HIGHWAY WORK PROPOSAL

Proposal Number: 2 5

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

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
St. Croix	8110-02-75		Stillwater - Somerset St. Croix River to 150th Avenue	STH 64

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, $ 100,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: December 8, 2015 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time November 18, 2017	
Assigned Disadvantaged Business Enterprise Goal 0%	This contract is subject to federal oversight.

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

(Bidder Signature)

(Print or Type Bidder Name)

(Bidder Title)

For Department Use Only

Type of Work Concrete pavement, HMA pavement, shoulders, aggregate base, concrete barrier, MGS guardrail, permanent signing, pavement marking, and virtual weigh station system.	
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

Table of Contents

SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 8110-02-75 Stillwater – Somerset, St. Croix River to 150th Avenue, STH 64, St. Croix 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, 2016 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 (20150630)

2. Scope of Work.

The work under this contract shall consist of preparing existing foundation for concrete pavement, HMA pavement, concrete pavement, concrete barrier, MGS Guardrail, permanent signing, permanent marking, virtual weigh station system, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.
104-005 (20090901)

3. Prosecution and Progress.

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

Provide the start date to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Upon approval, the engineer will issue the notice to proceed within 10 calendar days before the approved start date.

Prior to beginning operations under this contract, submit in writing the proposed schedule of operations to the engineer for approval.

Complete construction operations for all activities in Stage 1 prior to 12:01 AM September 16, 2016. Stage 1 operations include all work necessary, to open the 4-lane facility and interchange to traffic with no traffic impediments except for those traffic impediments as required for stage 3 operations. Stage 1 operations do not include work on STH 64 eastbound lanes, 130+95 to 147+00 and STH 64 westbound lanes, 130+95 to 142+00. Traffic impediments are defined as those operations that would affect traffic flow in any way. Drums, parked vehicles, equipment, personnel, flagging operations, and other

incidental operations as determined by the engineer in the field are all defined as traffic impediments.

Replace standard spec 108.10.2.2(1) as follows:

(1) The engineer will award a time extension for severe weather on calendar day and completion date contracts. Submit a request for severe weather days if the number of adverse weather days, as defined in standard spec 101.3, exceeds the anticipated number of adverse weather days tabulated below.

Total Anticipated Adverse Weather Days for Each Calendar Month[2]

Jan[1]	31	Aug	3
Feb[1]	28	Sept	4
Mar[1]	31	Oct	5
April	8	Nov 1 through 15	6
May	4	Nov 16 through 30[1]	15
June	3	Dec[1]	31
July	3		

[1] Includes an anticipated winter suspension from November 16 through March 31.

[2] The number of days will be modified in the special provision for year-round and painting contracts.

If the contractor fails to complete the work necessary to complete Stage 1 prior to 12:01 AM September 16, 2016, the department will assess the contractor $2,000 in interim liquidated damages for each calendar day that Stage 1 work is not complete after 12:01 AM, September 16, 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.

Winter Shutdown will commence with the completion of Stage 1. Do not resume work until 2017 unless approved by the engineer. Begin work within ten calendar days after the engineer issues a written notice to do so.

At the beginning of Stage 2 operations, after written order has been issued by the engineer, the contractor has a maximum of 60 calendar days to complete the work necessary to open STH 64, the STH 35 Interchange, and STH 35/64 to traffic with no traffic impediments except for those traffic impediments as required for stage 3 operations. Work operations may continue in Stage 2 beyond the 60 days if the operations occur outside the concrete barrier or beyond the subgrade shoulder point of any part the highways within the project limits and do not cause traffic impediments, including STH 35, STH 64, STH 35/64, CTH E, and interchange ramps.

If the contractor fails to complete the work necessary to open STH 64, the STH 35 Interchange, and STH 35/64 to traffic within 60 calendar days, the department will assess the contractor $20,000 in interim liquidated damages for each calendar day STH 64, the

STH 35 Interchange, and STH 35/64 remain closed beyond 60 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. Labor disputes that are not industry wide.
2. Delays in material deliveries.

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

Prosecution and progress meetings will be held once every week. The contractor's superintendent or designated representative and subcontractor representative for ongoing subcontract work or subcontract work expected to begin within the next two weeks shall attend and provide a written schedule of the next week(s) operations. The written schedule shall include begin and end dates of specific prime and subcontractor work operations. Agenda items at the meeting will include review of the contractor's linear schedule, evaluation of progress, and making revisions if necessary. Plans and specifications for upcoming work will be reviewed to prevent potential problems or conflicts with other contracts. Any outstanding issues will be reviewed.

Conformance with DNR requirements, which will prevent erosion in the grading areas from entering private lands and public waterways, will require the contractor to install erosion control, as the project progresses. The plan provides erosion control mobilizations and emergency erosion control mobilizations for this project per the requirements of standard spec 628.

Follow the staged construction as outlined below, unless otherwise approved by the engineer. Provide a schedule of construction staging, material hauling plan, and construction equipment delivery schedule and plan to the engineer for approval prior to starting work. Coordinate all operations and traffic control as necessary between the various locations for proposed work under this contract.

Construction vehicles and equipment are not allowed to cross STH 35, 64, STH 35/64, or CTH E live traffic at any time during construction. The construction engineer may approve on a limited basis intermittent crossing of unloaded construction equipment (loader, bulldozer, grader, and similar). Approval must be obtained prior to any crossing movement.

Stage 1:
STH 64 and Interchange Ramps, excluding STH 64 eastbound project begin to 147+00 and STH 64 westbound project begin to 142+00 and the removals as required in Stage 3.

Prepare foundation for concrete pavement. Place concrete pavement and finish shoulders. Prepare roadway for opening to traffic with no future traffic impediments beyond those as required for in stage 3.

Prepare shared use path foundation for asphalt pavement and place HMA pavement and shoulder aggregate.

Stage 2:
Coordinate with Minnesota Department of Transportation contractor, Lunda/Ames Joint Venture (LAJV), for STH 64 roadway work to be completed from project begin (St. Croix River Bridge abutment) to STH 64 EB 147+00 and STH 64 WB 142+00.

Work operations include preparing foundation for concrete pavement, concrete pavement, aggregate base, concrete barrier, MGS guardrail, asphaltic shoulders, signing, marking, and all other items and incidentals as necessary to open the 4-lane facility to traffic with no traffic impediments beyond those as required for stage 3.

Stage 3:
Remove all temporary crossovers constructed by others, including temporary connection from westbound STH 35/64 to old STH 35/64, connection between Frontage Road B and STH 35/64 westbound lanes, and temporary crossover north of 150th Ave. Shape roadways, pave shoulders, add rumble strips, and remove and add pavement markings as required in the plans.

Complete construction of Frontage Road A.

Construct STH 35/64 maintenance crossover.

4. Traffic.

Stage 1 & Stage 2 traffic:
Traffic patterns remain unchanged from existing conditions.

Open the 4-lane facility and interchange at the completion of Stage 2 with no traffic impediments beyond those as required for stage 3 operations.

Stage 3 traffic:
STH 64 and interchange open to traffic. Traffic will be reduced to one lane in each direction during all crossover and temporary roadway removals and maintenance crossover construction.

Frontage Rd A/Old STH 35/64 will be closed to traffic during the reconstruction of Frontage Rd A at the location of the existing crossover.

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

Closure type with height, weight, or width restrictions (available width, all lanes in one direction ≤16')	MINIMUM NOTIFICATION
Lane and shoulder closures	14 calendar days
Full roadway closures	14 calendar days
System and service ramp closures	14 calendar days
Full system and service ramp closures	14 calendar days
Detours	14 calendar days
Closure type without height, weight, or width restrictions (available width, all lanes in one direction >16')	MINIMUM NOTIFICATION
Lane and shoulder closures	3 business days
System and service ramp closures	3 business days
Modifying all closure types	3 business days

Discuss LCS completion dates and provide changes in the schedule to the engineer at weekly project meetings in order to manage closures nearing their completion date.
108-057 (20150630)

5. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying STH 35 and STH 64 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Friday, May 27, 2016 to 6:00 AM Tuesday, May 31, 2016 for Memorial Day;
- From noon Friday, July 1, 2016 to 6:00 AM Tuesday, July 5, 2016 for Independence Day;
- From noon Friday, September 2, 2016 to 6:00 AM Tuesday, September 6, 2016 for Labor Day;
- From noon Wednesday, November 23, 2016 to 6:00 AM Monday, November 28, 2016 for Thanksgiving;
- 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 Wednesday, July 5, 2017 for Independence Day;
- From noon Friday, September 1, 2017 to 6:00 AM Tuesday, September 5, 2017 for Labor Day.

107-005 (20050502)

6. Utilities.

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

There are known utility adjustments required for the construction of this project. Coordinate construction activities by calling Diggers Hotline and a direct call to the utilities known to have facilities in the area as required by state statutes. Use caution to ensure the integrity and maintain required clearances of underground and overhead facilities at all times.

Many of the facilities depicted in the plans have been discontinued or will be discontinued; however do not severe or otherwise impact any utility facility without first contacting the owner.

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

AT&T Wisconsin (Communications) has underground facilities within the project area:

Underground facilities and above ground pedestals along STH 35:

- An underground copper communications line on the west side of STH 35, Station 295+00'K' – Station 320+00'K' These facilities have been discontinued and relocated to the western right-of-way of STH 35, from Station 299 to Station 316, with a crossing at Peterson Road at approximately Station 313+50. Also a crossing at Station 318+36'K'. No conflict anticipated.

- An underground copper communications line on the east side of STH 35 beginning at a pedestal at Station 313+44'K', 56 feet RT crosses STH 35 at Station 313+52'K' and continues north with the previously described line. No conflict anticipated.

Underground facilities and above ground pedestals along and near old CTH E:

- A 72 strand fiber optic cable located approximately 40 feet north of the old centerline of CTH E. Boring equipment was used to place the fiber optic cable at depths of 17 to 20 feet through the area of the proposed interchange, which included boring through rock. The fiber optic cable is located about 10 feet below the bottom of the lowest cut and should not be affected by the excavation. This facility is not shown completely on the plan sheets. **Do not blast to aid in excavating the ponds** on the north side of old CTH E due to the potential for damage to the fiber optic. No conflict anticipated.

- Three copper cables paralleling CTH E east of the proposed interchange at CTH E and four copper cables paralleling CTH E west of the proposed interchange. The copper cables, one 600 pair cable, two 100 pair cables and one 50 pair cable are located 20' to 70' south of the old centerline of CTH E and **are in conflict**. AT&T WI will discontinue these **prior to construction** in the interchange area and will be partially removed during final grading of the interchange. Contact Rick Podolak, (715) 410-0656, to confirm these are discontinued prior to excavating any remaining lines. No conflict anticipated.

- One copper cable from outside the project limits along the south side of old CTH E crossing School Road and continuing east crossing under the NW ramp with STH 64 and continuing east crossing STH 64 at approximately Station 184 and continuing east crossing the NE ramp with STH 64 and turning north to the right-of-way and continuing east along the northern right-of-way of CTH E, crossing Thelan Farm Road and continuing east out of the project limits. No conflict anticipated.

- 3-4 copper cables along the south side of CTH E, with a crossing at 59+42'G', and continuing east out of the project limits. No conflict anticipated.

- Two copper cables from Thelan Farm Road (13th Street), south to existing CTH E and then turning east on the north side of existing CTH E and continuing out of the project limits. These facilities were relocated to nearer the right-of-way at the intersection. No conflict anticipated.

Underground facilities and above ground pedestals along and near old STH 64:

- 1-2 copper cables along the north side of old STH 64 from Station 218+00'T' Frontage Road A to the main crossing of STH 64 at Station 232+08'A' and then continuing along the north side of Frontage Road C and then crossing proposed Frontage Road C at Station 262+08'V' and continuing south along the east side of 20th Street. The facilities in conflict have been discontinued. No conflict anticipated.

- A copper cable from Anderson Scout Camp Road, south to old STH 64, crossing at Station 244+07'A', and then turning east and continuing along the north side of old STH 64. These facilities have been discontinued. A new line was installed from the north along the east side of Anderson Scout Camp Road crossing Frontage Road B and STH 64 at approximately Station 244, turning east along the southern right-of-way of Frontage Road C, to a crossing of Frontage Road C / 20th Street at approximately Station 270. No conflict anticipated.

- A line from a pedestal on 23rd Street, along the western right-of-way of STH 64 from Station 288 – Station 295+15. No conflict anticipated.

Contact Rick Podolak at (715) 410-0656 prior to damaging any facility that is believed to be discontinued.

Baldwin Telecom (Communications) is scheduled to install underground facilities within the project limits:

- A fiber optic line along the east right-of-way of STH 35, beginning outside the project limits and continuing north approximately 40-45 feet from centerline, and terminating at approximately Station 266, STH 35.

- A fiber optic line on the east right-of-way of STH 35/64, beginning outside the project limits and continuing south approximately 5-10 feet off the right-of-way line and terminating at approximately Station 298'A' RT.

