

HIGHWAY WORK PROPOSAL

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

Proposal Number:

Ø 5

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Waukesha	1060-30-70	WISC 2014 435	East - West Freeway (STH 67 NB & SB Bridge)	IH 94
Waukesha	2718-00-74	WISC 2014 228	Summit Avenue (Armour Road to Maple Lane) City of Oconomowoc	Local Street
Waukesha	2718-00-75	WISC 2014 436	Summit Avenue (STH 67 Bypass to Thackeray Trail)	Local Street
Waukesha	3030-08-70	WISC 2014 438	Summit Avenue, City of Oconomowoc (Blue Ribbon Drive - Thackeray Trail)	STH 67

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, \$ 740,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: December 9, 2014 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code
Contract Completion Time September 2, 2016	SAMPLE NOT FOR BIDDING PURPOSES
Assigned Disadvantaged Business Enterprise Goal 15%	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 Removals, excavation common, base aggregate, concrete pavement, HMA pavement, concrete barrier, concrete curb and gutter, concrete sidewalk, storm sewer, storm water ponds, erosion control, traffic control, restoration, pavement marking, permanent signing, street lighting, temporary and permanent traffic signals, FTMS items, Structures (B-67-276, B-67-277, R-67-112, R-67-113, R-67-114, and R-67-115).	
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.

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

DT1303 1/2006

Wisconsin Department of Transportation

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

(Signature of Attorney-in-Fact)

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

DT1305 8/2003

Wisconsin Department of Transportation

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

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

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

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

(Signature of Authorized Contractor Representative)

(Date)

March 2010

LIST OF SUBCONTRACTORS

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

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

[illegible]

DECEMBER 2000

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

Instructions for Certification

1. By signing and submitting this proposal, the prospective contractor is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective contractor shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective contractor to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department determined to enter into this transaction. If it is later determined that the contractor knowingly rendered an erroneous certification in addition to other remedies available to the Federal Government the department may terminate this transaction for cause or default.
4. The prospective contractor shall provide immediate written notice to the department to whom this proposal is submitted if at any time the prospective contractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective contractor agrees by submitting this proposal that, should this contract be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department entering into this transaction.
7. The prospective contractor further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," which is included as an addendum to PR-1273 - "Required Contract Provisions Federal Aid Construction Contracts," without

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

8. The contractor may rely upon a certification of a prospective subcontractor/materials supplier that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A contractor may decide the method and frequency by which it determines the eligibility of its principals. Each contractor may, but is not required to, check the Disapproval List (telephone # 608/266/1631).
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a contractor in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department may terminate this transaction for cause or default.

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

- (1) The prospective contractor certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offense enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective contractor is unable to certify to any of the statements in this certification, such prospective contractor shall attach an explanation to this proposal.

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Projects 1060-30-70, East – West Freeway (STH 67 NB and SB Bridge), IH 94; ID 2718-00-74, Summit Avenue, (Armour Road to Maple Lane), Local Street, City of Oconomowoc; ID 2718-00-75, Summit Avenue, (STH 67 Bypass to Thackeray Trail), Local Street; and ID 3030-08-70, Summit Avenue, City of Oconomowoc (Blue Ribbon Drive – Thackeray Trail), STH 67 in Waukesha County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2015 Edition, as published by the department, and these special provisions.

If all or a portion of the plans and special provisions are developed in the SI metric system and the schedule of prices is developed in the US standard measure system, the department will pay for the work as bid in the US standard system.

100-005 (20140630)

2. Scope of Work.

The work under this contract shall consist of removals, excavation common, base aggregate, concrete pavement, HMA pavement, concrete barrier, concrete curb and gutter, concrete sidewalk, storm sewer, storm water ponds, erosion control, traffic control, restoration, pavement marking, permanent signing, street lighting, temporary and permanent traffic signals, FTMS items, Structures (B-67-276, B-67-277, R-67-112, R-67-113, R-67-114, and R-67-115) and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. Prosecution and Progress.

A General

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.

The contract time for completion is based on an expedited work schedule and may require extraordinary forces and equipment.

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

Be advised that there may be multiple mobilizations and/or remobilizations to complete construction operations, for example such items as: concrete pavement, HMA pavement, concrete curb and gutter, traffic control, detours, signing, pavement marking, finishing items and other incidental items related to the staging. No additional payment will be made, by the department, for additional mobilizations.

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

Place topsoil in all graded areas as designated by the engineer immediately after grading has been completed and fertilize or sod all areas within five calendar days after placement of topsoil.

When permanent lane closures are permitted by the engineer, the work schedule must indicate that a continuous effort is made to complete the work in a timely manner.

Winter Maintenance

Waukesha County will perform snow removal operations for freeway, ramp, and highway lanes that are open to traffic. The City of Oconomowoc will perform snow removal operations for local streets that are open to traffic. Provide for snow removal in those areas closed to traffic as required to facilitate safe construction operations and as required to eliminate snow melt run-off from crossing active roadways. Provide Waukesha County Highway Maintenance and Waukesha County Sheriff's Department with a 24-hour emergency contact number for when maintenance is required.

SEF Rev. 12_0330

CPM Progress Schedule

Submit a CPM Progress Schedule and updates in accordance to standard spec 108.4.4, and as hereinafter provided.

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 to use to develop the Initial CPM Progress Schedule.

Designate a Project Scheduler who will be responsible for scheduling the Work and submit 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. Obtain approval of the submitted resume prior to scheduling the work.

With each Monthly CPM Progress Schedule Update also include:

- Activities underway and as-built dates for the past month.
- On a monthly basis, agree on the as-built dates with the department depicted in the Monthly CPM Progress Schedule Update or document any disagreements. Use the as-built dates from the Monthly CPM Progress Schedule Update for the month when updating the CPM schedule.
- Provide actual as-built dates for completed activities through final acceptance of the project.

SEF Rev. 13_0812

B Definitions

The following definitions apply to this contract for local street work restrictions:

Peak Hours

- 6:00 AM to 9:00 AM (daily)
- 3:00 PM to 6:00 PM (daily)

Off-Peak Hours

- 9:00 AM to 3:00 PM (daily)
- 6:00 PM to 9:00 PM (daily)

Night Time Hours

- 9:00 PM to 6:00 AM (daily)

The following definitions apply to this contract for freeway and ramp work restrictions:

Peak Hours

- 5:30 AM to 7:00 PM (Monday, Tuesday, Wednesday, Thursday)
- 5:30 AM to 8:00 PM (Friday)

Weekend Peak Hours

- 9:00 AM to 7:00 PM (Saturday, Sunday)

Weekend Off-Peak Hours

- 7:00 PM to 8:00 PM (Saturday, Sunday)

Night Time Hours

- 7:00 PM to 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)
- 8:00 PM to 9:00 AM (Friday PM to Saturday AM, Saturday PM to Sunday AM)

Full Freeway Closure Hours

- 11:00 PM – 4:30 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)

C Advance Notification

Notify the 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.

Provide the engineer with a schedule of lane and ramp closures for the following week by noon on Thursday of the previous week. In addition, provide the following minimum advance notification to the engineer for incorporation into the Wisconsin Lane Closure System:

Project Start	14 calendar days
Ramp Closures	3 business days
System Ramp Closures	7 calendar days
Lane Closures	3 business days
Full Freeway Closures	14 calendar days
Construction Stage Changes	14 calendar days
Detours	14 calendar days

Obtain prior acceptance from the engineer and the WisDOT Statewide Traffic Operations Center (STOC) for Full Freeway Closures. Notify local emergency and police agencies seven calendar days prior to freeway closure.

Notify the City of Oconomowoc Department of Public Works, City of Oconomowoc Police Department, Oconomowoc Fire Department, Lake Country Fire and Rescue, Dousman Fire District, and Waukesha County Sheriff's Department at least three calendar days in advance of all traffic switches and closures of existing streets.

Notify the Waukesha County Department of Parks and Land Use to remove two existing Lake Country Trail signs near the STH 67 crossing within the construction limits. Contact Duane Grimm via phone at (262) 548-7807 or via email at dgrimm@waukeshacounty.gov

a minimum of two weeks in advance of needing signs removed to coordinate construction activities.

Portable Changeable Message Signs

Coordinate the locations of message of portable changeable message sign with the engineer. Obtain acceptance from the engineer for all messages for all portable changeable message signs.

Use portable changeable message signs two weeks in advance of and during highway lane alterations to indicate such alterations and to notify drivers of changing stages and traffic patterns.

D All Work Restrictions

No weekday Peak Hour or Weekend Peak Hour lane closures are allowed.

Excavation material and cleared and grubbed material shall be stockpiled on upland areas an adequate distance away from wetlands, storm sewer inlets, floodplains, and the waterways as determined by the engineer.

Equip vehicles with a tailgate and adequate sideboards when hauling material subject to spillage on all roadways. Use covers and/or other protective devices to prevent spillage as directed by the engineer. Immediately clean up any debris or spillage that falls onto live traffic lanes or shoulders.

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.

Provide Waukesha County Highway Maintenance and Waukesha County Sheriff's Department with a 24 hour emergency contact number for when maintenance is required.

