HIGHWAY WORK PROPOSAL

Proposal Number: Ø 6

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

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Milwaukee	1060-45-70		East West Freeway Stadium Interchange to Jackson Street On Ramp	IH 94

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

Proposal Guaranty Required, $ 75,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: February 12, 2013 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time May 15, 2013	
Assigned Disadvantaged Business Enterprise Goal 0 %	This contract is exempt from federal oversight.

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

(Bidder Signature)

(Print or Type Bidder Name)

(Bidder Title)

For Department Use Only

Type of Work Asphaltic surface milling, HMA pavement, storm sewer, median concrete barrier construction, freeway lighting, pavement marking, miscellaneous structure work on B-40-33, B-40-34, B-40-43, and B-40-57, S-40-859, S-40-206, and ITS.	
Notice of Award Dated	Date Guaranty Returned

PLEASE ATTACH
PROPOSAL GUARANTY HERE

Effective with November 2007 Letting

PROPOSAL REQUIREMENTS AND CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

Effective with August 2007 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://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm. 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://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm 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.

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://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm**. 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)

FEBRUARY 1999

LIST OF SUBCONTRACTORS

Section 66.29(7), Wisconsin Statutes, provides that a bidder, as a part of his proposal, shall submit a list of the subcontractors he proposes to contract with and the class of work to be performed by each, provided that to qualify for such listing each subcontractor must first submit his bid in writing to the general contractor at least 48 hours prior to the time of bid closing. It further provides that a proposal of a bidder shall not be invalid if any subcontractor, and the class of work to be performed by such subcontractor, has been omitted from a proposal.

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

Name of Subcontractor	Class of Work	Estimated Value
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

DECEMBER 2000

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1060-45-70, East West Freeway, Jackson Street On Ramp to Stadium Interchange, IH 94, Milwaukee 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, 2013 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 (20120615)

2. Scope of Work.

The work under this contract shall consist of asphaltic surface milling, HMA pavement, storm sewer, median concrete barrier construction, freeway lighting, ITS, pavement marking, miscellaneous structure work on B-40-33, B-40-34, B-40-43, B-40-57, S-40-206, and S-40-859; 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. Field Facility.

The department will provide a field facility for this project located at 1001 West St. Paul Avenue, Milwaukee, WI 53233.

4. Prosecution and Progress.

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

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

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

Prior to beginning operations under this contract submit in writing a proposed schedule of operations and method of coordination and handling traffic to the engineer for approval.

Both the contract time for completion and the interim completion dates are based on an expedited work schedule and may require extraordinary forces and equipment.

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

Indicate on the proposed schedule of operations that adequate equipment will be needed to assure that the work will be completed within the established contract time.

Indicate on the contractor's work schedule for any permanent lane closure, when permitted by the engineer, a continuous effort to complete the work in a timely manner.

Winter weather work and excavation of frozen ground shall not be considered adverse weather delays to construction.

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

Protect the underside of the deck, B-40-0033 bridge deck; crash walls at structures B-40-0034, B-40-0043, B-40-0057; and S-40-206, S-40-859 by housing and heating when the national weather service forecast predicts temperatures to fall below 32° F during the cold weather protection period. Maintain a minimum temperature of 40° F in the enclosed area under the deck for the entire curing period. The cost is considered incidental to bid item concrete masonry bridges.

Do not at any time conduct construction operations in the median area and adjacent outside area of the freeway at the same time without the permission of the engineer.

Do not begin or continue any work that closes the freeway or ramps outside the allowed time periods specified in this article or the article "Traffic." Work may be performed, provided such work operations do not include ingress and egress of vehicles and equipment which would obstruct the flow of traffic on the freeway, during peak traffic periods.

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

Storm sewer work in the existing asphaltic surface must be completed prior to placing traffic control devices for staged construction and before the new asphaltic surface is laid.

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

Do not close any lanes during peak hours on IH 94 westbound prior to March 4, 2013, 12:01 AM, or after April 18, 2013, 11:59 PM.

Do not close any lanes on IH 94 eastbound during peak hours.

Close 35th Street westbound on ramp and 35th Street eastbound on ramp as early as February 25, 2013, 12:01 AM, with the written approval of the engineer.

Complete construction operations for all work under this contract prior to 11:59 PM May 15, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all work under this contract by 11:59 PM May 15, 2013, the department will assess the contractor $20,000 in liquidated damages for each calendar day that the contract work remains incomplete beyond 11:59 PM May 15, 2013.

CPM Program Schedule
Submit a CPM Progress Schedule and updates in accordance to standard spec 108.4.4.

To ensure compatibility with the Master Program Schedule, use the latest version of Primavera Project Planner (P6), by Primavera Systems, Inc., Bala Cynwyd, PA to prepare the Initial CPM Progress Schedule, Monthly CPM Progress Updates and other CPM Progress Revisions requested by the engineer.

Within five business days after award, the department will provide its current standard Work Breakdown Structure and activity codes for the contractor to use to develop the Initial CPM Progress Schedule.

Designate a Project Scheduler who will be responsible for scheduling the Work and submit for approval a professional resume describing a minimum of three years of scheduling experience on interstate-highway reconstruction work of similar size and complexity, including recent experience with P6.

Perform the work in accordance with the following stages as shown in the plans:

IH 94 Construction

Stage 1A

Install traffic control devices. Construct 35th Street entrance ramp. Reconstruct a portion of mainline shoulder west of 35th Street entrance ramp. Replace shoulder on IH-94 westbound between 25th Street exit ramp and 28th Street entrance ramp. Place temporary barrier along IH 94 eastbound. Replace parapet on the 32nd Street eastbound structure B-40-33. Construct drainage structures, pipes, freeway lighting, and FTMS along the westbound outside shoulder. Construct FTMS along westbound shoulder.

IH 94 westbound will remain open to two existing inside lanes for traffic at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane. Close 35th Street westbound entrance ramp during ramp reconstruction. Install bases and loops for ramp meters. Close 35th Street westbound exit ramp. Maintain three lanes of traffic on IH 94 eastbound at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane. Maintain one traffic lane on the Marquette Interchange north to west system interchange ramp at all times. Close 35th Street eastbound entrance ramp and close 32nd Street during B-40-33 structure reconstruction.

Complete all stage 1A work prior to April 18, 2013, 11:59 PM.

Stage 1B

Install traffic control devices. Construct 28th Street entrance ramp. Replace shoulder on IH-94 westbound between 25th Street exit ramp and 28th Street entrance ramp. Place temporary barrier along IH 94 eastbound shoulder. Construct drainage structures, pipes, freeway lighting, and FTMS along the westbound outside shoulder. Open 32nd Street at the start of Stage 1B construction.

IH 94 westbound will remain open to two existing inside lanes for traffic in the westbound direction at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane. Close 28th Street westbound entrance ramp during ramp reconstruction. Maintain three lanes of traffic on IH 94 eastbound at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane. Maintain one traffic lane on the Marquette Interchange north to west system interchange ramp at all times. Close 35th Street eastbound on ramp. Close 35th Street westbound exit ramp. At the end of stage 1B, open 35th Street westbound exit ramp and 28th Street westbound entrance ramp at the same time.

Complete all stage 1B work prior to April 18, 2013, 11:59 PM.

Stage 2

Install traffic control devices. Replace median barrier between 25th Street westbound exit ramp and 35th Street westbound entrance Ramp. Construct drainage structures, pipes, freeway lighting in the areas of median barrier replacement. Construct barrier crash wall at 25th Street Structure B-40-34, 27th Structure B-40-43, and 26th Structure/Saint Paul Avenue Structure B-40-57.

IH 94 westbound will remain open to two new outside lanes for traffic in the westbound direction at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane. IH 94 eastbound will remain open to three lanes of traffic at all times. Maintain one traffic lane on the Marquette Interchange north to west system interchange ramp at all times.

Complete all stage 2 work prior to April 18, 2013, 11:59 PM.

Stage 3A
Install traffic control devices. Mill and overlay two inside lanes of IH 94 westbound from 19th Street to Stadium Interchange and IH 94 eastbound from 35th Street to 26th Street. Place temporary pavement marking in permanent location as shown on the plan.

IH 94 westbound will remain open to three new outside lanes for traffic in the westbound direction at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

IH 94 eastbound will remain open to three existing lanes for traffic in the eastbound direction at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

Maintain one traffic lane on the Marquette Interchange north to west system interchange ramp at all times.

Stadium Interchange north to east system ramp can be closed during asphalt overlay operations.

Complete all stage 3A work prior to April 29, 2013, 4:59 AM.

Stage 3B
Install traffic control devices. Mill and overlay two outside lanes of IH 94 westbound from 19th Street to Stadium Interchange and IH 94 eastbound from 35th Street to 26th Street. Overlay asphalt surface on reconstructed 35th Street westbound entrance ramp and 28th Street westbound entrance ramp. Place temporary pavement marking in permanent location as shown on the plan.

IH 94 westbound will remain open to three new inside lanes for traffic in the westbound direction at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

IH 94 eastbound will remain open to three existing inside lanes for traffic in the eastbound direction at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

Maintain one traffic lane on the Marquette Interchange north to west system interchange ramp at all times.

28th Street westbound entrance ramp and 35th Street westbound entrance ramp can be closed during asphalt overlay operations. 35th Street westbound exit ramp can be closed during asphalt overlay operations. 35th Street eastbound entrance ramp can be closed during asphalt overlay operations. 26th Street/St. Paul Avenue eastbound exit ramp can be closed during asphalt overlay operations. Stadium Interchange south to east system ramp can be closed during asphalt overlay operations.

Complete all stage 3B work prior to April 29, 2013, 4:59AM.

Stage 4A
Install traffic control devices. Mill and overlay three outside lanes of IH 94 westbound between 19th Street and 13th Street.

Close the Marquette Interchange north to west system ramp and south to west system ramp.

IH 94 westbound from 19th Street to Stadium Interchange will remain open to four lanes of traffic.

IH 794 westbound will be open to one lane of traffic.

IH 94 eastbound will remain open to three lanes for traffic at all times.

Complete all stage 4A work over one weekend including installation of permanent signing and temporary pavement marking.

Stage 4B
Install traffic control devices. Mill and overlay two inside lanes of IH 94/IH 794 westbound between 19th Street and 13th Street. Mill and overlay asphaltic portions of IH 794. Waterblast and remove existing pavement marking on IH 794 structures from 4th Street to the Marquette Interchange. Restripe IH 794/IH 94 from 4th Street to 13th Street.

Close the Marquette Interchange east to west system ramp. Close IH 794 westbound to traffic. Close 7th Street and 11th Street westbound on ramps. Open the Marquette Interchange south to west ramp and north to west ramp to traffic.

IH 94 westbound from 19th Street to Stadium Interchange will remain open to four lanes of traffic.

IH 94 eastbound will remain open to three lanes for traffic all times.

Complete all stage 4B work over one weekend.

Stage 5
Place permanent pavement marking on IH 94/IH 794 westbound from 4th Street to Stadium Interchange. Place permanent pavement marking on IH 94 eastbound from 35th Street to 26th Street.

Maintain four lanes of traffic on IH 94 westbound at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

Maintain two lanes of traffic on IH 794 westbound at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

Maintain three lanes of traffic on IH 94 eastbound at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

Maintain two lanes of traffic on the Marquette Interchange north to west system interchange ramp at all times except during approved nighttime working hours at which time traffic may be reduced to a single lane.

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

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

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

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

Work which may disturb or destroy occupied nests during the nesting period will require the field manager or contractor to contact the DOT Wetland Ecologist to inform her of the existing circumstances. In the event that eggs, nestlings or both are present in a nest, coordinate with Mike Jones, USDA Wildlife Services, (800) 433-0663, for removal. In the event that numerous nests are occupied, apply for a depredation permit from the US Fish and Wildlife Service, as noted above.

5. Traffic.

Complete the construction sequence and the associated traffic control and detours as detailed on the plans and described herein.

Definitions
The following definitions apply to this contract:

Peak Hours
5:30 AM – 9:30 PM Monday, Tuesday, Wednesday, and Thursday
5:30 AM – 11:00 PM Friday
9:00 AM – 11:00 PM Saturday
9:00 AM – 9:30 PM Sunday

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

Lane closures shall be in accordance with these plans and the standard detail drawings (SDD) and have the approval of the engineer and the Statewide Traffic Operations Center, (414) 227-2142.

Freeway Shoulder Closures
Do not perform work in a closed shoulder area during peak hours unless otherwise approved by the engineer.

Freeway Ramp Closures
Do not close two consecutive service interchange ramps at the same time. Place a portable changeable message board ahead of the next open ramp ahead of the intended closed ramp.

If the contractor fails to open all lanes of traffic and ramps by the specified times, then a reduction of $20,000 per hour per traffic lane or ramp for each hour of lane or ramp closure violations will be made from monies due to him. This reduction is a quarterly fraction of the $20,000 hourly reduction rate for each 15-minute increment during which the lane or ramp closure violation occurs. The total reduction from monies due to the contractor is the summation of the separate reductions for each lane and each ramp closure violation. The department will assess interim liquidated damage for the roadway lanes and ramps not being open to through traffic under the Failing to Open Road to Traffic administrative item.

Single lane operation on IH 94 and system interchange lane operation is only permitted during nighttime hours pending approval of the engineer.

Freeway Traffic Management Systems
Do not re-open on ramps without the ramp meter equipment fully functioning including removal and replacement of ramp meter controller.

Schedule ramp meter controller removal and replacement with STOC staff a minimum of 15 calendar days prior to beginning such work. Do not take multiple ramp meters or system detector stations out of service simultaneously. Removal and replacement work must be completed prior to beginning work at another site.

Advance Notification
Notify the engineer and WisDOT Statewide Traffic Operations Center (STOC), (414) 227-2142, if there are any changes in the schedule, early completions, or cancellations of scheduled work. Coordinate the locations and messages of portable changeable message signs with the engineer and WisDOT STOC. Notify WisDOT Signal Operations, (414) 750-2605, and WisDOT Electrical Field Unit, (414) 266-1170, regarding changes for alternate routes and detours.

Provide the following minimum advance notification to the project engineer for incorporation into the Wisconsin Lane Closure System.

Ramp Closures	3 business days
System Ramp Closures	7 calendar days
Lane Closures	3 business days
Construction Stage Changes	7 calendar days
Detours	7 calendar days

Notify the project engineer and WisDOT Statewide Traffic Operations Center, (414) 227-2142, if there are any changes in the schedule, early completions, or cancellations of scheduled work. Notify WisDOT Signal Operations, (414) 750-2605, and WisDOT Electrical Field Unit, (414) 266-1170, regarding changes for alternate routes and detours.

Install all fixed message signs, except for ramp closures, as shown on the plans at least 7 calendar days prior to commencing stage construction or as indicated elsewhere.

Closures
Post all entrance and exit ramp closures three working days in advance of their closure with dates and time of closure. Do not close consecutive ramps.

Post all freeway-to-freeway ramp closures seven calendar days in advance of their closure with dates and times of closure.

Post local road closures seven calendar days in advance of their closure with dates and times of closure.

Complete closures of the freeway will not be permitted.

Freeway Emergency Crossovers
Do not close two consecutive emergency crossovers at the same time.

Cancellations
Notify the Traffic Operations Center of any closure cancellations or early completions as soon as possible.

Detours
Detour traffic as shown on the plans. Install required traffic control and detour signs as shown on the plans at least 7 calendar days prior to beginning stage construction; remove the detour after completion of the project. Cover advance-warning signs and detour signs until work begins.

Stage Changes
Traffic control for stage changes will only be allowed during nighttime working hours.

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

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

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

Signage Coordination
Multiple ramps and lanes will be closed at the same time during this project. Coordinate signage for detours, ramp and lane closures throughout all stages of construction.

6. Incentive/Disincentive for Interim Completion of Work, Item 108.3100.S.01 Stage 2.

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

The contractor shall complete all of the work as specified in Stages 1A, 1B and 2 on this contract prior to 11:59 PM April 18, 2013.

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

Under this Incentive/Disincentive plan, no time extensions will be granted for adverse weather conditions; for delays in material deliveries; or for labor disputes unless it can be shown that such disputes are industry wide.

Each day shall be defined as a 24 hour period beginning at 12:00 AM.

The maximum incentive payment, as shown on the Schedule of Items, is for department accounting purposes. The actual incentive payment the contractor may receive shall be in accordance to section B of this provision.

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

B Incentive Payment
The contractor shall be entitled to an incentive payment for completion of all of the work as specified in Stages 1A, 1B and 2 on this contract prior to 11:59 PM April 18, 2013.

The incentive payment shall be paid at the rate of $25,000 per calendar day for each day or portion thereof, of completion prior to 11:59 PM April 18, 2013. The maximum amount of incentive payment shall not exceed $200,000.

C Disincentive Pay Reduction
Should the contractor fail to complete all of the work identified in Stages 1A, 1B and 2 under this contract prior to 11:59 PM April 18, 2013, the contractor shall be liable to the department for a pay reduction in the amount of $25,000 per day or portion thereof, for each calendar day after 11:59 PM April 18, 2013 that work remains incomplete.

If contract time expires before completing all work specified in the contract, additional liquidated damages according to standard spec 108.11 will be affixed in addition to the disincentive pay reduction.

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

The unit price per day based on the incentive pay adjustment shall be compensation in full for completing the work as hereinbefore specified.

The unit price per day based on the disincentive pay reduction shall be assessed for failing to complete all the work as hereinbefore specified.
108-056 (20080501)

7. Coordination With Other Projects.

Coordinate traffic requirements under this contract with WisDOT I-43 Valley Bridge Project 1228-26-70 and other ongoing Department of Transportation construction projects. Contractor is responsible for implementing and coordinating traffic control measures with other contracts.

Coordinate traffic requirements under this contract with WisDOT Zoo Interchange – Greenfield Avenue Bridge Project 1060-33-77, Cleveland Ave Bridge Project 1090-07-73**,** and other ongoing Department of Transportation construction projects. Contractor is responsible for implementing and coordinating traffic control measures with other contracts.

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

8. Holiday Work and Special Event Restrictions.

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

4. From 5:30 AM Monday, April 1, 2013, to 9:30 PM Monday, April 1, 2013; for Milwaukee Brewers 2013 Opening Day at Miller Park;
5. From noon Friday, May 24, 2013, to 6:00 AM Tuesday, May 28, 2013, for Memorial Day.

107-005 (20050502)

9. Utilities.

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

On this project, the Administrative Rule TRANS 220 utility coordination process was not followed.

There are underground and overhead utility facilities located within the project limits. The contractor shall coordinate his construction activities with a call to Diggers Hotline or a direct call to the utilities that have facilities in the area as required per statutes. The contractor shall use caution to insure the integrity of underground facilities and shall maintain code clearances from overhead facilities at all times.

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 7 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 the utility not less than 3 working days before the site will be ready for the utility to begin its work.

Time Warner Cable
Time Warner Cable operates numerous buried and overhead cable television facilities in the project area. There is a crossing under 32nd Street. No conflicts are anticipated.

Electricity Lines:

ATC Management
ATC operates two high voltage transmission lines in the project area. There is an overhead crossing from Station 1624+10 to Station 1626+00, west of 27th Street. No conflicts are anticipated.

We Energies
We Energies operates numerous buried and overhead electric facilities in the project area. There are overhead crossings at Station 1611+25, east of 32nd Street; Station 1624+10 to Station 1626+00, west of 27th Street; Station 1659+50 near 19th Street; and Station 682+00 near 13th Street. No conflicts are anticipated.

Gas Lines:

We Energies
We Energies operates the following natural gas facilities along the project. There are underground crossings at Station 1637+10, near 25th Street; and Station 682+00, near 13th Street. No conflicts are anticipated.

Sanitary Sewer Lines

Milwaukee Metro Sewage District (MMSD)
MMSD operates numerous underground sewers lines. No Conflicts are anticipated.

City of Milwaukee
The City of Milwaukee operates sanitary sewer facilities at numerous locations in the project area. No conflicts are anticipated.

Fiber Telephone Lines:

AT&T Wisconsin
AT&T Wisconsin operates several telecom facilities in the project area. There are underground cables along the south side of W. Park Hill Avenue, north of 35th Street on ramp and along the south side of 35Th Street on ramp/W. Park Hill Avenue (approximately from Station 94+75 to Station 95+97). Coordinate with AT&T to expose existing utility in area of beam guard placement. No conflicts are anticipated if the utility is exposed in the area of beam guard replacement.

Midwest Fiber Networks
Upon contract execution, Contractor shall coordinate fiber relocation activities with Cablecom, Midwest Fiber Networks and WisDOT STOC representatives. Midwest Fiber Networks has fiber within WisDOT STOC ducts along the North side of IH 94 westbound from Stadium Interchange to 25th Street. The fiber from Station 1586+00 to Station 1599+15 will be relocated prior to construction. The fiber line enters the outside shoulder at approximately Station 1624+00 and runs underneath the shoulder until approximately Station 1635+35. Fiber line may be encased in concrete shoulder. A temporary connection will be in place from approximately Station 1624+00 to Station 1635+35 prior to construction. Existing facilities in IH 94 WB shoulder shall be removed by general contractor during shoulder pavement removal operations from approximately Station 1624+00 to Station 1635+35. After removal of the shoulder and prior to repaving, permanent facilities (4 – 2 inch PVC conduits) are to be placed by CableCom. CableCom will require one day to install the conduit.

Do not damage to any Midwest Fiber networks fibers. Report damage to the existing conduit in the shoulder immediately to the Midwest Fiber Networks representative, Richard Trgovec, (414) 349-2979, (rtrgovec@midwestfibernetworks.com), the Cablecom representative Matt Hebel, (414) 349-3722, (mhebel@cablecomllc.com), to the WisDOT contact. Jeff Madson, (414) 225-3723, (Jeffrey.Madson@dot.wi.gov).

Other Facilities:

WisDOT Freeway Lighting
WisDOT has existing facilities in the median from Stadium Interchange to Marquette Interchange. Existing cables and light poles will be replaced as part of the project. Coordinate construction activities with the WisDOT lighting contact is Matthew Pfeifer, (414) 266-1154, (matthew.pfeifer@dot.wi.gov).

WisDOT Overhead Signing
WisDOT has existing facilities along the corridor from Stadium Interchange to Marquette Interchange. Existing sign S-40-0206 will be moved as part of the project. Sign S-40-0859 will be constructed new as part of the project.

WisDOT Traffic Operations Center (TOC)
WisDOT has existing Freeway Traffic Management System (FTMS) facilities (manholes, loops, pull boxes, conduit) throughout the project. Existing FTMS at 35th Street on ramp and from Stadium Interchange to 25th Street shall be replaced as part of the project. Coordinate construction activities with the WisDOT –STOC contact is Dean Beekman, (414) 227-2154, (dean.beekman@dot.wi.gov)

10. Erosion Control.

Perform the work under this item in accordance to the requirements of standard spec 107.20 and supplemented as follows:

Take adequate precautions to install and maintain necessary erosion and sediment control during grading and construction operations at curbs and gutters, and at other locations as determined by the engineer. Protect storm drain inlets and manholes at locations determined by the engineer with a filter fabric meeting accepted design criteria, standards, and specifications. The erosion control items shown on the plans are at suggested locations. The engineer may modify locations as needed. Maintain all erosion control measures until such time as the engineer determines the measures are no longer necessary.

Topsoil graded areas, as designated by the engineer, immediately after grading has been completed within those areas. Sod and fertilize all topsoiled areas within 7 business days after placement of topsoil.

Place stockpiled spoil material on an upland site an adequate distance from wetland and any open water areas. Install silt fence between the spoil pile and excavation site and between any undisturbed area and waterway. Retopsoil the open grade area, as designated by the engineer, immediately after grading is completed within those areas. Seed, mulch and place erosion mat on all topsoiled areas within ten working days after placement of the topsoil. Leave the silt fence in place until the seeded area has produced sufficient grass cover to stabilize the area and thereby reduce the danger of site erosion.

Provide the erosion control implementation plan (ECIP) 14 days prior to the preconstruction meeting.

Minimize all dust emissions resulting from land disturbing activities under the contract to the maximum extent practicable. Do not generate excessive air borne particulate matter (PM) or nuisance dust conditions. The contractor has direct responsibility for controlling dust at all times throughout the duration of the contract, 24 hours per day, 7 days per week, including non-working hours, weekends, and holidays. The department will measure the various bid items associated with dust control as specified in the applicable measurement subsections of either the standard specifications or other contract special provisions including, but not limited to, the Pavement Cleanup bid item.

11. Project Site Air Quality.

Because fine particulate matter levels for Milwaukee, Racine and Kenosha Counties are typically close to $PM_{2.5}$ limits and the project is in a non-attainment area for the federal 8-hour ozone standard, contributions from construction activities can have a major impact well beyond the project limits. Take practical measures to mitigate the impact of operating construction equipment on the air quality in and around the project site.

Do not burn diesel fuel with a sulfur content exceeding 500 ppm (0.05% by weight) within the project limits. Red dyed diesel fuels marketed for off-road use frequently will not meet this requirement. If burning dyed fuel, ensure that the sulfur content meets this requirement.