These facilities are scheduled to be installed in the fall of 2015.

Additional installations are possible within the project limits, prior to construction. Contact Ken Carlsud (Baldwin Telecom), (715) 684-3346 for details.

No conflicts anticipated.

Midwest Natural Gas (Gas) has:

- One underground gas line on the east side of STH 35, Station 295+00'J' – Station 320+00'J' and to the north, with a crossing of STH 35 at approximately Station 313+00'J' and continuing west. There are multiple services connecting to these lines. The conflicting facilities have been discontinued.

- One underground gas line along the western right-of-way of STH 35 from approximately Station 300 – Station 315, crossing back to the eastern right-of-way and continuing north out of the project limits, with multiple service connections. No conflict anticipated.

- An underground gas facility along the northern right-of-way of old CTH E, from the northern intersection of CTH E with School Rd to Station 60+00 and continuing east, with two lines branching off at Thelen Farm Road, and continuing north. These facilities have been discontinued from the proposed cul-de-sac west of the NW Ramp of STH 64 and new STH 35 interchange and continuing east through Thelen Farm Rd. A new 4-inch poly gas main is located on the southern right-of-way of old CTH E, crossing STH 64 freeway underground at approximate Station 184'A' and continuing west out of the project limits. No conflicts anticipated.

- An underground gas facility on the southern right-of-way of old STH 64 from 219+00'T' Frontage Road A and continuing along old STH 64 to 243+25'V' Frontage Road C and then turning north along the western right-of-way of existing Anderson Scout Camp Rd to Station 250+00'P' and continuing north. Midwest Natural Gas will discontinue the portion of these facilities that are in conflict **prior to construction** starting in September 2015 and construct a new gas main along the northern right-of-way of Frontage Road A, that branches south and crosses STH 64 freeway at approximately Station 234+00'A' and Frontage Road C, and also continues east along the northern right-of-way of Frontage Road A and continues north out of the project limits along Anderson Scout Camp Road. No conflicts anticipated.

Contact Justin Jacobs, (715) 797-0590 prior to excavating near any facility that is thought to be discontinued.

St Croix Electric Cooperative (Electricity) has:

- Overhead electric distribution lines along the north side of Frontage Road A continuing east to a service crossing at approximately Station 225. This facility transitions underground and continues east-north-east to Andersen Scout Camp Road, turning south and crossing Frontage Road A at culvert no. 18 and continuing south crossing STH 64 at approximately Station 242 and continuing south crossing Frontage Road C at approximately Station 242 into a junction (a).

- From the junction (a) one underground electric line turns west along the southern right-of-way of Frontage Road C and continues turning south along Settlers Way and out of the project limits.

- From the junction (a) another underground electric line turns east along the southern right-of-way of Frontage Road C and continues east crossing Frontage Road C / 20th Street at approximately Station 270 and continuing east along the eastern right-of-way of STH 64 to a crossing of STH 64 at approximately Station 286, which parallels the direction of 23rd Street. The line then turns back east along the western right-of-way of STH 64 to a crossing of STH 64 at approximately Station 300 and out of the project limits.

- Underground facilities at the intersection of Thelan Farm Road and existing CTH E.

No conflicts anticipated.

Xcel Energy (Electricity – Distribution) has overhead and underground electric facilities within the project area:

- Overhead electric distribution along the eastern right-of-way of STH 35, crossing to the western right-of-way at Station 298+10, continuing north to a crossing to the eastern right-of-way at Station 313 and continuing north outside the project limits.

- Overhead electric distribution along the south side of old CTH E, from existing STH 35 to the intersection with School Road, with service crossings throughout.

No conflict anticipated.

7. Intelligent Transportation Systems (ITS) – Control of Materials, Dynamic Message Sign.

A Description
Standard spec 106.2 – Supply Source and Quality
Add the following to 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
Dynamic Message Sign
Pole-Mount Cabinet
Cellular Modem

Pick-up small department-furnished equipment, such as communications devices, cameras, and controllers, from the department's Statewide Traffic Operations Center (STOC), 433 W. St. Paul Ave., Milwaukee, WI 53203 at a mutually agreed upon time during normal state office hours. Contact the department's STOC at (414) 227-2166 to coordinate pick-up of equipment.

Large department-furnished equipment, such Dynamic Message Signs will be delivered by the supplier to a contractor-controlled site within the Northwest Region of Wisconsin. Delivery will not necessarily be in a "just in time" manner. Store the equipment until field installation. Provide location details and a contact for delivery coordination upon receiving the contract's Notice to Proceed.

Transportation of the equipment between the electric shop and the field or interim location(s) shall be the responsibility of the contractor.

Standard spec 106.3 – Approval of Materials
Add the following to standard spec 106.3 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.
- Mounting LED warning signs to the sign structure.
- Mounting detail for dynamic message signs.
- 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.
670-005 (20150630)

8. Removing Traffic Control Barricades Type III Permanent, Item 204.9060.S.01.

A Description
This special provision describes removing traffic control barricades type III permanent according to the pertinent provisions of standard spec 204 and as hereinafter provided.

All traffic control barricades Type III shall be stacked and with salvaged barricade bases separated. Notify the St. Croix County Highway Department's office a minimum of three days prior to delivery of the signs to the county highway shop. Contact Joe Murtha at (715) 760-1910 (joe.murtha@co.saint-croix.wi.us) or Jim Krizan at (715) 760-1904 (james.krizan@co.saint-croix.wi.us) for barricade and barricade base delivery coordination.

Deliver barricades and bases to:

St. Croix County Highway Department at:
920 3rd Street
Hammond, WI 54015

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Traffic Control Barricades Type III Permanent as each individual unit, acceptably completed and delivered.

E Payment
Add the following to standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.01 204-025 (20041005)	Removing Traffic Control Barricades Type III Permanent	Each

9. Removing Crash Cushion Temporary, Item 204.9060.S.02.

A Description
This special provision describes removing crash cushion temporary in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B Materials
Provide a non-shrink commercial grout or epoxy material identified on the current WisDOT approved products list for filling remaining holes in the concrete.

C Construction
Upon removal of the crash cushion unit, remove all anchor bolts to at least 2 inches below the surface and completely fill in the remaining holes with non-shrinking grout or epoxy.

D Measurement
The department will measure Removing Crash Cushion Temporary as each individually removed crash cushion, acceptably completed.

E Payment
Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.02 204-025 (20150630)	Removing Crash Cushion Temporary	Each

10. Removing Concrete Barrier Temporary, Item 204.9090.S.01.

A Description
This special provision describes removing concrete barrier temporary in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C Construction
Remove concrete barrier temporary as shown in plans in accordance with the standard spec 204.3

D Measurement
The department will measure Removing Concrete Barrier Temporary by the linear foot, acceptably completed.

E Payment
Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.01	Removing Concrete Barrier Temporary	LF
204-025 (20150630)		

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

(3) If corrective action improves the property in question such that the running average after 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)

12. Signs Type II Reflective H, Item 637.2210.

MNDOT Standard Sign M1-5A

This special provision describes providing MNDOT Standard Sign M1-5A. This work shall be according to the requirements of standard spec 637, the plans, and as hereinafter provided.

MNDOT Standard Sign M1-5A shall be incorporated into assemblies as indicated in the plans. Details of construction are included in the plan.

The department will pay for MNDOT Standard Sign M1-5A under item 637.2210 Signs Type II Reflective H.

13. 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.3 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.4 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.5 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)

14. Traffic Control Covering Signs Type I and Type II.

This work shall be according to the pertinent requirements of standard spec 643 and as provided here.

Covers used on Type I and Type II signs will become property of the department at the conclusion of the contract.

15. Removing Signs Type II Item 638.2602, Permanent Traffic Control Signs.

This work shall be according to the pertinent requirements of standard spec 638 and as provided here.

Type II signs are the department's property. All DOT signs removed, and not identified for reuse, shall be separated between plywood and aluminum signs and palletized the shipment for handling with a forklift. Contact DTSD Sign Shop Coordinator Steve Allard at (715) 855-7671 at least three business days prior to delivery to coordinate shipment to be delivered to the DTSD Sign Shop Distribution Center at one of the following locations:

- Dunn County Highway Shop, 3303 USH 12 East, Menomonie, WI 54751
- LaCrosse County Highway Shop, 301 Carlson Rd, West Salem, WI 54669
- Price County Highway Shop, 704 N. Lake Ave, Phillips, WI 54555
- Washburn County Highway Shop, 1600 CTH H, Spooner, WI 54801
- Wood County Highway Shop, 555 17th Ave North, Wisconsin Rapids, WI 54495

All traffic control barricades Type III and permanent traffic control signs removed as part of Stage 3A shall be separated between aluminum and plywood signs, and palletized the shipment for handling with a forklift. Barricades shall be stacked and salvaged barricade bases will be separated. Notify the St. Croix County Highway Department's office a minimum of three days prior to delivery of the signs to the county highway shop. Contact Joe Murtha at (715) 760-1910 and joe.murtha@co.saint-croix.wi.us and Jim Krizan at (715) 760-1904 and james.krizan@co.saint-croix.wi.us for sign, barricade, and barricade base delivery coordination. Signs, barricades, and barricade bases shall be delivered to the St. Croix County Highway Department at 920 3rd Street, Hammond, WI 54015.

16. Pavement Marking Grooved Wet Reflective Epoxy 4-Inch, Item 646.2304.S; 8-Inch, Item 646.2308.S.

A Description

This special provision describes furnishing, grooving, and installing wet reflective epoxy pavement marking as shown on the plans, according to standard spec 646, and as hereinafter provided.

B Materials

Furnish a 20 mils application of modified epoxy binder pavement marking, Epoplex LS65, Ennis-Flint HPS-4 or Dow Poly-Carb Mark 55.4, or approved equal, in a grooved slot. Provide a double drop system of 5.3 pounds per gallon of 3M elements Series 70E wet reflective beads for white marking and 71E for yellow markings and Utah Performance beads mixture at a drop rate of 12-22 pounds per gallon.

Replace standard spec 646.2.3 (1) with the following:

Furnish Utah Performance beads with the following gradation:

Utah Bead Gradation

US Mesh	Percent Passing (ASTM D1214)
18	65-80
20	
25	
30	30-50
40	
50	0-5

Beads shall achieve a minimum of 250 mcd, initial, and 80 mcd, for white after one year from placement, per ASTM E 2177, 45 seconds after the pavement marking is wetted.

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 the wet reflective epoxy/ bead marking.

Plane the grooved lines according 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. Remove lane line and center line pavement markings during the grooving process.

C.2 Groove Depth for Asphalt

Cut the groove to a depth of 80 mils ±10 mils from the pavement surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Depth for Concrete

Cut the groove to a depth of 60 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.4 Groove Width – Longitudinal Markings

Cut the groove 1inch wider than the width of the pavement marking.

C.5 Groove Position

Position the groove edge according to Standard Detail Drawing Pavement Marking (Mainline). If necessary, groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the pavement marking segment. Achieve straight alignment with the grooving equipment.

C.6 Groove Cleaning

C.6.1 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 marking. 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. 6.2 New Asphalt

Groove pavement five or more days after paving.

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. 6.3 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.

D Measurement

The department will measure Pavement Marking Grooved Wet Reflective Epoxy (Width) by the linear foot of line, 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
646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF
646.2308.S	Pavement Marking Grooved Wet Reflective Epoxy 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the epoxy, 3M elements and beads; and for removing existing or temporary marking, if necessary.
646-024 (20141107)

17. General Requirements for Electrical Work.

Add the following to standard spec 651.2, Materials:

(7) The approved products list is located at:
http://www.dot.wisconsin.gov/business/engrserv/docs/ap3/electrical.pdf

18. Ramp Closure Gates Hardwired 28-FT, Item 662.1028.S; Ramp Closure Gates Hardwired 30-FT, Item 662.1030.S; Ramp Closure Gates Hardwired 40-FT, Item 662.1040.S; Ramp Closure Gate Arms Stockpile 28-FT, Item 662.3028.S; Ramp Closure Gate Arms Stockpile 30-FT, Item 662.3030.S; Ramp Closure Gate Arms Stockpile 40-FT, Item 662.3040.S; Ramp Closure Gate Flashers Stockpile, Item 662.4000.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 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.

Install structure identification plaques in the location the plan details show. Contact Richard Tumaniec, WisDOT NW Region, (715) 833-9815, for identification number issuance.

C.2 Furnishing Gate Arms
Under the Ramp Closure Gate Arms Stockpile bid items, furnish and deliver spare arms of the nominal length the bid item indicates conforming to B.2. Deliver spare gate arms to an address provided by Richard Tumaniec, WisDOT NW Region, (715) 833-9815.

C.3 Furnishing Flashers
Under the Ramp Closure Gate Flasher Stockpile bid item, furnish and deliver spare gate flasher assemblies conforming to B.2. Deliver spare gate arms to an address provided by Richard Tumaniec, WisDOT NW Region, (715) 833-9815.