E Freeway and Ramp Restrictions

Follow plan details for closures. Lane restrictions of the freeway beyond that shown on the traffic control plans are subject to lane rental assessments and must be approved by the engineer. If plan details are not provided in the traffic control plan, furnish plans for review by the engineer, so that approval, or disapproval, is obtained.

Do not leave any slopes steeper than 3:1 within the clear zone or any drop-offs at the edge of the traveled way greater than 2-inches. If unsure whether an individual construction operation will meet the safety requirements for working within the clear zone, review the proposed construction operation with the engineer before proceeding with the work.

Do not, at any time, conduct construction operations in the median area and adjacent outside shoulder area of the freeway at the same time without obtaining prior permission of the engineer, beyond that shown on the traffic control plans.

Do not use freeway maintenance crossings connecting eastbound and westbound roadways of IH 94 unless the median lanes are closed to traffic.

Do not directly cross the live freeway lanes with any vehicle or piece of construction equipment.

Do not begin or continue any work that closes traffic lanes or ramps outside the allowed time periods specified in this contract. If the contractor fails to open freeway lanes of traffic and/or ramps to traffic by the specified times, assessment shown in the article Lane Rental Assessment will be made.

Restrict work on freeway roads and freeway ramps to working in closed shoulders or closed lanes as allowed by the plans or engineer. Provide and utilize temporary access roads and ramps to access the work zones. Construct temporary access incidental to other items of work. Access into the work zones will not be allowed directly from freeway roads during Peak Hours. Access into the work zones from freeway roads will be allowed during Night Time Hours and Off-Peak Hours, subject to approval of engineer, if operations can be safely accomplished and do not result in non-construction traffic entering the work zones. Provide parallel deceleration and acceleration lanes for freeways access into and out of the work zones per plan details at locations approved by the engineer. Access from ramps will be allowed as shown in the plans or as modified with written approval from the engineer. Exiting the work zones directly onto freeway roads will be allowed only when operations do not obstruct or slow traffic on the freeway.

Flagging operations will not be permitted on IH 94.

Work Zone Ingress/Egress

Provide engineer approved signage and parallel deceleration and acceleration lanes for freeway access into and out of the work zones at locations approved by the engineer.

At the weekly traffic meetings, provide an Emergency Work Zone Access Plan and required updates, as approved by the engineer, to direct emergency responders accessing a mainline median barrier restricted work zone.

Locations of work zone egress or ingress for construction vehicles, other than as shown in the plans, is subject to approval from the engineer. Access into the work zones are not allowed directly from the freeway during peak and off-peak hours. Access into the work zones from the freeway will be allowed during night-time hours, subject to approval by the engineer, if operations can be safely accomplished and do not result in non-construction traffic entering the work zones. Exiting work zones directly onto the freeway are only allowed when operations do not obstruct or slow traffic on the freeway. All construction vehicles shall yield to all through traffic at all locations.

SEF Rev. 13_0425

Full Closure

Full closure and detouring of freeway roads will be restricted to Full Freeway Closure Hours. The freeway may be closed to facilitate the removal of structures and erection of girders and to perform work related to major traffic shifts. Provide signed detour routes, as shown in the plans that are fully open and free of construction during all full freeway closures.

Rolling Closure

Short-term freeway mainline rolling closures may be allowed for a maximum of 15 minutes for the removal and erection of sign structures, equipment moves across the road, or other required work as determined by the engineer. The department will allow short term rolling closures only between 2:00 AM and 4:00 AM, and they may only be performed by freeway law enforcement.

Obtain approval from the engineer before coordinating these closures with freeway law enforcement. Coordinate 14 calendar days in advance of closure. Present the scheduled time for the short term rolling closure at the weekly traffic meeting a minimum of one week prior to the closure.

SEF Rev. 13_0815

F Local Street Work Restrictions

Comply with all local ordinances that apply to local street work operations, including those pertaining to working during night time hours. Furnish any ordinance variance issued by the municipality or required permits to the engineer in writing three business days prior to performing such work.

Maintain pedestrian access to adjacent properties, businesses, and schools or provide where necessary, as directed by the engineer.

Construct temporary crosswalks/sidewalks as shown in the plans, or where necessary, as directed by the engineer. The separate payment for the construction of temporary crosswalks/sidewalks will be made by the department under the bid item Temporary Crosswalk/Sidewalk, unless otherwise shown on the plans.

Inform property owners, business owners, and tenants at least 48 hours prior to removing a driveway approach that serves that property. Schedule sidewalk and driveway approach removal and replacement so that the time lapse between removal and replacement is minimal.

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

Work Zone Ingress/Egress - Summit Avenue (2718-00-74)

Access into and out of the work zones are allowed only on Summit Avenue south of Armour Road, Armour Road and Forest Street. Summit Avenue north of Armour Road and local city streets shall not be used by construction traffic.

G Schedule of Operations

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

Stage 1A Construction:

Construct temporary pavement on northbound STH 67, Summit Avenue (outside).
Construct storm sewer crossings under northbound STH 67, Summit Avenue.
Begin installing temporary signals for Stage 2 traffic operations.

Stage 1B Construction:

Construct temporary pavement on northbound STH 67, Summit Avenue (median).
Construct storm sewer crossings under northbound STH 67, Summit Avenue.
Finish installing temporary signals for Stage 2 traffic operations.
Construct temporary pavement on northbound Summit Avenue (2718-00-74).

Stage 2A Construction:

Begin construction on southbound STH 67, Summit Avenue.
Begin construction on B-67-276.
Construct Oconomowoc Drive.
Construct Oconomowoc Parkway eastbound lanes (west of STH 67).
Construct Pabst Road westbound lanes (west of STH 67).
Construct Regent Road westbound lanes.
Construct Robruck Drive eastbound lanes.
Construct Thackeray Trail eastbound lanes.
Construct Summit Avenue (2718-00-74).

Stage 2B Construction:

Continue construction on southbound STH 67, Summit Avenue.
Continue construction on B-67-276.
Construct CTH B/Valley Road outside lanes (west of STH 67).
Construct Oconomowoc Parkway westbound lanes (west of STH 67).
Construct Pabst Road eastbound lanes (west of STH 67).
Construct Regent Road eastbound lanes.
Construct Robruck Drive westbound lanes.
Construct Thackeray Trail westbound lanes.
Construct Summit Avenue (2718-00-74).

Stage 2C Construction:

Finish construction on southbound STH 67, Summit Avenue.
Construct IH 94/STH 67 interchange SW Ramp.
Begin construction on IH 94/STH 67 interchange Loop Ramp.
Finish construction on B-67-276.
Construct IH 94/STH 67 interchange NW Ramp.
Construct IH 94 eastbound median shoulder.
Construct CTH B/Valley Road inside lanes (west of STH 67).
Construct Lexington Drive (west of STH 67).
Install temporary signals for Stage 3 traffic operations.

Project 2718-00-74

Complete all construction operations on Summit Avenue from Station 43+00 to Station 50+42 and Station 51+75 to Station 73+87, prior to 12:01 AM September 4, 2015.

Do not fully reopen the roadway until completing the following work, and any associated work as determined by the engineer:

- Storm sewer structures and pipes.
- Removal and replacement of sidewalks, driveways and curb and gutter.
- Paving of binder and surface courses.
- Erosion control and Landscaping.
- Pavement marking and all work necessary to fully open Summit Avenue.

If the contractor fails to complete all construction operations on Summit Avenue from Station 43+00 to Station 50+42 and Station 51+75 to Station 73+87, prior to 12:01 AM September 4, 2015, the department will assess the contractor \$1,345 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM September 4, 2015. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

IH 94/STH 67 interchange SW Ramp (Eastbound Off-Ramp) and Loop Ramp Closure (Eastbound Loop On-Ramp)

During Stage 2C, the SW Ramp and Loop Ramp may be closed for a maximum of 30 consecutive calendar days. Do not reopen until completing the following work:

- Concrete curb and gutter
- Pavement
- Shoulders
- Signing and marking

Replace standard spec 108.10.2.2(1) as follows:

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

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

Jan ^[1]	31	Aug	6
Feb ^[1]	28	Sept	7
Mar ^[1]	31	Oct	8
April	8	Nov 1 through 15	5
May	7	Nov 16 through 30 ^[1]	15
June	7	Dec ^[1]	31
July	6		

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

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

If the contractor fails to complete the work necessary to reopen the SW Ramp and Loop Ramp to traffic within 30 consecutive calendar days, the department will assess the contractor \$30,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 30 consecutive calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

IH 94/STH 67 interchange NW Ramp Closure (westbound On-Ramp)

During Stage 2C, the NW Ramp may be closed for a maximum of 25 consecutive calendar days. Do not reopen until completing the following work:

- Concrete curb and gutter
- Pavement
- Shoulders
- Signing and marking

Replace standard spec 108.10.2.2(1) as follows:

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

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

Jan ^[1]	31	Aug	6
Feb ^[1]	28	Sept	7
Mar ^[1]	31	Oct	8
April	8	Nov 1 through 15	5
May	7	Nov 16 through 30 ^[1]	15
June	7	Dec ^[1]	31
July	6		

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

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

If the contractor fails to complete the work necessary to reopen the NW Ramp to traffic within 25 consecutive calendar days, the department will assess the contractor \$9,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 25 consecutive calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

Stage 3A Construction:

Begin construction on northbound STH 67, Summit Avenue.