The department encourages the contractor to voluntarily establish staging zones for trucks waiting to load and unload. Locate staging zones where idling of diesel powered equipment will have minimal impact on abutting properties and the general public. The department will make signs available to the contractor to help identify these zones. Have truckers queue up in these zones whenever it is practical. The department further encourages drivers to shut down diesel trucks as soon as it appears likely that they will be queued up for more than 15 minutes. Notify employees and sub-contractors about fueling and engine idling.

The department also encourages the contractor to locate stationary diesel powered equipment to minimize the impact of diesel emissions on abutting properties and the general public. The department further encourages the contractor to shut down stationary diesel powered equipment when not in use for extended periods.
SEF Rev. 090616

12. Hauling Restriction.

Do not haul materials of any kind on any local roads without approval of the local Maintaining Authority and the department. Provide any proposals to haul on local roads with a written agreement between the contractor and the respective Maintaining Authority. Submit a letter to the department from the Maintaining Authority in agreement to the hauling prior to hauling. Contact the respective Maintaining Authority prior to bidding for approval of haul routes.

At all times, conduct operations in a manner that will cause a minimum of disruption to traffic on existing roadways.

This provision does not reduce or eliminate the contractor responsibility from restoring local roads under the item maintenance and repair of haul roads.

13. Weekly Meetings with Project Personnel.

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

Meet with the engineer at 11:00 AM on Wednesdays at the Zoo Interchange project office located at 2424 S 102nd St, West Allis, WI 53227 to discuss and answer questions on the proposed schedule. Edit, delete and add closures to the detailed proposed two-week look ahead schedule, as directed by the project engineer, so that proposed closures meet specification requirements. Other edits, deletions or additions unrelated to meeting specification requirements may also be agreed upon between the contractor and engineer during the 11:00 AM meeting. The 11:00 AM meeting is mandatory for the prime contractor and the traffic control subcontractor.

Every Wednesday at 2:00 PM, attend a weekly traffic meeting at the Zoo Interchange project office. This meeting is mandatory for the prime contractor. The meeting will bring local agencies, project stakeholders, owner managers, owner engineers, contractors, document control and construction engineering personnel together to discuss traffic staging, closures and general impacts. Upon obtaining feedback from the meeting attendees, edit, delete and add information to the detailed two-week look-ahead closure schedule, as needed. Submit the revised two-week look-ahead closure schedule to the engineer.

Obtain approval from the engineer for any mid-week changes to the closure schedule. Revise the two-week look-ahead closure schedule as required and obtain engineer approval.

14. Debris Containment Structure B-40-33, Item 203.0225.S.01.

A Description

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

B (Vacant)

C Construction

Prior to starting work, submit a debris containment plan to the engineer for review. Incorporate engineer-requested modifications. Do not start work over 32nd Street until the engineer approves the debris containment plan.

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

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

Wisconsin Department of Transportation, Michael Treazise, (414) 750-7215.

D Measurement
The department will measure Debris Containment Structure B-40-33 as a single lump sum unit of work for each structure, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
203.0225.S.01	Debris Containment Structure B-40-33	LS

Payment is full compensation for furnishing, installing, maintaining, and removing a debris containment system.
203-010 (20080902)

15. Removing Concrete Surface Partial Depth, Item 204.0109.S.

A Description
This special provision describes removing a portion of the concrete surfaces as shown on the plans according to standard spec 204, and as hereinafter provided.

B (Vacant)

C Construction
C.1 Equipment
Use a machine that provides a surface finish acceptable to the engineer. Shroud the machine to prevent discharge of any loosened material into adjacent work areas or live traffic lanes.

Use a machine that is equipped with electronic devices that provide accurate depth, grade and slope control, and acceptable dust control system.

C.2 Methods
Remove existing concrete to the depths as shown on the plan by grinding, planing, chipping, sawing, milling, or by using other methods approved by the engineer.

Perform the removal operation in such a manner as to preclude damage to the remaining pavement and results in a reasonable uniform plane surface free of excessive large scarification marks and having a uniform transverse slope.

The sequence of removal operations shall be such that no exposed longitudinal joints 2 inches or more in depth remain during non-working hours. Windrowing or storing of the removed material on the roadway will only be permitted in conjunction with a continuous removal and pick-up operation. During non-working hours, clear the roadway of all materials and equipment.

The removed pavement shall become the property of the contractor. Properly dispose of it according to standard spec 204.3.1.3.

D Measurement
The department will measure Removing Concrete Surface Partial Depth in area by the square foot of surface area removed.

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

ITEM NUMBER	DESCRIPTION	UNIT
204.0109.S	Removing Concrete Surface Partial Depth	SF

Payment is in full compensation for removing the concrete; and for disposing of materials.
204-041 (20080902)

16. Removing Inlet Covers, Item 204.9060.S.01.

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

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Inlet Covers as each unit, acceptably completed.

E Payment
Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.01	Removing Inlet Covers	Each

204-025 (20041005)

17. QMP Base Aggregate.

A Description

A.1 General

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

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

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

(4) Provide and maintain a quality control program, defined as all activities related to and documentation of the following:

1. Production and placement control and inspection.
2. Material sampling and testing.

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

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

A.2 Contractor Testing for Small Quantities

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

(2) The requirements under this special provision apply equally to a small quantity for an individual bid item except as follows:

1. The contractor need not submit a full quality control plan but shall provide an organizational chart to the engineer including names, telephone numbers, and current certifications of all persons involved in the quality control program for material under affected bid items.

2. Divide the aggregate into uniformly sized sublots for testing as follows:

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

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

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

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

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

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

B Materials

B.1 Quality Control Plan

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

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

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.
3. A list of source and processing locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Test results for wear, sodium sulfate soundness, freeze/thaw soundness, and plasticity index of all aggregates requiring QC testing. Obtain this information from the region materials unit or from the engineer.

5. Descriptions of stockpiling and hauling methods.
6. Locations of the QC laboratory, retained sample storage, and where control charts and other documentation is posted.
7. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

B.2 Personnel

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

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

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

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

B.3 Laboratory

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

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

B.4 Quality Control Documentation

B.4.1 General

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

B.4.2 Records

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

B.4.3 Control Charts

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

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

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

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

B.5 Contractor Testing

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

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

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

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

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

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

B.6 Test Methods

B.6.1 Gradation

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

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

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

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

1. Control limits are at the upper and lower specification limits.
2. There are no upper warning limits for sieves allowing 100 percent passing and no lower control limits for sieves allowing 0 percent passing.
3. Dense graded warning limits, except for the No. 200 sieve, are 2 percent within the upper and lower control limits. Warning limits for the No. 200 sieve are set 0.5 percent within the upper and lower control limits.
4. Open graded warning limits for the 1-inch, 3/8-inch, and No. 4 sieves are 2 percent within the upper and lower control limits. Upper warning limits for the No. 10, No. 40, and No. 200 sieves are 1 percent inside the upper control limit.

B.6.2 Fracture

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

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

B.6.3 Liquid Limit and Plasticity

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

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

B.7 Corrective Action

B.7.1 General

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

B.7.2 Placement Corrective Action

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

(2) Notify the engineer whenever the running average exceeds a warning limit. When 2 consecutive running averages exceed a warning limit, the engineer and contractor will discuss appropriate corrective action. Perform the engineer's recommended corrective action and increase the testing frequency as follows:

1. For gradation, increase the QC testing frequency to at least one randomly sampled test per 1000 tons placed.
2. For fracture, increase the QC testing frequency to at least one test per gradation test.

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

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

(5) For individual test results significantly outside the control limits, notify the engineer, stop placing base, and suspend other activities that may affect the area in question. The engineer and contractor will jointly review data, data reduction, and data analysis; evaluate sampling and testing procedures; and perform additional testing as required to determine the extent of potentially unacceptable material. The engineer may direct the contractor to remove and replace that material. Individual test results are significantly outside the control limits if meeting one or more of the following criteria:

1. A gradation control limit for the No. 200 sieve is exceeded by more than 3.0 percent.
2. A gradation control limit for any sieve, except the No. 200, is exceeded by more than 5.0 percent.
3. The fracture control limit is exceeded by more than 10.0 percent.

B.8 Department Testing

B.8.1 General

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

B.8.2 Verification Testing

B.8.2.1 General

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

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

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

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

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

B.8.3 Independent Assurance

(1) Independence assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform an IA review

according to the department's independent assurance program. That review may include one or more of the following:

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

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

B.9 Dispute Resolution

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

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

(3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C (Vacant)

D (Vacant)

E Payment

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

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

301-010 (20100709)

18. Mill and Relay.

Replace standard spec 330.3(2) with the following:

(2) Immediately after milling, relay the material with a paver, grader, or both a paver and grader. Use equipment with automatic grade and slope control systems for adjusting the slope through superelevated curves, transitions, and tangent sections and an averaging device to achieve a smooth profile. If the automatic control systems break down, the contractor may use manual controls for the remainder of that day only.

330-001 (20080902)

19. QMP Ride; Incentive IRI Ride, Item 440.4410.S.

A Description

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

(2) Profile the final riding surface of all mainline pavements, bridges, approaches, and railroad crossings. Roundabouts, and pavements within 150 feet of the points of curvature of roundabout intersections, are excluded from the testing requirements of this provision.

(3) Pavements that are excluded from localized roughness according to C.5.2(1), bridges, and roundabout intersections are subject to engineer-directed straightedging according to the standard specifications. All other surfaces being tested under this provision are exempt from straightedging requirements.

B (Vacant)

C Construction

C.1 Quality Control Plan

(1) Submit a written quality control plan to the engineer at or before the pre-construction conference. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of all quality control personnel.
2. The process by which quality control information and corrective action efforts will be disseminated to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.
3. The methods and timing used for monitoring and/or testing ride quality throughout the paving process.
4. The evaluation process that will be used to make improvements to the construction operations if poor ride quality is found during the process control testing.
5. The methods that will be used to ensure a smooth pavement transition when matching into existing surfaces such as bridges, bridge approaches, or railroad crossings.
6. The segment locations of each profile run used for acceptance testing.
7. The approximate timing of acceptance testing in relation to the paving operations.

C.2 Personnel

(1) Have a profiler operator, certified under the department's highway technician certification program (HTCP), operate the equipment, collect the required data, and document the results using the methods taught in the HTCP profiling course.

C.3 Equipment

(1) Furnish a profile-measuring device capable of measuring IRI from the list of department-approved devices published on the department's web site:

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

(2) Unless the engineer and contractor mutually agree otherwise, arrange to have a calibrated profiler available when paving the final riding surface. Calibrate the profiler according to the manufacturer's recommendations. Provide the engineer with a copy of the most recent calibration results, signed by the certified profiler operator.

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

C.4 Testing

C.4.1 Run and Reduction Parameters

(1) Enter the equipment-specific department-approved filter settings and parameters listed on the department's ride web site.

C.4.2 Contractor Testing

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

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

(3) Measure the profiles of each standard or partial segment. Define primary segments starting at a project terminus and running contiguously along the mainline to the other project terminus. Field-locate the beginning and ending points for each profile run. When applicable, align segment limits with the sublot limits used for testing under the QMP Concrete Pavement specification. Define segments one wheel path wide and distinguished by length as follows:

1. Standard segments are 500 feet long.
2. Partial segments are less than 500 feet long.

(4) Treat partial segments as independent segments.

(5) The department will categorize each standard or partial segment as follows:

Segments with a Posted Speed Limit of 55 MPH or Greater	
Category	**Description**
HMA I	Asphalt pavement with multiple opportunities to achieve a smooth ride. The following operations performed under this contract are considered as opportunities: a layer of HMA, a leveling or wedging layer of HMA, and diamond grinding or milling of the underlying pavement surface.
HMA II	Asphalt pavement with a single opportunity to achieve a smooth ride.
HMA III	Asphalt pavement segments containing any portion of a bridge, bridge approach, railroad crossing, or intersection. An intersection is defined as the area within the points of curvature of the intersection radii.
PCC II	Concrete pavement including all gaps.
PCC III	Concrete pavement segments containing any portion of a bridge, bridge approach, railroad crossing, or intersection. An intersection is defined as the area within the points of curvature of the intersection radii.

Segments with Any Portion Having a Posted Speed Limit Less Than 55 MPH	
Category	**Description**
HMA IV	Asphalt pavement including intersections, bridges, approaches, and railroad crossings.
PCC IV	Concrete pavement including gaps, intersections, bridges, approaches, and railroad crossings.

C.4.3 Verification Testing

(1) The department may conduct verification testing (QV) to validate the quality of the product. A certified HTCP profiler technician will perform the QV testing. The department will provide the contractor with a listing of the names and telephone numbers of all verification personnel for the project.

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

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

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

C.4.4 Documenting Profile Runs

(1) Compute the IRI for each segment and analyze areas of localized roughness using the ProVAL software. Within 5 business days after completing a final acceptance profile run, submit a copy of the ProVAL smoothness assurance report showing the IRI for each segment and the areas of localized roughness exceeding an IRI of 175 in/mile. The ProVAL software and department-specified inputs are available on the department's web site:

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

(2) As part of the profiler software outputs and ProVAL reports, document the areas of localized roughness and the locations of individual features including construction joints, structure limits, design features, utility fixtures, and other features that might affect the department's evaluation of ride quality. Field-locate the areas of localized roughness prior to the engineer's assessment for corrective actions.

(3) Within 5 business days after completing profiling of the pavement covered under this special provision, unless the engineer and contractor mutually agree to a different timeline, submit the electronic ProVAL project file containing the .ERD files for each profiler acceptance run. Submit profile data using the department's Materials Reporting System (MRS) software available on the department's web site:

http://www.atwoodsystems.com/mrs

C.5 Corrective Actions

C.5.1 General

(1) Correct the ride as the engineer directs. The department will independently assess whether a repair will help or hurt the long-term pavement performance and/or public perception of the ride before deciding on corrective action.

C.5.2 Corrective Actions for Localized Roughness

(1) Apply localized roughness requirements to all pavements, including HMA III, PCC III, HMA IV, and PCC IV; except localized roughness requirements will not be applied to pavements within 25 feet of the following surfaces if they are not constructed under this contract: bridges, bridge approaches, or railroad crossings. The department may direct the contractor to make corrections to the pavement within the 25-foot exclusionary zones and will compensate the contractor for the extra work.

(2) The engineer will review each individual wheel track for areas of localized roughness. The engineer will assess areas of localized roughness that exceed an IRI of 175 in/mile and do one of the following for each location:

1. Direct the contractor to correct the area to minimize the effect on the ride.
2. Leave the area of localized roughness in place with no pay reduction.
3. Except for HMA IV and PCC IV segments, assess a pay reduction as follows for each location in each wheel path:

Localized Roughness IRI (in/mile)	Pay Reduction[1] (dollars)
> 175	(Length in Feet) x (IRI – 175)

[1] A maximum $250 pay reduction may be assessed for locations of localized roughness that are less than or equal to 25 feet long. Locations longer than 25 feet may be assessed a maximum pay reduction of $10 per foot.

(3) The engineer will not direct corrective action or assess a pay reduction for an area of localized roughness without independent identification of that area as determined by physically riding the pavement. For corrections, use only techniques the engineer approves.

(4) Re-profile corrected areas to verify that the IRI is less than 140 in/mile after correction. Submit a revised ProVAL smoothness assurance report for the corrected areas to validate the results.

C.5.3 Corrective Actions for Excessive IRI

(1) If an individual segment IRI exceeds 140 in/mile for HMA I, HMA II, and PCC II pavements after correction for localized roughness, the engineer may require the contractor to correct that segment. Correct the segment final surface as follows:

HMA I:	Correct to an IRI of 60 in/mile using whichever of the following methods the engineer directs: Mill and replace the full lane width of the riding surface excluding the paved shoulder. Correct the full lane width using techniques approved by the engineer.
HMA II:	Correct to an IRI of 85 in/mile using whichever of the following methods the engineer directs: Mill and replace the full lane width of the riding surface excluding the paved shoulder. Correct the full lane width using techniques approved by the engineer.
PCC II:	Correct to an IRI of 85 in/mile using whichever of the following methods the engineer directs: Continuous diamond grinding of the full lane width of the riding surface including adjustment of the paved shoulders Correct the full lane width using techniques approved by the engineer.

(2) Re-profile corrected segments to verify that the final IRI meets the above correction limits and there are no areas of localized roughness. Submit a revised ProVAL smoothness assurance report for the corrected areas to validate the results. Segments failing these criteria after correction are subject to the engineer's right to adjust pay for non-conforming work under standard spec 105.3.

C.6 Dispute Resolution

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

(2) If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming pavement, the department will use third party testing to resolve the dispute. The department's Quality Assurance Unit, or a mutually agreed on independent testing company, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent tester. The department may use third party tests to evaluate the quality of questionable pavement and determine the appropriate payment.

D Measurement

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

E Payment

E.1 Payment for Profiling

(1) Costs for furnishing and operating the profiler, documenting profile results, and correcting the final pavement surface are incidental to the contract.

E.2 Pay Adjustment

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

ITEM NUMBER	DESCRIPTION	UNIT
440.4410.S	Incentive IRI Ride	DOL

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

(3) The department will administer disincentives for ride under the Disincentive IRI Ride administrative item.

(4) The department will not assess disincentive on HMA III or PCC III segments. Incentive pay for HMA III and PCC III segments will be according to the requirements for the category of the adjoining segments.

(5) The department will adjust pay for each segment based on the initial IRI for that segment before any corrective action is taken. The department will base disincentives on the IRI after correction for pavement meeting the following conditions:

All Pavement:	The corrective work is performed in a contiguous, full lane width section 500 feet long, or a length as agreed with the engineer.
HMA Pavements:	The corrective work is a mill and inlay or full depth replacement and the inlay or replacement layer thickness conforms to standard spec 460.3.2.
Concrete Pavements:	The corrective work is a full depth replacement and conforms to standard spec 415.

(6) The department will adjust pay for 500-foot long standard segments nominally one wheel path wide using equation "QMP 1.03" as follows:

HMA I	
Initial IRI (inches/mile)	**Pay Adjustment[1] (dollars per standard segment)**
< 30	250
≥ 30 to <35	1750 – (50 x IRI)
≥ 35 to < 60	0
≥ 60 to < 75	1000 – (50/3 x IRI)
≥ 75	-250

HMA II and PCC II	
Initial IRI (inches/mile)	**Pay Adjustment[1] [2] (dollars per standard segment)**
< 50	250
≥ 50 to < 55	2750 – (50 x IRI)
≥ 55 to < 85	0
≥ 85 to < 100	(4250/3) – (50/3 x IRI)
≥ 100	-250

HMA IV and PCC IV	
Initial IRI (inches/mile)	**Pay Adjustment[1] [2] (dollars per standard segment)**
< 50	250
≥ 50 to < 75	750 – (10 x IRI)
≥ 75	0

[1] If the engineer directs placing upper layer asphaltic mixtures between October 15 and May 1 for department convenience as specified in standard spec 450.3.2.1(5), the department will not adjust pay for ride on pavement the department orders the contractor to place when the temperature, as defined in standard spec 450.3.2.1(2), is less than 36 F.

[2] If the engineer directs placing concrete pavement for department convenience, the department will not adjust pay for ride on pavement the department orders the contractor to place when the air temperature falls below 35 F.

(7) The department will prorate the pay adjustment for partial segments based on their length.

440-010 (20100709)

20. QMP HMA Pavement Nuclear Density.

A Description

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

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

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

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

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

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

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

http://www.atwoodsystems.com/mrs

B Materials

B.1 Personnel

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

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

B.2 Testing

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

B.3 Equipment

B.3.1 General

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

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

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

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

B.3.2 Correlation of Nuclear Gauges

B.3.2.1 Correlation of QC and QV Nuclear Gauges

(1) Select a representative section of the compacted pavement prior to or on the first day of paving for the correlation process. The section does not have to be the same mix design.

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

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

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

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

B.3.2.2 Correlation Monitoring

(1) After performing the gauge correlation specified in B.3.2.1, establish a project reference site approved by the department. Clearly mark a flat surface of concrete or asphalt or other material that will not be disturbed during the duration of the project. Perform correlation monitoring of the QC, QV, and all back-up gauges at the project reference site.

(2) Conduct an initial 10 density tests with each gauge on the project reference site and calculate the average value for each gauge to establish the gauge's reference value. Use the gauge's reference value as a control to monitor the calibration of the gauge for the duration of the project.

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

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

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

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

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

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

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

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

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

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

Table 1

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

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

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

(3) If a side road, crossover, turn lane, or ramp is 1500 feet or longer, determine sublots and random test locations as specified in B.4.1.1.

(4) If a side road, crossover, turn lane, or ramp is less than 1500 feet long, determine sublots using a maximum of 750 tons per sublot and perform the number of random tests as specified in Table 2.

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

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

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

(2) If all sublot averages are no more than one percent below the target density, calculate the daily lot density by averaging the results of each random QC test taken on that day's material.

(3) If any sublot average is more than one percent below the target density, do not include the individual test results from that sublot when computing the lot average density and remove that sublot's tonnage from the daily quantity for incentive. The tonnage from any such sublot is subject to disincentive pay according to standard spec 460.5.2.2.

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

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

B.4.2.2.2 Width of 5 Feet or Less

(1) If all sublot test results are no more than 3.0 percent below the minimum target density, calculate the daily lot density by averaging all individual test results for the day.

(2) If a sublot test result is more than 3.0 percent below the target density, the engineer may require the unacceptable material to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine the limits of the unacceptable material according to B.4.3.

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

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

B.4.2.4 Documentation

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

B.4.3 Corrective Action

(1) Notify the engineer immediately when an individual test is more than 3.0 percent below the specified minimum in standard spec 460.3.3.1. Investigate and determine the cause of the unacceptable test result.

(2) The engineer may require unacceptable material specified in B.4.3(1) to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine limits of the unacceptable area by measuring density of the layer at 50-foot increments both ahead and behind the point of unacceptable density and at the same offset as the original test site. Continue testing at 50-foot increments until a point of acceptable density is found as specified in standard spec 460.5.2.2(1). Removal and replacement of material may be required if extended testing is in a previously accepted sublot. Testing in a previously accepted sublot will not be used to recalculate a new lot density.

(3) Compute unacceptable pavement area using the product of the longitudinal limits of the unacceptable density and the full sublot width within the traffic lanes or shoulders.

(4) Retesting and acceptance of replaced pavement will be according to standard spec 105.3.

(5) Tests indicating density more than 3.0 percent below the specified minimum, and further tests taken to determine the limits of unacceptable area, are excluded from the computations of the sublot and lot densities.

(6) If 2 consecutive sublot averages within the same paving pass and same target density are more than one percent below the specified target density, notify the engineer and take necessary corrective action. Document the locations of such sublots and the corrective action that was taken.

B.5 Department Testing

B.5.1 Verification Testing

(1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will test randomly at locations independent of the contractor's QC work. The department will perform verification testing at a minimum frequency of 10 percent of the sublots and a minimum of one sublot per mix design. The sublots selected will be within the active work zone. The contractor will supply the necessary traffic control for the department's testing activities.

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

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

(4) If the verification sublot average is more than one percent below the specified target density, compare the QC and QV sublot averages. If the QV sublot average is within 1.0 lb/ft^3 of the QC sublot average, use the QC tests for acceptance.

(5) If the first QV/QC sublot average comparison shows a difference of more than 1.0 lb/ft^3 each tester will perform an additional set of tests within that sublot. Combine the additional tests with the original set of tests to compute a new sublot average for each tester. If the new QV and QC sublot averages compare to within 1.0 lb/ft^3, use the original QC tests for acceptance.

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

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

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

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

(3) If the testing discrepancy cannot be identified, the contractor may elect to accept the QV sublot density test results or retesting of the sublot in dispute within 48 hours of paving. Traffic control costs will be split between the department and the contractor.

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

B.7 Acceptance

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

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

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

E.2 Disincentive for HMA Pavement Density

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

E.3 Incentive for HMA Pavement Density

(1) Delete standard spec 460.5.2.3.

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

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

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

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

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

460-020 (20100709)

21. Concrete Barrier Curing.

Add the following to standard spec 603.3.1.4:

(2) When curing compound is applied to concrete barrier in proximity to live traffic, develop a construction plan which includes a containment system to avoid overspray onto traffic and to ensure complete coverage with the curing compound. Submit the construction plan to the engineer for review and approval.

22. Adjusting Manhole Covers.

This work shall be according to the pertinent provisions of standard spec 611, as shown on the plans, and as hereinafter provided.

Adjust manhole covers located in pavement areas in two separate operations. Initially, remove designated manhole covers along with sufficient pavement to permit installation of temporary cover plate over the opening. Fill the excavated area with asphaltic pavement mixture, which shall remain in place until contract milling and paving operations permit setting the manhole frames to grade. During the second phase, remove the asphaltic pavement mixture surrounding the manhole plus the temporary cover plate, and set the manhole cover to final grade. The department will measure and pay for the items of asphaltic pavement mixture, temporary cover plate, milling, and paving separately.

Revise standard spec 611.3.7 by deleting the last paragraph.