D Measurement
The department will measure the Ramp Closure Gates Hardwired bid items as each individual installation, acceptably completed.

The department will measure the Ramp Closure Gate Arms Stockpile bid items and Ramp Closure Gate Flashers Stockpile as each individual unit, acceptably furnished and delivered.

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

ITEM NUMBER	DESCRIPTION	UNIT
662.1028.S	Ramp Closure Gates Hardwired 28-FT	Each
665.1030.S	Ramp Closure Gates Hardwired 30-FT	Each
662.1040.S	Ramp Closure Gates Hardwired 40-FT	Each
662.3028.S	Ramp Closure Gate Arms Stockpile 28-FT	Each
662.3030.S	Ramp Closure Gate Arms Stockpile 30-FT	Each
662.3040.S	Ramp Closure Gate Arms Stockpile 40-FT	Each
662.4000.S	Ramp Closure Gate Flashers Stockpile	Each

Payment for the Ramp Closure Gate Hardwired bid items is full compensation for providing ramp closure gates including gate arms, structure identification plaques, electrical wiring, gate flashers, and for padlock.

Payment for the Ramp Closure Gate Arms Stockpile is full compensation for furnishing and delivering spare ramp closure gate arms.

Payment for the Ramp Closure Gate Flashers Stockpile is full compensation for furnishing and delivering ramp spare closure gate flasher assemblies.

19. Install Pole Mounted Cabinet, Item 673.0225.S.

A Description
This special provision describes installing department furnished aluminum enclosures on poles for intelligent transportation systems equipment.

B Materials
Use stainless steel bolts, nuts, and washers unless otherwise specified.

All conductors, terminals, and parts that could be hazardous to maintenance personnel shall be protected with suitable insulating material.

The cabinet will be equipped with service panels. Two panels shall be provided and mounted on the cabinet sidewalls. The left side panel shall be designated as "Input/Communications," and the right side panel shall be designated as the "Service Panel."

The service panel will be equipped with a four-outlet handi-box. Wire the handi-box to the series portion of the filtering surge protector.

Use metallic conduit, fittings, and adapters required from the underground conduit transition point to the cabinet as part of this item. A typical installation requires on 2-inch conduit. Use metallic conduit according to standard spec 652.

C Construction
Fasten the field cabinet securely onto a pole. Provide bolted stainless steel connections with lock washers, locking nuts, or other engineer-approved means to prevent the connection nuts from backing off. Isolate dissimilar materials from one another using stainless steel fittings. Make all power connections to the cabinet as specified in standard spec 656.

Drill and tap the cabinet, as necessary, to mount the terminal blocks and other attachments to the service panel, to provide an entrance on the back of the cabinet for cable from the pole mounted intelligent transportation systems equipment, and to mount the service panel to the cabinet as shown in the details. Remove all sharp edges or burrs, or both, caused by the cutting or drilling process. Seal all openings to prevent water from entering the cabinet. Mount the surge protector to the service panel.

Install metallic conduit on the exterior of the pole (for entrance to the cabinet from the ground) as shown in the plans, and according to the applicable requirements of standard spec 652.

D Measurement
The department will measure Install Pole Mounted Cabinet as each individual assembly, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
673.0225.S	Install Pole Mounted Cabinet	Each

Payment is full compensation for installing the pole mounted cabinet; for making all connections and conduit/wire entrances; and for furnishing all testing.
673-010 (20100630)

20. Installing Pole Mounted Cabinet, Item SPV.0060.01.

A Description
This special provision describes installing a department furnished aluminum cabinet on a Type 3 pole for traffic counting equipment, as shown on the plans and as hereinafter provided.

B Materials
The unit will consist of a pole-mounted cabinet. All mounting hardware such as the U-bolts, nuts, and washers that are subject to corrosion shall be stainless steel unless otherwise specified. The Cabinet and U-bolt mounts shall be picked up at the Eau Claire, WI DOT – Contact Rick Putzy at (715) 832-2893. Notify Jane Oldenburg, Wisconsin DOT, Travel Survey Shop at (608) 245-2679 three weeks prior to pickup, so items can be placed at the pickup location.

All conductors, terminals, and parts that could be hazardous to maintenance personnel shall be protected with suitable insulating material.

The cabinet and detector will protected by a Wavetronix Click 200 Surge arrestor module.

C Construction
The contractor shall securely fasten the field cabinet onto a pole (pole paid separately) with bolted stainless steel connections with lock washers, lock nuts, or other engineer-approved means to prevent the connection nuts from backing off. When applicable, install the bottom U-bolt so that it is above the battery case. Isolate dissimilar materials from one another by stainless steel fittings.

Make all power connections to the cabinet as specified in detail plans.

The cabinet shall be drilled and tapped, as necessary, to mount the "Din Rail and other attachments, to provide an entrance on the bottom back of the cabinet for the cable from the pole mounted Wavetronix Detector equipment. Sharp edges, or burrs, caused by the cutting or drilling process shall be removed. All openings shall be sealed to prevent water from entering the cabinet.

The surge protector shall be mounted to the Din Rail.

D Measurement
The department will measure Installing 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 items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060. 01	Installing Pole Mounted Cabinet	Each

Payment for Installing Pole Mounted Cabinet is full compensation for installing the pole mounted cabinet, for making all connections (to Traffic Detector and electrical service pedestal) and conduit/wire entrances, and for furnishing all testing.

21. Installing 2 Solar Panels on One Bracket, Item SPV.0060.02.

A Description

This section describes installing department furnished solar power units.

B Materials

The units will consist of 2 solar panels, solar panel rack, 2 U-bolts, 10 AWG Gauge stranded-wire wiring. Provide any other mounting or wiring hardware not furnished by the department. The 2 solar panels, solar panel rack, 2 U-bolts, and 10 AWG Gauge stranded-wire wiring shall be picked up at the Eau Claire, WI DOT – Contact Rick Putzy at (715) 832-2893. Notify Jane Oldenburg, Wisconsin DOT, Travel Survey Shop (608) 245-2679, three weeks prior to pickup, so items can be placed at the pickup location.

C Construction

Install and test the solar charge regulator and solar batteries (in parallel). Make the necessary electrical connections between the components of the solar power unit. Mount the solar panels and enclosure; all necessary hardware for mounting is incidental. Connect solar panels to the solar power unit according to the manufacturer's instructions.

The solar power unit shall be activated and left on for 30 consecutive days. During this period, all materials and components of the solar power unit shall operate as specified and without any failure. In event of a failure, the engineer will suspend the 30-day test until the failures are corrected, at which time the test will resume.

D Measurement

The department will measure Installing 2 Solar Power Panels on One Bracket as each individual assembly, 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.0060.02	Installing 2 Solar Power Panels on One Bracket	Each

Payment for Installing 2 Solar Power Panels on one Bracket is full compensation for installing the solar power unit on a pole, for making all connections, and for furnishing all testing.

22. Installing Wavetronix Click 200 Module, Item SPV.0060.03.

A Description
This special provision describes installing department furnished Wavetronix Click 200 Module as shown on the plans and as hereinafter provided.

B Materials
The units will consist of Wavetronix Click 200 Module. DIN racks, terminal block, wiring, and stainless steel bolts. Provide any other mounting or wiring hardware not furnished by the State. The Wavetronix Click 200 Module shall be picked up at the Eau Claire, WI DOT – Contact Rick Putzy at (715) 832-2893. Notify Jane Oldenburg, Wisconsin DOT, Travel Survey Shop, (608) 245-2679 three weeks prior to pickup, so items can be placed at the pickup location.

C Construction
Install the Wavetronix Click 200 Module in the cabinet on to the DIN rail as shown on the plans.

Connect the Wavetronix Click 200 Module to the Wavetronix Power Module and to the Wavetronix unit as shown on the plan. The power is wired to the bottom of the Click 200 Module.

After the Wavetronix Click 200 Module is installed and the Wavetronix cable is connected to the Wavetronix unit, test to see that all of the traffic lanes are being collected correctly.

D Measurement
The department will measure Install Wavetronix Click 200 Module, as each Wavetronix Click 200 Module is acceptably installed and operational.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.03	Installing Wavetronix Click 200 Module	Each

Payment is full compensation for installing antennas and connections; for furnishing and installing mast brackets and mounting hardware; and for testing.

23. Installing Concrete Maintenance Platform, Item SPV.0060.04.

A Description
This special provision describes installing a concrete maintenance platform at an automatic traffic recorder station.

B Materials
The contractor may furnish a pre-cast concrete slab, or furnish materials conforming to the following:

For concrete, provide materials according to standard spec 602.2.

For forms, provide materials according to standard spec 602.3.2.2.

C Construction
Install concrete maintenance platform as specified in the plan details.

Before installation of the pre-cast concrete slab, or concrete maintenance platform, the earth shall be leveled and compacted around the type 2 concrete or helix pole base.

Earth shall be removed and leveled on the side of the pole opposite the roadway. (When you are standing on the platform looking into the cabinet you are also looking straight ahead at the roadway.)

If pouring a concrete maintenance platform, 2 x 4 lumber forms shall be constructed and laid in the area that the earth was removed from. The forms shall be leveled and squared before the concrete is poured.

Place and finish the platform or concrete according to standard spec 602.3.2.3 (1).

D Measurement
The department will measure Inistalling Concrete Maintenance Platform as each individual concrete maintenance platform, 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.0060.04	Installing Concrete Maintenance Platform	Each

Payment is full compensation for furnishing and installing all materials, including concrete.

24. Grading, Shaping and Finishing for ATR Site, Item SPV.0060.05.

A Description
This special provision describes the excavating, filling, grading, shaping, compacting, and finishing necessary to accommodate ATR Site, as shown on the plans, according to the pertinent requirements of the standard specifications, and as hereinafter provided.

B Materials
The contractor shall furnish the topsoil, fertilizer, seed, and mulch for placement around the base and maintenance platform.

C Construction
Construct embankment slopes as shown on the plans.

Properly dispose of all surplus and unsuitable material according to standard spec 205.3.12.

D Measurement
The department will measure Grading, Shaping and Finishing for ATR Site as each individual terminal, 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.0060.05	Grading, Shaping and Finishing for ATR Site	Each

Payment is full compensation for furnishing all excavating, grading, shaping and compacting; and for furnishing and placing fill, topsoil, fertilizer, seed, and mulch.

25. Installing Wavetronix Detector Module, Item SPV.0060.06.

A Description
This special provision describes installing, testing, and completing the calibration of the state-furnished Wavetronix Detector (HD 125) Module, mounting bracket and stainless steel hose clamps as shown on the Plans and as hereinafter provided.

B Materials
The department will furnish the Wavetronix Detector (HD 125) Module, Wavetronix Cable, Mounting Bracket, and stainless steel hose clamps from the Project ID. The department will provide a Wavetronix Service Report form for the completion of the calibration requirements. The Wavetronix Detector (HD125) Module, mounting bracket and stainless steel hose clamps shall be picked up at the Eau Claire, WI DOT – Contact Rick Putzy at (715) 832-2893. Notify Jane Oldenburg, Wisconsin DOT, Travel Survey Shop, (608) 245-2679 three weeks prior to pickup, so items can be placed at the pickup location.

C Construction
Attach the Wavetronix Detector (HD125) Module to a 30 foot Type 3 pole utilizing the Wavetronix Mounting Bracket and stainless steel hose clamps. Do not use permanent straps. The bracket may need to be moved if it the detector goes out of alignment. Use manual installation height guidelines located at website:

http://www.wavetronix.com/support

Connect the Wavetronix 40 foot Detector cable to the Wavetronix Detector (HD125) Module mounted up on the pole, put drip loop outside the pole and then snake the cable down through the pole (leave slack in cable so the unit can be moved up or down and do not cut the cable) and make the appropriate cable connections to the Click 200 Surge Arrestor inside the pole-mounted cabinet.

The contractor shall demonstrate the functionality and operational accuracy of the Wavetronix Detector (HD125) Module. The contractor using a laptop computer running Windows and the Wavetronix Setup and Calibration software program SSM HD and manual located website: http://www.Wavetronix.com/support to connect to the Wavetronix unit and verify the detector is properly aimed. Under the Sensor Setting heading, enter the last four digits of the Wavetronix number. Description is "STH 64, West of Stillwater Bridge. Location is 550007621111. Follow the manual for the remaining setup. Use the software, run the "lane auto-configuration" to detect all traffic lanes. All lanes must be open to free-flowing traffic to complete this process.

The Wavetronix Detector (HD125) Module shall be setup to collect 5-bin length data. Bin length (feet) shall be 0-9, 9-24, 24-40, 40-75, 75 +. Collect speed into 15 bins starting with 30-35, 35-40 and 5 mph increments until 95 +.

In the "lane verification" mode of the software, set display so speed is indicated on each vehicle crossing the screen. The Wavetronix Detector unit needs to be adjusted so that speed is indicated for 98 %(normal accuracy) of vehicles with a minimum of 95% accuracy, per lane. Vehicles not being detected for speed, display "no speed (blank)". Record the data on the Wavetronix Service Report Form.

