACH		.		.
1730	522.1030 Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	5.000 EACH		.		.
1740	522.1036 Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	2.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1750	522.1042 Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	2.000 EACH		.		.
1760	522.1048 Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	2.000 EACH		.		.
1770	523.0419 Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	163.000 LF		.		.
1780	523.0424 Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 24x38-Inch	554.000 LF		.		.
1790	523.0524 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	18.000 EACH		.		.
1800	523.0529 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	1.000 EACH		.		.
1810	528.0328 Pipe Arch Polymer Coated Corrugated Steel 28x20-Inch	87.000 LF		.		.
1820	531.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 001. N-53-20	5,470.000 SF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1830	550.0020 Pre-Boring Rock or Consolidated Materials	4,010.000 LF		.		.
1840	550.0500 Pile Points	716.000 EACH		.		.
1850	550.1100 Piling Steel HP 10-Inch X 42 Lb	3,125.000 LF		.		.
1860	550.1120 Piling Steel HP 12-Inch X 53 Lb	3,330.000 LF		.		.
1870	550.1140 Piling Steel HP 14-Inch X 73 Lb	15,900.000 LF		.		.
1880	601.0405 Concrete Curb & Gutter 18-Inch Type A **P**	1,016.000 LF		.		.
1890	601.0407 Concrete Curb & Gutter 18-Inch Type D **P**	1,124.000 LF		.		.
1900	601.0409 Concrete Curb & Gutter 30-Inch Type A **P**	7,279.000 LF		.		.
1910	601.0411 Concrete Curb & Gutter 30-Inch Type D **P**	4,526.000 LF		.		.
1920	601.0551 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type A **P**	1,815.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS		UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1930	601.0553 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D **P**	80.000	LF		.		.
1940	601.0557 Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D **P**	2,867.000	LF		.		.
1950	601.0580 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type R	1,264.000	LF		.		.
1960	601.0600 Concrete Curb Pedestrian **P**	321.000	LF		.		.
1970	602.0410 Concrete Sidewalk 5-Inch **P**	72,274.000	SF		.		.
1980	602.0505 Curb Ramp Detectable Warning Field Yellow **P**	675.000	SF		.		.
1990	603.1142 Concrete Barrier Type S42 **P**	370.000	LF		.		.
2000	603.8000 Concrete Barrier Temporary Precast Delivered	75,940.000	LF		.		.
2010	603.8125 Concrete Barrier Temporary Precast Installed	98,190.000	LF		.		.
2020	604.0400 Slope Paving Concrete	60.000	SY		.		.
2030	604.0500 Slope Paving Crushed Aggregate	2,927.000	SY		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2040	606.0100 Riprap Light	295.000 CY		.		.
2050	606.0200 Riprap Medium	1,440.000 CY		.		.
2060	606.0300 Riprap Heavy	540.000 CY		.		.
2070	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	1,000.000 LF		.		.
2080	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	768.600 LF		.		.
2090	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	275.900 LF		.		.
2100	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	1,592.200 LF		.		.
2110	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	675.900 LF		.		.
2120	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	3,706.200 LF		.		.
2130	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	868.300 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2140	610.0119 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 19x30-Inch	184.700 LF		.		.
2150	610.0129 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 29x45-Inch	123.200 LF		.		.
2160	611.0530 Manhole Covers Type J	25.000 EACH		.		.
2170	611.0606 Inlet Covers Type B	1.000 EACH		.		.
2180	611.0610 Inlet Covers Type BW	5.000 EACH		.		.
2190	611.0612 Inlet Covers Type C	3.000 EACH		.		.
2200	611.0624 Inlet Covers Type H	75.000 EACH		.		.
2210	611.0627 Inlet Covers Type HM	26.000 EACH		.		.
2220	611.0642 Inlet Covers Type MS	39.000 EACH		.		.
2230	611.0651 Inlet Covers Type S	2.000 EACH		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2240	611.0652 Inlet Covers Type T	6.000 EACH		.		.