Set the manhole frames so that they comply with the surface requirements of standard spec 450.3.2.9. At the completion of the paving, a 6-foot straightedge shall be placed over the centerline of each manhole frame parallel to the direction of traffic. A measurement shall be made at each side of the frame. The two measurements shall be averaged. If this average is greater than 5/8 inches, reset the manhole frame to the correct plane and elevation. If this average is 5/8 inches or less but greater than 3/8 inches, the manhole frame shall be allowed to remain in place but shall be paid for at 50 percent of the contract unit price.

If the manhole frame is higher than the adjacent pavement, the two measurements shall be made at each end of the straightedge. These two measurements shall be averaged. The same criteria for acceptance and payment as above, shall apply.
611-005 (20030820)

23. Cover Plates Temporary, Item 611.8120.S.

A Description
This special provision describes furnishing, installing and removing a steel plate to cover and support asphaltic pavement and traffic loading at manholes, inlets and similar structures during milling and paving operations.

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

C (Vacant)

D Measurement
The department will measure Cover Plates Temporary, acceptably completed in place, as units.

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

ITEM NUMBER	DESCRIPTION	UNIT
611.8120.S	Cover Plates Temporary	Each

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

The steel plates shall become the property of the contractor when no longer needed in the contract work.
611-006 (20030820)

24. Fence Safety, Item 616.0700.S.

A Description
This special provision describes furnishing and installing a plastic fence at locations shown on the plans and as hereinafter provided.

B Materials
Furnish notched conventional metal "T" or "U" shaped fence posts.

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3 inch max
Resin/Construction:	High density polyethylene mesh
Service Temperature:	-60° F to 200° (ASTM D648)
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction
Drive posts into the ground 12 to 18 inches. Space posts at 7 feet.

Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.

Overlap two rolls at a post and secure with wire ties.

D Measurement
The department will measure Fence Safety by the linear foot along the base of the fence, center-to-center of posts.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S.	Fence Safety	LF

Payment is full compensation for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; and for removing and disposing of fence and posts at project completion.

616-030 (20070510)

25. Signing.

Modify standard spec 637 as follows:

Sheeting, borders, shields an message material for type I signs shall be ASTM D4956-04 Type IX or greater in lieu of type H sheeting and copy as shown in standard spec 637.2.2.2

26. Signs Type I and II.

Furnish and install mounting brackets per approved product list for type II signs on overhead sign supports incidental to sign. For type II signs on sign bridges use aluminum vertical support beams noted above incidental to sign.

Modify standard spec 637.2.2.2 with the following:

Furnish Type I Signs with Type IX or greater reflective sheeting in lieu of High intensity sheeting.

Modify standard spec 637.2.4 with the following:

Use stainless steel bolts, washers and nuts for type I and II signs mounted on sign bridges or type I signs mounted on overhead sign supports. Use clips on every joint for Sign Plate A 4-6 when mounted on a sign bridge or overhead sign support. Inspect installation of clips and assure bolts and nuts are tightened to manufacturers recommended torque values.

Use aluminum vertical sign support beams that have a 5-inch wide flange and weigh 3.7 pounds per foot, if the L-brackets are 4 inches wide then use 4 inch wide flange beams weighing 3.06 pounds per foot. Measure the width of the L-brackets on existing structures of determine the width needed for sign support beams. If L-brackets are 4 inches then use 4 inch by 3.06 pound per foot wide flange in lieu of 5 inch.

Use beams a minimum of six feet in length or equal to the height of the sign to be supported, whichever is greater. Use U-bolts that are made of stainless steel, one-half inch diameter and of the proper size to fit the truss cords of each sign bridge. Install

vertical sign support beams on each sign and use new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss.

For type II signs on overhead sign supports follow the approved product list for mounting brackets.

Replace standard spec 637.2.4.1(2)2 with the following:

Clips may be either stainless steel or ASTM B 108, aluminum alloy, 356.0-T6.

Append standard spec 637.3.2.1(3) with the following:

Provide the engineer with 3 copies of drawings of the signs proposed to be furnished under this contract for approval.

Append standard spec 637.3.3.2(2) with the following:

Install Type I Signs at the offset stated in the plan, which shall be the clear distance between the edge of mainline pavement right edgeline and the near edge of the sign.

Append standard spec 637.3.3.3(3) with the following:

Furnish and install new aluminum vertical sign support beams on each sign and new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss for Type I or Type II Signs and type I signs on overhead sign supports incidental to sign.
637-SER1 (20101021)

27. Blue Specific Service Signs.

Supplement standard spec 638.3.4 with the following:

Do not remove or move blue specific service signs or their associated posts. Specific service signs are signs with logos that identify commercial entities providing gas, food, lodging, camping, or attractions. A separate contractor, Derse, Inc., is responsible for these signs. Contact Mark Rognsvoog of the Derse Company at (800) 345-5772 a minimum of 14 calendar days in advance to coordinate removing, moving, or re-installation of these signs.

The contractor is responsible for damage done to these signs due to contractor operations.
638-010 (20120615)

28. Traffic Control.

Perform work under the various Traffic Control items in accordance to the requirements of standard spec 643, and as shown on the plans or as approved by the engineer, except as hereinafter modified.

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

Provide the Milwaukee County Sheriff's Department, the Wisconsin State Patrol, and the engineer a current telephone number with which the contractor or his representative can be contacted 24 hours a day in the event a safety hazard develops.

Do not proceed with any operation until all traffic control devices for such work are in the proper location.

Do not park or store any equipment, vehicles, or construction materials within 30 feet of the edge of the traffic lane or ramps during non-working hours except at locations and periods of time approved by the engineer. At such locations, do not create a hazard to the traveling public with the involved materials and equipment.

Do not permit equipment or vehicles to directly cross the live traffic lanes of the highway. Yield to all through traffic at all locations. Equip all contractor's vehicles or equipment operating in the live traffic lanes with a hazard identification beam (flashing yellow signal light). Operate the flashing yellow beam only when merging or exiting live traffic lanes or when parked or operating on shoulders.

Supplement standard spec 107.8 as follows:

Equip all construction vehicles and equipment operating on or near roadways open or closed to traffic with at least one flashing amber light. Activate the flashing amber light when vehicles or equipment are operated on the roadway, parked in close proximity to the roadway, and when entering or exiting live lanes of traffic. Mount the flashing amber light approximately midway between the transverse extremities of the vehicles or machinery and at the highest practicable point that provides visibility from all directions. Provide flashing strobe or revolving type lights meeting the following minimum requirements:

Flashing Strobe Type Light	**Revolving Type Light**
360-degree lens	360-degree lens
60 to 90 flashes per minute	45 to 90 flashes per minute
5-inch minimum height	4-5/8 inch minimum height
3-3/4 inch minimum diameter	3-3/4 inch minimum diameter

Equip the light with bulbs of 50 candlepower minimum. Provide either magnetic or permanent mounting. No compensation for furnishing and installing the flashing amber light to contractor owned construction equipment or vehicles will be provided for in the contract.

Obtain prior approval from the engineer for all locations of egress or ingress for construction vehicles other than as shown in the plans to prosecute the work.

Do not use flag persons to direct, control, or stop IH 43, IH 94, IH 794, or USH 41 traffic.

Do not disturb, remove, or obliterate any traffic control signs, advisory signs, shoulder delineators, or beam guard in place along the traveled roadways not shown on the plans without approval of the engineer.

The traffic requirements are subject to change at the direction of the engineer in the event of an emergency.

Cover all traffic control signs when they are not in use.

Provide new high intensity reflective sheeting on all traffic control drums and barricades.

Replace standard spec 643.3.1(6) with the following:

Provide 24-hour a day availability of equipment, forces and materials to promptly restore barricades, lights, or other traffic control devices that are damaged or disturbed. Restore any barricade, light, or other traffic control so that the device is not out of service for more than two hours.

Supplement standard spec 643.3.6(3) with the following:

Place one flashing arrow board in advance of each lane closure taper and place one flashing arrow board within each lane closure taper at locations directed by the engineer.

29. Preparation and Coating of Top Flanges B-40-0033, Item 517.0900.S.

A Description

This special provision describes thoroughly cleaning and coating the top surface and edges of the top flanges, removing loose paint, rust, mill scale, dirt, oil, grease, or other foreign substances until the specified finish is obtained.

B (Vacant)

C Construction

In accordance to SSPC SP-10, blast clean to a near white finish the top surface and edges of the top flanges that have no paint on them, and paint them with one coat of an approved zinc rich primer. No collection of blast waste material is required.

In accordance to SSPC SP-2 or SP-3, clean all areas of rust and loose paint on the top surface and edges of the top flanges, which have paint on them, by wire brushing, grinding or other mechanical means. Wash the top surface and edges of the top flanges and give them one coat of an approved zinc-rich primer.

Where plans call for the cleaning of other painted structural steel including hanger assemblies, bearings, field splices, and connections, clean areas of loose paint and rust by wire brushing, grinding, or other mechanical means as necessary and in accordance to SSPC SP-2, SP-3, or SP-11. Sound paint need not be removed with the exception of an area 12-inches on either side of hanger assembly centerlines. Clean this area to base metal in accordance to SSPC SP-10, or SP-11.

In accordance to SSPC SP-2, or SP-3, thoroughly clean by wire brushing, grinding or other mechanical means as necessary the surface area of exposed steel members that are to be imbedded in the new concrete, and wash and give one coat of an approved zinc rich primer to these areas.

Furnish and erect tarpaulins or other materials to collect all of the spent paint containing material resulting from blasting or hand and power tool cleaning and coating. Minimize dust during all clean-up activities. Collect and store waste material at the end of each work day or more often if needed. Store waste materials in the hazardous waste containers provided. Lock and secure all waste containers at the end of each work day. Cover the container(s) at all times except when adding or removing waste material. Store the containers in an accessible and secured area, not located in a storm water runoff course, flood plain or exposed to standing water. Transportation and disposal of such waste material will be the responsibility of the department.

Damage to existing painted surfaces as a result of construction operations, shall be restored to the approval of the engineer at the contractor's expense.

D Measurement

The department will measure Preparation and Coating of Top Flanges (Structure), completed in accordance to the contract and accepted, as a single complete unit of work for the structure.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
517.0900.S	Preparation and Coating of Top Flanges B-40-033	LS

Payment is full compensation for preparing and cleaning the designated surfaces; and for furnishing and applying the coating.

517-010 (20100709)

30. Nighttime Work Lighting-Stationary.

A Description

Provide portable lighting as necessary to complete nighttime work. Nighttime operations consist of work specifically scheduled to occur after sunset and before sunrise.

B (Vacant)

C Construction

C.1 General

This provision shall apply when providing, maintaining, moving, and removing portable light towers and equipment-mounted lighting fixtures for nighttime stationary work operations, for the duration of nighttime work on the contract.

At least 14 days prior to the nighttime work, furnish a lighting plan to the engineer for review and acceptance. Address the following in the plan:

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.

2. Specifications, brochures, and technical data of all lighting equipment to be used.

3. The details on how the luminaires will be attached.

4. Electrical power source information.

5. Details on the louvers, shields, or methods to be employed to reduce glare.

6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.

7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

Provide portable lighting that is sturdy and free standing and does not require any guy wires, braces, or any other attachments. Furnish portable lighting capable of being moved as necessary to keep up with the construction project. Position the portable lighting and trailers to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment. Provide lightning protection for the portable lighting. Portable lighting shall withstand up to 60 mph wind velocity.

If portable generators are used as a power source, furnish adequate power to operate all required lighting equipment without any interruption during the nighttime work. Provide wiring that is weatherproof and installed according to local, state, federal (NECA and OSHA) requirements. Equip all power sources with a ground-fault circuit interrupter to prevent electrical shock.

C.3 Light Level and Uniformity

Position (spacing and mounting height) the luminaires to provide illumination with an average to minimum uniformity ratio of 5:1 or less throughout the work area.

Illuminate the area as necessary to incorporate construction vehicles, equipment, and personnel activities.

C.4 Glare Control
Design, install, and operate all lighting supplied under these specifications to minimize or avoid glare that interferes with all traffic on the roadway or that causes annoyance or discomfort for properties adjoining the roadway. Locate, aim, and adjust the luminaires to provide the adequate level of illumination and the specified uniformity in the work area without the creation of objectionable glare.

Provide louvers, shields, or visors, as needed, to reduce any objectionable levels of glare. As a minimum, ensure the following requirements are met to avoid objectionable glare on the roadways open to traffic in either direction or for adjoining properties:

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.

2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

If lighting does not meet above-mentioned criteria, adjust the lighting within 24 hours.

C.5 Continuous Operation
Provide and have available sufficient fuel, spare lamps, generators, and qualified personnel to ensure that the lights will operate continuously during nighttime operation. In the event of any failure of the lighting system, discontinue the operation until the adequate level of illumination is restored. Move and remove lighting as necessary.

D (Vacant)

E Payment
Costs for furnishing a lighting plan, and for providing, maintaining, moving, and removing portable lighting, tower mounted lighting, and equipment-mounted lighting required under this special provision are incidental to the contract.
643-010 (20100709)

31. Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch, Item 646.0841.S; 8-Inch, Item 646.0843.S.

A Description
This special provision describes furnishing, grooving and installing preformed wet reflective pavement marking contrast tape for grooved applications as shown on the plans, according to standard spec 646, and as hereinafter provided.

B Materials
Furnish wet reflective pavement marking contrast tape and adhesive material, per manufacturer's recommendation if required, from the department's approved products list.

Furnish a copy of the manufacturer's recommendations to the engineer before preparing the pavement marking grooves.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of pavement marking contrast tape.

Plane the grooved lines according to details in the plan and per manufacturer's recommendations. Use grooving equipment with a free-floating, independent cutting head. Plane a minimum number of passes to create a grooved surface per manufacturer's recommendations.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ± 10 mils from the pavement surface or, if tined, from the high point of the tined surface. To measure the depth, the contractor may use a depth plate placed in the groove and a straightedge placed across the plate and groove, or the contractor may use a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Longitudinal Markings

Cut the groove one-inch wider than the width of the tape.

C.4 Groove Position

Position the groove edge according to plan details. Groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the tape segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with high-pressure water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the adhesive, and the pavement marking tape. Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt

Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt
Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.6 Tape Application
Apply the tape when both the air and surface temperature are 40 degrees F and rising.

Apply tape in the groove as per manufacturer's recommendations. If manufacturer's recommendations require surface preparation adhesive

6. For the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee:

7. Apply SPA-60 during May 1 to September 30, both dates inclusive due to Volatile Organic Compound Limitations..

8. Apply P-50 during October 1 to April 30, both dates inclusive. –

9. For the remainder counties:

10. Apply either adhesive.

Refer to the manufacturer's instructions for determining when the surface preparation adhesive is set.

Tamp the wet reflective pavement marking contrast tape with a tamper cart roller, with a minimum of a 200-lb load, cut to fit the groove. Tamp a minimum of three complete cycles (6 passes) with grooved modified tamper roller cart.

D Measurement
The department will measure Pavement Marking Grooved Wet Reflective Contrast Tape (Width) for grooved applications in length by the linear foot of tape placed according to the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF
646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for removing temporary pavement marking, if necessary.
646-022 (20120615)

32. Temporary Pavement Marking.

Replace paragraph (3) of standard spec 649.3.1 with the following:

Apply temporary pavement markings in the exact location as permanent pavement markings, as shown in the plans. Do not apply temporary pavement markings on any intermediate pavement layers, including milled surfaces, unless otherwise directed by the engineer. As directed by the engineer, remove temporary dashed and dotted lane line pavement markings and temporary gore pavement markings by cutting grooves in accordance to standard special provision articles "Pavement Marking Grooved Wet Reflective Tape 4-Inch" and "Pavement Marking Grooved Wet Reflective Tape 8-Inch."

33. Freeway Lighting Systems.

Wet Location Splices
Modify standard spec 655.3.1 as follows:

Wet location splices are not anticipated on this project and not shown in the plans. In the event that the engineer allows wet location splices, make with an approved epoxy kit.

Branch Circuit Tagouts
Any circuit that the contractor does not personally tag out at the disconnect is considered live, and will be subject to being activated by another person with no notice to the contractor. Make tagouts with manufactured tags, and endorse them with the date and the name of the contractor. Clear tagouts at the end of the workday.

Shop Locations
Pick up and haul materials indicated as state-furnished from one of the locations listed below, as directed by Mr. Michael Prebish, (414) 266-1170,. Haul materials indicated to be returned to the department to one of these locations, as directed by Mr. Prebish. Arrange pickups and deliveries in advance and during regular business hours.

State Electrical Shop, 935 South 60th Street, West Allis
Milwaukee County Grounds, 10191 West Watertown Plank Road, Wauwatosa

Corrosion Protection
Corrosion protection measures described in standard spec 657.3.1 and 657.3.5 are invoked for breakaway transformer bases and aluminum light poles.

Non-Breakaway Light Poles
At non-breakaway locations, the double-nutting of poles and the installation of galvanized rat screens are required, and both is considered incidental to the paid items of work.

Pole Plaques - Median Mount Light Poles
The standard detail drawing for light poles plaques is modified as follows: The note stating that the plaque height is to be adjusted for traffic signs is to be interpreted as follows: Provide a mounting height of four feet above the pavement, to allow for tenth-mile marker signs above.

Cable Removal
Disconnecting and abandoning cable will be incidental to the paid items.

Median Cable In Duct
Median cable in duct will be paid at the same bid unit prices per linear foot as cable in duct in standard spec 655.

Modify standard spec 655.3.2 by adding the following requirement:

Train median cable in duct along the right side of the gap between the barriers. At sufficiently close intervals, drive No. 4 rebar (or an equivalent stake) into the grade, and use tie wire to tie the cable duct to the stakes.

Cable Identification
Where more than one network of cable (example A/B/N and C/D/N) occupies a pull point, bundle each network with nylon cable ties and identify each network with approved tags suitable for the environment.

At each pull point, mark the cable or bundle with blue tape, blue indicating the line side of the system.

The following modifications are made to standard specifications and standard detail drawings:

Append standard spec 651.3.1 with the following:

Each electrical worker is responsible for his own protection from automatic switching and from switching by others. Conform to lock-out and tag-out rules that apply in the industry. Sign and date the tags and include the name of the contractor. If possible, clear lock-outs and tag-outs by the end of the work day. If not possible, notify the engineer.

The plans show required disconnections of existing lighting circuits, most in the form of abandoning existing underground conductors in place. The contractor may need to mobilize several times per each existing lighting distribution center. The contractor is expected to build these costs into the various paid items for removals and installations.

Append standard spec 651.5 with the following:

Work to disconnect and connect conductors will be incidental to the paid measurement of footage.

There will be no measurement for payment for abandoning conductors or removing conductors for scrap.

Work to disconnect and connect electrical system, splice through, or to connect conductors are incidental to the installation or removal of the lighting pay items included in this contract. The department will not measure conductors or conduits that have been abandoned in place or removing them for scrap. The department will allow, at the contractor's discretion, for the salvaging of conductors to be abandoned, if possible.

Append standard spec 652.3.1 with the following:

Installed minimum 3-inch diameter PVC conduit elbows in a ground mounted concrete bases to accommodate Cable in Duct (CID) type cable.

Append standard spec 652.3.1.2 with the following:

Furnish and install an UL-listed liquidtight flexible metallic conduit transition wherever a conduit exits from below grade.

Furnish a UL-listed fitting appropriate for the purpose at each transition from one type of conduit to another type. Couplings will not be individually measured for payment.

Append standard spec 652.3.1.4 with the following:

Support conductors at the top of the vertical raceway or as close as practical if the vertical rise exceeds 50-feet. Provide additional supports as shown; in no case shall the distance between supports exceed that shown in Table 300.19(A) of the National Electrical Code.

Append standard spec 655.3.1(1) and 655.3.7(3) with the following:

Wet location splices may be allowed under the following circumstances:

11. Where shown in the plans.
12. Where the best available location to connect new work to existing work below grade.

Make wet location splices with an approved epoxy kit.

Append standard spec 655.3.7(4) with the following:

Provide an approved secondary in line 600-volt AC fuse assembly with a FNQ 5 ampere fuses in the luminaire and provide No. 12 AWG, XLP wire in the pole shaft from fuses in the luminaire to underground feeder with splice at pole base. No. 12 AWG, XLP wire will be paid separately. Fuses are included in electrical wire bid items.

Where two or more cable networks occupy the same pull box, manhole, etc., bundle and tag each circuit network (i.e. A/B/N and C/D/N) with approved all-weather tags.

At each pull point or access point, indicate the line side bundle with a lap of blue tape. *Exception:* Where the direction the bundle comes from is obvious, the lap of blue tape is not required. *Example of exception:* a bridge parapet junction box.

Append subsection 657.2.1(2) of the standard specifications with the following:

For non-breakaway poles (mounted on structure, concrete base or behind noise wall barriers without transformer base), as well as at stems of sign bridges containing electrical wires, to be double nutted and contractor to install galvanized rat screen enclosing the bottom of pole area, extra nuts and screen incidental.

Modify subsection 657.3.1(3) of the standard specifications with the following:

Use corrosion protection measures for breakaway transformer bases and aluminum light poles for installation on lighting systems.

34. Install Conduit Into Existing Item, Item 652.0700.S.

A Description

This special provision describes installing proposed conduit into an existing manhole, pull box, junction box, communication vault, or other structure.

B Materials

Use nonmetallic conduit, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the requirements of pertinent provisions of the standard specifications.

C Construction

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for the entering conduit(s) at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

D Measurement

The department will measure Install Conduit Into Existing System by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
652.0700.S	Install Conduit Into Existing Item	Each

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.
652-070 (20100709)

35. Electrical Service Meter Breaker Pedestal, ATR-67-6113, Item 656.0200.11.

Append standard spec 656.2.3 with the following:

The contractor will be responsible for the electric service installation request for any department maintained facility.

Electric utility company service installation and energy cost will be billed to and paid for by the department.

Install the cabinet base and meter breaker pedestal first so the electric utility company can install the service lateral. Finish grade the service trench, replace topsoil that is lost or contaminated with other materials, fertilize, seed, and mulch or erosion mat all areas that are disturbed by the electric utility company.

Append standard spec 656.5(3) with the following:

Payment for grading the service trench will be incidental to this work. Payment for replacing topsoil, fertilizer, seed, and mulch or erosion mat will be paid for at the contract unit prices.

36. Intelligent Transportation Systems (ITS) – Control of Materials.

Standard spec 106.2 – Supply Source and Quality

Supplement standard spec 106.2 with the following:

The department will furnish a portion of equipment to be installed by the contractor. This department-furnished equipment includes the following:

Department-furnished Items
Poles Type 5 (30')
Transformer Bases Breakaway11 1/2-Inch Bolt Circle
Wavetronix HD 125 Unit
Wavetronix HD 125 Cable (40')
Wavetronix Click 200 Module
Wavetronix Click 202 Module
ATR Pole Mounted Cabinet (24"x51"x16"D)
U-Bolt 5/8"x8" (2)
Cabinet Heater
Heater Thermostat
Fiber Optic Cables
Fiber Optic Splice Enclosure
Microwave Vehicle Detector

All other materials needed are the responsibility of the contractor.

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.

Pick up remaining department-furnished equipment from the SE Region West Allis Service Facility at 935 S. 60th Street, West Allis, WI 53214 at a mutually agreed upon time. Contact Mike Prebish at (414) 266-1170 to coordinate pick up of equipment. Transportation of the equipment between the West Allis Service Facility and the field or interim location(s) shall be the responsibility of the contractor.

Large department-furnished equipment, such as camera poles will be delivered by the supplier to a contractor-controlled site within Milwaukee County. Delivery will not necessarily be in a "just in time" manner. Store the equipment until field installation. Provide location details and a contact for delivery coordination upon receiving the contract's Notice to Proceed.

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

Standard spec 106.3 – Approval of Materials

Supplement standard spec 106.3 with the following:

Design/Shop Drawings
Prior to the purchase and/or fabrication of any of the components listed herein, and for any non-catalog item shown on the Material and Equipment List specified above, and no more than 30 days after notice to proceed, submit five copies of design drawings and shop drawings, as required, to the department for review. The items and the drawings that represent them shall meet the requirements of the standard specifications.

Design drawing submissions shall consist of signed and certified designs, design drawings, calculations, and material specifications for required items.

Shop drawings will be required for, but not limited to the following:

1. Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.
2. Mounting LED warning signs to the sign structure.
3. Mounting detail for dynamic message signs.
4. Any contractor-designed structure or foundation.

The department will complete its review of the material within 30 days from the date of receipt of the submission, unless otherwise specified. The department will advise the contractor, in writing, as to the acceptability of the material submitted. The department may determine that if no exceptions were taken for the item, it is approved, and no further action is required by the contractor; or the item may be partially or totally rejected, in which case modify and/or amend the submittal as required by the department and resubmit the item within 14 days. At this time, the review and approval cycle described above will begin again.
670-005 (20100709)

37. Intelligent Transportation Systems – General Requirements.

A Description
A.1 General
This contract includes furnishing and installing elements for an Intelligent Transportation System (ITS) in or along the existing roadway as shown on the plans.