In the class 1 (C1) display mode, vehicles detected must be 90% accurate, per lane. Record the data on the Wavetronix Service Report Form.

A 15-minute volume count shall be taken. The accuracy between the display and the manual count must be 98%-99% typical with a minimum of 95% accuracy per lane. Recommend counting each lane in one direction at once. Record the data on the Wavetronix Service Report Form.

A field test shall be successfully conducted by Installation Contractor. A signed and dated Wavetronix Service Report Form, indicating the results of accuracy, speed, and class tests, shall be provided to Jane Oldenburg, Wisconsin DOT, Travel Survey Shop, 3633 Pierstorff St., Madison, WI 53704, 608-245-2679. You may scan and email document to: jane.oldenburg@dot.wi.gov or fax to 608-246-5401.

The Travel Survey Shop will verify the data after all of the construction work, wire and cable connections are made, the Wavetronix Service Report calibration form is complete, and the detector is declared operational by the contractor. The test is designed to demonstrate that Wavetronix Detector (HD 125) Module operates correctly, and that all functions are in conformance with these Specifications.

Following successful completion of the above tests, the Wavetronix Detector (HD 125) Module shall be activated and left on for 30 consecutive days. During this period, all materials and components of the Wavetronix Detector (HD 125) Module shall operate as specified and without any failure.

In the event any component of the Wavetronix (HD 125) Detector Module system malfunctions or operates below the level specified, the test period will be terminated, and the contractor shall be required to determine the problem, repair the problem and report the findings to the Travel Survey Shop within 7 to 10 calendar days of notification. Upon correction of the problems, to the satisfaction of the Travel Survey Shop, a new 30-day test period will be started.

WAVETRONIX SERVICE REPORT Date:

REPORT TYPE	STATION NAME	STATION
☐ CALIBRATION ☐ SERVICE		
WORK ORDER:		

SPEED CALIBRATION (NUMBER OF VEHICLES WITH "NO SPEED") ACCURACY REQUIREMENT: 98% NORMAL, 95% MIN.			CLASS CALIBRATION ACCURACY REQUIREMENT: 90%			
LANE #	SPEED CALIBRATION # NO SPEED	SPEED CALIBRATION TOTAL SAMPLE #	LANE #	CLASS CALIBRATION #WRONG CLASS	CLASS CALIBRATION TOTAL SAMPLE #	LENGTH ADJUSTMENT FT.
Lane 1			Lane 1			
Lane 2			Lane 2			
Lane 3			Lane 3			
Lane 4			Lane 4			
Lane 5			Lane 5			
Lane 6			Lane 6			
Lane 7			Lane 7			
Lane 8			Lane 8			

VOLUME CALIBRATION MANUAL VS WAVETRONIX 15 MINUTE COUNT ACCURACY REQUIREMENT: 98% TYPICAL (95% MINIMUM) *	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
Manual								
Wavetronix (WTX)								
Accuracy Percentage (%) (Manual ÷ WTX x 100 = %)								

*May use "per direction" totals for obstructed views. Accuracy Requirement: 98% (95%

EQUIPMENT NO: WAVETRONIX UNIT (LAST 4 DIGITS)#				MODEM NO:(LAST 6 DIGITS) #				
	LANE 1	LANE 2	LANE 3	LANE 4	LANE 5	LANE 6	LANE 7	LANE 8
LANE WIDTH								

COMMENTS/WORK COMPLETED:	
COMPLETED BY: (COMPANY AND NAME)	DATE:

D Measurement
The department will measure Installing Wavetronix Detector Module 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.0060.06	Installing Wavetronix Detector Module	Each

Payment is full compensation for installing the Wavetronix Detector (HD 125) Module, Wavetronix cable and Wavetronix mounting bracket; for making all cable connections; and for furnishing all testing and completion of the Wavetronix Service Report form.

26. Install Ground Mount Dynamic Message Sign, Item SPV.0060.07.

A Description
This special provision describes installing a department-furnished dynamic message sign and controller on structural steel sign supports (paid for separately), and integrating the sign and making it functional in the existing system.

B Materials
Materials will include department-furnished materials and contractor furnished materials.

Department-furnished materials include the following:

- One Adaptive Display Solutions NTCIP compliant Side Mounted Freeway Dynamic Message Sign (DMS). The DMS is 16'-10" long by 5'-3" tall and weighs approximately 800 pounds.
- Control cable from DMS Controller to DMS.

Contractor furnished materials include the following:

- AWG #6 copper wire to bond the sign to an adjacent ground rod.
- Category 5 network cable to connect the sign to the adjacent communications device (Ethernet switch or cell modem)

C Construction

Connect the power and control cables according to the manufacturer's recommendations.

Bond the bottom of the sign structure to one or more ground rods. Use exothermic welding at each end of the ground wire (unless the steel structure has a suitable grounding lug). Use an AWG # 6 solid, bare copper wire to bond the sign structure to the ground rod(s). Use a device that measures resistance to ground using the three-point fall-of-potential method to ensure that the resistance from the sign's ground bar to ground does not exceed 4 ohms. Add more ground rods if necessary to achieve this requirement.

D Measurement

The department will measure Install Ground Mount Dynamic Message Sign as a unit each, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.07	Install Ground Mount Dynamic Message Sign	Each

Payment is full compensation for installation of the sign and controller; fabrication and installation of all mounting hardware; furnishing and installation of control and power cables; and for testing the sign and controller.

27. Traffic Control Removing Sign Covers, Item SPV.0060.08.

A Description

This special provision describes removing sign covers installed on Type II signs under a previous contract. This work shall be according to the requirements of standard spec 643, the plans, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Traffic Control Removing Sign Covers 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.0060.08	Traffic Control Removing Sign Covers	Each

Payment is full compensation for removing sign covers and mounting hardware, disposal of sign covers and mounting hardware and for repairing any damage to the existing Type II signage.

28. Concrete Barrier Transitions MnDOT Parapet to S42, Item SPV.0060.09.

A Description
This special provision describes construction of concrete barrier transition according to standard spec 603, as shown on the plans, and as hereinafter provided.

B (Vacant)

C Construction
Concrete barrier transitions shall be used starting from the MnDOT parapet on the St. Croix River Bridge superstructure and approach panel to standard WisDOT S42 on the Wisconsin side.

Concrete barrier construction shall follow direction of the standard spec 603, as the plans show and as the engineer directs.

D Measurement
The department will measure Concrete Barrier Transitions MnDOT Parapet to S42 as each individual transition, 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.0060.09	Concrete Barrier Transition, MnDOT Parapet to S42	Each

Payment for permanent barrier transition bid item is accordance with standard spec 603.

29. Concrete Barrier Transition River Bridge Path Rail to C&G, Item SPV.0060.10.

A Description
This special provision describes construction of the bridge path railing to curb and gutter transition according to standard spec 601, as shown on the plans, and as hereinafter provided.

B (Vacant)

C Construction
Bridge path railing base to curb and gutter transitions shall be used starting from the MnDOT bridge path railing base on the St. Croix River Bridge superstructure and approach panel to 30" Type D curb and gutter on the Wisconsin side.

Bridge path railing base to curb and gutter transitions shall follow direction of the standard spec 601, as the plans show and as the engineer directs.

D Measurement
The department will measure Concrete Barrier Transition River Bridge Path Rail to C&G as each individual transition, 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.0060.10	Concrete Barrier Transition River Bridge Path to C&G	Each

Payment for permanent barrier transition bid item is accordance with standard spec 601.

30. Install State-Furnished Storm Sewer Grate and Rings, Item SPV.0060.11.

A Description
This special provision describes installing state furnished storm sewer rings and grates in accordance with standard spec 611, as shown on the plans, and as hereinafter provided.

B Materials
The rings and grates are located at the field office for the construction project.

C Construction
The storm sewer system and pipes were previously installed under a separate contract. All inlets are covered with cover plates. Remove the cover plate and install rings and grates in accordance with standard spec 611.3. Ensure the storm sewer systems will be operational upon completion of installing the rings and grates.

D Measurement
The department will measure Install State-Furnished Storm Sewer Grate and Rings as each individual inlet or manhole, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.11	Install State-Furnished Storm Sewer Grate and Rings	Each

Payment is full compensation in accordance with standard spec 611.5.4.

31. Traffic Control Install State-Furnished Vertical Panel, Item SPV.0060.12.

A Description

This special provision describes the installation of department furnished traffic control vertical panels, their supporting posts, and surface-mounted bases in accordance to the MUTCD and pertinent requirements of standard spec 643.

B Materials

The vertical panels are provided by the department for installation as designated by the engineer in the field. The panels are located at the St. Croix County salt shed located at the STH 35/Main Street roundabout, ¼ mile from the project site.

The provided panels and flexible supporting posts are made of non-metallic material that have a reactive spring so as to be resistant to direct wheel impacts with speeds up to 60 mph, and have the capability of immediately restoring itself to a vertical position when struck by a standard vehicle.

The surface-mounted bases have a maximum size of 8 inches square and shall not be a hazard to vehicles.

The vertical panels have alternating orange and white reflective stripes in accordance to MUTCD. The dimensions of the reflective sheeting are 12 inches by 24 inches. Reflective sheeting meets the requirements of standard spec 637.2.2.2 and is be suitable for use on reboundable traffic control devices.

The panels shall face direction of traffic as directed by the engineer and shall have an overall height above the pavement of 36 inches. The alternating orange and white stripes shall slope downward when facing the panel in the direction traffic is to flow.

C Construction

Attach vertical panels and supporting posts to the bases in accordance to the manufacturer's recommendations. The bases shall be fastened to the pavement using the manufacturer’s recommendations.

D Measurement

The department will measure Traffic Control Install State-Furnished Vertical Panel in place by each individual panel, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.12	Traffic Control Install State-Furnished Vertical Panels	Each

Payment is full compensation for installing, and removing the vertical panels, the supporting posts, bases and mounting hardware.

34. Concrete Curb and Gutter Cure and Seal Treatment, Item SPV.0090.01.

A Description

This work includes treating all newly constructed concrete curb and gutter with a surface cure and seal treatment as shown on plans, and as hereinafter provided.

B Materials

Materials shall conform to a clear treating material listed on the current approved WISDOT product list for "Cure and Seal Compounds for Non-Trafficked Surfaces on Structural Masonry".

C Construction

Application rates for the treating material shall be according to the manufacturer's specifications.

D Measurement

The department will measure the Concrete Curb and Gutter Cure and Seal Treatment 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.0090.01	Concrete Curb and Gutter Cure and Seal Treatment	LF

Payment is full compensation for providing Concrete Curb and Gutter Cure and Seal Treatment.

35. Cleaning, Grading & Shaping Existing Ditch, SPV.0090.02.

A Description

This work includes removing deposits of silt, sand, grass, rocks, and deleterious materials from existing ditches at locations selected by the engineer or as designated on the plans. This work also includes grading and shaping the selected areas, if necessary, to reestablish a flow line.

B (Vacant)

C Construction
Clean and shape the ditches sufficiently to allow proper hydraulic flow, with a minimum ditch gradient of 0.30%, and in a manner suitable to the engineer.

D Measurement
The department will measure Cleaning, Grading & Shaping Existing Ditch, in linear feet by the flowline of the ditch, 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.0090.02	Cleaning, Grading & Shaping Existing Ditch	LF

Payment is for full compensation for removing and properly disposing of deleterious material; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The finishing items of salvaged topsoil, fertilizer, seed, mulch, and riprap (if required) will be measured and paid under their respective items.

36. Project Concrete Crack Mitigation and Repair Special, Item SPV.0105.01.

A Description
This special provision describes work according to standard spec 415, and as hereinafter provided.

B (Vacant)

C Construction
Provide the engineer with HIPERPAV analysis three days prior to the placement of Concrete Pavement 9.0-Inch Special and Concrete Pavement 10.5-Inch Special. If seven calendar days elapse between staging paving operations, an additional analysis of HIPERPAV may be requested by the engineer.

If cracks occur, selection of repair type shall be as specified in Procedure 4.24 of the Construction and Materials Manual (CMM).

D Measurement
The department will measure Project Concrete Crack Mitigation and Repair Special by the lump sum unit of work, acceptably completed.

E Payment
Delete entire standard spec 415.5.3 and replace with the following.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.01	Project Concrete Crack Mitigation and Repair Special	LS

Payment is full compensation for performing mix design HIPERPAV analysis, mix design adjustments and corrections as per Project Concrete Crack Mitigation and Repair Special, all PCC pavement repairs, mobilization, all necessary traffic control devices.

Fifty percent payment of this item will be paid to the contractor after the completion of the first HIPERPAV analysis. The remaining 50 percent will be paid for upon final project acceptance.

37. Construction Staking Concrete Pavement Joint Layout, Item SPV.0105.02.

A Description
This work shall consist of staking the location of all joints on the project, including mainline and intersections to accommodate the concrete paving operation. The contractor shall set all points necessary to establish the horizontal position of the dowel bar sets and saw joints in the concrete pavement according to the plans or as directed by the engineer.