Begin construction on B-67-277.

Construct IH 94/STH 67 interchange NE Ramp.

Construct Pabst Farms Boulevard.

Construct Oconomowoc Parkway eastbound lanes (east of STH 67).

Construct Pabst Road westbound lanes (east of STH 67).

Construct Market Street eastbound lanes.

Construct Lexington Drive (east of STH 67).

Construct STH 67 (Bypass) northbound lanes (outside).

Construct STH 67 (Bypass) southbound lanes (outside).

Construct Old Tower Road westbound lanes (east of Summit Avenue).

IH 94/STH 67 interchange NE Ramp Closure (westbound Off-Ramp)

During Stage 3A, the NE Ramp may be closed for a maximum of 30 consecutive calendar days. Do not reopen until completing the following work:

- Concrete curb and gutter
- Pavement
- Shoulders
- Signing and marking

Replace standard spec 108.10.2.2(1) as follows:

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

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

Jan ^[1]	31	Aug	6
Feb ^[1]	28	Sept	7
Mar ^[1]	31	Oct	8
April	8	Nov 1 through 15	5
May	7	Nov 16 through 30 ^[1]	15
June	7	Dec ^[1]	31
July	6		

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

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

If the contractor fails to complete the work necessary to reopen the NE Ramp to traffic within 30 consecutive calendar days, the department will assess the contractor \$30,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 30 consecutive calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

Stage 3B Construction:

Continue construction on northbound STH 67, Summit Avenue.

Continue construction on B-67-277.

Construct CTH B/Valley Road (east of STH 67).

Construct Oconomowoc Parkway westbound lanes (east of STH 67).

Construct Pabst Road eastbound lanes (east of STH 67).

Construct Market Street westbound lanes.

Construct STH 67 (Bypass) northbound lanes (inside).

Construct STH 67 (Bypass) southbound lanes (inside).

Construct Old Tower Road eastbound lanes (east of Summit Avenue).

Stage 3C Construction:

Finish construction on northbound STH 67, Summit Avenue.

Construct IH 94/STH 67 interchange SE Ramp.

Finish construction on IH 94/STH 67 interchange Loop Ramp.

Finish construction on B-67-277.

Install temporary signals for Stage 4 traffic operations.

IH 94/STH 67 interchange SE Ramp and Loop Ramp Closure (eastbound On-Ramp and eastbound Loop On-Ramp)

During Stage 3C, the SE Ramp and Loop Ramp may be closed for a maximum of 45 consecutive calendar days. Do not reopen until completing the following work:

- Concrete curb and gutter
- Pavement
- Shoulders
- Concrete barrier
- MGS guardrail
- Signing and marking

Replace standard spec 108.10.2.2(1) as follows:

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

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

Jan ^[1]	31	Aug	6
Feb ^[1]	28	Sept	7
Mar ^[1]	31	Oct	8
April	8	Nov 1 through 15	5
May	7	Nov 16 through 30 ^[1]	15
June	7	Dec ^[1]	31
July	6		

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

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

Supplement standard spec 108.11 as follows:

If the contractor fails to complete the work necessary to reopen the SE Ramp and Loop Ramp to traffic within 45 consecutive calendar days, the department will assess the contractor \$31,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 45 consecutive calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

Stage 4 Construction:

Finish construction on STH 67, Summit Avenue (median and islands).

Install permanent traffic signals.

Install permanent street lights.

Install permanent signing and marking.

Removal and Installation of Beam Guard

Hazards (bridge pier columns, bridge parapets, steep slopes, etc.) in the areas of the existing beam guard are to remain protected at all times throughout construction when adjacent lanes are open to traffic. Prior to removal of the existing beam guard in median areas, close the adjacent travel lane in each direction. Prior to removal of the existing beam guard on the outside shoulder, close the adjacent lane of traffic. For all locations, once removal of the existing beam guard begins, complete installation of the new beam guard system within 48 hours and do not open the adjacent traffic lane until the beam guard system, including specified Sand Barrel arrays, is replaced and the hazard is fully protected.

If the contractor fails to complete the work necessary to replace beam guard within a 48-hour period of removal or prior to end of the lane closure restriction period, whichever occurs first, the department will assess the contractor \$1,000 in interim liquidated damages for each calendar day the required work remains incomplete beyond 48-hour period of removal or prior to end of the lane closure restriction period, whichever occurs first. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM. Damages will be assessed using Administrative item Failing to Open Road to Traffic.

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

4. Traffic.

A General

Keep IH 94, STH 67, and Summit Avenue open to through traffic at all times for the duration of this project except where noted below and in the Prosecution and Progress article in these special provisions.

Keep the Lake Country Trail crossing of STH 67, Summit Avenue at the Oconomowoc Parkway intersection open to through traffic at all times for the duration of this project.

Various detours are needed throughout the project to facilitate work. Provide signed detours for IH 94 and freeway ramp closures. Local streets will not have signed detour routes. Install required traffic control and detour signs as shown on the plans at least 14 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.

Traffic control for stage changes will only be allowed during Night Time Hours.

Perform the work under this contract in a manner that will interfere as little as possible with active traffic. Do not park or store vehicles, equipment, or materials on local streets adjacent to active traffic except at the time of performance of the work. Materials or equipment may be stored within the right-of-way only at locations meeting the approval of the engineer.

Coordinate traffic requirements under this contract with other ongoing department construction projects. This contractor shall be responsible for implementing and coordinating with other contractors all traffic control as shown on the plans.

B Residential and Business Property Access

Maintain access to properties within the project limits for local residents, businesses, and emergency vehicles. Maintain and keep open the access to all driveways and parking lots where alternative access is not available at all times by closing one driveway at a time, building half the driveway at a time and/or plating concrete work. Plating of concrete work, as directed by the engineer, is incidental to the item requiring the plating. Do not close or remove driveway approaches or parking stalls from service without a five day notice given to the occupants of the premises to remove their vehicles prior to driveway removal or closing of the driveway approach access. In parking lots that are being reconstructed, stage operations so that parking and access is maintained on existing or proposed base aggregate or pavement.

C Pedestrian Access

Maintain sidewalk at all times as directed by the engineer. Provide a temporary surface for pedestrian access at all times in areas of sidewalk construction. Construct the temporary surface to meet Americans with Disabilities Act Accessibility Guidelines (ADAAG) requirements consisting of temporary asphaltic surface, any grade of concrete, skid resistant steel plating, or alternative material as approved by the engineer. Gravel or base course material is not acceptable. Maintain sidewalk access to all businesses and residences at all times. The Temporary Crosswalk/Sidewalk bid item is payment for maintaining crosswalks and sidewalks through the construction zone at signalized intersections.

Maintain pedestrian movements crossing the construction zone at all intersections at all times, unless otherwise directed by the engineer. Construct pedestrian crossings of intersections to meet the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) consisting of temporary asphaltic surface, any grade of concrete, skid resistant steel plating, or alternative material as approved by the engineer. Gravel or base course material is not acceptable. Maintain ADAAG accessible pedestrian walkways that are free from mud, sand, and construction debris. The Temporary Crosswalk/Sidewalk bid item is payment for maintaining crosswalks through the construction zone where existing crosswalks exist. Closures of sidewalk must be approved by the engineer and conform to signing shown on the traffic control plan. At locations where crosswalks exist on both sides of the intersection, closure of one of the two crosswalks is permitted as long as all other crossings are completely open. At intersections where only one crosswalk exists, stage work to maintain the crosswalk at all times

D Winter Stage (Shutdown 2015)

Maintain traffic on existing, temporary, or proposed pavement at all times within the project limits, as shown in the plans or as directed by the engineer.

At the completion of construction operations prior to the 2015 winter shutdown, maintain the following traffic conditions:

IH 94:

Maintain traffic on original permanent lanes (no lane closures or traffic shifts allowed)

STH 67, Summit Avenue (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):

Reduce through traffic to one lane in each direction and shift to southbound roadway

STH 67, Summit Avenue (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Drive/Pabst Farms Boulevard):

Maintain two through lanes in each direction and shift to southbound roadway

STH 67, Summit Avenue (Oconomowoc Drive/Pabst Farms Boulevard – Thackeray Trail):

Maintain two lanes in each direction with a divided roadway condition

IH 94/STH 67 interchange ramps:

Maintain open to traffic

Oconomowoc Drive/Pabst Farms Boulevard:

Maintain open to traffic

CTH B/Valley Road intersection:

Maintain open to traffic

Oconomowoc Parkway:

Maintain open to traffic

Pabst Road:

Maintain open to traffic

Regent/Market Street:

Maintain open to traffic

Robruck Drive:

Maintain open to traffic

Lexington Drive:

Maintain open to traffic

STH 67 (Bypass):

Maintain open to traffic

Summit Avenue:

Maintain open to traffic

Thackeray Trail/Old Tower Road:

Maintain open to traffic

E Schedule of Operations

Traffic shifts shown in a given stage may occur at different times during that stage depending on the controlling elements for a given traffic movement. Complete the construction sequence and the associated traffic control and detours as detailed on the plans and as follows:

Stage 1A Traffic:

STH 67, Summit Avenue northbound (Blue Ribbon Drive – Thackeray Trail):

Close outside lane during Off-Peak Hours

CTH B/Valley Road intersection:

Reduce left turning traffic to one lane during Off-Peak Hours

STH 67 (Bypass):

Reduce through traffic to one lane during Off-Peak Hours

Stage 1B Traffic:

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Parkway):

Shift traffic to outside

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue southbound (Blue Ribbon Drive – Thackeray Trail):

Close inside or outside lane during Off-Peak Hours

IH 94/STH 67 interchange NE Ramp/NW Ramp intersection:

Reduce left turning traffic to one lane

CTH B/Valley Road intersection:

Reduce left turning traffic to one lane during Off-Peak Hours

STH 67 (Bypass):

Reduce through traffic to one lane

Summit Avenue (Armour Road to Forest Street) (2718-00-74):
Shift through traffic to west-side

Stage 2A Traffic:

IH 94:

Allowed to reduce through traffic to one lane during Night Time Hours
Allowed to close to traffic during Full Freeway Closure Hours

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Parkway):

Shift traffic to outside

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue southbound (Blue Ribbon Drive – IH 94/STH 67 interchange Loop Ramp):

Reduce through traffic to one lane and shift to northbound roadway

STH 67, Summit Avenue southbound (IH 94/STH 67 interchange Loop Ramp – Oconomowoc Parkway):

Shift traffic to northbound roadway

STH 67, Summit Avenue southbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to northbound roadway

IH 94/STH 67 interchange NE Ramp/NW Ramp intersection:

Reduce left turning traffic to one lane

Oconomowoc Drive:

Close to traffic

Oconomowoc Parkway (west of STH 67):

Reduce traffic to one lane in each direction and shift to north-side

Pabst Road (west of STH 67):

Shift traffic to south-side

Regent Road:

Shift traffic to south-side

Robruck Drive:
Shift traffic to north-side

STH 67 (Bypass):
Reduce through traffic to one lane

Thackeray Trail:
Reduce traffic to one lane in each direction and shift to north-side

Summit Avenue (Armour Road to Forest Street) (2718-00-74):
Shift through traffic to east-side
Allowed to reduce through traffic to one lane only during paving operations

Summit Avenue (Forest Street to Maple Lane) (2718-00-74):
Reduce traffic to one lane in each direction and shift to east-side
Allowed to reduce through traffic to one lane only during paving operations

Stage 2B Traffic:

IH 94:
Allowed to reduce through traffic to one lane during Night Time Hours
Allowed to close to traffic during Full Freeway Closure Hours

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):
Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Parkway):
Shift traffic to outside

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):
Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue southbound (Blue Ribbon Drive – IH 94/STH 67 interchange Loop Ramp):
Reduce through traffic to one lane and shift to northbound roadway

STH 67, Summit Avenue southbound (IH 94/STH 67 interchange Loop Ramp – Oconomowoc Parkway):
Shift traffic to northbound roadway

STH 67, Summit Avenue southbound (Oconomowoc Parkway – Thackeray Trail):
Reduce through traffic to one lane and shift to northbound roadway

IH 94/STH 67 interchange NE Ramp/NW Ramp intersection:
Reduce left turning traffic to one lane

CTH B/Valley Road:

Reduce eastbound traffic to two lanes and shift to inside

Reduce westbound traffic to one lane and shift to inside

Oconomowoc Parkway (west of STH 67):

Reduce traffic to one lane in each direction and shift to south-side

Pabst Road (west of STH 67):

Shift traffic to north-side

Regent Road:

Shift traffic to north-side

Robruck Drive:

Shift traffic to south-side

STH 67 (Bypass):

Reduce through traffic to one lane

Thackeray Trail:

Reduce traffic to one lane in each direction and shift to south-side

Summit Avenue (Armour Road to Forest Street) (2718-00-74):

Shift through traffic to west-side

Allowed to reduce through traffic to one lane only during paving operations

Summit Avenue (Forest Street to Maple Lane) (2718-00-74):

Shift through traffic to east-side

Allowed to reduce through traffic to one lane only during paving operations

Stage 2C Traffic:

IH 94:

Allowed to reduce through traffic to one lane during Night Time Hours

Allowed to close to traffic during Full Freeway Closure Hours

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Parkway):

Shift traffic to outside

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue southbound (Blue Ribbon Drive – IH 94/STH 67 interchange Loop Ramp):

Reduce through traffic to one lane and shift to northbound roadway

STH 67, Summit Avenue southbound (IH 94/STH 67 interchange Loop Ramp – Oconomowoc Parkway):

Shift traffic to northbound roadway

STH 67, Summit Avenue southbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to northbound roadway

IH 94/STH 67 interchange SW Ramp/Loop Ramp:

Close to traffic and detour

Closure only allowed while IH 94/STH 67 interchange NW Ramp is open to traffic

IH 94/STH 67 interchange NW Ramp:

Close to traffic and detour

Closure only allowed while IH 94/STH 67 interchange SW Ramp/Loop Ramp are open to traffic

IH 94/STH 67 interchange NE Ramp intersection:

Reduce left turning traffic to one lane

CTH B/Valley Road:

Reduce eastbound traffic to two lanes and shift to outside

Reduce westbound traffic to one lane and shift to outside

Oconomowoc Parkway (west of STH 67):

Reduce traffic to one lane in each direction and shift to south-side

Pabst Road (west of STH 67):

Shift traffic to north-side

Regent Road:

Shift traffic to north-side

Lexington Drive (west of STH 67):

Close to traffic

STH 67 (Bypass):

Reduce through traffic to one lane

Thackeray Trail:

Reduce traffic to one lane in each direction and shift to south-side

Stage 3A Traffic:

IH 94:

Allowed to reduce through traffic to one lane during Night Time Hours

Allowed to close to traffic during Full Freeway Closure Hours

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):

Reduce through traffic to one lane and shift to southbound roadway

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Parkway):

Shift traffic to southbound roadway

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to southbound roadway

STH 67, Summit Avenue southbound (Blue Ribbon Drive – IH 94/STH 67 interchange Loop Ramp):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue southbound (IH 94/STH 67 interchange Loop Ramp – Oconomowoc Parkway):

Shift traffic to outside

STH 67, Summit Avenue southbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to outside

IH 94/STH 67 interchange NE Ramp:

Close to traffic and detour

Pabst Farms Boulevard:

Close to traffic

Oconomowoc Parkway (east of STH 67):

Reduce traffic to one lane in each direction and shift to north-side

Pabst Road (east of STH 67):

Reduce traffic to one lane in each direction and shift to south-side

Market Street:

Reduce traffic to one lane in each direction and shift to north-side

Lexington Drive (east of STH 67):

Close to traffic

STH 67 (Bypass):

Reduce traffic to one lane in each direction and shift to inside

Old Tower Road:

Reduce traffic to one lane in each direction and shift to south-side

Stage 3B Traffic:

IH 94:

Allowed to reduce through traffic to one lane during Night Time Hours

Allowed to close to traffic during Full Freeway Closure Hours

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):

Reduce through traffic to one lane and shift to southbound roadway

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Parkway):

Shift traffic to southbound roadway

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to southbound roadway

STH 67, Summit Avenue southbound (Blue Ribbon Drive – IH 94/STH 67 interchange Loop Ramp):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue southbound (IH 94/STH 67 interchange Loop Ramp – Oconomowoc Parkway):

Shift traffic to outside

STH 67, Summit Avenue southbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to outside

IH 94/STH 67 interchange NE Ramp/NW Ramp intersection:

Reduce left turning traffic to one lane

CTH B/Valley Road:

Close to traffic

Oconomowoc Parkway (east of STH 67):

Reduce traffic to one lane in each direction and shift to south-side

Pabst Road (east of STH 67):

Reduce traffic to one lane in each direction and shift to north-side

Market Street:

Reduce traffic to one lane in each direction and shift to south-side

Lexington Drive (east of STH 67):

Close to traffic

STH 67 (Bypass):

Reduce traffic to one lane in each direction and shift to outside

Old Tower Road:

Reduce traffic to one lane in each direction and shift to north-side

Stage 3C Traffic:

IH 94:

Shift eastbound traffic to inside

Allowed to reduce through traffic to one lane during Night Time Hours

Allowed to close to traffic during Full Freeway Closure Hours

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange NE Ramp/NW Ramp):

Reduce through traffic to one lane and shift to southbound roadway

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange NE Ramp/NW Ramp – Oconomowoc Parkway):

Shift traffic to southbound roadway

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to southbound roadway

STH 67, Summit Avenue southbound (Blue Ribbon Drive – IH 94/STH 67 interchange Loop Ramp):

Reduce through traffic to one lane and shift to outside

STH 67, Summit Avenue southbound (IH 94/STH 67 interchange Loop Ramp – Oconomowoc Parkway):

Shift traffic to outside

STH 67, Summit Avenue southbound (Oconomowoc Parkway – Thackeray Trail):

Reduce through traffic to one lane and shift to outside

IH 94/STH 67 interchange SE Ramp:

Close to traffic and detour

IH 94/STH 67 interchange Loop Ramp:

Close to traffic and detour

IH 94/STH 67 interchange NE Ramp/NW Ramp intersection:
Reduce left turning traffic to one lane

CTH B/Valley Road:
Close to traffic

Oconomowoc Parkway (east of STH 67):
Reduce traffic to one lane in each direction and shift to south-side

Pabst Road (east of STH 67):
Reduce traffic to one lane in each direction and shift to north-side

Market Street:
Reduce traffic to one lane in each direction and shift to south-side

Lexington Drive (east of STH 67):
Close to traffic

STH 67 (Bypass):
Reduce traffic to one lane in each direction and shift to outside

Old Tower Road:
Reduce traffic to one lane in each direction and shift to north-side

Stage 4 Traffic:

STH 67, Summit Avenue northbound (Blue Ribbon Drive – IH 94/STH 67 interchange SW Ramp):
Reduce through traffic to one lane

STH 67, Summit Avenue northbound (IH 94/STH 67 interchange SW Ramp – Oconomowoc Parkway):
Reduce through traffic to two lanes

STH 67, Summit Avenue northbound (Oconomowoc Parkway – Thackeray Trail):
Reduce through traffic to one lane

STH 67, Summit Avenue southbound (Blue Ribbon Drive – IH 94/STH 67 interchange Loop Ramp):
Reduce through traffic to one lane

STH 67, Summit Avenue southbound (IH 94/STH 67 interchange Loop Ramp – Oconomowoc Parkway):
Reduce through traffic to two lanes

STH 67, Summit Avenue southbound (Oconomowoc Parkway – Thackeray Trail):
Reduce through traffic to one lane

STH 67 (Bypass):

Reduce through traffic to one lane

5. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying IH 94 and/or STH 67 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

From noon Friday, May 22, 2015 to 6:00 AM Tuesday, May 26, 2015 for Memorial Day;

From noon Friday, July 3, 2015 to 6:00 AM Monday, July 6, 2015 for Independence Day;

From noon Friday, September 4, 2015 to 6:00 AM Tuesday, September 8, 2015 for Labor Day;

From noon Wednesday, November 25, 2015 to 6:00 AM Monday, November 30, 2015 for Thanksgiving;

From noon Friday, May 27, 2016 to 6:00 AM Tuesday, May 31, 2016 for Memorial Day;

From noon Friday, July 1, 2016 to 6:00 AM Tuesday, July 5, 2016 for Independence Day;

From noon Friday, September 2, 2016 to 6:00 AM Tuesday, September 6, 2016 for Labor Day;

On days with a University of Wisconsin Badgers Football game at Camp Randall, no lane closures are allowed on westbound IH 94 from 4 hours prior to kickoff until kickoff and no lane closures are allowed on eastbound IH 94 from the time the game ends until 4 hours following.

107-005 (20050502)

6. Utilities.

This special provision article section applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

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

107-065 (20080501)

Underground and overhead utility facilities are located within the project limits. Utility adjustments are required for this construction project as noted below. Coordinate construction activities with a call to Diggers Hotline or a direct call to the utilities that have facilities in the area as required per state statute. Use caution to ensure the integrity of underground facilities and maintain code clearances from overhead facilities at all times.

Some utility work, as described below, is dependent on prior work being performed by the contractor at a specific site. Provide the engineer and the affected utility a good faith notice of when the utility is to start work at the site. Give notice 14 to 16 calendar days in advance of when 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.

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

Utility companies will be performing utility work and adjustments within the limits and during the life of the project. The contractor shall cooperate and coordinate construction activities with these companies.

There may be abandoned utility facilities within the project limits. If a conflict with an abandoned utility facility is encountered, contact the appropriate utility owner/representative to coordinate construction activities and proper removal and disposal of said facility as necessary.

Utility working days shown herein are as defined in Wisconsin Administrative Code Chapter Trans 220.

Known utilities in the project area are as follows:

American Transmission Company (ATC) has an overhead 138kV transmission facility at the following location:

- Crossing of STH 67 along the south-side of Oconomowoc Parkway

Notify Chris Dailey from ATC at (620) 506-6884 a minimum of three working days in advance of construction activities around any ATC pole locations crossing STH 67 near the Oconomowoc Parkway intersection for construction observation. Limit excavation operations to one pole at a time and to limit open trench excavation operations to a minimum to ensure structural integrity of existing ATC poles. Add preservative wrap to just above the proposed grade line before fill is added around the existing ATC poles to help prevent decay.

Conflicts are not anticipated, but the following guidelines must be followed when working around ATC facilities:

- Maintain safe working clearance to the 138kV conductors at all times based on the latest OSHA clearances.
- Exercise caution when working and driving near transmission line structures to avoid damage.
- Unobstructed ATC access to the transmission line and structures must be maintained at all times.
- No stockpiling or staging of equipment/materials under or near the ATC transmission lines and structures.

- ATC does not allow grade changes of more than 1 foot within the easement unless review of specific plans proves that the changes will not impact ATC's line clearances or access. If the planned grades are altered by more than 1 foot new plans must be submitted clearly showing all grade changes before approval can be granted.
- Any damages to ATC facilities must be reported immediately to Chris Dailey, (620) 506-6884.
- Trail signs and markers may not be attached to ATC structures. Small signs or markers may not be placed on the ground within 10 feet of any structure. Larger trail signs may not be placed within 30 feet of any transmission structure. Signs may not obstruct access to the right-of-way.
- Three feet of space between the paved portion of the trail and the base of ATC's structures is required.
- The trail must be constructed so that line trucks and maintenance vehicles (heavy, wide vehicles with trailers and large equipment) can travel over the trail to access the transmission facilities. ATC will not be held responsible for damages to the trail caused by work on our transmission lines.
- Excavation around the ATC H-frame poles must be limited to one pole at a time and limit the open trench time to an absolute minimum to avoid jeopardizing the structural integrity of the pole.
- Transmission line structures may have multiple ground rods. These ground rods could be located a significant distance from the structure. All ground rods are connected to the structure via a ground wire and could be buried to a depth of 18 inches or deeper. If the ground rods are disturbed through construction activities, the location must be noted and promptly reported to ATC Maintenance Department. The cost of all repairs to ground wires and ground rods is responsibility of the contractor.
- Excavation and construction of the bike tunnel will require sheet piling placement by the contractor to ensure the stability of the transmission structure. The sheet piling should be placed at no less than 10 feet from the face of the pole and extend approximately 10 to 20 feet beyond the pole. A sheeting plan should be provided to ATC to ensure the structure will not be compromised during construction operations of the pedestrian culvert (C-67-87).

AT&T Legacy has underground telephone facilities at the following locations:

- SW Ramp along the south-side
- Crossing of STH 67 south of SW Ramp
- STH 67 along the east-side from SW Ramp to IH 94
- IH 94 along the south-side

Conflicts are not anticipated.

AT&T Wisconsin has underground telephone facilities at the following locations:

- Aurora Drive along the south-side
- Crossing of STH 67 north of Blue Ribbon Drive/Aurora Drive
- STH 67 along the east-side from Aurora Drive to SE Ramp
- STH 67 along the west-side from Blue Ribbon Drive to SW Ramp
- STH 67 along the west-side from NW Ramp to Thackeray Trail
- Crossing of STH 67 south of Pabst Farms Boulevard/Oconomowoc Drive
- STH 67 north east of Pabst Farms Boulevard/STH 67 intersection
- STH 67 along the east-side from CTH B/Valley Road to Pabst Road
- Crossing of STH 67 north of CTH B/Valley Road
- Oconomowoc Parkway along the north-side
- STH 67 along the east-side from Pabst Road to Old Tower Road
- Pabst Road along the south-side
- Regent Road along the south-side
- Robruck Court along the south-side
- Crossing of STH 67 south of Lexington Drive at Station 321+00 NB

AT&T will install new pedestal along STH 67 at Station 209+00 NB RT prior to construction and existing underground cable along STH 67 between Station 209+00 NB RT and Station 212+65 NB RT will be abandoned in place.

AT&T will install new underground cables and pedestals along Summit Center Drive between Station 12+00 SD LT and Station 15+50 SD LT to the west along the right-of-way line prior to construction and existing underground cables will be abandoned in place.

AT&T will install new underground cables and pedestals along STH 67 between Station 251+19 NB LT and Station 262+20 NB LT prior to construction and existing underground cables and conduits will be abandoned in place.

AT&T will install new underground cable crossing STH 67 at Station 254+15 NB prior to construction and existing underground cable will be abandoned in place.

AT&T will remove the existing pedestal along STH 67 at Station 267+23 NB RT prior to construction and existing underground cables along STH 67 between Station 267+23 NB RT and Station 269+65 NB RT will be abandoned in place.

AT&T will install new underground cable and pedestal along STH 67 between Station 290+40 NB LT and Station 292+43 NB LT prior to construction and existing underground cable will be abandoned in place.

AT&T will install new underground cables and pedestals crossing STH 67 at Station 306+95 NB and also along STH 67 between Station 302+87 NB RT and Station 306+95 NB RT prior to construction. Existing underground cables will be abandoned in place.

AT&T will relocate existing pedestal along STH 67 at Station 307+58 NB LT to the north to Station 307+64 NB LT prior to construction.