Unusual aspects of this project include:

1. The project includes working on cables and equipment that are carrying data between roadside equipment and the department's Statewide Traffic Operations Center (STOC). Interruption of this service is not expected to perform this work. If an interruption is determined necessary, it must be done on a weekend, and must be done in a way that minimizes communication outages for the existing equipment. Notify the department's STOC at least 48 hours in advance of the planned interruption.

2. The department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment prior to installing it.

A.2 Surge Protection

Equip every ungrounded conductor wire entering or leaving any equipment cabinet with a surge protector. For purposes of this section, multiple cabinets on a single pole or foundation are considered a single cabinet.

B Materials

B.1 General

Only furnish equipment and component parts for this work that are new and have high quality workmanship. All controls, indicators, and connectors shall be clearly and permanently labeled in a manner approved by the engineer. All equipment of each type shall be identical.

All electrical equipment shall conform to the standards and requirements of the Wisconsin Electrical Code, the National Electrical Manufacturers Association (NEMA), National Electric Safety Council (NESC), Underwriter's Laboratory Inc. (UL) or the Electronic Industries Association (EIA), when applicable. All materials and workmanship shall conform to the requirements of the National Electrical Code (NEC), Rural Electrification Administration (REA), Standards of the American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), requirements of the plans these special provisions, the standard specifications, and to any other codes, standards, or ordinances that may apply. All system wiring, conduit, grounding hardware and circuit breakers shall be in conformance with the National Electrical Code. Whenever reference is made to any of the standards mentioned, the reference shall be considered to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

B.2 Outdoor Equipment

All conductive connectors, pins (except pins connected by soldering), and socket contacts shall be gold plated. Acrylic conformal coating shall protect each circuit board side that has conductive traces. Except for integrated circuits containing custom firmware, all components shall be soldered to the printed circuit board.

To prevent galvanic corrosion, all connections between dissimilar metals shall incorporate a means of keeping moisture out of the connection. Where the connection need not conduct electricity, interpose a non-absorbing, inert material or washer between the dissimilar metals. Use nonconductive liners and washers to insulate fasteners from dissimilar metals. Where the connection must conduct electricity, use a conductive sealant between the dissimilar metals. Alternatively, use an insulating gasket and a bond wire connecting the two metal parts.

B.3 Custom Equipment

Equipment that is not part of the manufacturer's standard product line, or that is made or modified specifically for this project, shall conform to the following requirements:

Where practical, electronics shall be modular plug-in assemblies to facilitate maintenance. Such assemblies shall be keyed to prevent incorrect insertion of modules into sockets.

All components shall be available from multiple manufacturers as part of the manufacturers' standard product lines. All must be clearly labeled with the value, part number, tolerance, or other information sufficient to enable a technician to order an exact replacement part.

Lamps used for indicator purposes shall be light-emitting diodes.

The printed circuit boards shall be composed of "two-ounce" copper on 1/16-inch thick fiberglass epoxy or equivalent type construction. Holes that carry electrical connections from one side of the boards to the other shall be completely plated through. Multilayer printed circuit boards shall not be used. The name or reference number used for the board in the drawings and maintenance manuals supplied to the department shall be permanently affixed to each board.

All components shall be mounted so that the identifying markings are visible without moving or removing any part, if practical.

B.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.

13. **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.
14. Duty Cycle: Continuous
15. **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.
16. Electrical Power:
17. **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.
18. **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.

19. **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.
20. Temperature and Humidity:
21. **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.
22. **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:

23. The protectors shall suppress a peak surge current of up to 10k amps.
24. The protectors shall have a response time less than one nanosecond.
25. 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.
26. The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.
27. The protector shall also contain a resettable fuse (PTC) to protect against excessive current.
28. There shall be no more than two pairs per protector.
29. 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)

38. Intelligent Transportation Systems – Signal Assemblies.

Modify standard spec standard spec 676 with the following:

676.2.4 Signal Heads

30. Furnish the housing, visor, lenses, LED modules, and other components consisting of an LED signal head assembly from the statewide approved electrical materials list.

39. Intelligent Transportation System – Communication Vault.

673.2 Materials

31. Furnish a vault lid with a minimum design load of 15,000 pounds and that has permanent stamp that reads WISDOT COMMUNICATIONS or as the plans show. The vault lid will have 2 slots measuring ½ inch by 4 inches to use as a pull out. The vault lid will also be detectable through the inclusion of detectable metal incorporated into the lid.

40. Portable Changeable Message Sign (PCMS) Cellular Communications, SPV.0045.01.

A Description

This special provision describes cellular communications requirements for use with PCMS. Cellular communication allows the department to control PCMS during incidents or other emergencies through Trans Suite software. The department will notify contractor of message changes.

B Materials

Provide a cellular modem and antenna that enables the department to communicate and control PCMS conforming to standard spec 643.2.7.

B.1 Cellular Modem and Antenna

Furnish an EV-DO Cellular modem registered to a 3G Cellular carrier. The cellular modem must include 1 or more external antennas, 1 or more 10/100 Ethernet ports, and 1 or more db9 Serial RS-232 interfaces. The device must be able to handle -30° C to +75° C and powered by a 12VDC power supply. The cellular modem must have a built-in secure router with NAT, port forwarding and IP pass-through capabilities.

Provide management IP and passwords for the cellular modem to the department.

Access includes IP address, serial port setting, and password(s). Antenna cable shall be continuous without splices. Mount the antenna at the highest practical location on the PCMS.

C Construction

Conform to standard spec 643.3.7. Install cellular modem in a lockable, weatherproof compartment in the PCMS trailer.

A minimum of 14 days prior to deployment, demonstrate to the department that the cellular modem is capable of communications with Trans Suite software.

If remote communications are interrupted or temporarily unavailable, contractor will be notified by the department to change the message.

D Measurement

The department will measure Portable Changeable Message Sign (PCMS) Cellular Communications by the day, acceptably completed, measured as the number of calendar days each cellular modem for PCMS is available for exclusive use under the contract. The department will deduct one day for each calendar day the sign communications are required but out of service for more than 2 hours.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0045.01	Portable Changeable Message Sign (PCMS) Cellular Communications	Day

Payment is full compensation for providing, operating and maintaining a cellular modem and antenna, and for making message changes if cellular communications are interrupted or temporarily unavailable.

41. Sawing Concrete Barrier, Item SPV.0060.01.

A Description
Saw, full depth, existing concrete barrier in accordance to the pertinent requirements of standard spec 690, as shown on the plans, and as hereinafter provided.

B (Vacant)

C Construction
This work includes transverse full depth sawing of the concrete barrier wall, and transverse full depth sawing of the concrete barrier footing extending a distance of 2-feet out perpendicular to the front barrier face.

D Measurement
The department will measure Sawing Concrete Barrier as each individual existing barrier saw cut, 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.0060.01	Sawing Concrete Barrier	Each

Payment is full compensation for transverse full-depth sawing of concrete barrier wall and concrete barrier footing.

42. Welding Storm Sewer Covers, Item SPV.0060.02.

A Description
This work includes welding storm sewer covers at locations as shown on the plan.

B (Vacant)

C Construction
Prior to welding clean out all soil, debris, other accumulated matter, and materials deposited or lodged on the storm sewer structure cover.

Conform welding to ANSI/AWI structural welding code D1.1.

Provide welding in such a manner that welding can be grounded off for future access.

D Measurement
The department will measure Welding Storm Sewer Covers as each individual item, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.02	Welding Storm Sewer Covers	Each

Payment is full compensation for cleaning covers, welding including welding materials.

43. Cover Plates Left In Place, Item SPV.0060.03.

A Description
Furnish and install a steel plate to cover and support backfill material and traffic loading at inlets as shown on the plans, in accordance to the pertinent provisions of standard spec 611 of the standard specifications, and as hereinafter provided.

Cover plates left in place becomes the property of the department after final acceptance by the engineer.

B Materials
Provide a 0.5-inch minimum thickness steel plate that extends to the outside edge of the existing masonry.

C Construction
Clean out all soil, debris, other accumulated matter, and materials deposited or lodged due to the contractor's operations from the structure prior to placing the cover plate left in place on the structure.

Place cover plates as shown on the plans.

D Measurement
The department will measure Cover Plates Left In Place as each individual cover plate left in place, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.03	Cover Plates Left In Place	Each

Payment is full compensation for furnishing and installing the cover plate; for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

44. Exposing Existing Utility, Item SPV.0060.04.

A Description

This work includes exposing existing utilities which are in direct conflict with proposed facilities. The location of existing utilities not in direct conflict with proposed construction is not included and shall be addressed using standard utility location procedures. The work includes exposing existing utilities under paved and unpaved surfaces, and providing both lateral and depth measurements for use in determining potential utility conflict solutions.

B Materials

B.1 Granular Backfill

Furnish granular backfill that conforms to standard spec 209.

B.2 Slurry Backfill

Use aggregates that conform to standard spec 501 for grade A concrete. Weigh aggregates at a batch plant suitable for batching concrete masonry. Mix and deliver to the project site using a truck mixer. Add enough water to enable the mixture to flow readily.

C Construction

C.1 General

Submit all requests for exposing existing utilities in writing to the engineer for approval prior to performing the work. Coordinate utility exposures with the engineer and notify the utility owner or their agents of this work two working days in advance so that they may be present when the work commences.

C.2 Excavation

Remove all paved and unpaved surfaces at locations where the existing utility is being exposed. Saw or remove concrete and asphaltic pavements to the nearest joint. Remove all pavement surfaces in such a way that all existing edges consist of a true line having a perpendicular edge with no unraveling. Maintain drainage at all times in accordance to standard spec 205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work in accordance to all applicable laws, ordinances, rules, regulations, and OSHA standards.

Expose all utility locations within a given location to a minimum depth of 18-inches below the bottom of each utility. Excavate in a manner that protects the integrity of the utilities and prevents any damage to wrappings or protective coatings such as by any mechanical method or hand digging. Notify the utility owner promptly if damage or interruption of service occurs. Repair all damage caused to such utilities resulting from negligence or carelessness on the part of the contractor's operation at contractor expense.

Take all lateral and depth measurements in US feet and tenths thereof. Identify horizontal locations of each exposed utility with a coordinate northing and easting referenced to the Wisconsin County Coordinate System (WCCS), Milwaukee, County, NAD 83 (97). Provide vertical elevations for each exposed utility and reference to NAVD 88 (91).

The utility location shall remain exposed and available for visual inspection until the completion of all work in a given location. If the utility shall remain exposed overnight or for prolonged periods of time, protect the location with traffic-rated steel plating, safety barriers, and all necessary traffic control devices that may be required under applicable standards or as directed by the engineer.

C.3 Backfilling

Upon completion of the utility exposure, restore the location in kind to its original condition. Use granular backfill, conforming to standard spec 209, to backfill the exposed utility locations to the subgrade elevation except for areas located within local streets. All granular material placed to an elevation of 18-inches above each exposed utility shall consist substantially of sand with all particles retained on a one-inch (25.0 mm) sieve removed. The remaining granular material shall conform to the specifications for backfill for trench excavation. When exposed utility locations fall within local streets or city right-of-way, use slurry backfill to fill the entire location to the subgrade elevation.

Restore concrete pavement and concrete base course to the depth found in the existing roadway. Replace all locations that fall within live lanes of any roadway or pedestrian traffic with a high early-strength concrete pavement mix design having a depth equivalent to the existing pavement structure unless directed otherwise by the engineer. Locations that are closed to through traffic may use an approved concrete pavement mix conforming to standard spec 501. If directed by the engineer, tie concrete pavement and/or dowel it to the existing pavement according to the standard detail drawing for concrete pavement. All locations requiring asphaltic pavement shall consist of HMA Pavement Type E-3 unless otherwise directed by the engineer. Place the HMA pavement in lifts to a depth as directed by the engineer. Apply tack coat to composite pavement structures and between lifts.

Place base aggregate dense between the subgrade surface and the bottom of the pavement. In grassy areas, place 4-inches of topsoil, sod or seed and mulch, and fertilizer. Alternate restoration methods may be used upon written approval from the engineer.

C.4 Documentation

Provide documentation to the engineer and include the coordinates, elevations, and sketches of the utility locations tied to known features in the plans. Each utility shall be referenced to a proposed alignment with a station and offset. The size and/or diameter, composition, and a description of each utility shall be documented and the location of the elevation with respect to each utility noted. Supply digital photographs of the uncovered utility to the engineer in .jpeg format for future reference.

D Measurement

The department will measure Exposing Existing Utility as a unit for each location. A location may have multiple utilities located within the same exposure area. An exposure area will include all utilities within 6 lateral feet of each other and payment will only be made for one unit regardless of the number of utilities exposed. If the distance from the existing ground elevation, located above the existing utility, to a point 18-inches below

the exposed utility is between 0 and 6-feet, the department will measure each location as a single unit of work. If the distance from the existing ground elevation, located above the existing utility, to a point 18-inches below the exposed utility is greater than 6-feet and less than twelve feet, the department will pay for the item as two units of work. Exposures in depth greater than 12-feet are not covered under this item.

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.0060.04	Exposing utilities	Each

Payment is full compensation for sawing all pavement; for removing all pavement; for furnishing all excavation; for disposing of all materials; for locating all utilities within each respective location; for providing documentation and photographs of utility locations to the engineer; for furnishing all surveying associated with exposing existing utilities; for furnishing all maintenance of the location during construction; for furnishing all traffic control, safety barriers, and steel plating required; for furnishing and placing granular backfill and slurry backfill; and for temporary shoring. All finishing items including, but not limited to, base aggregate dense, concrete pavement, HMA pavement, curb and gutter, and sidewalk located above the subgrade elevation will be paid for using other contract items.
SEF Rev. 110210

45. Concrete Barrier Transition Type S32 to S42 At Gore, Item SPV.0060.05; Concrete Barrier Transition Type S36 Single to Double, Item SPV.0060.06; Concrete Barrier Transition Type V36 to S36, Item SPV.0060.07; Concrete Barrier Transition Type S32 to S42 Anchored, Item SPV.0060.08.

A Description
Construct Concrete Barrier Transition (Type) (Size) in accordance to standard spec 603, details shown in the plans and as hereinafter provided.

B Materials
Furnish materials conforming to standard spec 603.2.

Concrete minimum strength to be 4000 psi.

C Construction
Use construction methods conforming to standard spec 603.3.

Construct the Concrete Barrier Transition (Type) (Size) to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines shown on the plans or as directed by the engineer, and be free of lumps, sags or other irregularities. The top and exposed faces of the barrier shall conform to standard spec 603.3.1.5.

Construct expansion joints in conformance with standard spec 603.3.1.3.

When forming joints before the concrete has hardened, support adjacent portions of the barrier firmly with close fitting shields.

When forming joints after the application of curing compound, treat the exposed faces of the barrier in the vicinity of the joint with curing compound after the forming of the joints.

In transitions between barrier shapes, tie reinforcement bars to Concrete Barrier reinforcement by tying the first vertical bar ±3 inches from the transition point and lapping any horizontal bars that match.

D Measurement

The department will measure Concrete Barrier Transition (Type) (Size) by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.05	Concrete Barrier Transition Type S32 to S42 At Gore	Each
SPV.0060.06	Concrete Barrier Transition Type S36 Single to Double	Each
SPV.0060.07	Concrete Barrier Transition Type V36 to S36	Each
SPV.0060.08	Concrete Barrier Transition Type S32 to S42 Anchored	Each

Payment will be made in accordance to standard spec 603.5.

46. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 1, Item SPV.0060.09; Arrows Type 2, Item SPV.0060.10; Arrows Type 5, Item SPV.0060.11.

A Description

This special provision describes grooving the pavement surface, and furnishing and installing preformed thermoplastic pavement marking as shown on the plans, in accordance with standard spec 647, and as hereinafter provided.

B Materials

Furnish preformed thermoplastic pavement marking and sealant material, if required, from the department's approved products list.

C Construction

C.1 General

For quality assurance, provide the project engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of preformed thermoplastic pavement marking.

Plane the grooved lines in accordance with the plan details. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ±10 mils deeper than the thermoplastic thickness, from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Linear Markings

Cut the groove 1-inch wider than the width of the thermoplastic.

C.4 Groove Position

Position the groove edge in accordance with the plan details.

C.4.1 Linear Marking

Groove at a minimum of 4-inches, but not greater than, 12-inches from both ends of the line segment. Achieve straight alignment with the grooving equipment.

C.4.2 Special Marking

Groove a box around the special marking up to 4 inches from the perimeter of the special marking.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and prior to pavement marking application. Clean and dry the groove for proper application of the sealant, and placement of the pavement marking. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt
Groove pavement 5 or more days after paving. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt
Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

C.5.2 Asphalt
Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.6 Preformed Thermoplastic Application
Preheat the surface if necessary based on manufacturer's recommendation.

Application of the preformed thermoplastic in the groove without sealant will be as follows:

- May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.
- June 1 to August 31 – the Southwest Region, and the Northeast, North Central, and Northwest Regions except for the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.

Application of the preformed thermoplastic in the groove with sealant materials will be as follows:

- October 1 to April 30, both dates inclusive – the Southeast Region and the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.
- September 1 to May 31, both dates inclusive – the Southwest Region and the Northeast, North Central, and Northwest Regions, except for the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.

The sealant must be wet.

D Measurement
The department will measure Pavement Marking Grooved Preformed thermoplastic by the unit, acceptably placed, or in length by the linear foot of tape placed in accordance with the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.09	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 1	Each
SPV.0060.10	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2	Each
SPV.0060.11	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 5	Each

Payment is full compensation for cleaning and preparing the pavement surface, furnishing and installing the material; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

47. Linear Delineation System, Item SPV.0060.12.

A Description

This special provision describes installing linear delineator panels on both concrete barrier and beamguard.

B Materials

Provide Linear Delineation System that are equivalent to the 3M Diamond Grade Linear Delineation System Series 340 (4-inch, Series 344). Provide delineators in either white or fluorescent yellow, as required by the plans

C Construction

Install Linear Delineation System in the locations detailed in the plans, as specified by the manufacturer.

D Measurement

The department will measure Linear Delineation System as 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	Linear Delineation System	Each

Payment is full compensation for providing and placing all materials, including mounting brackets, hardware, adhesives, or other incidental items needed as directed by the manufacturer's installation instructions; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

48. Ground Rod, Item SPV.0060.21.

A Description

This special provision describes installing a ground rod and ground wire.

B Materials
Ground rod shall be copper clad steel with cladding 13 mils thick. The minimum diameter is 5/8-inch and the minimum length is eight feet. Ground wire shall be AWG # 6 bare, solid copper.

C Construction
Use exothermic welding to connect the ground wire to the rod. Install the rod vertically, or as close to vertical as conditions permit. Select locations with moist soil, if available. Place the rod at least six feet from all other ground rods.

D Measurement
The department will measure Ground Rod by the unit, acceptably installed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.21	Ground Rod	Each

Payment is full compensation for installation of the ground rod and ground wire; welding and connections at both ends of the ground wire.

49. Salvage Existing Microwave Detector Assembly, SPV.0060.22.

A Description
This special provision describes salvaging existing microwave detector assembly and associated equipment.

B Materials
32. Existing microwave detector assembly and associated equipment.

C Construction
Prior to beginning work, the contractor may request that it be tested for functionality and that it be inspected to determine the condition. Once removal has started, the contractor shall be responsible for any damage to the microwave detector assembly or associated equipment. It will be the choice of the contractor on how best to disassemble the components and remove them. Replace or repair any damaged components at no additional expense to the department.

Carefully remove the Microwave Sensor and associated equipment from the pole and store for later reinstallation.

D Measurement
The department will measure Salvage Existing Microwave Detector Assembly by the unit, acceptably removed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.22	Salvage Existing Microwave Detector Assembly	Each

Payment is full compensation for removing the microwave detector assembly and associated equipment, including any necessary wiring disconnections; any necessary restoration; and for storing the equipment for later installation.

50. Reinstall Salvaged Microwave Detector Assembly, Item SPV.0060.23.

A Description
This special provision describes reinstalling previously salvaged existing microwave detector and associated equipment on a new pole.

Installation of the pole and concrete base will be paid for under other pay items in this contract.

B Materials
Salvaged microwave detector assembly and associated equipment.

C Construction
Coordinate all planned down-time of the temporary vehicle detector assembly with the STOC at (414) 227-2166. Notify the STOC an amount of time ahead of planned down-time equal to the planned down-time. Examples would be that a 4-hour temporary down-time of the system would require notification 4-hours ahead of time while an 8-hour planned down-time would require 8-hours of advance notification.

Verify to the satisfaction of the engineer that the existing detector assembly is working properly.

D Measurement
The department will measure Install Salvaged Microwave Detector Assembly by the unit, acceptably installed and operational.

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.0060.23	Install Salvaged Microwave Detector Assembly	Each

Payment is full compensation for salvaging the existing and installing the salvaged ramp control signal assembly, associated equipment, and existing signs; for making all connections; and for furnishing all testing.

51. Refocus Existing Microwave Detectors Assembly, Item SPV.0060.24.

A Description

This special provision describes refocusing an existing microwave detector assembly for operation with a new lane configuration.

B Materials

Existing microwave detector assembly.

C Construction

Coordinate all planned down-time of the temporary vehicle detector assembly with the STOC at (414) 227-2166. Notify the STOC an amount of time ahead of planned down-time equal to the planned down-time. Examples would be that a 4-hour temporary down-time of the system would require notification 4-hours ahead of time while an 8-hour planned down-time would require 8-hours of advance notification.

Verify to the satisfaction of the engineer that the existing detector assembly is working properly. Inspect the microwave detector assembly for damage.

Reinstall the detector as required in standard spec 675.

D Measurement

The department will measure Refocus Existing Microwave Detector Assembly by the unit, acceptably refocused and operational.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.24	Refocus Existing Microwave Detector Assembly	Each

Payment is full compensation for making the detector fully operational with a new lane configuration.

52. Salvage Existing And Install Salvaged Signal Assembly Ramp Control Sidemount, Item SPV.0060.25.

A Description

This special provision describes salvaging existing ramp control signal assembly, associated equipment, and existing signs; and reinstalls the salvaged ramp control signal assembly, associated equipment and existing signs on a new pole.

B Materials

Existing ramp control signal assembly, associated equipment, and existing signs.

C Construction
Prior to beginning work, the contractor may request that it be tested for functionality and that it be inspected to determine the condition. Once removal has started, the contractor shall be responsible for any damage to the flasher assembly or associated equipment. It will be the choice of the contractor on how best to disassemble the components and remove them. Replace or repair any damaged components at no additional expense to the department.

Carefully remove the ramp control signal assembly and store for later reinstallation.

Reinstall the detector as required in standard spec 676.

D Measurement
The department will measure Salvage Existing and Install Salvaged Signal Assembly Ramp Control Sidemount by the unit, acceptably removed, installed and operational.

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.0060.25	Salvage Existing and Install Salvaged Signal Assembly Ramp Control Sidemount	Each

Payment is full compensation for removing and reinstalling the ramp control signal assembly, associated equipment and signs, including any necessary wiring disconnections; any necessary restoration; and for storing the equipment for later installation.

53. Barricade Rack, Item SPV.0060.26.

A Description
This special provision describes furnishing and erecting wood and tubular steel posts to support Type III barricades as shown on the plans.

B Materials
Conform to standard spec 634.2.1.

Conform to Upper Tube language in standard spec 634.2.5.

C Construction
Under the bid item Barricade Rack, furnish and install wood posts, perforated tubular steel posts, and all necessary miscellaneous hardware to complete the installation of the poles.

Install poles as specified in the plan details.

Conform to standard spec 634.3.1.

D Measurement

The department will measure Barricade Rack as each individual barricade rack, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.26	Barricade Rack	Each

Payment is full compensation for furnishing and installing all materials, including wood posts and tubular steel posts and all hardware and fittings necessary to install the barricade rack; providing corrosion prevention; and for furnishing all labor, tools, equipment and incidentals necessary to complete the contract work.

54. Ramp Closure Gates Solar Powered 24-FT, Item SPV.0060.27; Ramp Closure Gates Solar Powered 30-FT, Item SPV.0060.28; Ramp Closure Gates Solar Powered 37-FT, Item SPV.0060.29; Ramp Closure Gate Arms Stockpile 24-FT, Item SPV.0060.30; Ramp Closure Gate Arms Stockpile 30-FT, Item SPV.0060.31; Ramp Closure Gate Arms Stockpile 37-FT, Item SPV.0060.32; Ramp Closure Gate Flashers Stockpile, Item SPV.0060.33.

A Description

This special provision describes providing freeway on-ramp closure gates on type 5 steel luminaire poles, and furnishing and delivering spare gate arms and flashers.

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 alternate components equal to the manufactured components this special provision specifies. The engineer may require modification of the plan details to accommodate alternates. If the contractor provides an alternate arm and/or mounting adaptor, the engineer will reject that alternate if the contractor cannot demonstrate, to the engineer's satisfaction, that the department can easily remove and replace the arms.