2250	611.0666 Inlet Covers Type Z	2.000 EACH		.		.
2260	611.2004 Manholes 4-FT Diameter	13.000 EACH		.		.
2270	611.2005 Manholes 5-FT Diameter	24.000 EACH		.		.
2280	611.2006 Manholes 6-FT Diameter	4.000 EACH		.		.
2290	611.2007 Manholes 7-FT Diameter	2.000 EACH		.		.
2300	611.3003 Inlets 3-FT Diameter	1.000 EACH		.		.
2310	611.3004 Inlets 4-FT Diameter	16.000 EACH		.		.
2320	611.3230 Inlets 2x3-FT	80.000 EACH		.		.
2330	611.3901 Inlets Median 1 Grate	13.000 EACH		.		.
2340	611.3902 Inlets Median 2 Grate	13.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2350	611.8120.S Cover Plates Temporary	41.000 EACH		.		.
2360	611.9800.S Pipe Grates	20.000 EACH		.		.
2370	612.0106 Pipe Underdrain 6-Inch	4,565.000 LF		.		.
2380	612.0206 Pipe Underdrain Unperforated 6-Inch	495.000 LF		.		.
2390	612.0218 Pipe Underdrain Unperforated 18-Inch	285.000 LF		.		.
2400	612.0406 Pipe Underdrain Wrapped 6-Inch	10,048.000 LF		.		.
2410	612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	15.000 EACH		.		.
2420	612.0902.S Insulation Board Polystyrene (inch) 001. 2-Inch	38.000 SY		.		.
2430	614.0150 Anchor Assemblies for Steel Plate Beam Guard	12.000 EACH		.		.
2440	614.0220 Steel Thrie Beam Bullnose Terminal	2.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2450	614.0230 Steel Thrie Beam	225.000 LF		.		.
2460	614.0800 Crash Cushions Permanent	1.000 EACH		.		.
2470	614.0905 Crash Cushions Temporary	33.000 EACH		.		.
2480	614.1000 MGS Guardrail Temporary	188.000 LF		.		.
2490	614.1100 MGS Guardrail Temporary Thrie Beam Transition	80.000 LF		.		.
2500	614.2300 MGS Guardrail 3	4,139.500 LF		.		.
2510	614.2500 MGS Thrie Beam Transition	269.200 LF		.		.
2520	614.2610 MGS Guardrail Terminal EAT	14.000 EACH		.		.
2530	614.2620 MGS Guardrail Terminal Type 2	8.000 EACH		.		.
2540	616.0100 Fence Woven Wire (height) 001. 4-FT **P**	19,957.000 LF		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2550	616.0100 Fence Woven Wire (height) 002. 8-FT **P**	835.000 LF		.		.
2560	616.0700.S Fence Safety	5,950.000 LF		.		.
2570	618.0100 Maintenance And Repair of Haul Roads (project) 001. 1005-10-71	1.000 EACH		.		.
2580	618.0100 Maintenance And Repair of Haul Roads (project) 002. 1005-10-72	1.000 EACH		.		.
2590	619.1000 Mobilization	1.000 EACH		.		.
2600	620.0100 Concrete Corrugated Median **P**	695.000 SF		.		.
2610	620.0300 Concrete Median Sloped Nose **P**	1,414.000 SF		.		.
2620	624.0100 Water	3,378.000 MGAL		.		.
2630	625.0500 Salvaged Topsoil **P**	349,558.000 SY		.		.
2640	627.0200 Mulching	323,316.000 SY		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2650	628.1104 Erosion Bales	550.000 EACH		.		.
2660	628.1504 Silt Fence	8,185.000 LF		.		.
2670	628.1520 Silt Fence Maintenance	35,870.000 LF		.		.
2680	628.1905 Mobilizations Erosion Control	75.000 EACH		.		.
2690	628.1910 Mobilizations Emergency Erosion Control	40.000 EACH		.		.