B (Vacant)

C Construction
Plan and locate all points necessary to establish the horizontal position of the transverse and longitudinal joints in the concrete to prevent uncontrolled cracking. Mark the location of all concrete joints in the field. Make joint adjustments as required to fit field conditions, traffic staging, or as directed by the engineer.

D Measurement
The department will measure Construction Staking Concrete Pavement Joint Layout 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.0105.02	Construction Staking Concrete Pavement Joint Layout	LS

Payment is full compensation for survey work necessary to locate all dowel bar sets and saw joints on the mainline and intersections, and for adjustments to match field conditions and traffic staging.

38. Electrical Service, Virtual Weigh Station, Item SPV.0105.03.

A Description

This work consists of all coordination and work by the Contractor and utility company as required to provide electrical service from an existing source to a meter at the new Virtual Weigh Station, in accordance with the plans and as hereinafter provided. Electrical service shall include overhead or underground single phase power to the site and to transformers near the virtual weigh station, including furnishing and installation of transformers and transformer pads; underground single phase service to the new virtual weigh station; non-metallic conduit required for crossing under paved areas; wire and terminations at transformers and at meter sockets; and meter.

Electrical work and equipment from the meter socket, conduit, and virtual weigh station electrical system terminations at the main switch; and exterior conduit stub from the meter are included under other bid items.

B (Vacant)

C Construction

The contractor shall make arrangements and coordinate through the proper utility company for service. The contractor is responsible for obtaining all necessary permits. The contractor shall coordinate all required utility work in accordance with standard spec 107.22, and shall pay for the installation of new site utilities and tie-ins as may be necessary to complete the work.

Xcel Energy or St. Croix Electric Cooperative are to provide electric service to the site. The new virtual weigh station system will require electrical service. Xcel Energy and St. Croix Electric Cooperative have service facilities located in the vicinity of the proposed virtual weigh station site.

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

Submit the application to the utility for any required electrical services. Pay the utility installation costs promptly and seek reimbursement through the "Electrical Service, Virtual Weigh Station" bid item. If required by the local utility, contact the local municipality to establish a site address for the new electrical service location.

Arrange for future monthly energy usage billing to be established in the name of the appropriate entity. Contact Bob Spoerl, (608) 266-8665, WisDOT Bureau of Highway Maintenance, Roadside Facilities Section for this information.

Electrical service lines within Highway right-of-way shall be underground. Utility will provide and install transformers and transformer pads; wire; and all terminations at tie-in to existing, at transformers and at meter socket; and shall provide and install the meter.

The estimated allowance of $5,000 for electric utility company charges for installation shall be incorporated into the lump sum bid price for this bid item. Final price may be adjusted, if necessary, by Contract Change Order if the final utility company charge is more than or less than the stated allowance.

Contractor shall include all other work not incorporated into the utility allowance but necessary for complete installation.

D Measurement
The department will measure Electrical Service, Virtual Weigh Station 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.0105.03	Electrical Service, Virtual Weigh Station	Lump Sum

Payment is full compensation for providing overhead or underground single phase electric service from existing source to the meter, transformers, transformer pads, meter, wiring, non-metallic conduit required for crossing under paved areas; and all associated coordination, labor, material, equipment, tools, and incidentals necessary to complete the work as specified herein, subject to final price adjustments for items covered by contract allowances.

39. Virtual Weigh Station System, Item SPV.0105.04.

A Description
Furnish and install a virtual weigh station system to weigh and classify commercial vehicles and process information according to current ASTM E1318 "Standard Specification for Highway Weigh-in-Motion (WIM) Systems with User Requirements and Test Methods" (the contractor and/or vendor may obtain ASTM E1318 upon request to the department). Two potential system configurations (Configurations A and B as shown in the plans) have been preapproved by the department. The work to be coordinated and done in conjunction with concrete pavement work on STH 64.

A.1 General
The system shall include two weigh-in-motion scales and components, located on the eastbound lanes of STH 64, Station 132+95, east of the Stillwater Bridge. This proposed virtual weigh station system will provide commercial vehicle enforcement coverage of STH 64 remotely via an Internet connection in State Patrol squad cars and gather information regarding commercial vehicle traffic on STH 64.

The Virtual Weigh Station System shall include various components that interact together. The components shall include the following:

- Weigh-in-motion (WIM) scales
- Axle and loop detection
- Overview image capture
- WIM computer system
- On-site communication system
- Portable static wheel load scales

The scope of work includes furnishing and installing the following:

- WIM scales, axle sensing, loops, cabinets and platforms
- Overview image camera and illuminator installation
- Communications conduit, cabling and wiring
- Electrical power wiring and conduit
- On-site communication system
- Wireless Ethernet connection
- Monitoring capability and equipment
- Portable static wheel load scales

The objective of the department is to have a fully operational virtual weigh station system capable of accurately weighing, classifying and automatically screening vehicles in motion for enforcement purposes. Based on the weights obtained from the WIM screening, the system shall automatically display commercial vehicle weights, speeds, axle spacings and classification, as shown in the attached plans and these specifications.

The purpose of this project is not for the research and development of a system which might perform the objectives as described above. Therefore the contractor shall be required to furnish documentation which demonstrates to the satisfaction of the department that all equipment proposed for use in the virtual weigh station system is of standard manufacture; that the manufacturer has had similar equipment available for purchase for not less than five years; and has a proven acceptable performance history while in use under conditions similar to those for the intended use.

As a minimum, the equipment documentations provided by the contractor shall include the following for the virtual weigh station system:

1. Detailed description of how the system requirements will be met.
2. Drawings showing control and display panels with descriptions.
3. Manufacturer's name and model number, supported by descriptive material for (but not limited to) the standard package components with all accessories identified under "Description." Submittals shall be supported by descriptive material, such as catalog cuts, diagrams, a database containing vehicle records showing the WIM and static weights and other data published by the manufacturer, to show conformance to specifications and plan requirements

A.2 Virtual Weigh Station System Operational Overview

The Virtual Weigh Station System shall be located on the eastbound lanes of STH 64. This location shall provide coverage of commercial vehicle traffic on STH 64 and shall relay that information to mobile State Patrol inspectors on their laptop computers.

All commercial vehicles approaching the Virtual Weigh Station System in the WIM lanes shall produce a vehicle record containing an overview image, various weights, axles, axle spacings and speed, as well as classification information. The Virtual Weigh Station System shall determine whether each vehicle is weight compliant based on its allowable weights by vehicle classification as set by the weigh station administrator.

The Virtual Weigh Station System shall trigger an overview image camera system to capture an image of each commercial vehicle as it passes the WIM scales and will link each image with the appropriate WIM vehicle record.

Based on the parameters set forth by the user, images of commercial vehicles can be collected and stored by the System Electronics for all commercial vehicles or for only violating commercial vehicles. The user can also identify the selection criteria for a violating commercial vehicle, i.e. overweight, over-length, speeding, etc.

The combined data (image and vehicle record) will be transferred to the central computer. After the system electronics has received the data, any computer with secure network access will be able to connect to it and view the vehicle records and captured images of the suspected violating vehicles.

The system shall allow State Patrol officers to select a vehicle and view a detailed view of the record. In this view the system shall show a larger image of the vehicle to better view of the vehicle details.

The system shall also allow State Patrol officers to enter static weights for vehicles when weighed statically and print a ticket.

The system shall allow historical searching of violating vehicles from its web pages by date range. The results should be sortable by vehicle ID, weight violation, speed, lane, class, travel direction, and date and time.

A.3 WIM Scale Auto-Calibration

To minimize or eliminate costly calibrations and maintenance, the WIM scales shall allow feedback to be provided from certified static scales. On a continuous basis, the static scales shall ensure WIM accuracy and calibration.

Calibration adjustment of the each WIM Scale shall be automatic and performed by electronic recording of WIM and static weights of the vehicle stream which are loaded to within 75% of the legal allowable limit. Auto-calibration shall incorporate speed range and vehicle class to provide more accurate results.

B Materials

Materials used in the construction of this equipment shall be of good commercial quality entirely suitable for the intended purpose. Materials shall be free from all defects and imperfections that might affect serviceability of the finished product.

The equipment shall be constructed of standard materials, so that the prompt and continuing service and delivery of spare parts may be assured. The component parts need not be products of the same manufacturer.

C Construction

C.1 Virtual WIM System Functional Requirements

C.1.1 WIM Scales

The accuracy of the Virtual WIM system shall be in conformance with ASTM E1318-09 "Standard Specifications for Highway Weigh-in-Motion (WIM) Systems with User Requirements and Test Method" performance requirements for a Type III system.

The contractor shall place Concrete Pavement 10.5-Inches. The concrete pavement shall cover the width of the roadway as shown and be doweled and non-reinforced as shown in the plans. Concrete pavement shall be paved through, then an area sawcut and removed to enable WIM scale installation. The removed and replaced area will not be measured separately.

To allow reliable virtual weigh station system performance, the concrete roadway 200 feet in advance of and 100 feet beyond the WIM scale shall be smooth before sensor installation and maintained in a condition such that a 6-inch diameter circular plate 0.125-inch thick cannot be passed beneath a 16-feet long straightedge when the straightedge is positioned and maneuvered as indicated in Section 6.1.5.1 of ASTM E1318.

Blanket grind the concrete roadway beginning at least 200 feet prior to the WIM scale location and ending 100 feet after the scale location, for a total of 300 feet, with a minimum 36-inch blanket grinder to ensure that the roadway meets the requirements of Section 6 of ASTM E1318 unless otherwise approved by the engineer.

The WIM scales shall be constructed of two independent weighing platforms placed in each lane of the roadway. The WIM scales shall measure approximately 144-inch x 38-inch including frame.

Each scale module shall be a self-contained weighing unit. Each scale module shall measure approximately 72-inch x 38-inch including frame.

There shall be two scale frames into which the two scale modules are mounted. The WIM scales shall be installed flush with the road surface.

The WIM scales shall operate properly in a temperature range of -40°F to +160°F. The WIM scales shall be weather-sealed. There shall be no intrusion of water, ice, snow, salt, debris, dirt, moisture, or sand into the scales. The WIM scales and their frames shall be galvanized. All installation hardware shall be either stainless steel or rust proofed. All surface mounting bolt and service holes shall be sealed.

The design of the WIM scales is to be such to provide a fatigue life of 20 years based on weighing 10,000 trucks per day with 40,000 pound dual tandem axles

The WIM scales and frames shall be grounded as per manufacturer's recommendations. The signal processing electronic components/modules shall be protected against lightning.

C.1.2 Axle Sensors

The Virtual WIM system may use axle sensors in each lane for WIM or classification operation. If used, the axle sensors shall be Class I piezoelectric and approximately 12 feet in length.

The axle sensors shall be installed below the road surface. The axle sensors and their electrical wiring connector shall be completely water tight and sealed.

C.1.3 Loop Detectors

Each detector loop shall have a minimum loop area of 6-feet x 6-feet. Loops shall be installed in or beneath the new concrete pavement. Detector loops shall conform to WisDOT standard specifications.

Loop wire shall be 1 conductor, 14 AWG, IMSA 51-5. Loop leads shall be 2 conductor, 14 gauge, IMSA 50-2 cable.

C.1.4 System Electronics

The System Electronics shall be located near the WIM scales in protective roadside cabinets. The System Electronics shall be responsible for creating truck data and formatting the truck data for a web server to enable an enforcement officer to remotely view the vehicle records via wireless Internet access. The virtual weigh station system interface and data collection computer will be a stand-alone system with the capability to collect and interpret the signals from the WIM scale.

The Virtual Weigh Station system electronics shall contain the interface and signal conditioning for the inroad sensors and camera, a process computer, and an integral power supply. All material necessary for setup and operation of the system shall be provided including all cords and cabling. The system shall be provided with the required software pre-loaded so that it will automatically execute when the system is powered up.

The electronics shall be modular in design to facilitate easy maintenance, troubleshooting and in-field servicing. The computer, power supply and the interface electronics shall meet the following requirements.

The electronics shall include interfaces to the following components:

- WIM scales
- Axle sensing
- Loops
- Off-scale detection.
- Camera system
- Communications system

The roadside electronics shall provide a facility for viewing vehicle records and sensor diagnostics directly without any ancillary equipment.

All components of the electronic system, including inductive loop detectors, shall contain electrical protection to prevent damage from electrical surges, spikes and lightning.

The system shall be of a durable, industrial design and construction, and enable continuous operation, with automated start-up in the event of a power outage.

The System Electronics shall provide the following functions:

- Perform WIM operation.
- Weigh all vehicles traveling over WIM scales.
- Classify all vehicles traveling on all instrumented lanes of the highway.
- Perform weight compliance analysis on vehicles over 10,000 pounds according to department or agency regulations.
- Perform sorter operation according to decisions based on weight compliance analysis, other violations (speeding, improper maneuver, sudden speed change, etc.).
- Insert sequence numbers for vehicle records for tracking purposes.
- Capture images for all commercial vehicles over 10,000 pounds.
- Filter out all non-interesting images and format for Web server.
- Perform data collection, data storage, file management and report generation functions for collected vehicle information.