AT&T will install new underground cables, pedestals, and handholes along STH 67 between Station 311+84 NB LT and Station 323+85 NB LT prior to construction and existing underground cables will be abandoned in place.

AT&T will relocate existing pedestal along STH 67 at Station 314+90 NB RT to the east to Station 314+85 NB RT prior to construction.

AT&T will install new underground cable crossing STH 67 at Station 315+70 NB prior to construction and existing underground cable will be abandoned in place.

AT&T will install new underground cable crossing STH 67 at Station 321+03 NB prior to construction and existing underground cable will be abandoned in place.

AT&T will relocate existing pad mounted cabinet along Summit Avenue at Station 336+22 NB LT to the west prior to construction.

AT&T will complete facility adjustments to the below list of items during construction. Contact Carol Anason via email at ca2624@att.com a minimum of five business days prior to needing each adjustment completed to coordinate construction activities. AT&T will require one day to complete each adjustment below during construction:

- STH 67 between Station 238+25 NB LT and Station 239+25 NB LT (relocate existing underground cable to the west of the retaining wall footing).
- STH 67 at Station 256+10 NB, 74' RT (pedestal adjustment to finished grade)
- STH 67 at Station 259+95 NB, 74' RT (pedestal adjustment to finished grade)
- STH 67 at Station 290+00 NB, 88' RT (pedestal adjustment to finished grade)
- STH 67 at Station 302+87 NB, 57' RT (handhole adjustment to finished grade)
- Summit Avenue at Station 338+57 NB LT (relocate cable and pedestal to the west of sidewalk and pedestal adjustment to finished grade)

Charter Communications has underground facilities at the following locations:

- NW Ramp along the north-side
- STH 67 along the west-side from IH 94 to Oconomowoc Drive
- Crossing of STH 67 south of Oconomowoc Drive/Pabst Farms Boulevard
- STH 67 along the east-side from Pabst Farms Boulevard to Oconomowoc Parkway
- Oconomowoc Parkway along the north-side
- STH 67 along the west-side from Pabst Road to STH 67 Bypass
- Pabst Road along the south-side
- STH 67 along the east-side from Beach Road to Market Street
- STH 67 along the east-side from Lexington Drive to Old Tower Road
- Lexington Drive along the north-side

Charter will install new underground cables and vaults along STH 67 between Station 267+11 NB RT and Station 271+80 NB RT (under proposed pedestrian culvert C-67-87) prior to construction and existing underground ducts will be abandoned in place.

Charter will install new underground cables and pedestals along STH 67 between Station 291+00 NB LT and Station 323+80 NB LT prior to construction and existing underground ducts will be abandoned in place.

Charter will install new underground cables and pedestals crossing STH 67 at Station 323+80 NB (under proposed storm sewer) prior to construction and existing underground cable will be abandoned in place.

Charter will install new underground cables and pedestals along STH 67 between Station 320+75 NB RT and Station 87+00 BN RT prior to construction and existing underground ducts will be abandoned in place.

Use extreme caution when working around Charter Communication facilities that are to remain in place during grading operations near STH 67 at Station 242+50 NB RT

Charter will complete facility adjustments to the below list of items during construction. Contact Ron Frase at (920) 349-3202 extension 103 a minimum of five business days prior to needing each adjustment completed to coordinate construction activities. Charter will require two days to complete each adjustment below during construction:

- STH 67 at Station 243+89 NB, 76' RT (raise and support existing facility over proposed storm sewer)
- STH 67 at Station 244+16 NB, 75' RT (raise and support existing facility over proposed storm sewer)
- STH 67 at Station 307+80 NB, 123' LT (raise and support existing facility over proposed storm sewer)

The highway contractor must contact Charter Communications before removing or adjusting any coax or fiber optic facility to verify that the facility has been abandoned. The highway contractor must not assume that an unmarked facility has been abandoned.

Oconomowoc Area School District has an underground line at the following locations:

- CTH B/Valley Road along the north-side east of the STH 67 intersection
- STH 67 along the east-side from CTH B/Valley Road to Oconomowoc Parkway
- Crossing of STH 67 along the south-side of Oconomowoc Parkway
- Oconomowoc Parkway along the south-side west of the STH 67 intersection

Oconomowoc Area School District will require 15 working days to complete utility adjustments near the proposed pedestrian culvert (C-67-87). A new underground duct and fiber will cross STH 67 near Station 269+00 NB. New handholes will be placed near Station 269+50 SB (100' LT) and near Station 269+00 NB (65' RT) to intercept the existing duct and fiber. The existing duct and fiber crossing near Station 269+50 will be abandoned and left in place. Contact Joel Mikulsky from MC&E via phone at (920) 676-0494 to coordinate relocation operations.

City of Oconomowoc (Signals) has traffic signals and underground facilities at the following locations:

Summit Avenue and Thackeray Trail intersection

Traffic signal removals and replacements are included as part of the project as shown in the plans.

City of Oconomowoc (Storm Sewer) has underground storm sewer facilities at the following locations with the size denoted in parenthesis:

- Crossing of STH 67 north of Delafield Road
- Blue Ribbon Drive along the south-side (15”-54”)
- STH 67 along the west-side from Blue Ribbon Drive to SW Ramp
- Oconomowoc Drive along the north-side (15”)
- Pabst Farms Boulevard along the north-side (12”-15”)
- CTH B/Valley Road west of STH 67 along the north-side (12”-15”)
- CTH B/Valley Road east of STH 67 along the south-side (12”-15”)
- Oconomowoc Parkway along the south-side (12”)
- STH 67 along the median from Station 319+75 NB to Station 326+30 NB (varies)
- STH 67 along the median from Station 329+80 NB to the north (varies)
- Thackeray Trail/Old Tower Road along the north-side (12”-36”)

Storm sewer removals, replacements, and adjustments are included as part of the project as shown in the plans.

Oconomowoc Utilities - Electric has underground electric lines at the following locations:

- Crossing of STH 67 along the north-side of NE Ramp and NW Ramp
- STH 67 along the west-side from NW Ramp to N Summit Center Drive
- Crossing of STH 67 along the south-side of Oconomowoc Drive/Pabst Farms Boulevard
- Crossing of CTH B/Valley Road west of STH 67
- Along the south-side of CTH B/Valley Road east and west of STH 67
- STH 67 along the east-side from CTH B/Valley Road to Station 260+00 NB
- STH 67 along the west-side from CTH B/Valley Road to Oconomowoc Parkway
- Crossing of STH 67 along the south-side of Oconomowoc Parkway
- Crossing of Oconomowoc Parkway west of STH 67
- STH 67 along the east-side from Oconomowoc Parkway to Pabst Road
- Crossing of STH 67 along the south-side of Regent Road
- Crossing of STH 67 north of Lexington Drive
- SW quadrant of Summit Avenue and Thackeray Trail

Oconomowoc Utilities will install new underground cable facilities along STH 67 at Station 253+25 NB prior to construction and the existing facilities will be abandoned in place.

Oconomowoc Utilities will install new underground fiber optic and cable facilities crossing STH 67 at Station 267+00 NB prior to construction and the existing facilities crossing at Station 269+75 NB will be abandoned in place.

Oconomowoc Utilities will install new underground cable facilities along the east-side of STH 67 between Station 284+00 NB RT and Station 289+25 NB RT prior to construction and the existing facilities will be abandoned in place.

Oconomowoc Utilities will abandon in place the existing facilities along STH 67 at Station 323+95 NB prior to construction.

Oconomowoc Utilities will complete facility adjustments along STH 67 at Station 255+74 NB LT during construction. The existing cable will be de-energized and raised over the proposed storm sewer. Contact Casey Lemke at (262) 569-6424 a minimum of five business days prior to needing adjustments completed to coordinate construction activities. Oconomowoc Utilities will require one day to complete the adjustment during construction.

The highway contractor must contact Oconomowoc Utilities - Electric before removing or adjusting any electric lines to verify that the facility has been abandoned. The highway contractor must not assume that an unmarked facility has been abandoned.

Oconomowoc Wastewater Utility has underground sanitary sewer facilities at the following locations with the size denoted in parenthesis:

- Oconomowoc Drive along the south-side (21“)
- Pabst Farms Boulevard along the south-side (21“)
- STH 67 along the west-side from Station 246+50 NB to Station 251+50 NB (varies)
- Oconomowoc Parkway along the north-side (12”)
- STH 67 along the east-side from Station 303+00 NB to Station 312+00 NB (12”)
- Crossing of STH 67 at Station 312+00 NB (12”)
- STH 67 along the west-side from Station 312+00 NB to Lexington Drive (8”)
- Thackeray Trail along the south-side (15”)
- Old Tower Road along the south-side (15”)

Wastewater utility removals, replacements, and adjustments are included as part of the project as shown in the plans.