B.2 Components

Furnish one Poles Type 5-Steel designed to carry twin 15-foot luminaire arms and conforming to standard spec 657 and with dimensions for acceptable installation of the ramp gate hardware as shown on the detail. Ensure a contiguous pole by eliminating the hand hole near base of pole, thus allowing uninhibited mounting of the gate pivot assembly.

Furnish galvanized steel nuts and galvanized 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 ¾" bolt (B&B Part Number 0605P0539 or approved equal).

Furnish grade A36 steel for the gate supports, gate pivot assembly, and associated hardware that is all 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 sheeting conforming to section 637 of the standard specifications. Also provide a shear pin base that is the manufacturer's "permanent pivot" style. Obtain components from a WisDOT Approved Products List qualified vendor.

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 solar power system and batteries conforming to the following:

1. Cabinet
   The cabinet shall be manufactured of 0.125-inch sheet aluminum. Nominal cabinet dimensions shall be 26.25 inches high by 15.5 inches wide by 14.75 inches deep. The cabinet shall be a two-compartment type; the bottom compartment shall have a neoprene gasket seal so as to prevent battery gases from seeping into the top compartment. The cabinet shall have wire screened insect proof louvers on each side of both compartments for ventilation. The louvers shall be designed to not allow any rain to enter the cabinet. On the bottom of the cabinet there shall be two screened insect proof drain holes.

   The door shall be a single unit with a continuous piano hinge riveted to the door and the cabinet. The door shall incorporate a neoprene gasket which, when closed, forms a snug weather tight seal. The door lock shall be a standard police lock, reinforced with a steel plate.

   Each cabinet shall be equipped with the necessary rigid back wall for mounting to a traffic signal standard. The cabinet shall have a 1 inch diameter cable entry hole at each mounting location on the back.

2. Control Panel
   The control panel containing the electronics shall be mounted in the top compartment of the cabinet using bolts with wing nuts for quick and easy removal. The solar panel and battery shall be connected directly to the solar charge controller terminals. All modular components shall be easily removed for replacement or maintenance.

   The solar panels, load, and battery shall be fused for short circuit protection and ease of system maintenance.

   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.

3. Solar Charge Controller
   The solar charge controller shall control battery charging through pulse width, modulated, temperature compensating, constant charging algorithm. The solar charge controller will have both a low voltage disconnect (LVD) of 11.4 VDC and a high voltage disconnect (HVD) of 15.5 VDC. A liquid crystal display (LCD) of battery voltage, solar array current, and load current will be available with the solar charge controller. In addition, colored LEDs will display battery state. A green LED will indicate full charge, amber LED will indicate half charge, and a flashing red LED will indicate low charge. A solid glowing red LED will indicate the load has been disconnected. A separate green LED will indicate the battery is being charged.

   The solar charge controller will have a load disconnect pushbutton. When the load is disconnected the button will glow red.

   The solar charge controller will be capable of operating in a temperature range of -40° C and +85° degrees C.

   Wire terminations to the solar charge controller shall be accomplished using Euro style terminations.

4. Solar Panel
   The solar panel shall be a 50-watt high efficiency, single crystal silicon solar cells that are laminated to glass with layers of ethylene vinyl acetate (EVA). The panel will be self-cleaning, impact resistant, highly transmissive, tempered glass superstate. The panel module frame will be made of extruded, polymer-coated aluminum alloy or similar approved construction. The panel module junction box will be a UV-resistant, weatherproof wire termination system that handles #14 AWG to #8 AWG wiring. The minimum wattage for the system shall be determined by the supplier, with design calculations submitted with the bid.

5. Solar Panel Mount
   The solar panel mounting system shall consist entirely of non-corrosive materials, including aluminum brackets and zinc-plated hardware. The solar panel shall be mounted at angle of 60 degrees from horizontal, shall mount to a pole with a nominal diameter of 4-inches, and shall be designed for minimum of 30 pound per square foot.

6. Battery
   The battery shall be a 99-amp-hour type 31 AGM maintenance-free, deep cycle, 12 volt DC battery. It shall contain valve regulation with a self-discharge rate of 1% per month or less (at 20° C). The battery will utilize T881 terminals. The positive terminal will be covered with a rubber boot to protect the battery from accidental shorting.

Furnish gate flasher assemblies conforming to the following:

1. A 2-conductor battery 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. 12-volt 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 4-digit combination padlock (Master Lock Model 175DLH or approved equal) for the purpose of preventing unauthorized use of the ramp closure gate system.

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 corrosion protection material from the department's approved products list 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 solar power system and battery as the plans show. The engineer may direct adjustment of the solar power unit to ensure the correct orientation to the sun.

Connect the battery 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.

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(4) of this special provision. Deliver spare gate arms to an address provided by:

Mike Prebish
(414) 750-2814

C.3 Furnishing Flashers

Under the Ramp Closure Gate Flasher Stockpile bid item, furnish and deliver spare gate flasher assemblies conforming to B.2(7) of this special provision. Deliver spare gate arms to an address provided by:

Mike Prebish
(414) 750-2814

D Measurement

The department will measure the Ramp Closure Gates Solar Powered (Size) as each individual installation, acceptably completed.

The department will measure the Ramp Closure Gate Arms Stockpile (Size) 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 items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.27	Ramp Closure Gates Solar Powered (24-FT)	Each
SPV.0060.28	Ramp Closure Gates Solar Powered (30-FT)	Each
SPV.0060.29	Ramp Closure Gates Solar Powered (37-FT)	Each
SPV.0060.30	Ramp Closure Gate Arms Stockpile (24-FT)	Each
SPV.0060.31	Ramp Closure Gate Arms Stockpile (30-FT)	Each
SPV.0060.32	Ramp Closure Gate Arms Stockpile (37-FT)	Each
SPV.0060.33	Ramp Closure Gate Flashers Stockpile	Each

Payment for the Ramp Closure Gate Solar Powered is full compensation for providing ramp closure gates including support poles, gate arm assemblies, guides and collars, gate arms, solar power system, cabinets, wiring and batteries, and gate flashers.

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

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

55. Install Type 5 Poles, Item SPV.0060.40; Install Type 3 Poles, Item SPV.0060.47.

A Description

This special provision describes installing department-furnished Type (number) poles for automatic traffic recorder stations and department-furnished transformer bases.

B (Vacant)

C Construction

Perform work in accordance to standard spec 657.3 and as hereinafter provided. Under the bid item Installing Poles Type (number), install poles, transformer bases, ventilated pole caps, and all necessary miscellaneous hardware to complete the installation of the poles.

Install poles and transformer bases as specified in the plan details.

Before installation, clean each pole of all oil and foreign matter. Coat the following surfaces of aluminum poles with an approved corrosion preventative: the bottom 24 inches of the inside of the pole; the top and bottom of the pole base plate; and the top and bottom of shims.

Follow the application procedure and drying time instructions provided by the corrosion preventative manufacturer.

After completing erection using normal pole shaft raking techniques, ensure the centerline of the shaft appears vertical.

D Measurement
The department will measure Install Type (number) Poles as each individual pole and transformer base, 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.0060.40	Install Type 5 Poles	Each
SPV.0060.47	Install Type 3 Poles	Each

Payment is full compensation for installing all materials, including poles, transformer bases, and all hardware and fittings necessary to install the poles and transformer bases; and for providing corrosion prevention.

56. Install CCTV Pole Mounted Cabinet 24”x51”, Item SPV.0060.41.

A Description
This special provision describes installing department furnished aluminum enclosures on poles for intelligent transportation systems equipment, as shown on the plans and as hereinafter provided.

B Materials
Provide stainless steel for all bolts, nuts, and washers that are subject to corrosion, unless otherwise specified.

Protect all conductors, terminals, and parts that could be hazardous to maintenance personnel with suitable insulating material.

Equip the cabinet with service panels. Provide two panels and mount on the cabinet backwall. Designate the left side panel as “Input/Communications”, and designate the right side panel as the “Service Panel”.

Equip the service panel with a four-outlet handi-box. Wire the handi-box to the series portion of the SHA-1210 specified herein.

Protect the cabinet by a filtering surge protector. Provide the surge protector with the following minimum features:

Peak Current	20,000 amps
Life Test	5% change
Clamp Voltage (L-N)	280V @ 20KA
Response Time	Voltage never exceeds 28 volts during surge
Continuous Service Current	10 amps maximum
120VAC 60Hz	

Provide metallic conduit, fittings, and adapters required from the underground conduit transition point to the cabinet as part of this item. Supply metallic conduit in accordance to standard spec 652. Supply size conduit and fittings according to the plan. Install one 2-inch conduit for electrical wire.

C Construction

Securely fasten the field cabinet onto a pole (pole paid separately). 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 by 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 sharp edges, or burrs, caused by the cutting or drilling process. Seal all openings led to prevent water from entering the cabinet.

Mount the surge protector to the service panel.

Install conduit exterior to the pole (for entrance to the cabinet from the ground) as shown in the plans, and in accordance to the applicable requirements of section 652.

D Measurement

The department will measure Install CCTV 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.0060.41	Install CCTV Pole Mounted Cabinet 24”x51”	LF

Payment is full compensation for installing the pole mounted cabinet; for making all connections and conduit/wire entrances; and for furnishing all testing.

57. Concrete Maintenance Platform 48”x36x4”, Item SPV.0060.42.

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

B Materials
Provide materials per standard spec 602.2.

C Construction
Under this bid item a 48” x 36” x 4” concrete maintenance platform will be constructed. Install concrete maintenance platform as specified in the plan details.

Before installation of the concrete maintenance platform, the earth shall be leveled and compacted around the type 2 concrete pole base.

Fifty two inches by forty inches of earth 4 inches deep shall be removed 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.)

Two by four 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.

The concrete is poured it shall be leveled and finished with a broom finish.

The area around the maintenance platform and type 2 concrete pole base shall be leveled to the top of the maintenance platform and seeded.

D Measurement
The department will measure concrete maintenance platform as each individual concrete maintenance platform 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.0060.42	Concrete Maintenance Platform 48”x36”x4”	Each

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

58. Install Wavetronix Click 202 Module, Item SPV.0060.43; Install Wavetronix Click 200 Module, Item SPV.0060.44.

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

B Materials
The units will consist of Wavetronix Click (number) Module, DIN racks, terminal block, and wiring. Provide stainless steel bolts and any other mounting or wiring hardware not furnished by the department.

C Construction
Install the Wavetronix Click (number) Module in the cabinet on to the DIN rail as shown on the plans. Maintain good physical contact between the DIN rail and the cabinet to assure proper grounding.

Connect the Wavetronix Click (number) Module to the Wavetronix Power Module and to the Wavetronix unit as shown on the plan.

After the Wavetronix Click (number) 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 (number) Module as each Wavetronix Click (number) Module 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.0060.43	Install Wavetronix Click 202 Module	LF
SPV.0060.44	Install Wavetronix Click 200 Module	LF

Payment is full compensation for installing Wavetronix Click (number) Module, antennas, and connections; for furnishing and installing mast brackets and mounting hardware; and for testing.

59. Install Wavetronix Detector HD 125 Module and Cable, Item SPV.0060.45.

A Description
This special provision describes installing and testing a department furnished Wavetronix Detector HD 125 Module and Cable as shown on the plans and as hereinafter provided.

B Materials

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C Construction

Make all Wavetronix detector cable connections to the field cabinet and Wavetronix detector HD 125 module, to provide the required operation.

If any work proceeds at a location, without completion of testing procedures, contractor is responsible for the ultimate correct operation of the module and cables. The cost of correcting the Wavetronix Detector HD 125 cables shall be borne entirely by the contractor.

Demonstrate the functionality and accuracy of the vehicle detectors connected to each location. The traffic flow information obtained from each detector shall be within +/- 5% of each of two 10-minute manual data periods.

A field test shall be successfully conducted by the ITS Field System Integrator for each Wavetronix Detector HD 125 Module, complete with connections. The test is designed to demonstrate that Wavetronix Detector HD 125 Module integrated by the contractor 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.

The contractor / ITS Field System Integrator shall submit copies of the test results, including any unsuccessful and subsequently successful tests to the engineer prior to any field operations testing.

D Measurement

The department will measure Installing Wavetronix Detector HD 125 Module and HD 125 Cable as each unit, 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.0060.45	Install Wavetronix Detector HD 125 Module and Cable	Each

Payment is full compensation for installing the Wavetronix Detector HD 125 Module and Cable; for making all connections; and for furnishing all testing.

60. Install Cabinet Heater and Thermostat, Item SPV.0060.46.

A Description
This special provision describes installing department-furnished cabinet heater and thermostat as shown on the plans and as hereinafter provided.

B Materials
The units will consist of cabinet heater and thermostat. Provide stainless steel bolts and any other mounting or wiring hardware not furnished by the department.

C Construction
Install the cabinet heater in the lower part of the cabinet as shown on the plans.

Connect the cabinet heater to the AC power supply and place the thermostat in the upper part of the cabinet as shown on the plans.

D Measurement
The department will measure Install Cabinet Heater and Thermostat as each individual assembly, 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.0060.46	Install Cabinet Heater and Thermostat	LF

Payment is full compensation for installing all materials, including heater and thermostat and connections; for furnishing and installing mounting hardware; and for testing.

61. Install Solar Power Panels and Racks, Item SPV.0060.48.

A Description
This special provision describes installing department furnished solar power units.

B Materials
Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C Construction
Install and test the charge regulator and solar battery. Make the necessary electric connections between the components of the solar power unit. Mount the solar panels and enclosure; all necessary hardware for mounting is incidental. Program 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 Install Solar Power Panels and Racks 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
SPV.0060.48	Install Solar Power Panels and Racks	Each

Payment is full compensation for installing the solar power unit on a pole, for making all connections, for furnishing all programming, and for furnishing all testing.

62. Install Cellular Antenna, Item SPV.0060.49.

A Description
This special provision describes installing department Furnished Cellular Antennas and Antenna Cable as shown on the plans and as hereinafter provided.

B Materials
Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

The department will provide Cellular antennas and antenna cable. The following antennas are included:

- Yagi Antennas with 10 dB Gain

All mounting material shall be stainless steel. Holes or notches shall not be drilled into a sign structure or pole. The sign structure or pole shall not be altered in any way.

C Construction
Install the antennas on poles by means of a mast bracket as shown on the plans. Provide the mast bracket of a diameter and construction as recommended by the antenna manufacturer, and approved by the engineer. Electrical and physically bond the mast bracket to the pole. The bracket shall maintain good physical contact with the pole to assure proper grounding.

Place the antenna in the direction indicated on the plan and Communication Schematic to ensure 100% data transfer.

Connect the antenna drop cable to the antenna. The connection shall be fully sealed with waterproof antenna sealant type compound.

After the antenna is installed on the pole, and the antenna cable is connected from the antenna to the assembly, test the signal for data transfer and signal strength. The data transfer shall be at 100%, and the signal strength shall be 60 or better.

D Measurement
The department will measure Install Cellular Antenna as each cellular antenna and cable, 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.0060.49	Install Cellular Antenna	Each

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

63. Install Wavetronix HD 125, Item SPV.0060.51.

A Description
This special provision describes installing and testing a department furnished Wavetronix Detector HD 125 Module and Cable as shown on the plans and as hereinafter provided.

B Materials
Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C Construction
Make all Wavetronix detector cable connections to the field cabinet and Wavetronix detector HD 125 module, to provide the required operation.

If any work proceeds at a location, without completion of testing procedures, the contractor is responsible for the ultimate correct operation of the module and cables. Contractor incurs entire cost of correcting the Wavetronix Detector HD 125 cables.

Demonstrate the functionality and accuracy of the vehicle detectors connected to each location. The traffic flow information obtained from each detector shall be within +/- 5% of each of two 10-minute manual data periods.

Successfully conduct a field test by the ITS Field System Integrator for each Wavetronix Detector HD 125 Module, complete with connections. The test is designed to demonstrate that Wavetronix Detector HD 125 Module integrated by the contractor 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.

The contractor/ITS Field System Integrator shall submit copies of the test results, including any unsuccessful and subsequently successful tests to the engineer prior to any field operations testing.

D Measurement
The department will measure Installing Wavetronix HD 125 as each unit, 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.0060.51	Install Wavetronix HD 125	Each

Payment is full compensation for installing the Wavetronix Detector HD 125 and cable; for making all connections; and for all testing.

64. Install Transformer Bases 11 ½-Inch Bolt Circle, Item SPV.0060.52.

A Description
This special provision describes installing state furnished transformer bases 11 ½-Inch bolt circle as shown on the plans and as hereinafter provided.

B Materials
Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414)266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C Construction
Conform to standard spec 657.3.

Install junction boxes as shown in the plans and as the manufacturer directs.

D Measurement
The department will measure Installing Transformer Bases 11 ½-Inch Bolt Circle as each unit, 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.0060.52	Install Transformer Bases 11 ½-Inch Bolt Circle	Each

Payment is full compensation for picking up department furnished materials, transporting to the project site, Installing Transformer Bases 11 ½ Bolt Circle, and for making all connections.

65. Wood Pole Lighting 40-Foot, Item SPV.0060.80.

A Description

The work under these items include furnishing and installing 40-foot wood pole, arm(s) and floodlight(s), junction box, grounding system, and lightning protection system, as shown on the plans, in accordance to standard spec 651 and 659, and as hereinafter provided.

B Materials

Furnish wood poles, Class 4 or larger with a 40-foot minimum overall length. The poles shall be western red cedar in accordance to ANSI standards 05.1. Pressure treatment shall be 5% pentachlorophenol with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative. All poles shall be shaved the entire length.

Luminaire arm and luminaire for wood pole lighting units and temporary wood pole lighting units shall be per standard spec 657.2.3 and 659.2, respectively.

Floodlight mounting bracket arms for wood pole lighting units will be as shown on plan details. The floodlights are provided under this bid item.

C Construction

Perform work in accordance to the pertinent provisions of standard spec 611.3.1.1 and as shown on the plans. Install #4 AWG equipment grounding wire exothermically bonded to a 5/8 inch by 8 foot copper clad grounding electrode. Install cable guard, NEMA 3R junction box near mounting arm, and NEMA 4X junction box at 3 feet above grade for fuses and splice on wood pole units. Install air terminal with #2 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode for lightning protection. Install #2 AWG bare copper exothermically bonding between grounding electrodes. Install conduit and wiring between junction boxes, wire racks, and required hardware as necessary and as shown on lighting plans and detail drawings.

Install luminaire arm for wood pole lighting units as shown on the plans and details and as per applicable portion of standard spec 657.3 and 659.3.

D Measurement
The department will measure Wood Pole Lighting 40-Foot as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.80	Wood Pole Lighting 40-Foot	Each

Payment is full compensation for furnishing and installing items as mentioned above; and for furnishing all excavation and backfill.

66. Wood Poles 40-Foot, Item SPV.0060.81.

A Description
Furnish and install wood poles and other incidental items as required and as shown on the plans, in accordance to standard spec 651, and as hereinafter provided. Remove and dispose of temporary wood poles, 40-foot as a part of this item.

B Materials
Furnish wood poles that are Class 4 or larger with a 60-foot minimum overall length. The poles shall be western red cedar in accordance to ANSI standards 05.1. All poles shall be shaved the entire length.

Wood poles used for freeway lighting shall be pressure treated with a 5 percent pentachlorophenol mixture with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative.

C Construction
Install the pole in accordance to the pertinent provisions of standard spec 611.3.1.1, and as shown on the plans. As necessary, install #4 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode, cable guard, NEMA 3R junction box 3ft above grade level for splice, and incidentals as necessary.

D Measurement
The department will measure Wood Poles 40-Foot as each individual pole, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.81	Wood Poles 40-Foot	Each

Payment is full compensation for furnishing and installing a wood pole; and for all excavation and backfill; and for removal and disposal of temporary wood poles.

67. Luminaires Floodlight 400W HPS, Item SPV.0060.82.

A Description
The work under this item shall consist of furnishing and installing 400 Watt HPS floodlight luminaires, with photoelectric control, in a 480 Volt configuration and in accordance to standard spec 659.

B Materials
Appropriate Floodlight Models include or approved equal:

GE Turnpike, General Elec. Product Number: RPFS40S480VM2GLN3GRK.
Holophane Predator, Holophane Product Number: PF-400HP-480V-BN1KR
Lithonia Lighting, Lithonia Product Number: 170S 400S HPN 480V TS PER

Units shall have a 6x6 or 7x7 light distribution. Units shall have a photoelectric cell for control of the fixture operation.

C Construction
Install the luminaire on the light poles at locations specified in lighting plan in accordance to standard spec 659.2.1, and 659.3.1, and wired and fused in accordance to standard spec 659.3.2 and plan details. Luminaires shall be orientated (0 deg = North) as shown and at an angle of 45-degrees from the vertical. Units shall be suitable for mounting on the wood poles.

D Measurement
The department will measure Luminaires Floodlight 400W HPS by each individual luminaire, 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.0060.82	Luminaires Floodlight 400W HPS	Each

Payment is full compensation for furnishing all the work and materials required under this bid item.

68. Boom Light and Generator, Item SPV0060.83.

A Description
Work consists of furnishing a portable boom operator with a generator to power the up to three 400 Watt HPS floodlight luminaires mounted on the boom.

B Materials
B.1 Boom
Boom shall be capable of lighting and maintaining the up to three operating luminaires at a minimum height of 50-feet. It is intended that the boom be rented. Provide an adequate

base for the boom in accordance to the manufacturer and rental agency. Boom lifting capabilities shall be greater than the sum of the luminaires, luminaire mounting structure and operator (for initial aiming procedure). Provide a steel mounting structure to be placed within the boom's platform. The structure shall allow each luminaire to be aimed vertically from horizontal to 60-degrees down from horizontal. The structure shall allow the two outside luminaires to be aimed over a 45-degree arc from straight ahead to 45-degrees to the side. Provide a fused disconnect switch for each luminaire.

B.2 Generator
Provide a portable generator capable of operating the boom mounted luminaires with a minimum of 25% spare capability. It is intended that the generator be rented. A generator already owned by the contractor would be acceptable provided it meets the other requirements set herein. The generator shall be capable of operating a minimum of a full night without refueling. Provide overcurrent protection. Provide suitable cabling to the luminaires. Allow for the rising/lowering the boom with the cabling in place. Cabling shall be UL listed for exposure to sunlight.

B.3 Luminaire
Appropriate Floodlight Models include or approved equal:

GE Turnpike, General Elec. Product Number: RPFS40S---VM2GLN3GRK.
Holophane Predator, Holophane Product Number: PF-400HP---V-BN1KR
Lithonia Lighting, Lithonia Product Number: 170S 400S HPN ---V TS PER

Units shall have a 6x6 or 7x7 light distribution. Voltage to be coordinated with the generator selection.

C Construction
Have the boom, luminaires and generator in place and operational prior to the start of Stage 2 work. Obtain the manufacturer and rental agency's limitations for wind speed/loading and coordinate with the weather predictions. Anchor the boom in accordance to recommendations from the manufacturer. Protect the electrical cables from the boom movements/pinching and abuse from vehicle/pedestrian traffic. Install the luminaire on the structure and aim to minimize driver glare.

D Measurement
The department will measure Boom Light and Generator by each individual system, 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.0060.83	Boom Light and Generator	Each

Payment is full compensation for furnishing all the work and materials required under this bid item.

69. Self Contained Tower Light, Item SPV.0060.84.

A Description
Works consists of furnishing a portable self-contained unit complete with boom, generator and boom mounted luminaires.

B Materials
Unit shall be capable of operating a single or multiple luminaire mounted on a 30-foot boom. Unit shall be self-contained with its own generator. Luminaires shall be 400W or 1000W. Unit shall be securable from the general public or fenced off to prevent non authorized personnel from starting/stopping or reaimimg the unit.

C Construction
Have the unit in place and operational prior to the start of Stage 2 work. Obtain the manufacturer and rental agency's limitations for wind speed/loading and coordinate with the weather predictions. Anchor and level the unit in accordance to recommendations from the manufacturer. Aiming of the luminaires is critical. Aim the luminaires to prevent glare in the driver's eyes.

D Measurement
The department will measure Self Contained Tower Light by each individual system, 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.0060.84	Self Contained Tower Light	Each

Payment is full compensation for furnishing all the work and materials required under this bid item.

70. Lamp Disposal High Intensity Discharge, Item SPV.0060.85.

A Description
This special provision describes the packaging and delivering of high intensity discharge (mercury vapor, metal halide, and high-pressure sodium) lamps removed under this contract to the department for disposal as hazardous materials.

B Materials
Lamps turned in to the department will be considered the property of the department for proper future disposal, and the contractor will have no further obligation for their disposal.

C Construction

Pack intact lamps in the packaging of the new lamps used to replace them, or packaging affording the equivalent protection. Place in full, stackable cartons with the name of the contractor written on each carton. Segregate the lamps by type and wattage. Label each carton by the type and wattage contained (do not mix) and the quantity.

Pack broken lamps into thick plastic bags and place inside sturdy cardboard boxes or the equivalent. Mark the outer packaging with the term "broken lamps". Deliver all broken lamps to the department.

The department will not accept lamps improperly packaged or packed in metal containers. The department will reject any lamps not removed as part of this contract as shown on the plans.