The system shall include a data extraction system to allow data to be retrieved in the field.

The virtual weigh station shall be provided with a roadside cabinet to house the System Electronics, the WIM computer and its peripherals and the overview camera equipment.

The roadside cabinet shall be weatherproof aluminum, lined and insulated and installed with a fan. All cutouts and openings shall be vermin proofed.

All electrical work shall meet the requirements of standard spec 651.

All wires from scales, off-scale sensors, axle sensors, loops, cameras, shall be terminated on terminal strips or screw terminal connectors. The terminal strips shall be identified by terminal strip number and screw connection number. These terminal strips shall be readily accessible. All cables shall be long enough to easily reach these terminal strips. Terminal

strips, splices, or other type of connections prior to these standard terminal strips shall not be allowed except for splicing of a loop to a shielded twisted loop lead.

All AC power connections shall be shielded to prevent electrical shock.

C.1.5 Camera System

The Camera System shall consist of the following system components:

- Color and black/white image camera
- Illuminator system
- Image capture system

The image capture system shall monitor commercial traffic flow on the roadway at the virtual weigh station site. It shall capture still images of trucks having violations for identification and enforcement purposes. The images shall be displayed on an operator interface, a secure webpage available from an officer's laptop. Each vehicle record number shall be displayed with the vehicle image.

One camera for the WIM location shall be provided and installed on a pole located near the virtual weigh station location. The camera shall be capable of taking an image of both lanes. The camera shall provide overview images of the passing commercial vehicles, detailing their cab and side. Color images shall be provided for daylight use, and black/white images shall be provided for night use. Camera images shall be crisp and clear at all times and in all lighting conditions.

Camera, camera pole, hardware and concrete base installation shall conform to the requirements of standard spec 672 and 677.

C.1.6 Communications

Data from the virtual weigh station system shall be communicated to a computer in the virtual weigh station system cabinet that is accessible through a high-speed Internet connection. The system shall allow the operator to remotely access the vehicle data. The vendor is responsible for providing all necessary hardware and access service until testing is completed and accepted. Billing of the Internet service shall be turned over to the department after testing has been completed and accepted. No costs related to the Internet connection will be paid by the department until the system has been accepted.

C.1.7 Conduits and Pull Boxes

All cables shall be in conduit unless specifically approved by the engineer. All conduit shall meet the requirements of standard spec 652 and 671. All pull boxes shall meet the requirements of standard spec 653.

All materials shall comply with the "National Electrical Code" and the current Standard Specifications, "Highway Division Standard Drawings for design and Construction", and special requirements by department weigh-in-motion specifications. Duct seal shall be used to seal all conduits in the cabinets and in all pull boxes. All conduits shall have a

polyethylene pull string with at least 210-pound break strength left in place at completion of construction.

Separate conduits shall be used for AC/DC power and low voltage signal cables. Low voltage signal cables shall include image, digital communication, sensor signal cable, and sensor excitation cables where voltage is under +/- 20 volts DC. Conduits for image and RF cables shall be of a large enough size to accommodate the maximum bend radius using factory 90-degree "bends".

C.1.8 Portable Static Wheel Load Scales

Furnish two sets of six scale units meeting the following specifications. The units shall be portable hydraulic/analog (mechanical) designed to weigh commercial vehicles. Each unit shall be applicable for use in law enforcement as a wheel-load weigher for weighing commercial vehicles which includes large trucks and buses.

Each unit shall have a large active platform measuring a minimum of 26-inches x 15-inches to accommodate the space needs of dual and wide base tires. The height shall not exceed ¾-inch in order to negate the need of ingress and egress ramp. The total physical weight of the unit shall not exceed 35 pounds. Each unit shall be completely waterproof and dustproof.

Each unit shall be able to accurately weigh up to 20,000 pounds, with:

- A rate of "+ or –" 50 pounds up to 2,500 pounds.
- A rate of "+ or –" 100 pounds between 2,500 and 10,000 pounds.
- A rate of "+ or –" 300 pounds between 10,000 and 20,000 pounds.

The weight gradations shall be easily readable and must be in 50-lb or less increments. The readout system shall be capable of indicating weights from 0 to 20,000 pounds. The unit must have incorporated a simple zero adjust method to facilitate zeroing before each weighing.

Each unit shall remain within the acceptance tolerance when subjected to temperatures of 0 degrees or less to 120 degrees or more. Each unit shall be able to weigh accurately under conditions not absolutely level. Each unit shall be capable of 24 hours of continual use without need for battery recharge of external power source.

Each unit shall meet applicable technical requirements of National Institute of Standards and Technology (NIST) Handbook 44 as they pertain to specifications, tolerances, and other technical requirements for wheel load scales or Class III devices. The NIST Handbook can be obtained at http://ts.nist.gov/weightsandmeasures/h44-07.cfm.

Each unit shall be capable of being calibrated with a Portable Manual Test Stand. All weighing and measuring devices are required by State law to have an NTEP Certificate. Any piece of equipment purchased for the purposes of calibrating/testing wheel load scales must have an NTEP Certificate of Conformance

C.2 System Acceptance

The Virtual Weigh Station System shall be accepted subject to fulfilling the following conditions:

- System review
- Acceptance tests (meeting WIM accuracy on a weekly basis)
- Training

C.2.1 System Review

The VWS vendor shall submit six copies of the proposed system layout before equipment delivery. These layouts shall be submitted to the department for review. Approval shall be made by either an official from the department or a designate.

A preliminary on-site meeting shall be held to discuss contractor and/or vendor's plans for the routing of conduits, cables, and placement of equipment.

C.2.2 Acceptance Tests

The virtual weigh station system, all inclusive as contracted, shall be designed, built and tested by the vendor, and as proof of operation, the systems, overall and singularly, shall be tested at various times according to the test specifications. All field tests shall be performed by the VWS vendor and observed by the department with all reports submitted to the department.

C.2.2.1 Factory Acceptance Tests

Prior to shipment of any equipment, factory acceptance tests shall be performed for each system to verify the equipment operating as described in the contract documents and according to the test specifications approved by the department. The factory acceptance tests shall include at minimum the following:

- A physical inspection to verify that the quality of material and workmanship satisfy specified requirements and standards and that the equipment and software under test are complete and ready for delivery.
- A functional test to verify that the equipment and software operate as described in the contract documents.
- A performance test to verify that the equipment satisfies performance and operation criteria.

For the purpose of these tests the equipment and software shall be configured as nearly as possible to the final configuration. Any field inputs not available at the factory test site shall be simulated to provide a close approximation to actual site conditions.

C.2.2.2 Site Acceptance Tests

After all the equipment and software have been installed at the site, the vendor shall run tests to ensure that all equipment shall operate as specified in contract documents. These tests shall be witnessed or conducted by the department within one week of the manufacturer notifying the department that the system is ready for testing.

The camera system shall be tested at the virtual weigh station system site to verify that the images taken at daytime and nighttime are clear and integrated properly with the vehicle record from the virtual weigh station system. The vendor shall collect data observed by the department and provide the results of the images taken for the duration of the testing during day and night time operation. Success will be determined by images that are non-blurred, crisp, and properly integrated with the vehicle data received by the virtual weigh station system.

C.2.2.3 Continuous Operating Test

Following successful completion of the Site Acceptance Test, a Continuous Operating Test shall be conducted for a period of 56 calendar days. During this period the virtual weigh station system and its Weight Sorter System shall operate under normal conditions and attain a Level of Service of 98.0% or better of the total station operating hours within any period of 56 consecutive days.

The virtual weigh station system shall be considered unavailable when:

- A major system component completely fails which significantly degrades the performance or operation of the weigh station. This situation is said to have prevailed if either the WIM system or the communication system has failed.
- More than one system component fails to operate or respond to operator commands and/or system automation for more than 30 minutes.
- Weekly WIM accuracy is not met.

During the Continuous Operating Test, the entire virtual weigh station system shall be fully operational under normal traffic conditions and operate trouble free for fifty-six (56) consecutive days. During the continuous operating test, the WIM accuracy test/database shall be printed by department personnel weekly as previously specified for the virtual weigh station system.

In the event that one of the above mentioned conditions persists and the specified availability cannot be achieved, the WIM Vendor will be informed and problem(s) shall be corrected and the continuous operating test shall start over until 56 continuous days of trouble free operation are experienced, at the discretion of the department. This re-start can only occur three times. In order for this test to be valid, the static scale must be fully operational for the 56 day period. The WIM Vendor must leave the site prior to the start of the continuous test and may only return if a problem is encountered or accompanied by the engineer.

Payment:

1. Payment upon safe and secure delivery of all equipment at a storage location approved by the engineer. 40%
2. Complete installation of the entire VWS system. 25%
3. Completion of calibration and burn-in. 10%
4. Completion of the COT to the satisfaction of the engineer. 25%

The Continuous Operating Test will be the basis for acceptance or rejection of the virtual weigh station system as a result of demonstrated performance. If the VWS system is rejected and there have been more than three strikes and re-starts of the COT, the parties will negotiate, in good faith, an acceptable resolution. Following such negotiations, if the same are unsuccessful, the department may execute the performance bond. Notwithstanding the foregoing, the contractor shall retain/be entitled to receive all amounts paid or payable to the contractor according to the above payment schedule, agreed-to by the parties.

The department will issue a Certificate of Final Acceptance upon successful completion of the Continuous Operating Test and training program.

This calibration/acceptance procedure follows latest version of ASTM E1318 Standards. Calibration is to be performed by the running of one calibration truck. The five axle, test vehicle should be of a tractor/trailer combination (3S2), complete with air ride suspension and a non-shifting static load. The truck will be loaded to within 90 to 100% of allowable Gross Vehicle Weight for the road under test. The truck shall be be in excellent mechanical condition.

The calibration procedure is as follows:

1. The vehicle will be weighed at a government certified static weigh scale. The weight information on the front (single axle), drive (tandem axle group), and trailer (tandem axle group), shall be recorded. The Gross Vehicle Weight (GVW) of the vehicle will be calculated by adding the three weights together.
2. The distance between the five individual axles on the truck will be measured and recorded.
3. The test vehicle will make three test passes over the system under test at a selected speed which is indicative of the truck traffic at the site. Adjustments will be made by vendor personnel on site during this time to fine-tune the axle spacing and weight output of the WIM system.
4. Once all initial adjustments have been made, the test vehicle will make an additional two test passes to confirm the accuracy of the adjustments. If all the readings fall within the latest version of ASTM E1318 ranges for the WIM Type under test, and vendor personnel do not feel that additional adjustments are required, the tests will continue. If this is not the case, additional adjustments will be performed and two more confirming passes will be made by the test truck.
5. The test truck should then make an additional ten passes at a selected speed that is indicative of the truck traffic at the test site.
6. All of the data shall be recorded and placed into a spreadsheet.
7. The mean error and standard deviation for all recorded measurements will be calculated at the end of the ten test passes. The calculations will be as follows:
   A. For weight measurements, the percent error for each test pass will be calculated using the following formula:
   [(WIM Weight - Static Weight)/Static Weight] x 100 = % error

B. The mean error for each weight type (single, group, GVW) will be calculated as follows:
% errors for single, group or GVW/# of samples = Mean error
(Each weight type calculated individually)

C. The error for individual axle spacings will be calculated using the following formula:
10 of [(WIM Axle Spacings - Actual Axle Spacing)]/10 = Mean Axle Spacing Error (each of the four axle spacings calculated individually)

8. All of the calculated errors will also be entered into the spreadsheet.

9. A check will be made of the calculated result against the acceptable range for the latest version ASTM E1318 WIM Type under testing. There will be one of two results:

   A. If 95% of all recorded test results, (single axles, axle groups, GVW, axle spacing) fall within the specified tolerance for the latest version ASTM WIM Type under testing then the system will have passed the requirements.
   B. If less than 95% of the calculated differences fall within the specified tolerance for the latest version ASTM E1318 WIM Type under testing then the system will be readjusted and an additional ten test passes will be required to retest the system.

10. The testing will continue until the system passes all criteria according to current version ASTM E1318 Standards.

C.2.3 Training

The Vendor shall set up and conduct formal training programs for State Patrol personnel on the operation, maintenance and installation of the system components of the Virtual Weigh Station System. The training shall include the following:

Two half-day operator training sessions providing an introduction to the operation and installation of the Virtual Weigh Station Systems, and to the functions performed by the major system components. A class size of up to eight individuals per session can be expected.

Two one-day "hands-on" guidance sessions for operators in the operation of the systems. A class size of up to four individuals per session can be expected. This training will occur during the first two days of the Continuous Operating Test.

Schedule the training program for the week prior to the start of the continuous operating test.

The cost for the first training sessions shall be included in the contract price. The department will, from time to time, review any future training requirements. The vendor shall agree to provide future and additional training sessions upon receipt of requests from.