2700	628.2004 Erosion Mat Class I Type B	156,020.000 SY		.		.
2710	628.2006 Erosion Mat Urban Class I Type A	6,460.000 SY		.		.
2720	628.2023 Erosion Mat Class II Type B	23,800.000 SY		.		.
2730	628.2027 Erosion Mat Class II Type C	12,240.000 SY		.		.
2740	628.2037 Erosion Mat Class III Type C	1,830.000 SY		.		.
2750	628.6005 Turbidity Barriers	5,400.000 SY		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2760	628.6505 Soil Stabilizer Type A	17.000 ACRE		.		.
2770	628.6510 Soil Stabilizer Type B	42.000 ACRE		.		.
2780	628.7005 Inlet Protection Type A	171.000 EACH		.		.
2790	628.7015 Inlet Protection Type C	96.000 EACH		.		.
2800	628.7020 Inlet Protection Type D	48.000 EACH		.		.
2810	628.7504 Temporary Ditch Checks	10,245.000 LF		.		.
2820	628.7555 Culvert Pipe Checks	102.000 EACH		.		.
2830	628.7560 Tracking Pads	65.000 EACH		.		.
2840	628.7570 Rock Bags	465.000 EACH		.		.
2850	629.0205 Fertilizer Type A	304.000 CWT		.		.
2860	630.0120 Seeding Mixture No. 20	15,679.000 LB		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2870	630.0130 Seeding Mixture No. 30	755.000 LB		.		.
2880	630.0140 Seeding Mixture No. 40	342.000 LB		.		.
2890	630.0200 Seeding Temporary	2,510.000 LB		.		.
2900	630.0300 Seeding Borrow Pit	375.000 LB		.		.
2910	630.0400 Seeding Nurse Crop	100.000 LB		.		.
2920	631.0300 Sod Water	103.000 MGAL		.		.
2930	631.1000 Sod Lawn	760.000 SY		.		.
2940	633.0100 Delineator Posts Steel	282.000 EACH		.		.
2950	633.0500 Delineator Reflectors	476.000 EACH		.		.
2960	633.1100 Delineators Temporary	56.000 EACH		.		.
2970	633.5200 Markers Culvert End	70.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2980	634.0614 Posts Wood 4x6-Inch X 14-FT	76.000 EACH		.		.
2990	634.0616 Posts Wood 4x6-Inch X 16-FT	80.000 EACH		.		.
3000	634.0618 Posts Wood 4x6-Inch X 18-FT	57.000 EACH		.		.
3010	634.0620 Posts Wood 4x6-Inch X 20-FT	20.000 EACH		.		.
3020	634.0808 Posts Tubular Steel 2x2-Inch X 8-FT	3.000 EACH		.		.
3030	634.0812 Posts Tubular Steel 2x2-Inch X 12-FT	10.000 EACH		.		.
3040	634.0814 Posts Tubular Steel 2x2-Inch X 14-FT	2.000 EACH		.		.
3050	635.0200 Sign Supports Structural Steel HS	9,200.000 LB		.		.
3060	636.0100 Sign Supports Concrete Masonry	13.200 CY		.		.
3070	636.0500 Sign Supports Steel Reinforcement	860.000 LB		.		.
3080	637.0620 Sign Flags Permanent Type II	44.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3090	637.1220 Signs Type I Reflective SH	1,944.500 SF		.		.
3100	637.2210 Signs Type II Reflective H	1,901.820 SF		.		.
3110	637.2215 Signs Type II Reflective H Folding	30.000 SF		.		.
3120	637.2220 Signs Type II Reflective SH	9.000 SF		.		.
3130	637.2230 Signs Type II Reflective F	549.000 SF		.		.
3140	638.2102 Moving Signs Type II	390.000 EACH		.		.
3150	638.2601 Removing Signs Type I	8.000 EACH		.		.
3160	638.2602 Removing Signs Type II	144.000 EACH		.		.
3170	638.3000 Removing Small Sign Supports	167.000 EACH		.		.