Pile cartons no more than two high if palletized and secure them to prevent shifting or falling of the loads.

Deliver the lamps to the department at the South 60th Street office in West Allis. Consolidate all deliveries into a truckload or more, except when all the lamps removed under a contract measure less than a truckload, deliver as one load at one time. Contact Mike Prebish at (414) 266-1170, Monday through Thursday from 8 am to 4 pm to set up an appointment for delivery.

D Measurement

The department will measure Lamp Disposal High Intensity Discharge as each individual unit, acceptably completed. The department will not measure broken lamps that exceed a total of ten percent of all lamps to be delivered.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.85	Lamp Disposal High Intensity Discharge	Each

Payment is full compensation for handling, packaging, and labeling and delivering the lamps.

Payment will be in addition to payment for the work under which the lamps are removed from service.

71. Salvaging Light Poles Luminaires and Arms, Item SPV.0060.86.

A Description

The work under this item shall consist of removing lighting pole, arm and luminaires from the locations shown in the plans, and reinstalling pole at a new location as shown in the plans, in accordance to the applicable provisions of standard spec 204, 655 and 659 or delivering the units to a specific location.

B (Vacant)

C Construction
Inspect the pole prior to removing from the existing base. Inform the engineer of any items of concern or potential problems that may interfere with the reuse of the pole, arm or luminaire. Minimize the time between removal from the existing base and reinstallation on the new base. Bases will be paid as a separate item and are not included herein.

D Measurement
The department will measure Salvaging Light Poles Luminaires and Arms by each individual light pole, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.86	Salvaging Light Poles Luminaires and Arms	Each

Payment is full compensation for furnishing all the work required under this bid item.

72. Pull Box Steel 18x42-Inch Special, Item SPV.0060.87.

A Description
This special provision describes providing and installing pull box steel as shown on the plans and as hereinafter provided.

B Materials
Conform to standard spec 653.2.1 and additional requirements per Standard Detail Drawing – Pull Box.

C Construction
Provide pull boxes with manhole frames and solid lids. Coordinate with concrete barrier construction.

D Measurement
The department will measure Pull Box Steel 18x42-Inch Special as each individual box, 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.0060.87	Pull Box Steel 18x42-Inch Special	Each

The payment is full compensation for providing and installing all materials including conduits, drain piping components, manhole frames and covers; all fittings; and for coordination with barrier contractor.

73. Concrete Bases Median Barrier, Item SPV.0060.88.

A Description

This work shall be in accordance to the requirements of standard spec 654, the plans, standard detail drawings, and as hereinafter provided.

B Materials

B.1 Concrete Bases

In accordance with standard spec 654.2, Concrete Bases.

B.2 Junction Boxes

Furnish 18 X 12 X 6 – inch hot-dipped zinc coated cast iron junction boxes with a recessed cover. Junction box shall meet NEMA 4 standards for protection against windblown dust and rain and splashing water. Furnish standard covers with stainless steel hex-head mounting bolts with each box assembly. Boxes shall have a neoprene gasket with provision for allowing drainage out of the box.

Junction boxes shall be furnished with factory installed mounting buttons as required to attach grounding lugs and mechanical connectors as shown on the plans. Provide engineer-approved protection that totally and permanently seals connections with a silicone or rubberized caulk.

One junction box per base required.

B.3 Electrical Wiring Connectors

Furnish rubber insulated submersible secondary connectors rated for copper conductors (minimum 12 AWG) as required for splicing in each location. Secondary connectors shall include silicone grease and CO-OX oxide inhibitor and meet the performance requirements of ANSI C119.1 & C119.4.

B.4 Conduit, Fittings and Expansion/Deflection Couplings

Furnish rigid metallic and schedule 40 PVC conduit and fittings as shown on the plans conforming to the pertinent provisions of standard spec 652, Electrical Conduit.

Furnish UL listed expansion/deflection coupling joints as shown on the plans. Expansion/deflection coupling joints shall be rated for use with rigid metallic conduit and provide a watertight and corrosion resistant connection which allows for movement in all directions. Couplings shall maintain a constant inner diameter and provide a smooth insulated wireway for protection of the conductors. Couplings shall include an integral bonding jumper.

Refer to the plans and details to determine the number of deflection couplings needed per base.

B.5 Expansion Material
Furnish 3/4-inch expansion material in accordance with standard spec 415.2.3, Expansion Joint Filler. Use elastic type joint filler to seal the surface of the expansion joint.

C Construction
Construct concrete bases in accordance with standard spec 654.3, Construction.

Install junction boxes as shown in the plans and as the manufacturer directs.

Install expansion/deflection couplings as the manufacturer directs. Coordinate the connection of the conduit into the receiving roadway barrier prior to pouring the concrete base.

All secondary connectors and miscellaneous wiring, fusing and grounding connections shall be installed in accordance with standard spec 659.3.2, Wiring and Fusing and as the manufacturer directs.

D Measurement
The item will be measured in place by the unit and the quantity measured for payment will be the number of bases of each one installed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.88	Concrete Bases Median Barrier	Each

Payment for the Concrete Bases Median Barrier bid item is full compensation for providing all materials including conduit, couplings, bushings, caps or plugs, or both, anchor rods, nuts, washers, expansion material, grounding electrodes, exothermic welds, copper equipment grounding conductors, bar steel reinforcement, junction boxes, and concrete; and for excavating, backfilling, and disposing of surplus materials.

74. Pavement Cleanup, Item SPV.0075.01.

A Description
This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site.

B Materials
Furnish street sweeper equipped with a power broom, water spray system, and a vacuum collection system.

Provide vacuum equipment having a self-contained particulate collector capable of preventing discharge from the collection bin into the atmosphere.

C Construction

C.1 Pavement Cleanup

Keep all pavements both closed and open to public traffic within the jobsite boundaries free of dust and debris generated from any activity under the contract. Keep all pavements adjacent to the project free of dust and debris that are affected by land disturbing, dust generating activities, as defined in the contractor's dust control implementation plan.

Provide surveillance to identify if material is being tracked from the jobsite. Clean up spillage and material tracked from the project within an hour of occurrence. Perform cleanup operations in a safe manner.

Provide routine pavement sweeping of asphaltic and concrete pavements both within and adjacent to the project, 2 times daily for a minimum of one hour Each sweeping operation, whenever land disturbing, dust-generating activities are occurring, unless the engineer directs or approves otherwise.

In addition to routine sweeping, conduct sweepings as the engineer directs or approves, to deal with dust problems that might arise during off-work hours or emergencies. Provide the engineer with a contact person available at all times to respond to requests for emergency sweeping. Respond to emergency sweeping requests within 24 hours.

Conduct all sweeping, to the extent that is practical, using street sweepers. Ensure that the water spray, particulate collector, and vacuum systems are on and functioning properly. Where size or weight restrictions preclude using street sweepers, the contractor may employ dry sweeping equipment with a vacuum system on and functioning properly. Use manual wet sweeping to cover areas inaccessible to power equipment.

D Measurement

The department will measure Pavement Cleanup by the hour, acceptably completed. The department will only measure clean up activity approved as part of the contractor's dust control implementation plan.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0075.01	Pavement Cleanup	HRS

Payment is full compensation for surveillance, mobilization, sweeping, and properly disposing of materials.

75. Truck Mounted Attenuator With Operator, Item SPV.0075.02; Truck Mounted Attenuator Without Operator, Item SPV.0075.03.

A Description

This special provision describes furnishing a truck with Truck Mounted Attenuator (TMA) and operator, if required, for use on this project during operations which are directly next to live lanes of traffic which have limited mobility, limited ingress/regress, confined space, or as directed by the engineer. All work shall be in accordance to section 643 of the standard specifications, the plans, and as directed by the engineer. Request to protect construction workers from construction vehicle traffic will be denied for this item.

Use of a TMA shall be requested to the engineer for approval 72 hours prior to its use or at the prior weekly construction meeting. Approval or denial will be given within 24 hours of request.

B Materials

Provide a TMA that meets the requirements of the NCHRP Report 350, and a truck meeting the TMA manufacturer's recommendations with a minimum total gross vehicle weight of 25,000 pounds.

For the TMA with Operator bid item, provide an operator who shall remain with the vehicle at all times during moving operations.

C (Vacant)

D Measurement

The department will measure Truck Mounted Attenuator With Operator by the hour acceptably completed. The measured quantity will equal the number of hours the TMA including the truck and operator are used in protection of workers.

The department will measure Truck Mounted Attenuator Without Operator by the hour acceptably completed. The measured quantity will equal the number of hours the TMA without an operator is used in protection of workers.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0075.02	Truck Mounted Attenuator With Operator	HRS
SPV.0075.03	Truck Mounted Attenuator Without Operator	HRS

Payment is full compensation for mobilizing, furnishing and operating each truck with truck mounted attenuator (TMA) and operator, if required.

Delivery, set up, and removal of the TMA without Operator is incidental to the Truck Mounted Attenuator without Operator bid item.

76. Removing Pavement Markings Water Blasting, Item SPV.0090.01

A Description
Remove pavement markings using ultra-high pressure water. Remove pavement markings from locations shown on the plans or as the engineer directs.

B (Vacant)

C Construction
Provide a truck or vehicle mounted ultra high pressure pump and water tank capable of delivering a minimum of 30,000 psi and up to 40,000 psi to waterjet nozzles.

Remove pavement markings through means of water blasting. Do not damage the pavement during removal process.

D Measurement
The department will measure Removing Pavement Markings Water Blasting by the linear foot of 4-inch wide line acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.01	Removing Pavement Markings Water Blasting	LF

Payment is full compensation for removal, repairing associated damage, and disposal of residue.

77. Drain Slotted Vane 6-Foot Special, Item SPV.0090.02.

A Description
This special provision describes furnishing and installing Drain Slotted Vane 6-Foot Special as shown on the plans, in accordance to standard spec 501, 505, 607, and 611, and as hereinafter provided.

B Materials
The pipe that the vane drain casting rests in shall be 10-inch diameter SDR-35 poly vinyl chloride, (PVC) sewer pipe.

C Construction
Prior to encasing the pipe in concrete, cover the upper end of the slotted drain as shown on the plans, or as approved by the engineer.

Prior to construction operations adjacent to the slotted area of the slotted vane drain pipe, cover the slots on the top of the drain. Remove any material entering the pipe at the contractor's expense.

Exercise care to avoid damage to the slotted vane drainpipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drainpipe at contractor's expense.

D Measurement
The department will measure Drain Slotted Vane 6-Foot Special by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.02	Drain Slotted Vane 6-Foot Special	LF

Payment is full compensation for furnishing and instaslling all materials, including PVC pipe and end cap, slotted vane drain castings, concrete masonry and reinforcement; adjusting bricks; drilling inlet or manhole cover to accommodate connection bolts to vane drain; hauling and placing the pipe; making connections to existing inlets; cleaning out and restoring site of work; and for repairing opening of drainage structure.

78. Concrete Barrier Type S42 Anchored, Item SPV.0090.03; Concrete Barrier Type S32 Anchored, Item SPV.0090.09.

A Description
Work consists of constructing Concrete Barrier (Type) Anchored in accordance with standard spec 603, details shown in the plans and as hereinafter provided.

B Materials
Furnish materials conforming to standard spec 603.2.

Concrete minimum strength to be 4000 psi.

C Construction
Use construction methods conforming to standard spec 603.3.

Construct the concrete barrier to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines shown on the plans or ordered by the engineer, and be free of lumps, sags or other irregularities. The top and exposed faces of the barrier shall conform to standard spec 603.3.1.5.

If constructed by using a slip form machine or similar type equipment, the concrete barrier shall be of well-compacted, dense concrete, and the exposed surfaces conform to standard spec 603.3.1.7. If requested by the engineer, evidence of successful operation of the slip form machine or other equipment may be required.

Feed concrete into the slip form machine at a uniform rate. Operate the machine under sufficient uniform restraint to forward motion to produce a well compacted mass of concrete free from surface pits larger than one inch in diameter and requiring no further finishing, other than that conforming to standard spec 603.3.1.6.

Utilize concrete of such consistency that, after slip forming, it will maintain the shape of the barrier without support.

Construct expansion joints in conformance with standard spec 603.3.1.3.

When forming joints before the concrete has hardened, support adjacent portions of the barrier firmly with close fitting shields.

When forming joints after the application of curing compound, treat the exposed faces of the barrier in the vicinity of the joint with curing compound after the forming of the joints.

D Measurement

The department will measure Concrete Barrier (Type) Anchored by the linear foot, acceptably completed, measured along the base of the concrete barrier.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.03	Concrete Barrier Type S42 Anchored	LF
SPV.0090.09	Concrete Barrier Type S32 Anchored	LF

Payment will be made in accordance to standard spec 603.5.

79. Drain Slotted Vane Pipe, Item SPV.0090.04.

A Description

This special provision describes furnishing and installing Drain Slotted Vane Pipe as shown on the plans, in accordance to standard spec 501, 505, 607, and 611 and as hereinafter provided.

B Materials

The pipe that the vane drain casting rests in shall be 10-inch diameter SDR-35 poly vinyl chloride, (PVC) sewer pipe.

C Construction
Encase the pipe in concrete as shown on the plans.

Remove any material entering the pipe at the contractor's expense.

Exercise care to avoid damage to the slotted vane drainpipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drainpipe at contractor's expense.

D Measurement
The department will measure Drain Slotted Vane Pipe by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.04	Drain Slotted Vane Pipe	LF

Payment is full compensation for furnishing and installing all materials, including PVC pipe and end cap, concrete masonry and reinforcement; adjusting bricks; drilling inlet or manhole cover to accommodate pipe connection; hauling and placing the pipe; making connections to existing inlets; cleaning out and restoring site of work; and for repairing opening of drainage structure.

80. Concrete Curb and Gutter and Barrier, Cold Weather Covering, Plastic/Hay/Plastic or Blankets, Item SPV.0090.05; Plastic 1 Layer, Item SPV.0090.06; Plastic 2 Layers, Item SPV.0090.07.

A Description
Place protective covering in accordance to standafd spec 415.3.13, the plans, standard detail drawings, and as hereinafter provided.

B Materials
Furnish materials that meet the requirements specified in standard spec 415.3.13.2.

C (Vacant)

D Measurement
The department will measure Concrete Curb and Gutter and Barrier, Cold Weather Covering (Type) by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.05	Concrete Curb and Gutter and Barrier, Cold Weather Covering, Plastic/Hay/Plastic or Blankets	LF
SPV.0090.06	Concrete Curb and Gutter and Barrier, Cold Weather Covering, Plastic 1 Layer	LF
SPV.0090.07	Concrete Curb and Gutter and Barrier, Cold Weather Covering, Plastic 2 Layers	LF

Payment is full compensation for supplying the plastic, hay, material sufficient to weight down the insulating materials to withstand wind; and for furnishing all labor, tools, equipment, and incidentals required to place, remove, replace and dispose of all covering materials as required during normal concreting operations. Heating of water, aggregates, or both, if deemed necessary by the contractor to maintain placement temperature, is incidental to this item.

81. Concrete Barrier Type V36, Item SPV.0090.08.

A Description

This special provision describes constructing Concrete Barrier Type V36 in accordance to standard spec 603, details shown in the plans and as hereinafter provided.

B Materials

Furnish materials conforming to standard spec 603.2.

Concrete minimum strength to be 4000 psi.

C Construction

Use construction methods conforming to standard spec 603.3.

Construct the concrete barrier to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines shown on the plans or ordered by the engineer, and be free of lumps, sags or other irregularities. The top and exposed faces of the barrier shall conform to standard spec 603.3.1.5.

If constructed by using a slip form machine or similar type equipment, the concrete barrier shall be of well-compacted, dense concrete, and the exposed surfaces conform to standard spec 603.3.1.7. If requested by the engineer, evidence of successful operation of the slip form machine or other equipment may be required.

Feed concrete into the slip form machine at a uniform rate. Operate the machine under sufficient uniform restraint to forward motion to produce a well compacted mass of concrete free from surface pits larger than one inch in diameter and requiring no further finishing, other than that conforming to standard spec 603.3.1.6.

Utilize concrete of such consistency that, after slip forming, it will maintain the shape of the barrier without support.

Construct expansion joints in conformance with standard spec 603.3.1.3.

When forming joints before the concrete has hardened, support adjacent portions of the barrier firmly with close fitting shields.

When forming joints after the application of curing compound, treat the exposed faces of the barrier in the vicinity of the joint with curing compound after the forming of the joints.

In transitions between barrier shapes, tie reinforcement bars to concrete barrier reinforcement by tying the first vertical bar ±3 inches from the transition point and lapping any horizontal bars that match.

Required Vertical Construction Joint can be constructed in 2 ways: 1) pour the shoulder to the required vertical construction joint, and then pour the barrier full depth (no optional horizontal construction joint), or 2) pour the shoulder to go under the barrier (utilizing the optional horizontal construction joint), and then saw cut the shoulder full depth within 4" horizontally of the edge of the barrier. Location of saw cut will be determined in the field to match existing conditions. Saw cut and sealing is incidental to Concrete Barrier Type V36.

D Measurement

The department will measure Concrete Barrier V36 by the linear foot acceptably completed, measured along the base of the concrete barrier in accordance to standard spec 109.1.1.2.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.08	Concrete Barrier Type V36	LF

Payment will be made in accordance to subsection 603.5 of the standard specifications, except for sawing pavement, which will be considered incidental to the barrier item.

82. Cable Aerial Aluminum 4 AWG Quadruplex Temporary, Item SPV.0090.80.

A Description

Furnish, install, and connect temporary overhead cable complete with all splicing, identifications, terminations and guy wires at wood poles. The removal of the overhead cable after the temporary lighting is approved for removal.

B Materials

Overhead cable shall be aluminum conductors according to ASTM B 230 and shall be Class B stranded according to ASTM B 231, and shall conform to the values listed in the table below:

Phase Conductor				Messenger Wire	
Size AWG	**Stranding**	**Avg. Insulation Thickness**		**Min. Size AWG**	**Stranding**
		mm	mils		
6	7	1.1	45	6	6/1
4	7	1.1	45	4	6/1
2	7	1.5	45	2	6/1

The aerial cable shall be an assembly of insulated aluminum conductors and a steel messenger wire according to ANSI/ICEA S-76-474. The cable assembly may have the messenger wire intertwined with the insulated cables or lashed to the insulated cables by a factory wrap. The cable shall be assembled according to ANSI/ICEA S-76-474.

All cable shall be rated 600-V. The cable shall be rated 105º C dry and 90º C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals, and UV rated. The UL listing mark, cable voltage, insulation type and ratings, as well as the cable size, shall all be clearly printed on the cable in a color contrasting with the insulation color. When specified, each cable installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.

All electric cables installed shall be color coded. Neutral wires shall be color-coded white. Single phase three wire runs of cable shall be color-coded one black, one red, and one white. Insulated ground wires, where applicable, shall be green. Color striping of cables will not be acceptable in lieu of the specified color coding means.

Make the luminaire connections to the aerial cable with listed parallel tap insulation piercing connectors. The connector shall be rated for 600-V, and be listed under UL Standard 486B.

C Construction

Overhead cable as shown on temporary lighting plans will not be needed for final lighting. Remove temporary overhead cable. Removal of temporary overhead cable will be incidental to this pay item and it will become property of the contractor. The bid price shall reflect the salvage value of the temporary overhead cable.

Upon written request of the contractor, the engineer may permit to reuse removed temporary overhead cable of ampacity equivalent to the specified cable and of a type and condition approved by the engineer, if possible.

Install guy wires as necessary per WisDOT standard details for Spanwire Temporary Traffic Signal.

Conform to standard spec 655.3.5(9) for ground resistance testing.

D Measurement
The department will measure Cable Aerial Aluminum 4 AWG Quadruplex in length by the linear foot, acceptably completed in place and will be taken as the length of the messenger wire. Measurement will be made in a straight line between changes in direction and to the centers of light standards and control cabinets. Sag of the aerial cable or vertical cable will not be measured for payment. The rewiring to facilitate relocation of the cable due to staging or other construction requirements will not be measured for payment.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.80	Cable Aerial Aluminum 4 AWG Quadruplex Temporary	LF

Payment is full compensation for providing and installing electrical wire; for making all connections; for providing all connectors, including wire nuts, fuses, fuse holders, splices, tape, and insulators; for providing messenger wire, and guy wires; and for removing temporary overhead cable.

83. Survey Project 1060-45-70, Item SPV.0105.01.

A Description
Standard spec 105.6 and 650 are modified to define the requirements for construction staking for this contract.

Replace standard spec 105.6.2 with the following:

The department will not perform any construction staking for this contract. The contractor shall perform all survey required to lay out and construct the work under this contract, subject to engineer's approval.

B (Vacant)

C Construction
Conform to standard spec 650.3.

D Measurement
Replace standard spec 650.4 with the following:

The department will measure Survey Project 1060-45-70 as a separate single lump sum unit of work, acceptably completed.

E Payment
Replace standard spec 650.5 with the following:

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.01	Survey Project 1060-45-70	LS

Payment is full compensation for performing all survey work required to lay out and construct all work under this contract.

84. Maintenance of Lighting Systems, Item SPV.0105.80.

A Description
Maintain existing and proposed lighting system beginning on the date that the contractor's activities (electrical or otherwise) at the job site begin. The contractor shall be responsible for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by, the work until final acceptance or as otherwise determined by the engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. Make the request for the maintenance preconstruction inspection no less than seven calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained.

B (Vacant)

C Construction
C.1 Existing Lighting Systems
Existing lighting systems shall be defined as any lighting system or part of a lighting system in service prior to this contract. The contract drawings indicate the general extent of any existing lighting, but whether indicated or not, it remains the contractor's responsibility to ascertain the extent of effort required for compliance with these specifications; failure to do so will not be justification for extra payment or reduced responsibilities. Extent of maintenance of existing lighting system shall be as follows:

Partial Maintenance: Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the contractor shall only maintain the affected circuits. Isolate the affected circuits by means of in-line waterproof fuse holders as specified elsewhere and as approved by the engineer.

Full Maintenance: If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the contractor shall maintain the entire controller and all associated circuits.

C.2 Proposed Lighting Systems

Proposed lighting systems shall be defined as any temporary or final lighting systems or part of a lighting system which is to be constructed under this contract.

The contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, contractor operations, or other means. Include the potential cost of replacing or repairing any malfunctioning or damaged equipment in the bid price of this item; it will not be paid for separately.

C.3 Maintenance Operations

The contractor's responsibility shall include the maintenance of lighting units (including sign lighting), cable runs, and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the engineer. Uncorrected deficiencies may be designated by the engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the contractor will be allowed to perform corrective action on specific lighting system equipment.

Incident or Problem	Service Response Time	Service Restoration Time	Permanent Repair Time
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	na	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	na
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	na
Outage of 75% of lights on one tower	1 hour	4 hours	na
Outage of light nearest RR crossing approach, Islands and gores	1 hour	4 hours	na
Outage (single or multiple) found on night outage survey	na	na	7 Calendar days

C.4 Lighting

1. **Serve Response Time:** The amount of time from the initial notification to the contractor until a patrolman physically arrives at the location.
2. **Service Restoration Time**: The amount of time from the initial notification to the contractor until the time the system is fully operational again. (In cases of motorist-caused damage, the undamaged portions of the system are operational.)
3. **Permanent Repair Time**: The amount of time from initial notification to the contractor until the time permanent repairs are made if the contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of $500 per calendar day per occurrence. In addition, the department reserves the right to assign any work not completed within this timeframe to the State Electrical Engineering and Electronics Unit. All costs associated to repair this uncompleted work shall be the responsibility of the contractor. Failure to pay these costs to the State Electrical Engineering and Electronics Unit within one month after the incident will result in additional liquidated damages of $500 per month per occurrence. Unpaid bills will be deducted from the cost of the contract. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Engineering and Electronics Unit being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

Repair damage caused by the contractor's operations at no additional cost to the contract.

C.5 Operation of Lighting

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Do not keep lighting systems in operation during long daytime periods. Demonstrate to the satisfaction of the engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

D Measurement

The department will measure Maintenance of Lighting Systems as a single lump sum unit 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.0105.80	Maintenance of Lighting Systems	LS

Payment is full compensation for Maintenance of Lighting Systems.

85. Concrete Pavement, Cold Weather Covering, Plastic 1 Layer, Item SPV.0180.01; Plastic 2 Layers, Item SPV.0180.02; Plastic/Hay/Plastic or Blankets, Item SPV.0180.03.

A Description

Place protective covering in accordance to standard spec 415.3.13, the plans, standard detail drawings, and as hereinafter provided.

B Materials

Furnish materials that meet the requirements specified in standard spec 415.3.13.2.

C (Vacant)

D Measurement

The department will measure the Concrete Pavement Cold Weather Covering (Type) by the square yard, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.01	Concrete Pavement, Cold Weather Covering, Plastic 1 Layer	SY
SPV.0180.02	Concrete Pavement, Cold Weather Covering, Plastic 2 Layers	SY
SPV.0180.03	Concrete Pavement, Cold Weather Covering, Plastic/Hay/Plastic or Blankets	SY

Payment is full compensation for supplying the plastic, hay, material sufficient to weight down the insulating materials to withstand wind, and for furnishing all labor, tools, equipment, and incidentals required to place, remove, replace and dispose of all covering materials as required during normal concreting operations. Heating of water, aggregates, or both, if deemed necessary by the contractor to maintain placement temperature, is incidental to this item.