The department will reimburse the vendor the cost of providing additional training sessions on a per diem basis and at a rate agreed upon by the department at the time of the request. The department will provide classroom space for training session.

C.3 Warranty
The VWS vendor shall warrant all subsystems and system components as supplied and installed. This warranty and associated maintenance work are covered under a separate bid item.

The portable static wheel load scales shall each have a separate, minimum 3-year vendor warranty, to include parts, labor, shipping, updates, modifications and recalls.

D Measurement
The department will measure Virtual Weigh Station System 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.0105.04	Virtual Weigh Station System	LS

Payment is full compensation for furnishing and installing all materials, concrete pavement removal and replacement, pavement grinding, sawing, for furnishing all labor, supervision, equipment, calibration and testing, training, tools, and incidentals. Materials and equipment included in the virtual weigh station system: control cabinets and concrete control cabinet pad, load cells, scale hardware, piezoelectric sensors, system electronics (including all interface cards), Internet connection, camera, camera pole, hardware and bases, modems, X-terminal, manual console, wiring, cabling, conduit, junction boxes, pullboxes, software and software licenses, portable static wheel load scales.

Refer to C.2.2.3 for interim payment information.

Virtual Weigh Station Electrical Service and Virtual Weigh Station System Warranty will be paid for under separate bid items.

40. Virtual Weigh Station System Warranty, Item SPV.0105.05.

A Description
Vendor, as used within this special provision item, is defined as follows:

Vendor: The firm which supplies and integrates the virtual weigh station system.

A.2 General
The vendor shall provide warranty and maintenance service for the Virtual Weigh Station System for a period of five years. Provide system review/refresher courses and routine

maintenance on all major systems, system components and ancillary equipment at 6-month intervals and provide emergency repair services on an as-required basis.

This system, which includes weigh-in-motion scales on two lanes, will be located on the eastbound lanes of STH 64 off the end of the Stillwater Bridge. This proposed virtual weigh station system will provide coverage of STH 64 remotely from State Patrol squad cars and gather information regarding commercial vehicles entering Wisconsin.

A.3 Warranty Bond

The necessary warranty bond for the warranted virtual weigh station system items will be in effect for the entire five-year warranty period beginning when the weigh station is acceptably completed. The bonding company must have an A.M. Best rating of "A-"or better and the contractor will provide proof of a five-year bond commitment before execution of the contract.

The warranty bond will be $40,000.00 for the warranted virtual weigh station system. The bond will insure the proper and prompt completion of required warranty work for the duration of the warranty period, including payments for furnishing all labor, equipment and materials used according to this specification.

The contract bond, which remains in effect for one year beyond the completion of the project, will also include warranty work as described in Section C.1 Warranty Overview of this article. For the remaining four-year warranty period, provide documentation that the warranty bond will remain in effect for the portion of the warranty period after expiration of the contract bond.

If a subcontractor places the warranted virtual weigh station system, the subcontractor may provide the warranty bond for the remaining four-year warranty period after expiration of the contract bond. If the subcontractor does provide the bond, it shall be a dual obligee bond, naming the contractor and the Wisconsin Department of Transportation as obligees. The subcontractor shall provide documentation that the warranty bond will remain in effect for the portion of the warranty period after expiration of the contract bond.

Failure of the contractor, subcontractor or its surety to issue or renew the warranty bond will be considered a default and will result in forfeiture of the face amount of the bond to the department.

All warranty work will be as prescribed in Section C.1 Warranty Overview of this article. At the end of the warranty period, the contractor will be relieved of the responsibility to perform further warranty work, provided all previous warranty work has been completed. Maintain insurance, in the course of performing warranty work, as specified in standard spec 107.26 throughout the five-year warranty period.

B (Vacant)

C Construction

C.1 Warranty Overview

C.1 Warranty Overview

The virtual weigh station system subsystems and system components as supplied shall be warranted by the Vendor, in writing, against defects in or from material, workmanship, lightning, and to perform as required by these technical special provisions, giving proper and continuous service under all conditions required and specified, or which may reasonably be inferred, for a period of five years from the date of issuance of the Certificate of Final Acceptance by the engineer. The written vendor's warranty shall be furnished to the engineer at the time of the virtual weigh station system equipment documentation submittal.

The vendor shall warrant all subsystems and system components as supplied for five years from the date of issuance of the Certificate of Final Acceptance of the virtual weigh station system by the engineer. The virtual weigh station system shall be warranted by the vendor, in writing, against defects in or from material, workmanship, lightning, and to perform as required by these technical special provisions, giving proper and continuous service under all conditions required and specified, or which may reasonably be inferred, for a period of five years from the date of issuance of the Certificate of Final Acceptance by the engineer. The written vendor's warranty shall be furnished to the engineer at the time of the virtual weigh station system equipment documentation submittal.

The warranty shall cover all system components, hardware and software, included in the contract for any defects in material and workmanship. This shall include:

- All loops, WIM Scales, off scale sensors and piezoelectric sensors on site
- Interface operations, system electronics and housing cabinet
- WIM cables, connectors, terminal strips and back-up batteries
- Notification signs
- Structures
- Communication systems
- Camera and illuminator equipment and technology

The warranty shall include all:

- Routine maintenance service scheduled at 6-month intervals
- Emergency repair service
- System review/refresher courses
- Mobilization, parts, labor and shipping
- Equipment updates, upgrades, modifications and recalls
- System interface and electronics updates, upgrades, modifications and recalls
- Traffic control for maintenance services or emergency repair
- Training for major system updates or upgrades

C.2 Scheduled Maintenance Service

The vendor's routine maintenance on all major systems, system components and ancillary equipment shall be scheduled at 6-month intervals. A semi-annual maintenance report shall be submitted to the department upon completion of the scheduled maintenance

service. Scheduled maintenance, emergency maintenance and refresher training shall be included as part of the warranty. All mileage, lodging and related expenses are incidental to the repair and are to be paid for by the vendor.

The semi-annual scheduled maintenance service shall include the following:

- Visual inspection, signal checks and testing measures on all loops.
- Cleaning, repair and testing measures on all WIM scales.
- Visual inspection and testing measures on all off-scale sensors.
- Visual inspection, testing measures and signal checks on all piezoelectric sensors.
- Visual inspection and cleaning of cabinet and system electronics.
- Maintenance of WIM cables, connectors, terminal strips and back-up batteries.
- Electrical inspection.
- Cabinet mechanical condition inspection.
- Heating, ventilation and air conditioning maintenance.
- Interface card operation inspection, testing measures and maintenance.
- Notification sign inspection, testing and maintenance.
- Structural integrity check of all poles and mast arms.
- Inspection and verification of computer communication systems.
- Camera and illuminator inspection, testing and maintenance.
- Parts, labor and shipping.
- Mobilization and traffic control necessary to perform the maintenance service.
- WIM scale accuracy and calibration.
- Check and record all load cell readings (raw counts, millivolts, ohms and grounding) and provide in report.
- Perform linearity and repeatability tests then adjust as required. This test must be performed with a minimum 4,000 LBS certified test weights.
- Apply certified test weight for calibration and adjust as required. This test must be performed with a minimum 4,000 LBS certified test weights.
- Perform in-motion tests and adjust as required to comply with standards.
- Provide print outs of the test.
- WIM scale maintenance.
- Lubricate load cell bolts.
- Remove all grease and apply new grease to O-rings and pins.
- Visually check scale platforms for visible damage.
- Remove cover plates, preload bolts, and anti-lift bolts and check platform for level or rocking.
- Remove platform.
- Check shims for damage and replace as needed.
- Remove load pin from load cells and check gasket for wear.
- Check torque on load cell bolts (390 foot-lbs.).
- Check all bolts in frame for tightness.
- Reinstall platform, pre-load bolts torque (300 foot-lbs.), and install anti-lift blocks (1/32 gap).
- Replace shims and o-rings.

A report shall accompany the scheduled maintenance service and shall be submitted to the department. The report shall include:

- Pass/Fail grading of all loops, scales, off-scale sensors and piezoelectric sensors.
- A checklist of all components checked as listed above, as well as the location of the components and comments on their general state.
- A checklist and commentary detailing whether each component (as listed above) met standards or required repairs.

C.3 Emergency Repair Service

Emergency repair service shall be completed on an as-required basis. The maximum response time for emergency repair services shall not exceed 72 hours after written receipt of notice by fax. The vendor shall initiate on-site repairs within 4 days of notification. All mileage, lodging and related expenses are incidental to the repair and are to be paid for by the vendor.

C.4 System Review/Refresher Courses

In conjunction with the semi-annual scheduled maintenance service, the Vendor shall provide a system review/refresher course on the operation of the entire virtual weigh station system. The course shall have a maximum duration of four hours and shall be scheduled before or after the semi-annual maintenance service. The course shall include attendees as decided by the department, and shall address comments, concerns and feedback regarding the virtual weigh station system operation and performance. The system review/refresher course shall be arranged by the Vendor and held at a department location. All mileage, lodging and related expenses are incidental to the repair and are to be paid for by the Vendor. These review/refresher courses are in addition to the training requirements under Virtual Weigh Station System, SPV.0105.04, article C.2.3.

D Measurement

The department will measure Virtual Weigh Station System Warranty 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.0105.07	Virtual Weigh Station System Warranty	LS

Payment is full compensation for providing all warranty, scheduled maintenance service, emergency repair service and system review/refresher courses for a period of five years; and for furnishing all labor, tools, parts, shipping, mobilization, traffic control and incidentals necessary to perform the required work.

41. Concrete Pavement 10.5-Inch Special, Item SPV.0180.01; 9-Inch Special, Item SPV.0180.02.

A Description

This special provision describes construction of doweled concrete pavement according to standard spec 415, standard spec 710, and standard spec 715, as shown on the plans, and as hereinafter provided.

B Materials

B.1 Concrete Mixtures

Add the following to standard spec 715.2:

Concrete mix designs shall be the responsibility of the contractor. Provide the concrete mix designs necessary to accommodate contractor's operations and contractor scheduling according to the traffic provisions and the prosecution and progress provisions included in the plan. At least seven business days before producing concrete, submit concrete mix documentation to the engineer for approval. Approval of the design mix does not relieve the contractor of the responsibility for meeting contractual requirements located within the traffic provisions and the prosecution and progress provisions.

If the geological composition of the coarse aggregate is primarily igneous or metamorphic materials, modify and add the following to standard spec 415, standard spec 710, and standard spec 715 with the following:

1. The contractor may use class C fly ash or grade 100 or 120 slag as a partial replacement for Portland cement. For binary mixes use up to 15% fly ash or slag, except for slip-formed work the contractor may use up to 20% slag. For ternary mixes use up to 25% fly ash and slag in combination. Replacement values are in percent by weight of the total cementitious material in the mix.

2. One hundred percent of the aggregate shall pass the 1-inch sieve.

   Use of recycled concrete for coarse aggregate will not be allowed.

C Construction

C.1 Construction Methods

Supplement standard spec 415.3.16.1 (2) as follows:

At anytime during pavement placement or after pavement placement, the engineer may require coring to supplement the probing testing operation for conforming thickness verification to compliment normal QV testing. The coring will be completed at department expense.

D Measurement

The department will measure Concrete Pavement x-Inch Special by area in square yards, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.01	Concrete Pavement 10.5-Inch Special	SY
SPV.0180.02	Concrete Pavement 9-Inch Special	SY

Standard spec 415.5.3 is deleted and replaced with special provision Project Concrete Crack Mitigation and Repair, Item SPV.0105.01.