3180	638.3100 Removing Structural Steel Sign Supports	14.000 EACH		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3190	641.8100 Overhead Sign Support (structure) 001. S-53-97	LUMP	LUMP			.
3200	641.8100 Overhead Sign Support (structure) 002. S-53-98	LUMP	LUMP			.
3210	641.8100 Overhead Sign Support (structure) 003. S-53-99	LUMP	LUMP			.
3220	641.8100 Overhead Sign Support (structure) 004. S-53-100	LUMP	LUMP			.
3230	642.5401 Field Office Type D	1.000 EACH		.		.
3240	643.0200 Traffic Control Surveillance and Maintenance (project) 001. 1005-10-71/72	914.000 DAY		.		.
3250	643.0300 Traffic Control Drums	197,280.000 DAY		.		.
3260	643.0420 Traffic Control Barricades Type III	18,143.000 DAY		.		.
3270	643.0500 Traffic Control Flexible Tubular Marker Posts	642.000 EACH		.		.
3280	643.0600 Traffic Control Flexible Tubular Marker Bases	642.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3290	643.0705 Traffic Control Warning Lights Type A	36,286.000 DAY		.		.
3300	643.0715 Traffic Control Warning Lights Type C	47,774.000 DAY		.		.
3310	643.0800 Traffic Control Arrow Boards	894.000 DAY		.		.
3320	643.0900 Traffic Control Signs	95,385.000 DAY		.		.
3330	643.0910 Traffic Control Covering Signs Type I	13.000 EACH		.		.
3340	643.0920 Traffic Control Covering Signs Type II	697.000 EACH		.		.
3350	643.1000 Traffic Control Signs Fixed Message	2,739.000 SF		.		.
3360	643.1050 Traffic Control Signs PCMS	5,896.000 DAY		.		.
3370	643.1055.S Truck or Trailer Mounted Attenuator	75.000 DAY		.		.
3380	643.2000 Traffic Control Detour (project) 001. 1005-10-72	1.000 EACH		.		.
3390	643.3000 Traffic Control Detour Signs	5,166.000 DAY		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3400	645.0111 Geotextile Fabric Type DF Schedule A	14,234.000 SY		.		.
3410	645.0120 Geotextile Fabric Type HR	3,670.000 SY		.		.
3420	645.0130 Geotextile Fabric Type R	870.000 SY		.		.
3430	646.0103 Pavement Marking Paint 4-Inch	39,060.000 LF		.		.
3440	646.0106 Pavement Marking Epoxy 4-Inch	164,770.000 LF		.		.
3450	646.0123 Pavement Marking Paint 8-Inch	3,090.000 LF		.		.
3460	646.0126 Pavement Marking Epoxy 8-Inch	4,665.000 LF		.		.
3470	646.0600 Removing Pavement Markings	42,100.000 LF		.		.
3480	646.0805.S Pavement Marking Outfall	1.000 EACH		.		.
3490	646.0841.S Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	5,890.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3500	646.0843.S Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	4,040.000 LF		.		.
3510	646.0900.S Pavement Marking Late Season	3,000.000 LF		.		.
3520	647.0156 Pavement Marking Arrows Epoxy Type 1	1.000 EACH		.		.
3530	647.0163 Pavement Marking Arrows Paint Type 2	13.000 EACH		.		.
3540	647.0166 Pavement Marking Arrows Epoxy Type 2	5.000 EACH		.		.
3550	647.0256 Pavement Marking Symbols Epoxy	5.000 EACH		.		.
3560	647.0353 Pavement Marking Words Paint	6.000 EACH		.		.
3570	647.0356 Pavement Marking Words Epoxy	2.000 EACH		.		.
3580	647.0456 Pavement Marking Curb Epoxy	80.000 LF		.		.
3590	647.0563 Pavement Marking Stop Line Paint 18-Inch	303.000 LF		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3600	647.0566 Pavement Marking Stop Line Epoxy 18-Inch	103.000 LF		.		.