Oconomowoc Water Utility has underground water distribution facilities at the following locations with the size denoted in parenthesis:

- Blue Ribbon Drive (varies)
- Aurora Drive (varies)
- Oconomowoc Drive along the north-side (16”)
- Pabst Farms Boulevard along the north-side (16”)
- STH 67 along the west-side from Station 246+50 NB to Station 251+50 NB (16“)
- CTH B/Valley Road west of STH 67 (16”)

- Crossing of Oconomowoc Parkway west of STH 67 (16")
- Oconomowoc Parkway along the north-side (12")
- W Beach Road from Station 292+00 NB to Station 297+00 NB (10")
- STH 67 along the west-side from Station 313+00 NB to Lexington Drive (10")
- Crossing of STH 67 at Station 312+00 NB (10")
- Lexington Drive (6" and 10")
- Thackeray Trail along the north-side (10")
- Old Tower Road (10")
- Summit Avenue along the east-side from Thackeray Trail to the north (12")

Oconomowoc Water Utility has known abandoned facilities along Summit Avenue north of the Thackeray Trail intersection.

Water utility removals, replacements, and adjustments are included as part of the project as shown in the plans.

Time Warner Cable has underground facilities at the following locations:

- NW Ramp along the north-side
- STH 67 along the west-side from NW Ramp to Station 233+25 NB
- Oconomowoc Drive/Pabst Farms Boulevard along the south-side
- CTH B/Valley Road along the north-side
- STH 67 along the west-side from CTH B/Valley Road to Oconomowoc Parkway
- STH 67 along the east-side from CTH B/Valley Road to Summit Avenue
- Oconomowoc Parkway along the south-side
- Pabst Road along the north-side
- Summit Avenue along the east-side

Time Warner Cable will install new facilities along the south-side of Oconomowoc Drive prior to construction and the existing facilities will be abandoned in place.

Time Warner Cable will install new facilities crossing STH 67 at Station 267+15 NB from the existing vault at Station 267+15 NB LT to the east and along STH 67 on the east-side to Station 271+69 NB RT (under proposed pedestrian culvert C-67-87) prior to construction. The existing Time Warner Cable facilities along STH 67 between Station 267+08 NB and Station 271+69 NB RT will be abandoned in place.

Time Warner Cable will install new facilities along the east-side of STH 67 between Station 281+00 NB to Pabst Road around the proposed storm water pond prior to construction and the existing facilities will be abandoned in place.

Time Warner Cable will install new facilities crossing STH 67 at Station 292+10 NB and along the north-side of Pabst Road prior to construction and the existing facilities will be abandoned in place.

Time Warner Cable will install new facilities along the east-side of W. Beach Road from Pabst Road to the north prior to construction. The existing facilities along the west-side of W. Beach Road will be abandoned in place.

Time Warner Cable will install a new vault along STH 67 at Station 320+61 NB, 54' RT set at the proposed grade prior to construction.

Time Warner Cable will adjust existing facilities along STH 67 at Station 323+51 NB RT to avoid proposed storm sewer structure placement prior to construction.

Use extreme caution when working around Time Warner Cable facilities that are to remain in place during storm sewer construction operations at the following locations:

- CTH B/Valley Road at Station 18+00 CB, 52' LT
- STH 67 at Station 255+75 NB, 152' LT
- STH 67 at Station 279+80 NB, 64' RT
- STH 67 at Station 330+75 NB, 61' RT

Time Warner Cable will complete facility height adjustments to the below list of vaults during construction. Contact Steve Cramer at (414) 277-4045 a minimum of five business days prior to needing each adjustment completed to coordinate construction activities. Time Warner Cable will require one day to complete each adjustment below during construction:

- STH 67 at Station 254+84 NB, 66' RT
- STH 67 at Station 281+00 NB, 65' RT
- STH 67 at Station 292+10 NB, 135' LT
- STH 67 at Station 298+50 NB, 74' RT
- STH 67 at Station 306+13 NB, 61' RT
- STH 67 at Station 329+67 NB, 64' RT

Time Warner Cable will lower existing facilities in place during construction to avoid proposed storm sewer construction. Contact Steve Cramer at (414) 277-4045 a minimum of five days prior to needing each adjustment completed to coordinate construction activities. Time Warner Cable will require one day to complete each adjustment below during construction:

- STH 67 at Station 306+28 NB, 60' RT
- STH 67 at Station 307+75 NB, 60' RT
- STH 67 at Station 332+39 NB, 53' RT

The highway contractor must contact Time Warner Cable before removing or adjusting any coax or fiber optic facility to verify that the facility has been abandoned. The highway contractor must not assume that an unmarked facility has been abandoned.

TW Telecom has underground facilities at the follow locations:

- Oconomowoc Drive along the north-side
- STH 67 along the west-side from Oconomowoc Drive to Station 248+60 NB
- Crossing of STH 67 at Station 248+60 NB
- STH 67 along the east-side from Station 248+60 NB to CTH B/Valley Road

TW Telecom will install new facilities along the north-side of Oconomowoc Drive and crossing STH 67 at Station 244+43 NB prior to construction and the existing inner duct and fiber optic cable facilities will be abandoned in place while the existing vaults will be removed.

TW Telecom will install new facilities along the east-side of STH 67 between Station 244+43 NB RT and Station 254+85 NB RT and crossing CTH B/Valley Road at Station 22+00 VR prior to construction and the existing inner duct and fiber optic cable facilities will be abandoned in place while the existing vaults will be removed.

TW Telecom will complete facility height adjustments to the below list of vaults during construction. Contact Sasha Demian at (414) 908-1042 or sasha.demian@twtelecom.com a minimum of seven business days prior to needing each adjustment completed to coordinate construction activities. TW Telecom will require one day to complete each adjustment below during construction:

- STH 67 at Station 244+43 NB, 82' RT
- STH 67 at Station 254+85 NB, 70' RT

The highway contractor must contact TW Telecom before removing or adjusting any abandoned or retired in place facilities to verify that the facility has indeed been abandoned. The highway contractor must not assume that an unmarked facility has been abandoned.

We Energies (Electric) has underground electric facilities at the following locations:

- STH 67 along the east-side from Aurora Drive to Pabst Road
- SE Ramp along the east-side and south-side
- Oconomowoc Parkway along the south-side
- Pabst Road along the south-side

WE Energies has overhead electric facilities at the following locations:

- Crossing of STH 67 along the south-side of Oconomowoc Parkway

WE Energies also has several underground and overhead electric service lines located within the project limits.

WE Energies has existing abandoned facilities along the west-side of STH 67 between Oconomowoc Drive and CTH B/Valley Road.

WE Energies will remove the existing overhead electric facility crossing of STH 67 along the south-side of Oconomowoc Parkway prior to construction. The existing underground electric facility along the south-side of Oconomowoc Parkway will be abandoned in place prior to construction. These facilities will be replaced with an underground crossing bored approximately 3 feet south of existing cable and deeper to avoid excavation impacts necessary for the construction operations of the pedestrian culvert (C-67-87).

WE Energies will abandon in place the existing underground electric facility along the east-side of STH 67 between approximately Station 283+52 NB and Station 290+45 NB prior to construction. This facility will be replaced with an underground facility routed along the permanent limited easement for the proposed storm water pond.

It is imperative that the highway contractor contact WE Energies before removing any gas facilities or electrical underground cables, to verify that they have been abandoned and carry no natural gas or electrical current. The contractor must not assume that unmarked facilities have been abandoned. At no time is it acceptable to push, pull, cut or drill an unmarked facility without explicit consent from We Energies. Contractor must call the WE Energies 24-hour dispatch lines to arrange for this verification.

WE Energies Electric dispatch at (800) 662-4797

WE Energies Gas dispatch at (800) 261-5325

We Energies (Gas) has underground gas facilities at the following locations:

- STH 67 along the east-side from Aurora Drive to Station 246+75 NB
- Crossing of STH 67 at Station 246+75 NB
- STH 67 along the west-side from Station 246+75 NB to STH 67 Bypass
- Crossing of STH 67 at Station 254+75 NB
- STH 67 along the east-side from Valley Road to Station 260+00 NB
- Crossing of STH 67 at Station 294+50 NB
- STH 67 along the east-side from Station 299+00 NB to Station 310+00 NB
- Crossing of STH 67 at Station 305+75 NB
- Summit Avenue along the west-side from STH 67 Bypass to end of project
- Crossing of Summit Avenue at Station 334+00 NB
- Aurora Drive along the north-side
- Crossing of SE Ramp, IH 94, and NE Ramp east of STH 67
- Pabst Farms Boulevard along the south-side
- Valley Road/CTH B along the centerline
- Oconomowoc Parkway along the north-side
- Regent Road along the south-side
- Market Street along the south-side
- Lexington Drive (east) along the south-side
- Thackeray Trail along the centerline

WE Energies will lower the existing 6" PE along Pabst Farms Boulevard at Station 13+67 PB (under proposed storm sewer) prior to construction.

WE Energies will install a new underground 6" PE crossing of STH 67 at Station 246+75 NB (under proposed storm sewer) prior to construction and the existing underground 6" ST will be abandoned in place.

WE Energies will install a new underground 6" PE along STH 67 between Station 246+75 NB LT and Station 256+57 NB LT prior to construction and the existing underground 6" ST will be abandoned in place.

WE Energies will install a new underground 4" PE crossing of STH 67 at Station 255+00 NB (under proposed storm sewer) prior to construction and the existing underground 4" PE will be abandoned in place.

WE Energies will install a new underground 6" PE along STH 67 between Station 267+00 NB LT and Station 326+45 NB LT prior to construction and the existing underground 6" ST will be abandoned in place.