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 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
ST. CROIX 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	30.42	18.04	48.46
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	34.05	17.07	51.12
Electrician	30.59	18.37	48.96
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	19.09	42.82
Ironworker	34.65	22.85	57.50
Future Increase(s): Add $1.50/hr on 5/1/2015.			
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 and Christmas Day.			
Line Constructor (Electrical)	39.50	21.37	60.87
Painter	26.65	16.09	42.74
Pavement Marking Operator	28.97	17.70	46.67
Piledriver	36.54	18.08	54.62
Roofer or Waterproofer	23.70	10.28	33.98
Teledata Technician or Installer	22.25	7.70	29.95
Tuckpointer, Caulker or Cleaner	33.76	17.82	51.58
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	14.98	46.58
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.65	13.44	41.09

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.68	12.83	38.51
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	11.63	33.38
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	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.			
Pavement Marking Vehicle	23.16	18.11	41.27
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	24.68	14.61	39.29
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 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)	17.00	0.00	17.00
Railroad Track Laborer	15.50	4.48	19.98

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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).	52.90	20.19	73.09
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. 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.	37.22	21.15	58.37
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 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.	36.72	21.15	57.87

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
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: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): 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 Roadyway Items					
0010	204.0180 Removing Delineators and Markers	333.000 EACH		.		.
0020	204.9060.S Removing (item description) 01. Traffic Control Barricades Type III Permanent	16.000 EACH		.		.
0030	204.9060.S Removing (item description) 02. Crash Cusion Temporary	1.000 EACH		.		.
0040	204.9090.S Removing (item description) 01. Concrete Barrier Temporary	340.000 LF		.		.
0050	205.0100 Excavation Common	7,118.000 CY		.		.
0060	211.0100 Prepare Foundation for Asphaltic Paving (project) 01. 8110-02-75	LUMP	LUMP			.
0070	211.0200 Prepare Foundation for Concrete Pavement (project) 01. 8110-02-75	LUMP	LUMP			.
0080	211.0400 Prepare Foundation for Asphaltic Shoulders	616.000 STA		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0090	213.0100 Finishing Roadway (project) 01. 8110-02-75	1.000 EACH		.		.
0100	305.0110 Base Aggregate Dense 3/4-Inch	5,034.000 TON		.		.
0110	305.0120 Base Aggregate Dense 1 1/4-Inch	66,354.000 TON		.		.
0120	416.0620 Drilled Dowel Bars	96.000 EACH		.		.
0130	416.1110 Concrete Shoulder Rumble Strips	24,005.000 LF		.		.
0140	440.4410 Incentive IRI Ride	69,000.000 DOL	1.00000		69000.00	
0150	455.0135 Asphaltic Material PG58-34P	362.000 TON		.		.
0160	455.0605 Tack Coat	1,802.000 GAL		.		.
0170	460.1100 HMA Pavement Type E-0.3	7,222.000 TON		.		.
0180	460.1103 HMA Pavement Type E-3	838.000 TON		.		.
0190	460.2000 Incentive Density HMA Pavement	8,540.000 DOL	1.00000		8540.00	

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0200	460.4000 HMA Cold Weather Paving	2,563.000 TON		.		.
0210	465.0105 Asphaltic Surface	754.000 TON		.		.
0220	465.0315 Asphaltic Flumes	20.000 SY		.		.
0230	465.0400 Asphaltic Shoulder Rumble Strips	38,711.000 LF		.		.
0240	601.0415 Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	446.000 LF		.		.
0250	603.1142 Concrete Barrier Type S42	2,556.000 LF		.		.
0260	603.3535 Concrete Barrier Transition Type S36 to S42	1.000 EACH		.		.
0270	606.0100 Riprap Light	60.000 CY		.		.
0280	606.0200 Riprap Medium	178.000 CY		.		.
0290	614.0010 Barrier System Grading Shaping Finishing	2.000 EACH		.		.
0300	614.0220 Steel Thrie Beam Bullnose Terminal	2.000 EACH		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0310	614.0230 Steel Thrie Beam	175.000 LF		.		.
0320	614.0396 Guardrail Mow Strip Asphalt	296.000 SY		.		.
0330	614.2300 MGS Guardrail 3	1,255.000 LF		.		.
0340	614.2500 MGS Thrie Beam Transition	40.000 LF		.		.
0350	614.2610 MGS Guardrail Terminal EAT	2.000 EACH		.		.
0360	614.2620 MGS Guardrail Terminal Type 2	1.000 EACH		.		.
0370	616.0100 Fence Woven Wire (height) 01. 4-Feet	20,907.000 LF		.		.
0380	618.0100 Maintenance And Repair of Haul Roads (project) 01. 8110-02-75	1.000 EACH		.		.
0390	619.1000 Mobilization	1.000 EACH		.		.
0400	624.0100 Water	565.000 MGAL		.		.
0410	625.0500 Salvaged Topsoil	5,940.000 SY		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0420	627.0200 Mulching	11,122.000 SY		.		.
0430	628.1504 Silt Fence	2,020.000 LF		.		.
0440	628.1520 Silt Fence Maintenance	2,020.000 LF		.		.
0450	628.1905 Mobilizations Erosion Control	3.000 EACH		.		.
0460	628.1910 Mobilizations Emergency Erosion Control	5.000 EACH		.		.
0470	628.2023 Erosion Mat Class II Type B	7,787.000 SY		.		.
0480	628.7005 Inlet Protection Type A	5.000 EACH		.		.
0490	628.7010 Inlet Protection Type B	5.000 EACH		.		.
0500	628.7015 Inlet Protection Type C	2.000 EACH		.		.
0510	628.7504 Temporary Ditch Checks	935.000 LF		.		.
0520	628.7555 Culvert Pipe Checks	3.000 EACH		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0530	629.0210 Fertilizer Type B	4.500 CWT		.		.
0540	630.0120 Seeding Mixture No. 20	39.000 LB		.		.
0550	630.0130 Seeding Mixture No. 30	130.000 LB		.		.
0560	630.0300 Seeding Borrow Pit	70.000 LB		.		.
0570	633.0100 Delineator Posts Steel	173.000 EACH		.		.
0580	633.0500 Delineator Reflectors	216.000 EACH		.		.
0590	633.1000 Delineator Brackets	5.000 EACH		.		.
0600	634.0612 Posts Wood 4x6-Inch X 12-FT	8.000 EACH		.		.
0610	634.0614 Posts Wood 4x6-Inch X 14-FT	5.000 EACH		.		.
0620	634.0616 Posts Wood 4x6-Inch X 16-FT	26.000 EACH		.		.
0630	634.0618 Posts Wood 4x6-Inch X 18-FT	22.000 EACH		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0640	634.0620 Posts Wood 4x6-Inch X 20-FT	43.000 EACH		.		.
0650	634.0622 Posts Wood 4x6-Inch X 22-FT	11.000 EACH		.		.
0660	634.0624 Posts Wood 4x6-Inch X 24-FT	2.000 EACH		.		.
0670	635.0200 Sign Supports Structural Steel HS	11,049.000 LB		.		.
0680	636.0100 Sign Supports Concrete Masonry	18.000 CY		.		.
0690	636.0500 Sign Supports Steel Reinforcement	1,044.000 LB		.		.
0700	637.1220 Signs Type I Reflective SH	1,683.000 SF		.		.
0710	637.2210 Signs Type II Reflective H	1,063.250 SF		.		.
0720	637.2215 Signs Type II Reflective H Folding	30.000 SF		.		.
0730	637.2220 Signs Type II Reflective SH	27.500 SF		.		.
0740	637.2230 Signs Type II Reflective F	107.000 SF		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0750	638.2102 Moving Signs Type II	22.000 EACH		.		.
0760	638.2601 Removing Signs Type I	9.000 EACH		.		.
0770	638.2602 Removing Signs Type II	114.000 EACH		.		.
0780	638.3000 Removing Small Sign Supports	70.000 EACH		.		.
0790	638.3100 Removing Structural Steel Sign Supports	2.000 EACH		.		.
0800	638.4000 Moving Small Sign Supports	22.000 EACH		.		.
0810	642.5201 Field Office Type C	1.000 EACH		.		.
0820	643.0100 Traffic Control (project) 01. 8110-02-75	1.000 EACH		.		.
0830	643.0300 Traffic Control Drums	15,000.000 DAY		.		.
0840	643.0420 Traffic Control Barricades Type III	600.000 DAY		.		.
0850	643.0705 Traffic Control Warning Lights Type A	1,200.000 DAY		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0860	643.0715 Traffic Control Warning Lights Type C	1,560.000 DAY		.		.
0870	643.0800 Traffic Control Arrow Boards	240.000 DAY		.		.
0880	643.0900 Traffic Control Signs	2,400.000 DAY		.		.
0890	643.0910 Traffic Control Covering Signs Type I	1.000 EACH		.		.
0900	643.0920 Traffic Control Covering Signs Type II	1.000 EACH		.		.
0910	645.0120 Geotextile Fabric Type HR	193.000 SY		.		.
0920	645.0130 Geotextile Fabric Type R	129.000 SY		.		.
0930	646.0106 Pavement Marking Epoxy 4-Inch	2,860.000 LF		.		.
0940	646.0600 Removing Pavement Markings	37,630.000 LF		.		.
0950	646.2304.S Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	90,645.000 LF		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0960	646.2308.S Pavement Marking Grooved Wet Reflective Epoxy 8-Inch	2,600.000 LF		.		.
0970	647.0746 Pavement Marking Diagonal Epoxy 24-Inch	295.000 LF		.		.
0980	650.5000 Construction Staking Base	33,875.000 LF		.		.
0990	650.5500 Construction Staking Curb Gutter and Curb & Gutter	446.000 LF		.		.
1000	650.7000 Construction Staking Concrete Pavement	34,533.000 LF		.		.
1010	650.7500 Construction Staking Concrete Barrier	2,566.000 LF		.		.
1020	650.9910 Construction Staking Supplemental Control (project) 01. 8110-02-75	LUMP	LUMP			.
1030	652.0125 Conduit Rigid Metallic 2-Inch	10.000 LF		.		.
1040	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	5.000 LF		.		.
1050	653.0135 Pull Boxes Steel 24x36-Inch	1.000 EACH		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1060	654.0102 Concrete Bases Type 2	1.000 EACH		.		.
1070	655.0625 Electrical Wire Lighting 6 AWG	120.000 LF		.		.
1080	656.0200 Electrical Service Meter Breaker Pedestal (location) 01. ITS	LUMP	LUMP			.
1090	656.0500 Electrical Service Breaker Disconnect Box (location) 01. ITS	LUMP	LUMP			.
1100	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	1.000 EACH		.		.
1110	657.0310 Poles Type 3	1.000 EACH		.		.
1120	659.0802 Plaques Sequence Identification	1.000 EACH		.		.
1130	662.1028.S Ramp Closure Gates Hardwired 28-FT	1.000 EACH		.		.
1140	662.1030.S Ramp Closure Gates Hardwired 30-FT	1.000 EACH		.		.
1150	662.1040.S Ramp Closure Gates Hardwired 40-FT	1.000 EACH		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1160	662.3028.S Ramp Closure Gate Arms Stockpile 28-FT	1.000 EACH		.		.
1170	662.3030.S Ramp Closure Gate Arms Stockpile 30-FT	1.000 EACH		.		.
1180	662.3040.S Ramp Closure Gate Arms Stockpile 40-FT	1.000 EACH		.		.
1190	662.4000.S Ramp Closure Gate Flashers Stockpile	3.000 EACH		.		.
1200	670.0100 Field System Integrator	LUMP	LUMP			.
1210	670.0200 ITS Documentation	LUMP	LUMP			.
1220	673.0225.S Install Pole Mounted Cabinet	1.000 EACH		.		.
1230	690.0150 Sawing Asphalt	3,448.000 LF		.		.
1240	715.0415 Incentive Strength Concrete Pavement	35,000.000 DOL	1.00000		35000.00	
1250	SPV.0060 Special 01. Installing Pole Mounted Cabinet	1.000 EACH		.		.
1260	SPV.0060 Special 02. Installing 2 Solar Panels on One Bracket	1.000 EACH		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1270	SPV.0060 Special 03. Installing Wavetronix Click 200 Module	1.000 EACH		.		.
1280	SPV.0060 Special 04. Installing Concrete Maintenance Platform	1.000 EACH		.		.
1290	SPV.0060 Special 05. Grading, Shaping and Finishing for ATR Site	1.000 EACH		.		.
1300	SPV.0060 Special 06. Installing Wavetronix Detector Module	1.000 EACH		.		.
1310	SPV.0060 Special 07. Install Ground Mount Dynamic Message Sign	1.000 EACH		.		.
1320	SPV.0060 Special 08. Traffic Control Removing Sign Covers	33.000 EACH		.		.
1330	SPV.0060 Special 09. Concrete Barrier Transition MNDOT Parapet to S42	2.000 EACH		.		.
1340	SPV.0060 Special 10. Concrete Barrier Transition River Bridge Path Rail to C&G	1.000 EACH		.		.
1350	SPV.0060 Special 11. Install State-Furnished Storm Sewer Grate and Rings	6.000 EACH		.		.
1360	SPV.0060 Special 12. Traffic Control Install State- Furnished Vertical Panel	30.000 EACH		.		.

CONTRACT: 20151208025 PROJECT(S): 8110-02-75 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1370	SPV.0090 Special 01. Concrete Curb and Gutter Cure and Seal Treatment	446.000 LF		.		.
1380	SPV.0090 Special 02. Cleaning, Grading and Shaping Existing Ditch	400.000 LF		.		.
1390	SPV.0105 Special 01. Project Concrete Crack Mitigation and Repair Special	LUMP	LUMP			.
1400	SPV.0105 Special 02. Construction Staking Concrete Pavement Joint Layout	LUMP	LUMP			.
1410	SPV.0105 Special 03. Electrical Service Virtual Weigh Station	LUMP	LUMP			.
1420	SPV.0105 Special 04. Virtual Weigh Station System	LUMP	LUMP			.
1430	SPV.0105 Special 05. Virtual Weigh Station System Warranty	LUMP	LUMP			.
1440	SPV.0180 Special 01. Concrete Pavement 10.5-Inch Special	82,097.000 SY		.		.
1450	SPV.0180 Special 02. Concrete Pavement 9-Inch Special	6,938.000 SY		.		.
	SECTION 0001 TOTAL					.
	TOTAL BID					.

PLEASE ATTACH SCHEDULE OF ITEMS HERE