3610	647.0606 Pavement Marking Island Nose Epoxy	4.000 EACH		.		.
3620	647.0656 Pavement Marking Parking Stall Epoxy	2,584.000 LF		.		.
3630	647.0706 Pavement Marking Diagonal Epoxy 6-Inch	280.000 LF		.		.
3640	647.0726 Pavement Marking Diagonal Epoxy 12-Inch	485.000 LF		.		.
3650	647.0766 Pavement Marking Crosswalk Epoxy 6-Inch	185.000 LF		.		.
3660	647.0856 Pavement Marking Concrete Corrugated Median Epoxy	300.000 SF		.		.
3670	647.0955 Removing Pavement Markings Arrows	4.000 EACH		.		.
3680	647.0965 Removing Pavement Markings Words	2.000 EACH		.		.
3690	648.0100 Locating No-Passing Zones	1.200 MI		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3700	649.0400 Temporary Pavement Marking Removable Tape 4-Inch	90,960.000 LF		.		.
3710	649.0801 Temporary Pavement Marking Removable Tape 8-Inch	7,440.000 LF		.		.
3720	649.1200 Temporary Pavement Marking Stop Line Removable Tape 18-Inch	364.000 LF		.		.
3730	649.1800 Temporary Pavement Marking Arrows Removable Tape	15.000 EACH		.		.
3740	649.2000 Temporary Pavement Marking Words Removable Tape	8.000 EACH		.		.
3750	649.2100 Temporary Raised Pavement Markers	1,092.000 EACH		.		.
3760	652.0125 Conduit Rigid Metallic 2-Inch **P**	856.000 LF		.		.
3770	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch **P**	13,258.000 LF		.		.
3780	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch **P**	2,440.000 LF		.		.
3790	653.0135 Pull Boxes Steel 24x36-Inch	1.000 EACH		.		.

CONTRACT: 20160112018 PROJECT(S): 1005-10-71, 1005-10-72 FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3800	653.0140 Pull Boxes Steel 24x42-Inch	37.000 EACH		.		.
3810	653.0222 Junction Boxes 18x12x6-Inch	20.000 EACH		.		.
3820	653.0222 Junction Boxes 18x12x6-Inch **P**	6.000 EACH		.		.
3830	653.0905 Removing Pull Boxes	14.000 EACH		.		.
3840	654.0105 Concrete Bases Type 5	1.000 EACH		.		.
3850	654.0106 Concrete Bases Type 6	39.000 EACH		.		.
3860	654.0230 Concrete Control Cabinet Bases Type L30	2.000 EACH		.		.
3870	655.0610 Electrical Wire Lighting 12 AWG	8,208.000 LF		.		.
3880	655.0615 Electrical Wire Lighting 10 AWG	17,446.000 LF		.		.
3890	655.0625 Electrical Wire Lighting 6 AWG	28,848.000 LF		.		.
3900	655.0635 Electrical Wire Lighting 2 AWG	2,766.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3910	656.0200 Electrical Service Meter Breaker Pedestal (location) 001. CB 100	LUMP	LUMP			.
3920	656.0200 Electrical Service Meter Breaker Pedestal (location) 002. CB 200	LUMP	LUMP			.
3930	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	40.000 EACH		.		.
3940	657.0322 Poles Type 5-Aluminum	1.000 EACH		.		.
3950	657.0326 Poles Type 6-Steel	3.000 EACH		.		.
3960	657.0327 Poles Type 6-Aluminum	40.000 EACH		.		.
3970	657.0709 Luminaire Arms Truss Type 4-Inch Clamp 12-FT	2.000 EACH		.		.
3980	657.0710 Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT	46.000 EACH		.		.
3990	657.6005.S Anchor Assemblies Light Poles on Structures	2.000 EACH		.		.
4000	659.1115 Luminaires Utility LED A	10.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4010	659.1120 Luminaires Utility LED B	38.000 EACH		.		.