86. Epoxy Overlay, Item SPV.0180.07.

A Description

This special provision describes furnishing and applying two layers of a two-component polymer overlay system to the bridge decks shown on the plans. The total thickness of the overlay system shall be 3/8".

B Materials

B.1 General

Furnish materials specifically designed for use over concrete bridge decks. Pre-qualified polymer liquid binders are as follows:

Product Trade Name	Manufacturer or Supplier	Telephone
Mark-163 Flexogrid	PolyCarb, Inc.	(866) 765-9227
Sikadur 22 Lo-mod	Sika Corporation	(248) 569-5665
E-Bond 526 Lo-Mod	E-Bond Epoxies, Inc.	(954) 566-6555
Propoxy DOT Type III	Unitex	(816) 231-7700
Sure Level Epoxy (J-57)	Dayton Superior	(888) 977-9600
ICO Flexi-Coat	International Coatings, Inc.	(800) 624-8919
Flexolith	Euclid Chemical Co.	(800) 321-7628

B.2 Polymer Resin

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

Property	Requirements	Test Method
Gel Time [A]	15 - 45 minutes @ 75° F	ASTM C881
Viscosity [A]	7 - 70 poises	ASTM D2393, Brookfield RVT, Spindle No. 3, 20 rpm
Shore D Hardness [B]	60-75	ASTM D2240
Absorption [B]	1% maximum at 24 hr	ASTM D570
Tensile Elongation [B]	30% - 70% @ 7 days	ASTM D638
Tensile Strength [B]	>2000 psi @ 7 days	ASTM D638
Flexural Strength [B]	>4500 psi @ 7 days	ASTM D790
Chloride Permeability [B]	<100 coulombs @ 28 days	AASHTO T277

[A] Uncured, mixed epoxy binder
[B] Cured, mixed epoxy binder

B.3 Aggregates
Furnish natural or synthetic aggregates that have a proven record of performance in applications of this type. Furnish aggregates that are non-polishing, clean, free of surface moisture, fractured or angular in shape; free from silt, clay, asphalt, or other organic materials; and meet the following properties and gradation requirements:

Aggregate Properties:

Property	**Requirement**	**Test Method**
Moisture Content	≤0.2%	ASTM C566
Hardness	≥6.5	Mohs Scale
Fractured Faces	100% with at least 1 fractured face and 80% with at least 2 fractured faces of material retained on No.16	ASTM 5821

Gradation:

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

B.4 Required Properties of Overlay System
The required properties of the overlay system are listed in the table below:

Property	Requirement [A]	Test Method
Minimum Compressive Strength at 8 Hrs. (psi)	1,000 psi @ 8 hrs 5,000 psi @ 24 hrs	ASTM C 579 Method B, Modified [B]
Thermal Compatibility	No Delaminations	ASTM C 884
Minimum Pull-off Strength	250 psi @ 24 hrs	ACI 503R, Appendix A

[A] Based on samples cured or aged and tested at 75°F
[B] Plastic inserts that will provide 2-inch by 2-inch cubes shall be placed in the oversized brass molds.

B.5 Approval of Bridge Deck Polymer Overlay System
A minimum of 20 working days prior to application, submit product data sheets and specifications from the manufacturer, and a certified test report to the engineer for approval. The engineer may request samples of the polymer and/or aggregate, prior to application, for the purpose of acceptance testing by the department.

For materials not pre-qualified, in addition to the above submittals, submit product history/reference projects and a certified test report from an independent testing laboratory showing compliance with the requirements of the specification.

The product history/reference projects consist of a minimum of 5 bridge/roadway locations where the proposed overlay system has been applied in Wisconsin or in locations with a similar climate - include contact names for the facility owner, current phone number or e-mail address, and a brief description of the project.

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

C Construction
C.1 General
Conduct a pre-installation conference with the manufacturer's representative prior to construction to establish procedures for maintaining optimum working conditions and coordination of work. Furnish the engineer a copy of the recommended procedures and apply the overlay system according to the manufacturer’s instructions. The manufacturer's representative familiar with the overlay system installation procedures shall be present at all times during surface preparation and overlay placement to provide quality assurance that the work is being performed properly.

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

C.2 Deck Preparation

C.2.1. Deck Repair

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

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

C.2.2 Surface Preparation

Determine an acceptable shotblasting machine operation (size of shot, flow of shot, forward speed, and/or number of passes) that provides a surface a profile meeting CSP 5 according to the International Concrete Repair Institute Technical Guideline No. 03732. If the engineer requires additional verification of the surface preparation, test the tensile bond strength according to ACI 503R, Appendix A of the ACI *Manual of Concrete Practice*. The surface preparation will be considered acceptable if the tensile bond strength is greater than or equal to 250 psi or the failure area at a depth of ¼ inches or more is greater than 50% of the test area. Continue adjustment of the shotblasting machine and necessary testing until the surface is acceptable to the engineer or a passing test result is obtained.

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

Just prior to overlay placement, clean all dust, debris, and concrete fines from the deck surface including vertical faces of curbs and barrier walls up to a height of 1 inch above the overlay with compressed air. When using compressed air, the air stream must be free of oil. Any grease, oil, or other foreign matter that rests on or has absorbed into the concrete shall be removed completely.

Cover the bridge deck drains and bridge expansion joints to prevent materials from adhering and entering.

Create a transitional area approaching transverse expansion joints and ends of the deck using the shotblasting machine or other approved method. Remove 5/16" to 3/8" of concrete adjacent to the joint or end of deck and taper a distance of 3 feet.

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

C.3 Application of the Overlay

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

a. Ambient air temperature is below 50^{o}F;
b. Deck temperature is below 50^{o}F;
c. Moisture content in the deck exceeds 4.5% when measured by an electronic moisture meter or shows visible moisture after 2 hours when measured in accordance to ASTM D4263;
d. Rain is forecasted during the minimum curing periods listed under C.5 ;
e. Materials component temperatures below 50^{o}F;
f. Concrete age is less than 28 days unless approved by the engineer.

After the deck has been shotblasted or during the overlay curing period, only necessary surface preparation and overlay application equipment will be allowed on the deck. Begin overlay placement as soon as possible after surface preparation operations.

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

After completion of each course, cure the overlay according to the manufacturer's instructions. Follow the minimum cure times listed under C.5 or as prescribed by the manufacturer. Remove the excess aggregate from the surface treatment by sweeping, blowing, or vacuuming without tearing or damaging the surface; the material may be re-used if approved by the engineer and manufacturer. Apply all courses of the overlay system before opening the area to traffic. Do not allow traffic on the treated area until directed by the engineer.

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

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

C.4 Application Rates

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

Course	Minimum Epoxy Rate [A] (GAL/100 SF)	Aggregate [B] (LBS/SY)
1	2.5	10+
2	5.0	14+

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

[B] Application of aggregate shall be of sufficient quantity to completely cover the epoxy.

C.5 Minimum Curing Periods

As a minimum, cure the coating as follows:

	Average temperature of deck, epoxy and aggregate components in °F					
Course	**60-64**	**65-69**	**70-74**	**75-79**	**80-84**	**85+**
1	4 hrs.	3 hrs.	2.5 hrs	2 hrs	1.5 hrs.	1 hr.
2 *	6.5 hrs.	5 hrs.	4 hrs.	3 hrs.	3 hrs.	3 hrs.

* Cure course 2 for 8 hours if the air temperature drops below 60° F during the curing period.

D Measurement

The department will measure Epoxy Overlay in area by 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.0180.07	Epoxy Overlay	SY

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

ADDITIONAL SPECIAL PROVISION 4

Payment to all Subcontractors. Within 10 calendar days of receipt by a contractor of a progress payment for work performed, materials furnished, or materials stockpiled by a subcontractor, the contractor shall pay that subcontractor for all work satisfactorily performed and for all materials furnished or stockpiled.

The contractor agrees further to release retainage amounts to each subcontractor within 10 calendar days after the subcontractor's work is satisfactorily completed. In addition, whenever the Department reduces the contract retainage amount, within 10 calendar days of receipt by a contractor of a retainage payment, the contractor must reduce the total amount retained from subcontractors to no more than remains retained by the Department.

The contractor shall pay the subcontractor within the time frames described above unless the contractor complies with both of the following within 10 calendar days of receiving the Department's progress payment:

1) The contractor notifies the subcontractor in writing that the work is not satisfactorily completed.
2) The contractor requests approval from the Department to delay payment because the subcontractor has not satisfactorily completed the work.

The contractor's request for approval should include the written notification to the subcontractor and shall provide sufficient documentation of good cause to assist the engineer in making a timely decision. If the engineer does not grant approval, the contractor shall pay the subcontractor within 10 calendar days of the Department's decision.

All subcontracting agreements made by a contractor shall include the above provisions and shall be binding on all contractors and subcontractors.

The contractor certifies compliance with the requirements of this Additional Special Provision by signing the contract. This clause applies to both DBE and non-DBE subcontractors.

ADDITIONAL SPECIAL PROVISION 6
MODIFICATIONS TO THE STANDARD SPECIFICATIONS

Make the following revisions to the 2013 edition of the standard specifications:

106.3.4.3.1 General

Replace paragraph two with the following effective with the November 2012 letting:

(2) Required sampling and testing methodologies and documentation are specified in CMM chapter 8.

(3) If disputed, approval of materials and components, as well as acceptance of the work incorporating those materials or components, is subject to review under the QMP dispute resolution process.

107.17.3 Railroad Insurance Requirements

Replace the entire text with the following effective with the August 2012 letting:

(1) If required by the special provisions, provide or arrange for a subcontractor to provide railroad protective liability insurance in addition to the types and limits of insurance required in 107.26. Keep railroad protective liability insurance coverage in force until completing all work, under or incidental to the contract, on the railroad right of way or premises of the railroad and until the department has accepted the work as specified in 105.11.2.4.

(2) Provide railroad protective liability insurance coverage written as specified in 23 CFR part 646 subpart A. Provide a separate policy for each railroad owning tracks on the project. Ensure that the railroad protective liability insurance policies provide the following minimum limits of coverage:

1. Coverage A, bodily injury liability and property damage liability; $2 million per occurrence.
2. Coverage B, physical damage to property liability; $2 million per occurrence.
3. An annual aggregate amount of $6 million that shall apply separately to each policy renewal or extension.

(3) Obtain coverage from insurance companies licensed to do business in Wisconsin that have an A.M. Best rating of A- or better. The cost of providing the required insurance coverage and limits is incidental to the contract. The department will make no additional or special payment for providing insurance.

(4) Submit the following to each railroad owning tracks on the project as evidence of that railroad's respective coverage:

1. A certificate of insurance for the types and limits of insurance specified in 107.26.
2. The railroad protective liability insurance policy or other acceptable documentation to the railroad company.

(5) Submit the following to the region as evidence of the required coverage:

1. A copy of the letter to the railroad company transmitting the submittal documents specified in 107.17.3(4).
2. A certificate of insurance for the required railroad protective liability coverages.

(6) Do not begin work on the right of way or premises of the railroad company until the region receives the submittals specified in 107.17.3(5) and notification from the railroad company that the contractor has provided sufficient insurance information to begin work.

(7) Notify the railroad and the region immediately upon cancellation or initiating cancellation, whichever is earlier, or any material change in coverage. Cease operations within 50 feet of the railroad right of way immediately if insurance is cancelled or reduced. Do not resume operations until the required coverage is in force.

460.2.8.3.1.4 Department Verification Testing Requirements

Replace paragraph four with the following effective with the December 2012 letting:

(4) The department will randomly test each design mixture at the following minimum frequency:

FOR TONNAGES TOTALING:	
Less than 501 tons	no tests required
From 501 to 5,000 tons	one test
More than 5,000 tons	add one test for each additional 5,000-ton increment

501.2.5.5 Sampling and Testing

Replace the entire text with the following effective with the January 2013 letting:

(1) Sample and test aggregates for concrete according to the following:

Sampling aggregates	AASHTO T2
Lightweight pieces in aggregate	AASHTO T113
Material finer than No. 200 sieve	AASHTO T11
Unit weight of aggregate	AASHTO T19
Organic impurities in sands	AASHTO T21
Sieve analysis of aggregates	AASHTO T27
Effect of organic impurities in fine aggregate	AASHTO T71
Los Angeles abrasion of coarse aggregate	AASHTO T96
Freeze-thaw soundness of coarse aggregate	AASHTO T103
Sodium sulfate soundness of aggregates	AASHTO T104
Specific gravity and absorption of fine aggregate	AASHTO T84
Specific gravity and absorption of coarse aggregate	AASHTO T85
Flat & elongated pieces based on a 3:1 ratio	ASTM D4791[1]
Sampling fresh concrete	AASHTO R60
Making and curing concrete compressive strength test specimens	AASHTO T23
Compressive strength of molded concrete cylinders	AASHTO T22

[1] As modified in CMM 8-60.

506.3.22 Shop Inspection

Replace paragraph one with the following effective with the July 2010 letting:

(1) The engineer or an independent inspection agency under department contract may inspect all structural steel and miscellaneous metals furnished. The department will provide the contractor with monthly consultant inspection invoices and identify any quality deficiencies at the fabrication facility.

506.5 Payment

Add paragraph nine as follows effective with the June 2010 letting:

(9) The department will limit costs for inspections conducted under 506.3.2 to $0.05 per pound of material and deduct costs in excess of that amount from payment due the contractor. The department will determine costs for in-house inspections based on hourly rates for department staff plus overhead and use invoiced costs for contracted-out inspections. The department will administer deductions for the contractor's share of the total inspection cost under the Excess Costs For Fabrication Shop Inspection administrative item.

507.2.2.1 General

Replace paragraph four with the following effective with the December 2012 letting:

(4) Ensure that there are no unsound knots or knot holes. Also ensure that there are no tight knots of a diameter exceeding one-quarter of the greater dimension at the point where they occur. Measure a knot by taking its diameter at right angles to the length of the timber. Ensure that the sum of sizes of all knots in any one-foot length does not exceed 2 times the size of the largest allowed single knot. The engineer will treat cluster knots as if they were a single knot. A cluster knot is 2 or more knots grouped together, with the fibers of the wood deflected around the entire unit.

512.3.1 Driving and Cutting Off

Replace the entire text with the following effective with the December 2012 letting:

512.3.1.1 General

(1) Coordinate driving operations to prevent damage or displacement of concrete in substructure units or damage to adjacent facilities due to vibrations.

(2) Drive sheeting with a variation of 1/4 inch or less per foot from the vertical or from the batter the plans show. Ensure that the sheetpiles are within 6 inches of the plan position after driving. Do not damage sheetpiles attempting to correct for misalignment.

(3) Remove and replace, or otherwise correct, sheetpiles the engineer deems unacceptable under 105.3. Submit details of planned corrections to the engineer for review and approval before initiating any corrective actions.

(4) Drive sheetpiles to or beyond the required tip elevation the plans show.

512.3.1.2 Driving System

(1) Furnish a sheetpile driving system capable of driving the sheetpiles to the required minimum tip elevation the plans show.

(2) The engineer may order the contractor to remove a pile driving system component from service if it causes insufficient energy transfer or damages the sheetpiles. Do not return a component to service until the engineer determines that it has been satisfactorily repaired or adjusted.

(3) Drive sheetpiles with diesel, air, steam, gravity, hydraulic, or vibratory hammers.

512.3.1.3 Cut-Offs

(1) Cut off sheetpiles at the elevations the plans show or as the engineer directs. Pile cut-offs become the property of the contractor. Dispose of cut-offs not incorporated into the work.

526.3.3 Temporary Structures

Replace paragraphs two through four with the following effective with the January 2013 letting:

(2) Inspect temporary structures conforming to the National Bridge Inspection Standards (NBIS) and the department’s structure inspection manual before opening to traffic. Perform additional inspections, as the department’s structure inspection manual requires, based on structure type and time in service. Submit inspection reports on department form DT2007 to the engineer and electronic copies to the department's bureau of structures maintenance section. Ensure that a department-certified active team leader, listed online in the department's highway structures information system (HSIS), performs the inspections.

(3) Maintain temporary structures and approaches in place until no longer needed. Unless the engineer directs otherwise, completely remove and dispose of as specified in 203.3.4. Contractor-furnished materials remain the contractor's property upon removal.

614.2.5 Wood Posts and Offset Blocks

Retitle and replace the entire text with the following effective with the July 2012 letting:

614.2.5 Posts and Offset Blocks

614.2.5.1 Wood Posts and Offset Blocks

(1) Furnish sawed posts and offset blocks of one of the following species:

Douglas fir	Southern pine	Ponderosa pine	Jack pine	White pine
Red pine	Western hemlock	Western larch	Hem-fir	Oak

(2) Ensure that posts are the size the plans show and conform to the nominal and minimum dimensions tabulated in 507.2.2.3. The contractor does not have to surface the posts. Provide posts of the net length the plans show after setting and cut off.

(3) Use stress graded posts rated at 1200 psi f_b or higher. Determine the stress grade rating for douglas fir, western larch, and southern pine as specified in 507.2.2.4.

(4) For hem-fir, hemlock, red pine, white pine, jack pine, ponderosa pine, and oak conform to the following:

TABLE 614-1 PROPERTIES FOR WOOD POSTS AND BLOCKS

SPECIES			WESTERN HEMLOCK, HEM-FIR, RED PINE, WHITE PINE, JACK PINE, PONDEROSA PINE		OAK	
MAXIMUM SLOPE OF GRAIN			1 in 15		1 in 12	
NOMINAL WIDTH OF FACE			6"	8"	6"	8"
SHAKES, CHECKS, AND SPLITS		GREEN	1"	1 3/8"	2 3/8"	3 1/8"
		SEASONED	1 1/2"	2"	2 5/8"	3 1/2"
MAXIMUM WANE			1"	1 3/8"	1 1/8"	1 5/8"
MAXIMUM ALLOWABLE KNOTS	NARROW FACE	MIDDLE 1/3 OF LENGTH	1 3/8"	1 5/8"	2 1/8"	2 3/8"
		END[1]	2 3/4"	3 1/4"	4 1/4"	4 3/4"
		SUM IN MIDDLE 1/2 OF LENGTH[2]	11"	13"	17"	19
	WIDE FACE	EDGE KNOT N MIDDLE 1/3 OF LENGTH	1 3/8"	1 5/8"		
		EDGE KNOT AT END[1]	2 3/4" 7	3 1/4"		
		CENTERLINE	1 3/8"	1 7/8"	2 1/4"	2 7/8"
		SUM IN MIDDLE 1/2 OF LENGTH	5 1/2"	7 1/2"	9"	11 1/2"

[1] But do not exceed the maximum allowable knot on the centerline of the wide face of the same piece.

[2] But do not exceed 4 times the maximum allowable knot on the centerline of the wide face of the same piece.

(5) Pressure treat posts and offset blocks as specified in 507.2.2.6. Use one of the oil-soluble preservatives or chromated copper arsenate conforming to 507.2.3. Use the same material for offset blocks and posts and treat material used in each continuous installation with the same type of preservative.

614.2.5.2 Steel Posts

(1) Furnish steel posts conforming to AASHTO M270 Grade 36 and galvanized according to AASTHO M111.

614.2.5.3 Plastic Offset Blocks

(1) Furnish plastic offset blocks from the department's approved products list.

614.3.1 General

Replace the entire text with the following effective with the July 2012 letting:

(1) Paint the ends of cut-off galvanized posts, rail, bolts, cut or drilled surfaces of galvanized components, and areas of damaged zinc coating with 2 coats of zinc dust/zinc oxide paint. Clean the damaged and adjacent areas thoroughly before applying paint.

(2) Apply 2 coats of wood preservative to cut surfaces of wood components. Use the same preservative originally used to treat that component or use a 2-percent solution of copper naphthenate conforming to AWPA Standard P8 or P36.

614.3.2.1 Installing Posts

Replace paragraph four with the following effective with the July 2012 letting:

(4) Cut post tops to the finished elevation the plans show.

628.2.13 Rock Bags

Replace paragraph one with the following effective with the November 2012 letting:

(1) Furnish rock bags made of a porous, ultraviolet resistant, high-density polyethylene or geotextile fabric that will retain 70% of its original strength after 500 hours of exposure according to ASTM D4355 and a minimum in-place filled size of 18-inches long by 12-inches wide by 6-inches high. Ensure that the fabric conforms to the following:

TEST REQUIREMENT	METHOD	VALUE
Minimum Tensile	ASTM D4632	
Machine direction		70 lb minimum
Cross direction		40 lb minimum
Elongation	ASTM D4632	
Machine direction		20% minimum
Cross direction		10 % min
Puncture	ASTM 4833	65 lbs minimum
Minimum Apparent Opening		0.0234 inches (No. 30 sieve)
Maximum Apparent Opening		0.0787 inches (No. 10 sieve)

701.4.2 Verification Testing

Replace paragraph two with the following effective with the December 2012 letting:

(2) The department will sample randomly at locations independent of the contractor’s QC tests and use separate equipment and laboratories. The department will conduct a minimum of one verification test for each 5 contractor QC tests unless specific QMP provisions specify otherwise.

715.3.1.3 Department Verification Testing

Replace paragraph one with the following effective with the December 2012 letting:

(1) The department will perform verification testing as specified in 701.4.2 except as follows:

- Air content, slump, and temperature: a minimum of 1 verification test per lot.
- Compressive strength: a minimum of 1 verification test per lot.

Errata

Make the following corrections to the 2012 edition of the standard specifications:

107.22 Contractor's Responsibility for Utility Facilities, Property, and Services

Correct errata by eliminating references to the department. Costs are determined by statute.

(3) If the contractor damages or interrupts service, the contractor shall notify the utility promptly. Coordinate and cooperate with the utility in the repair of the facility. Determine who is responsible for repair costs according to Wisconsin statutes 66.0831 and 182.0175(2).

506.2.6.5.2 Pad Construction

Correct errata by changing ASTM A570 to ASTM A1011.

(4) For the internal steel plates use rolled mild steel conforming to ASTM A36, or ASTM A1011 grade

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512.3.3 Painting

Correct errata by changing 511.3.5 to 550.3.11.3.

(1) Paint permanent steel sheet piling as specified for painting steel piling in 550.3.11.3.

513.2.2.8 Toggle Bolts

Correct errata by changing r ASTM A570 to ASTM A1011.

(1) Use toggle bolts made of steel, conforming to the plans. Make the assembly from the material specified below:

Toggle bolt and pin	Cold finished steel heat-treated Brinell 311-363 ASTM A354.
Toggle washer	Hot rolled steel ASTM A1011. Manufacturer's standard washer.
Spacer nut	Grade 1213, ASTM A108. Cold finished steel heat-treated ASTM A325.

660.2.1 General

Correct errata by changing section 511 to 550.

(1) Furnish materials conforming to the following:

Concrete	section 501
Concrete bridges	section 502
Luminaires	section 659
Steel piling	section 550
Steel reinforcement	section 505

660.3.2.3 Pile Type Foundations

Correct errata by changing section 511 to 550.

(1) Drive piles as specified in for steel piling in section 550.

701.3 Contractor Testing

Correct errata by changing AASHTO T141 to AASHTO R60 and changing AASHTO T309 to ASTM C1064.

(1) Perform contract required QC tests for samples randomly located according to CMM 8-30. Also perform other tests as necessary to control production and construction processes, and additional testing enumerated in the contractor's quality control plan or that the engineer directs. Use test methods as follows:

TABLE 701-2 TESTING STANDARDS

TEST	TEST STANDARD
Washed P 200 analysis	AASHTO T11[1]
Sieve analysis of fine and coarse aggregate	AASHTO T27[1]
Aggregate moisture	AASHTO T255[1]
Sampling freshly mixed concrete	AASHTO R60
Air content of fresh concrete	AASHTO T152[2]
Concrete slump	AASHTO T119[2]
Concrete temperature	ASTM C1064
Concrete compressive strength	AASHTO T22
Making and curing concrete cylinders	AASHTO T23
Standard moist curing for concrete cylinders	AASHTO M201

[1] As modified in CMM 8-60.

[2] As modified in CMM 8-70.

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://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm

(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 section 3.2 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/docs/crc-basic-info.pdf

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
MILWAUKEE COUNTY

Compiled by the State of Wisconsin - Department of Workforce Development
for the Department of Transportation
Pursuant to s. 103.50, Stats.
Issued on April 1, 2012

CLASSIFICATION: Contractors are required to call the Department of Workforce Development if there are any questions reqarding the proper trade or classification to be used for any worker on a public works project.

OVERTIME: Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

FUTURE INCREASE: If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

PREMIUM PAY: If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

SUBJOURNEY: Wage rates may be available for some of the classifications indicated below. Any employer that desires to use any subjourney classification on a project MUST request the applicable wage rate from the Department of Workforce Development PRIOR to the date such classification is used on such project. Form ERD-10880 is available for this purpose and can be obtained by writing to the Department of Workforce Development, Equal Rights Division, P.O. Box 8928, Madison, WI 53708.

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Bricklayer, Blocklayer or Stonemason	32.66	15.92	48.58
Carpenter	33.43	19.31	52.74
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	29.33	17.03	46.36
Future Increase(s): Add $1.86 on 6/1/12; Add $1.87 on 6/1/13; Add $1.87 on 6/1/14; Add $1.87 on 6/1/15; Add $1.75 on 6/ 1/ 16. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Electrician	31.64	23.78	55.42
Fence Erector	35.62	0.00	35.62
Ironworker	31.31	21.54	52.85
Line Constructor (Electrical)	35.97	18.08	54.05
Painter	27.87	14.39	42.26
Pavement Marking Operator	27.87	14.39	42.26
Piledriver	29.56	24.96	54.52
Premium Pay: Add $.65/hr for Piledriver Loftsman; Add $.75/hr for Sheet Piling Loftsman. 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.			
Roofer or Waterproofer	28.85	14.60	43.45
Teledata Technician or Installer	24.65	15.17	39.82
Tuckpointer, Caulker or Cleaner	34.30	15.47	49.77
Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	33.87	16.10	49.97
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	29.64	14.64	44.28
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.			
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.18	13.07	38.25
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27
TRUCK DRIVERS			
Single Axle or Two Axle	22.35	16.19	38.54
Future Increase(s): Add $1.75/hr on 6/1/2012; Add $1.85/hr on 6/1/2013.			
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	24.91	15.63	40.54
Articulated, Euclid, Dumptor, Off Road Material Hauler	22.50	16.19	38.69
Future Increase(s): Add $1.75/hr on 6/1/2012; Add $1.85/hr on 6/1/2013.			
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	23.84	14.70	38.54
Shadow or Pilot Vehicle	24.76	15.35	40.11
Truck Mechanic	24.91	15.63	40.54
LABORERS			
General Laborer	24.34	17.85	42.19
Future Increase(s): Add $1.60/hr on 6/1/2012: Add $1.70/hr on 6/1/2013; Add $1.60/hr on 6/1/2014.			
Premium Pay: Add $.15/hr for air tool operator, joint sawer and filler (pavement), vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add $.35/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add $.50/hr for line and grade specialist; Add $.65/hr for blaster and powderman; Add $2.01/hr for topman; Add $2.46/hr for bottomman; Add $3.23/hr for pipelayer. / DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Asbestos Abatement Worker	22.00	16.86	38.86
Landscaper	23.71	15.03	38.74
Flagperson or Traffic Control Person	20.83	17.85	38.68
Future Increase(s): Add $1.60/hr on 6/1/2012; Add $1.70/hr on 6/1/2013; Add $1.60/hr on 6/1/2014.			
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)	17.09	14.40	31.49
Railroad Track Laborer	17.00	1.06	18.06

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). Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. 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).	34.22	18.90	53.12
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 $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. 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).	33.72	18.90	52.62
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	33.22	18.90	52.12

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
& A- Frames. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. 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).			
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 $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. 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).	32.96	18.90	51.86
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 $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. 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).	32.67	18.90	51.57
Fiber Optic Cable Equipment.	24.39	15.45	39.84
Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01
Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	36.20	18.81	55.01
Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks-Great Lakes ONLY.	26.80	18.52	45.32

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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 ROADWAY / LIGHTING					
0010	108.3100.S INCENTIVE/DISINCENTIVE FOR INTERIM COMPLETION OF WORK 01. STAGE 2	1.000 CD		.		.
0020	201.0105 CLEARING	11.000 STA		.		.
0030	201.0205 GRUBBING	11.000 STA		.		.
0040	203.0200 REMOVING OLD STRUCTURE (STATION) 01. 1609+80	LUMP	LUMP			.
0050	203.0225.S DEBRIS CONTAINMENT (STRUCTURE) 01. B-40-33	LUMP	LUMP			.
0060	204.0100 REMOVING PAVEMENT	4,024.000 SY		.		.
0070	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH	13,126.000 SF		.		.
0080	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS	634.000 SY		.		.
0090	204.0120 REMOVING ASPHALTIC SURFACE MILLING	68,703.000 SY		.		.
0100	204.0157 REMOVING CONCRETE BARRIER	5,232.000 LF		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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
0110	204.0165 REMOVING GUARDRAIL	167.000 LF		.		.
0120	204.0195 REMOVING CONCRETE BASES	19.000 EACH		.		.
0130	204.0220 REMOVING INLETS	10.000 EACH		.		.
0140	204.0245 REMOVING STORM SEWER (SIZE) 01. 12-INCH	73.000 LF		.		.
0150	204.0245 REMOVING STORM SEWER (SIZE) 02. 15-INCH	8.000 LF		.		.
0160	204.9060.S REMOVING (ITEM DESCRIPTION) 01. INLET COVERS	18.000 EACH		.		.
0170	205.0100 EXCAVATION COMMON	3,841.000 CY		.		.
0180	206.1000 EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-40-34	LUMP	LUMP			.
0190	206.1000 EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 02. B-40-43	LUMP	LUMP			.
0200	206.1000 EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 03. B-40-57	LUMP	LUMP			.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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
0210	213.0100 FINISHING ROADWAY (PROJECT) 01. 1060-45-70	1.000 EACH		.		.
0220	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	3,841.000 TON		.		.
0230	320.0355 CONCRETE BASE HES 9-INCH	1,513.000 SY		.		.
0240	320.0365 CONCRETE BASE HES 10-INCH	6,441.000 SY		.		.
0250	390.0403 BASE PATCHING CONCRETE SHES	300.000 SY		.		.
0260	415.0070 CONCRETE PAVEMENT 7-INCH	517.000 SY		.		.
0270	416.0610 DRILLED TIE BARS	2,805.000 EACH		.		.
0280	416.0620 DRILLED DOWEL BARS	144.000 EACH		.		.
0290	440.4410.S INCENTIVE IRI RIDE	20,648.000 DOL	1.00000		20648.00	
0300	455.0115 ASPHALTIC MATERIAL PG64-22	76.000 TON		.		.
0310	455.0150 ASPHALTIC MATERIAL PG70-28P	476.000 TON		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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
0320	455.0605 TACK COAT	2,614.000 GAL		.		.
0330	460.1130 HMA PAVEMENT TYPE E-30	11,524.000 TON		.		.
0340	502.0100 CONCRETE MASONRY BRIDGES	215.490 CY		.		.
0350	502.3100 EXPANSION DEVICE (STRUCTURE) 01. B-40-33	LUMP	LUMP			.
0360	502.3200 PROTECTIVE SURFACE TREATMENT	200.000 SY		.		.
0370	505.0405 BAR STEEL REINFORCEMENT HS BRIDGES	11,960.000 LB		.		.
0380	505.0605 BAR STEEL REINFORCEMENT HS COATED BRIDGES	8,820.000 LB		.		.
0390	509.1500 CONCRETE SURFACE REPAIR	20.000 SF		.		.
0400	517.0900.S PREPARATION AND COATING OF TOP FLANGES (STRUCTURE) 01. B-40-33	LUMP	LUMP			.
0410	520.8000 CONCRETE COLLARS FOR PIPE	2.000 EACH		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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	601.0557 CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	1,710.000 LF		.		.
0430	603.1136 CONCRETE BARRIER TYPE S36	2,795.000 LF		.		.
0440	603.1142 CONCRETE BARRIER TYPE S42	173.000 LF		.		.
0450	603.2142 CONCRETE BARRIER FIXED OBJECT PROTECTION TYPE S42	481.000 LF		.		.
0460	603.3113 CONCRETE BARRIER TRANSITION TYPE NJ32SF TO S36	6.000 EACH		.		.
0470	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	1,625.000 LF		.		.
0480	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	2,225.000 LF		.		.
0490	608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH	94.000 LF		.		.
0500	611.0430 RECONSTRUCTING INLETS	15.000 EACH		.		.
0510	611.0530 MANHOLE COVERS TYPE J	2.000 EACH		.		.
0520	611.0606 INLET COVERS TYPE B	1.000 EACH		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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	611.0627 INLET COVERS TYPE HM	3.000 EACH		.		.
0540	611.0654 INLET COVERS TYPE V	15.000 EACH		.		.
0550	611.3004 INLETS 4-FT DIAMETER	1.000 EACH		.		.
0560	611.3220 INLETS 2X2-FT	14.000 EACH		.		.
0570	611.3230 INLETS 2X3-FT	3.000 EACH		.		.
0580	611.8110 ADJUSTING MANHOLE COVERS	1.000 EACH		.		.
0590	611.8115 ADJUSTING INLET COVERS	11.000 EACH		.		.
0600	611.8120.S COVER PLATES TEMPORARY	1.000 EACH		.		.
0610	614.0905 CRASH CUSHIONS TEMPORARY	1.000 EACH		.		.
0620	614.2300 MGS GUARDRAIL 3	313.000 LF		.		.
0630	614.2500 MGS THRIE BEAM TRANSITION	120.000 LF		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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	614.2610 MGS GUARDRAIL TERMINAL EAT	6.000 EACH		.		.
0650	614.2620 MGS GUARDRAIL TERMINAL TYPE 2	1.000 EACH		.		.
0660	616.0700.S FENCE SAFETY	500.000 LF		.		.
0670	619.1000 MOBILIZATION	1.000 EACH		.		.
0680	625.0105 TOPSOIL	3,464.000 CY		.		.
0690	628.1504 SILT FENCE	300.000 LF		.		.
0700	628.1520 SILT FENCE MAINTENANCE	300.000 LF		.		.
0710	628.1905 MOBILIZATIONS EROSION CONTROL	3.000 EACH		.		.
0720	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL	3.000 EACH		.		.
0730	628.2008 EROSION MAT URBAN CLASS I TYPE B	2,944.000 SY		.		.
0740	628.7010 INLET PROTECTION TYPE B	66.000 EACH		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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	628.7020 INLET PROTECTION TYPE D	54.000 EACH		.		.
0760	629.0210 FERTILIZER TYPE B	2.200 CWT		.		.
0770	630.0120 SEEDING MIXTURE NO. 20	94.000 LB		.		.
0780	634.0616 POSTS WOOD 4X6-INCH X 16-FT	6.000 EACH		.		.
0790	636.0100 SIGN SUPPORTS CONCRETE MASONRY	16.000 CY		.		.
0800	636.1000 SIGN SUPPORTS STEEL REINFORCEMENT HS	2,598.000 LB		.		.
0810	637.0101 SIGNS TYPE I	197.500 SF		.		.
0820	637.0202 SIGNS REFLECTIVE TYPE II	92.500 SF		.		.
0830	638.2101 MOVING SIGNS TYPE I	2.000 EACH		.		.
0840	638.2102 MOVING SIGNS TYPE II	15.000 EACH		.		.
0850	638.2601 REMOVING SIGNS TYPE I	1.000 EACH		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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	638.2602 REMOVING SIGNS TYPE II	13.000 EACH		.		.
0870	641.1200 SIGN BRIDGE CANTILEVERED (STRUCTURE) 01. S-40-859	LUMP	LUMP			.
0880	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 01.1060-45-70	60.000 DAY		.		.
0890	643.0300 TRAFFIC CONTROL DRUMS	17,155.000 DAY		.		.
0900	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	497.000 DAY		.		.
0910	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	2,629.000 DAY		.		.
0920	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C	1,514.000 DAY		.		.
0930	643.0800 TRAFFIC CONTROL ARROW BOARDS	245.000 DAY		.		.
0940	643.0900 TRAFFIC CONTROL SIGNS	3,063.000 DAY		.		.
0950	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I	5.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0960	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	50.000 EACH		.		.
0970	643.2000 TRAFFIC CONTROL DETOUR (PROJECT) 01. 1060-45-70	1.000 EACH		.		.
0980	643.3000 TRAFFIC CONTROL DETOUR SIGNS	4,478.000 DAY		.		.
0990	646.0103 PAVEMENT MARKING PAINT 4-INCH	13,318.000 LF		.		.
1000	646.0106 PAVEMENT MARKING EPOXY 4-INCH	83,690.000 LF		.		.
1010	646.0123 PAVEMENT MARKING PAINT 8-INCH	10,157.000 LF		.		.
1020	646.0126 PAVEMENT MARKING EPOXY 8-INCH	650.000 LF		.		.
1030	646.0600 REMOVING PAVEMENT MARKINGS	94,812.000 LF		.		.
1040	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH	10,989.000 LF		.		.
1050	646.0843.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH	8,639.000 LF		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1060	647.0576 PAVEMENT MARKING STOP LINE EPOXY 24-INCH	20.000 LF		.		.
1070	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH	125.000 LF		.		.
1080	647.0746 PAVEMENT MARKING DIAGONAL EPOXY 24-INCH	1,506.000 LF		.		.
1090	649.0100 TEMPORARY PAVEMENT MARKING 4-INCH	55,068.000 LF		.		.
1100	649.0701 TEMPORARY PAVEMENT MARKING 8-INCH	2,254.000 LF		.		.
1110	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	4,420.000 LF		.		.
1120	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	821.000 LF		.		.
1130	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM	2.000 EACH		.		.
1140	652.0800 CONDUIT LOOP DETECTOR	220.000 LF		.		.
1150	653.0135 PULL BOXES STEEL 24X36-INCH	11.000 EACH		.		.
1160	653.0905 REMOVING PULL BOXES	3.000 EACH		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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
1170	654.0101 CONCRETE BASES TYPE 1	2.000 EACH		.		.
1180	654.0102 CONCRETE BASES TYPE 2	3.000 EACH		.		.
1190	654.0105 CONCRETE BASES TYPE 5	6.000 EACH		.		.
1200	654.0220 CONCRETE CONTROL CABINET BASES TYPE 10	4.000 EACH		.		.
1210	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG	672.000 LF		.		.
1220	655.0305 CABLE TYPE UF 2-12 AWG GROUNDED	573.000 LF		.		.
1230	655.0505 ELECTRICAL WIRE TRAFFIC SIGNALS 14 AWG	338.000 LF		.		.
1240	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	4,096.000 LF		.		.
1250	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	717.000 LF		.		.
1260	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG	528.000 LF		.		.
1270	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG	10,288.000 LF		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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
1280	655.0640 ELECTRICAL WIRE LIGHTING 1 AWG	3,808.000 LF		.		.
1290	655.0700 LOOP DETECTOR LEAD IN CABLE	3,431.000 LF		.		.
1300	655.0800 LOOP DETECTOR WIRE	802.000 LF		.		.
1310	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 01. 11.ATR ATR 40-0003	LUMP	LUMP			.
1320	657.0100 PEDESTAL BASES	3.000 EACH		.		.
1330	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	22.000 EACH		.		.
1340	657.0321 POLES TYPE 5-STEEL	1.000 EACH		.		.
1350	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	3.000 EACH		.		.
1360	659.0802 PLAQUES SEQUENCE IDENTIFICATION	32.000 EACH		.		.
1370	670.0100 FIELD SYSTEM INTEGRATOR 01. FTMS	LUMP	LUMP			.
1380	670.0200 ITS DOCUMENTATION 01. FTMS	LUMP	LUMP			.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 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
1390	674.0200 CABLE MICROWAVE DETECTOR	131.000 LF		.		.
1400	674.0300 REMOVE CABLE	2,030.000 LF		.		.
1410	678.0500 COMMUNICATION SYSTEM TESTING 01. FTMS	LUMP	LUMP			.
1420	690.0250 SAWING CONCRETE	11,993.000 LF		.		.
1430	SPV.0045 SPECIAL 01. PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS	13,274.000 DAY		.		.
1440	SPV.0060 SPECIAL 01. SAWING CONCRETE BARRIER	12.000 EACH		.		.
1450	SPV.0060 SPECIAL 02. WELDING STORM SEWER COVERS	16.000 EACH		.		.
1460	SPV.0060 SPECIAL 03. COVER PLATES LEFT IN PLACE	21.000 EACH		.		.
1470	SPV.0060 SPECIAL 04. EXPOSING EXISTING UTILITY	2.000 EACH		.		.
1480	SPV.0060 SPECIAL 05. CONCRETE BARRIER TRANSITION TYPE S32 TO S42 AT GORE	1.000 EACH		.		.

CONTRACT: 20130212006 PROJECT(S): 1060-45-70 FEDERAL ID(S): N/A

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1490	SPV.0060 SPECIAL 06. CONCRETE BARRIER TRANSITION TYPE S36 SINGLE TO DOUBLE	4.000 EACH		.		.
1500	SPV.0060 SPECIAL 07. CONCRETE BARRIER TRANSITION TYPE V36 TO S36	35.000 EACH		.		.
1510	SPV.0060 SPECIAL 08. CONCRETE BARRIER TRANSITION TYPE S32 TO TYPE S42 ANCHORED	1.000 EACH		.		.
1520	SPV.0060 SPECIAL 09. PAVEMENT MARKING GROVED PREFORMED THERMOPLASTIC ARROWS TYPE 1	2.000 EACH		.		.
1530	SPV.0060 SPECIAL 10. PAVEMENT MARKING GROVED PREFORMED THERMOPLASTIC ARROWS TYPE 2	2.000 EACH		.		.
1540	SPV.0060 SPECIAL 11. PAVEMENT MARKING GROVED PREFORMED THERMOPLASTIC ARROWS TYPE 5	4.000 EACH		.		.
1550	SPV.0060 SPECIAL 12. LINEAR DELINATION SYSTEM	736.000 EACH		.		.
1560	SPV.0060 SPECIAL 21. GROUND ROD	1.000 EACH		.		.
1570	SPV.0060 SPECIAL 22. SALVAGE EXISTING MICROWAVE DETECTOR ASSEMBLY	1.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1580	SPV.0060 SPECIAL 23. REINSTALL SALVAGED MICROWAVE DETECTOR ASSEMBLY	1.000 EACH		.		.
1590	SPV.0060 SPECIAL 24. REFOCUS EXISTING MICROWAVE DETECTOR ASSEMBLY	3.000 EACH		.		.
1600	SPV.0060 SPECIAL 25. SALVAGE EXISTING & INSTALL SALVAGED SIGNAL ASSEMBLY RAMP CONTROL SIDEMOUNT	2.000 EACH		.		.
1610	SPV.0060 SPECIAL 26. BARRICADE RACK	1.000 EACH		.		.
1620	SPV.0060 SPECIAL 27. RAMP CLOSURE GATES SOLAR POWERED 24-FT	1.000 EACH		.		.
1630	SPV.0060 SPECIAL 28. RAMP CLOSURE GATES SOLAR POWERED 30-FT	3.000 EACH		.		.
1640	SPV.0060 SPECIAL 29. RAMP CLOSURE GATES SOLAR POWERED 37-FT	1.000 EACH		.		.
1650	SPV.0060 SPECIAL 30. RAMP CLOSURE GATES ARM STOCKPILE 24-FT	1.000 EACH		.		.
1660	SPV.0060 SPECIAL 31. RAMP CLOSURE GATES ARM STOCKPILE 30-FT	3.000 EACH		.		.
1670	SPV.0060 SPECIAL 32. RAMP CLOSURE GATES ARM STOCKPILE 37-FT	1.000 EACH		.		.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1680	SPV.0060 SPECIAL 33. RAMP CLOSURE GATES FLASHERS STOCKPILE	3.000 EACH		.		.
1690	SPV.0060 SPECIAL 40. INSTALL TYPE 5 POLE	1.000 EACH		.		.
1700	SPV.0060 SPECIAL 41. INSTALL CCTV POLE MOUNTED CABINET 24"X51"	3.000 EACH		.		.
1710	SPV.0060 SPECIAL 42. CONCRETE MAINTENANCE PLATFORM 48"X36"X4"	3.000 EACH		.		.
1720	SPV.0060 SPECIAL 43. INSTALL WAVETRONIX CLICK 202 MODULE	1.000 EACH		.		.
1730	SPV.0060 SPECIAL 44. INSTALL WAVETRONIX CLICK 200 MODULE	3.000 EACH		.		.
1740	SPV.0060 SPECIAL 45. INSTALL WAVETRONIX HD 125 & CABLE	1.000 EACH		.		.
1750	SPV.0060 SPECIAL 46. INSTALL CABINET HEATER & THERMOSTAT	1.000 EACH		.		.
1760	SPV.0060 SPECIAL 47. INSTALL TYPE 3 POLE	2.000 EACH		.		.
1770	SPV.0060 SPECIAL 48. INSTALL SOLAR POWER PANELS & RACK	2.000 EACH		.		.
1780	SPV.0060 SPECIAL 49. INSTALL CELLULAR ANTENNA	2.000 EACH		.		.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1790	SPV.0060 SPECIAL 51. INSTALL WAVETRONIX HD 125	2.000 EACH		.		.
1800	SPV.0060 SPECIAL 52. INSTALL TRANSFORMER BASES 11 1/2-INCH BOLT CIRCLE	1.000 EACH		.		.
1810	SPV.0060 SPECIAL 80. WOOD POLE LIGHTING 40-FT	5.000 EACH		.		.
1820	SPV.0060 SPECIAL 81. WOOD POLE 40-FT	3.000 EACH		.		.
1830	SPV.0060 SPECIAL 82. LUMINAIRES FLOODLIGHT 400W HPS	5.000 EACH		.		.
1840	SPV.0060 SPECIAL 83. BOOM LIGHT AND GENERATOR	1.000 EACH		.		.
1850	SPV.0060 SPECIAL 84. SELF CONTAINED TOWER LIGHT	7.000 EACH		.		.
1860	SPV.0060 SPECIAL 85. LAMP DISPOSAL HIGH INTENSITY DISCHARGE	33.000 EACH		.		.
1870	SPV.0060 SPECIAL 86. SALVAGING LIGHT POLES, LUMINAIRES AND ARMS	16.000 EACH		.		.
1880	SPV.0060 SPECIAL 87. PULL BOX STEEL 18X42-INCH SPECIAL	4.000 EACH		.		.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1890	SPV.0060 SPECIAL 88. CONCRETE BASES MEDIAN BARRIER	15.000 EACH		.		.
1900	SPV.0075 SPECIAL 01. PAVEMENT CLEANUP	100.000 HRS	200.00000		20000.00	
1910	SPV.0075 SPECIAL 02. TRUCK MOUNTED ATTENUATOR WITH OPERATOR	250.000 HRS	80.00000		20000.00	
1920	SPV.0075 SPECIAL 03. TRUCK MOUNTED ATTENUATOR WITHOUT OPERATOR	250.000 HRS	50.00000		12500.00	
1930	SPV.0090 SPECIAL 01. REMOVING PAVEMENT MARKINGS WATER BLASTING	4,565.000 LF		.		.
1940	SPV.0090 SPECIAL 02. DRAIN SLOTTED VANE 6-FT SPECIAL	216.000 LF		.		.
1950	SPV.0090 SPECIAL 03. CONCRETE BARRIER TYPE S42 ANCHORED	758.000 LF		.		.
1960	SPV.0090 SPECIAL 04. DRAIN SLOTTED VANE PIPE	561.000 LF		.		.
1970	SPV.0090 SPECIAL 05. CONC C&G AND BARRIER COLD WEATHER COVERING PLASTIC/HAY/PLASTIC OR BLANKETS	2,600.000 LF		.		.
1980	SPV.0090 SPECIAL 06. CONCRETE CURB & GUTTER AND BARRIER COLD WEATHER COVERING PLASTIC 1 LAYER	2,600.000 LF		.		.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1990	SPV.0090 SPECIAL 07. CONCRETE CURB & GUTTER AND BARRIER COLD WEATHER COVERING PLASTIC 2 LAYERS	2,600.000 LF		.		.
2000	SPV.0090 SPECIAL 08. CONCRETE BARRIER TYPE V36	129.000 LF		.		.
2010	SPV.0090 SPECIAL 09. CONCRETE BARRIER TYPE S32 ANCHORED	211.000 LF		.		.
2020	SPV.0090 SPECIAL 80. CABLE AERIAL ALUMINUM 4 AWG QUADRUPLEX TEMPORARY	1,075.000 LF		.		.
2030	SPV.0105 SPECIAL 01. SURVEY PROJECT I.D. 1060-45-70	LUMP	LUMP			.
2040	SPV.0105 SPECIAL 80. MAINTENANCE OF LIGHTING SYSTEM	LUMP	LUMP			.
2050	SPV.0180 SPECIAL 01. CONCRETE PAVEMENT COLD WEATHER COVERING PLASTIC 1 LAYER	2,800.000 SY		.		.
2060	SPV.0180 SPECIAL 02. CONCRETE PAVEMENT COLD WEATHER COVERING PLASTIC 2 LAYERS	2,800.000 SY		.		.
2070	SPV.0180 SPECIAL 03. CONCRETE PAVEMENT COLD WEATHER COVERING PLASTIC/HAY/PLASTIC OR BLANKETS	2,800.000 SY		.		.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2080	SPV.0180 SPECIAL 07. EPOXY OVERLAY	45.000 SY	.		.	
	SECTION 0001 TOTAL				.	
	TOTAL BID				.	

PLEASE ATTACH SCHEDULE OF ITEMS HERE