4020	659.2130 Lighting Control Cabinets 120/240 30-Inch	2.000 EACH		.		.
4030	661.0200 Temporary Traffic Signals for Intersections (location) 001. I-39 SB Off-Ramp & STH 59	LUMP	LUMP			.
4040	661.0200 Temporary Traffic Signals for Intersections (location) 002. I-39 NB On-Ramp & STH 59	LUMP	LUMP			.
4050	661.0200 Temporary Traffic Signals for Intersections (location) 003. STH 59 & Goede Rd	LUMP	LUMP			.
4060	661.0200 Temporary Traffic Signals for Intersections (location) 004. I-39 NB Ramps & USH 51/STH 73	LUMP	LUMP			.
4070	662.1026.S Ramp Closure Gates Hardwired 26-FT	1.000 EACH		.		.
4080	662.1028.S Ramp Closure Gates Hardwired 28-FT	1.000 EACH		.		.
4090	662.1030.S Ramp Closure Gates Hardwired 30-FT	1.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4100	670.0100 Field System Integrator	LUMP	LUMP			.
4110	670.0200 ITS Documentation	LUMP	LUMP			.
4120	671.0132 Conduit HDPE 3-Duct 2-Inch **P**	9,940.000 LF		.		.
4130	671.0232 Conduit HDPE Directional Bore 3-Duct 2-Inch **P**	290.000 LF		.		.
4140	672.0250 Base Camera Pole 50-FT	1.000 EACH		.		.
4150	673.0105 Communication Vault Type 1	7.000 EACH		.		.
4160	673.0225.S Install Pole Mounted Cabinet	1.000 EACH		.		.
4170	674.0200 Cable Microwave Detector	314.000 LF		.		.
4180	674.0300 Remove Cable	85.000 LF		.		.
4190	675.0300 Install Mounted Controller Microwave Detector Assembly	2.000 EACH		.		.
4200	675.0400.S Install Ethernet Switch	1.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4210	677.0100 Install Camera Pole	1.000 EACH		.		.
4220	677.0200 Install Camera Assembly	1.000 EACH		.		.
4230	677.0300.S Install Video Encoder	1.000 EACH		.		.
4240	690.0150 Sawing Asphalt	8,181.000 LF		.		.
4250	690.0250 Sawing Concrete	8,412.000 LF		.		.
4260	715.0415 Incentive Strength Concrete Pavement	45,238.000 DOL	1.00000		45238.00	
4270	715.0502 Incentive Strength Concrete Structures	55,284.000 DOL	1.00000		55284.00	
4280	999.1000.S Seismograph 001. B-53-357	LUMP	LUMP			.
4290	999.1000.S Seismograph 002. B-53-358	LUMP	LUMP			.
4300	999.1500.S Crack and Damage Survey 001. B-53-357	LUMP	LUMP			.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4310	999.1500.S Crack and Damage Survey 002. B-53-358	LUMP	LUMP			.
4320	999.1950.S Bicycle Rack Asphalt or Concrete-Mounted	2.000 EACH		.		.
4330	SPV.0035 Special 001. Roadway Embankment	368,538.000 CY		.		.
4340	SPV.0035 Special 701. High Performance Concrete (HPC) Masonry Structures **P**	4,605.000 CY		.		.
4350	SPV.0060 Special 001. Baseline CPM Progress Schedule	1.000 EACH		.		.
4360	SPV.0060 Special 002. CPM Progress Schedule Updates & Accepted Revisions	36.000 EACH		.		.
4370	SPV.0060 Special 003. Mobilizations Emergency Pavement Repair	5.000 EACH		.		.
4380	SPV.0060 Special 004. Salvage Terminal High-Tension Cable TL-3, Safence	7.000 EACH		.		.
4390	SPV.0060 Special 005. Terminal High-Tension Cable Guard TL-3, Gibraltar	6.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4400	SPV.0060 Special 006. Salvage Terminal High-Tension Cable TL-3, Gibraltar	2.000 EACH		.		.
4410	SPV.0060 Special 007. Reinstall Terminal High-Tension Cable TL-3, Safence	1.000 EACH		.		.
4420	SPV.0060 Special 009. Access Gate 6-FT	4.000 EACH		.		.
4430	SPV.0060 Special 010. Emergency Access Gate	1.000 EACH		.		.
4440	SPV.0060 Special 011. Landmark Reference Monuments Special	50.000 EACH		.		.
4450	SPV.0060 Special 012. Reinforced Concrete Endwalls & Grates, 19x30-Inch Special	8.000 EACH		.		.
4460	SPV.0060 Special 013. Reinforced Concrete Endwalls & Grates, 24x38-Inch Special	4.000 EACH		.		.
4470	SPV.0060 Special 014. Adjusting Sanitary Manhole	6.000 EACH		.		.
4480	SPV.0060 Special 200. Fixed Message Sign Portable Support	29.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4490	SPV.0060 Special 201. Traffic Control Barricades Type III With Sign, Permanent	8.000 EACH		.		.
4500	SPV.0060 Special 300. Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 1	3.000 EACH		.		.
4510	SPV.0060 Special 301. Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 2	5.000 EACH		.		.
4520	SPV.0060 Special 302. Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 3	3.000 EACH		.		.
4530	SPV.0060 Special 303. Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 3R	6.000 EACH		.		.
4540	SPV.0060 Special 304. Pavement Marking Grooved Contrast Preformed Thermoplastic Arrows Type 5	2.000 EACH		.		.
4550	SPV.0060 Special 305. Pavement Marking Grooved Contrast Preformed Thermoplastic Words	16.000 EACH		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4560	SPV.0060 Special 350. Concrete Bases Type 6 Tall	4.000 EACH		.		.
4570	SPV.0060 Special 401. Fiber Tracer Marker Post	7.000 EACH		.		.
4580	SPV.0060 Special 402. Install Cellular Modem	1.000 EACH		.		.
4590	SPV.0060 Special 403. Remove Poles Wood	3.000 EACH		.		.
4600	SPV.0060 Special 500. Decorative Medallion B-53-359	6.000 EACH		.		.
4610	SPV.0060 Special 501. Medallion Concrete Staining B-53-359	6.000 EACH		.		.
4620	SPV.0085 Special 001. Seeding No Mow Fescue	129.000 LB		.		.
4630	SPV.0090 Special 001. Concrete Curb & Gutter 4-Inch Sloped 60-Inch Type A, Special	530.000 LF		.		.
4640	SPV.0090 Special 002. Concrete Curb & Gutter 6-Inch Sloped 24-Inch Type A, Special	20.000 LF		.		.
4650	SPV.0090 Special 003. Concrete Curb & Gutter OSOW **P**	1,292.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4660	SPV.0090 Special 004. Salvage High-Tension Cable TL-3, Socketed, Safence	11,315.000 LF		.		.
4670	SPV.0090 Special 005. High-Tension Cable Guard TL-3, Socketed, Gibraltar	6,485.000 LF		.		.
4680	SPV.0090 Special 006. Salvage High-Tension Cable TL-3, Socketed, Gibraltar	2,559.000 LF		.		.
4690	SPV.0090 Special 007. Pipe Boring & Jacking 36-Inch	183.000 LF		.		.
4700	SPV.0090 Special 008. Pipe Boring & Jacking 42-Inch	363.000 LF		.		.
4710	SPV.0090 Special 009. Pipe Boring & Jacking 48-Inch	206.000 LF		.		.
4720	SPV.0090 Special 010. Temporary Pavement Marking Wet Reflective Removable Tape 4-Inch	35,720.000 LF		.		.
4730	SPV.0090 Special 011. Decorative Railing	245.000 LF		.		.
4740	SPV.0090 Special 100. Drain Slotted Vane Longitudinal	1,069.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SPV.0090 Special 101.					
4750	Drain Slotted Vane Longitudinal Temporary	779.000 LF		.		.
	SPV.0090 Special 200.					
4760	Concrete Barrier Temporary Precast Left In Place	1,160.000 LF		.		.
	SPV.0090 Special 201.					
4770	Traffic Control Glare Screen Furnished	3,200.000 LF		.		.
	SPV.0090 Special 202.					
4780	Traffic Control Glare Screen Installed	3,200.000 LF		.		.
	SPV.0090 Special 203.					
4790	Traffic Control Gawk Screen Furnished	33,150.000 LF		.		.
	SPV.0090 Special 204.					
4800	Traffic Control Gawk Screen Installed	33,150.000 LF		.		.
	SPV.0090 Special 300.					
4810	Pavement Marking Grooved Contrast Preformed Thermoplastic Crosswalk 6-Inch	590.000 LF		.		.
	SPV.0090 Special 301.					
4820	Pavement Marking Grooved Contrast Preformed Thermoplastic 8-Inch	1,270.000 LF		.		.
	SPV.0090 Special 302.					
4830	Pavement Marking Grooved Preformed Thermoplastic 18-Inch	555.000 LF		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4840	SPV.0090 Special 303. Removing Longitudinal Pavement Markings Water Blasting Conc. Pavement	52,140.000 LF		.		.
4850	SPV.0105 Special 001. Survey Project 1005-10-71	LUMP	LUMP			.
4860	SPV.0105 Special 002. Survey Project 1005-10-72	LUMP	LUMP			.
4870	SPV.0105 Special 003. Concrete Pavement Joint Layout	LUMP	LUMP			.
4880	SPV.0105 Special 350. Electrical Service Meter Breaker Pedestal Special	LUMP	LUMP			.
4890	SPV.0105 Special 401. Relocate Solar-Powered Bluetooth Sensor	LUMP	LUMP			.
4900	SPV.0105 Special 402. Relocate CCTV Camera	LUMP	LUMP			.
4910	SPV.0105 Special 403. Temporary Power Connection for ITS Equipment	LUMP	LUMP			.
4920	SPV.0105 Special 404. Salvage ITS Equipment	LUMP	LUMP			.
4930	SPV.0105 Special 450. Temporary Vehicle Detection I-39 SB Off-Ramp & STH 59	LUMP	LUMP			.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
4940	SPV.0105 Special 451. Temporary Vehicle Detection I-39 NB On-Ramp & STH 59	LUMP	LUMP			.
4950	SPV.0105 Special 452. Temporary Vehicle Detection STH 59 & Goede Rd	LUMP	LUMP			.
4960	SPV.0105 Special 453. Temporary Vehicle Detection I-39 NB Ramps & USH 51/STH 73	LUMP	LUMP			.
4970	SPV.0105 Special 454. Remove Traffic Signals STH 59 & Goede Rd	LUMP	LUMP			.
4980	SPV.0105 Special 455. Remove Loop Detector Wire & Lead-In Cable STH 59 & Goede Rd	LUMP	LUMP			.
4990	SPV.0165 Special 701. Longitudinal Grooving Bridge Deck **P**	102,430.000 SF		.		.
5000	SPV.0165 Special 702. Polyurea Coating	646.000 SF		.		.
5010	SPV.0165 Special 850. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP **P**	4,532.000 SF		.		.
5020	SPV.0180 Special 001. Removing Rumble Strips	218.000 SY		.		.

CONTRACT: 20160112018
PROJECT(S): 1005-10-71, 1005-10-72
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
5030	SPV.0180 Special 002. Subsoiling Special Infiltration Ditch	8,200.000 SY		.		.
5040	SPV.0180 Special 003. Geogrid Reinforcement	545.000 SY		.		.
5050	SPV.0180 Special 004. Geotextile Fabric Type FF	200.000 SY		.		.
	SECTION 0001 TOTAL					.
	TOTAL BID					.

PLEASE ATTACH SCHEDULE OF ITEMS HERE