WE Energies will install a new underground 4" PE along Oconomowoc Parkway between Station 27+00 OW LT and Station 31+00 OE LT prior to construction (crossing STH 67 at Station 272+00 NB) and the existing underground 4" PE will be abandoned in place.

WE Energies will lower the existing 6" PE along STH 67 at Station 294+61 NB RT (under the proposed storm water pond) prior to construction.

WE Energies will install a new underground 2" PE crossing of STH 67 at Station 305+50 NB (under proposed storm sewer) prior to construction and the existing underground 2" ST will be abandoned in place.

WE Energies will install a new underground 4" PE along Regent Road between Station 47+30 RR RT and Station 48+65 RR RT prior to construction and the existing underground 2" PE will be abandoned in place.

WE Energies will install a new underground 2" PE along Robruck Lane between Station 50+36 RD RT and Station 52+35 RD RT prior to construction and the existing underground 2" PE along Robruck Drive will be abandoned in place.

WE Energies will install a new underground 4" PE crossing of STH 67 at Station 322+00 NB prior to construction and the existing underground 6" ST will be abandoned in place.

WE Energies will install a new underground 2" PE along Lexington Drive between Station 65+75 LW RT and Station 69+06 LW RT prior to construction.

WE Energies will install a new underground 6" PE along STH 67 between Station 333+80 NB LT and Station 341+50 NB LT prior to construction and the existing underground 6" ST will be abandoned in place.

WE Energies will install a new underground 4" PE along Thackeray Trail between Station 86+00 TE RT and Station 88+70 TE RT prior to construction and the existing underground 2" ST will be abandoned in place.

WE Energies will complete the installation of a new underground 12" ST high pressure gas transmission main in the center of CTH B/Valley Road between Station 16+50 CB RT and Station 24+95 CB RT (boring under proposed storm sewer) during construction. There are temperature restrictions associated with this work. WE Energies anticipates completing this work between April 15, 2015 and June 1, 2015, weather and temperatures permitting.

WE Energies will complete valve and test point adjustments within the slope intercepts to finished grade during construction. Contact WE Energies Gas Dispatch at (800) 261-5325 a minimum of five business days prior to needing each adjustment completed to coordinate construction activities. WE Energies will require one day to complete each adjustment.

It is imperative that the highway contractor contact WE Energies before removing any gas facilities or electrical underground cables, to verify that they have been abandoned and carry no natural gas or electrical current. The contractor must not assume that unmarked facilities have been abandoned. At no time is it acceptable to push, pull, cut or drill an unmarked facility without explicit consent from WE Energies. Contractor must call the WE Energies 24-hour dispatch lines to arrange for this verification.

WE Energies Electric dispatch at (800) 662-4797

WE Energies Gas dispatch at (800) 261-5325

The existing steel gas mains along CTH B/Valley Road between Station 16+50 CB RT and Station 24+95 CB RT were installed during an era when "coal tar" wrap was common. Some coal tar wrap products were supplemented with a small percentage of asbestos fibers. The fibers are imbedded in the coal tar and do not present a hazard during normal handling. WE Energies will work along with the highway contractor at the time of construction to dispose of any steel pipe, that is coated with coal tar wrap that contains asbestos fibers, where the pipe is in conflict with grading or storm sewer work. WE Energies will remove and dispose of the hazardous material in all affected sections which require removal. In all unaffected areas, it is the responsibility of the highway contractor to remove and dispose of the sections of the abandoned facilities necessary for them to continue with the project after WE Energies verifies that the lines are dead per the above paragraph.

WisDOT Signals has traffic signals and underground facilities at the following locations:

- STH 67 and IH 94 SW Ramp intersection
- STH 67 over IH 94 attached to structure
- STH 67 and IH 94 NE Ramp and NW Ramp intersection
- STH 67 and Oconomowoc Drive/ Pabst Farms Boulevard intersection
- STH 67 and CTH B/ Valley Road intersection
- STH 67 and Oconomowoc Parkway intersection
- STH 67 and Pabst Road intersection

- STH 67 and Summit Avenue intersection
- Summit Avenue and Thackeray Trail/ Old Tower Road intersection
- STH 67 and Old Tower Road intersection

Traffic signal removals and replacements are included as part of the project as shown in the plans.

WisDOT State Traffic Operations Center (STOC) has overhead and underground traffic monitoring equipment at the following locations:
STH 67 and IH 94 interchange

FTMS removals and replacements are included as part of the project as shown in the plans.

This special provision article section applies only to Project 2718-00-74.

This contract does not come under the provisions of Administrative Rule Trans 220. 107-065B (20080501)

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

Bidders are advised to contact each utility company listed in the plans, prior to preparing their bids, to obtain information on the status of existing and any new utility relocation work.

The following utilities have facilities in the area: Time Warner Cable, AT&T Wisconsin, WE-Energies Gas, Charter Communications, Oconomowoc Water, Oconomowoc Sewer and Oconomowoc Electric.

The following utilities have facilities in the project limits and utility conflicts are anticipated. A summary of the proposed relocation work is provided:

WE Energies-Gas

WE-Energies underground gas lines are located throughout the length of the project. Their facilities are located on both sides of the roadway in the vicinity of the sidewalk from Station 12+80 to 38+25, and alternately on the north or south side in the vicinity of the sidewalk or curb and gutter from Station 38+25 to 73+87. The WE Energies facilities include a few road crossings from Station 12+80 to 38+25 and numerous road crossings from Station 38+25 to 73+87. Services are provided to the residences and businesses throughout the project area.

WE Energies will be relocating and replacing a number of their facilities and prior to this project. Main relocations will be taking place at the following locations: 21+50 to 25+00 (north side parallel to roadway), 38+20 to 39+45 (road crossing from George Street to Lyman Street), 45+50 to 52+25 (south side of roadway then crossing to High Street), 60+75 (road crossing to Crest Road), 68+45 (road crossing to Wood Drive), and 70+75 (road crossing to Maple Lane). In addition to Main relocations, there will be work conducted on many of the services throughout the project. WE Energies plans to commence work on 1/15/14 and expect the work to take approximately 60 working days.

Contractor shall contact WE Energies before removing any gas facilities, to verify that they have been abandoned and carry no natural gas. Contractor must call the WE Energies 24 hour dispatch lines to arrange for this verification. WE Energies Gas Dispatch (800) 261-5325.

The WE Energies contact for this project is Mr. Joseph Dable, (414) 944-5543.

Time Warner Cable

Time Warner Cable has underground lines located primarily between Station 51+75 and 73+87 continuously on the north side of the roadway, and intermittently on the south side of the roadway. The underground lines are located in the vicinity of the sidewalk or curb and gutter. The primary facility is a fiber optic cable connected to Oconomowoc Memorial Hospital.

Time Warner Cable plans to relocate three facilities prior to and during construction. They will be boring a new fiber road crossing at 61+50 with work planned to commence on March 1, 2014 and take approximately 15 working days. Time Warner Cable also has two fiber lines in Wood Drive and Maple Lane. They think that the lines are low enough to remain in place, but they wish to coordinate with the contractor. If the lines need to be lowered, Time Warner Cable will require 4 days for lowering – 3 days for utility locates and 1 day for lowering work. No other conflicts are anticipated.

The Time Warner Cable contact is Mr. Lukas LaCrosse, (414) 908-4766.

AT&T Communications

AT&T Communications has overhead facilities located throughout the length of the project. They also have underground lines located primarily between Station 24+00 and 26+50 on the north side of the roadway, between Station 37+25 and 42+50 on the north side of the roadway, between Station 51+75 and 59+25 on both sides of the roadway and between Station 59+25 and 73+87 on the south side of the roadway. The underground lines are located behind the curb and gutter or in the vicinity of the sidewalk, and these lines will remain in place.

Contractor must use caution when removing and installing curb and gutter from Station 39+00 to 42+25 due to underground lines in the vicinity.

AT&T Communications will be relocating facilities located on the utility pole being relocated by the Oconomowoc Electric Utility at Station 38+90 LT. This work is planned to commence on approximately 1/1/14 and take approximately 25 working days.

The AT&T Communications contact is Mr. Joel Ostrenga, (262) 896-7427.

Charter Communications

Charter Communications has overhead facilities located throughout the length of the project. They have no underground lines within the project area.

Charter Communications will be relocating two facilities located on utility poles being relocated by the Oconomowoc Electric Utility at Station 38+20 RT and Station 38+90 LT. This work is planned to commence on approximately 1/1/14 and take approximately 10 working days.

The Charter Communications contact is Mr. Ron Frase, (920) 263-0015.

Oconomowoc Electric Utility

The Oconomowoc Electric Utility has overhead facilities located throughout the length of the project. They also have underground services located primarily between Station 17+00 and 32+00 and between Station 48+50 and 71+00. These underground facilities include a number of road crossings. The underground lines are located in the vicinity of the sidewalk or curb and gutter. No conflict is anticipated with underground facilities.

Oconomowoc Electric Utility plans to relocate 3 utility poles (Station 12+90 LT, 38+20 RT and 38+90 LT), and 2 light poles (Station 57+40 RT, 69+75 LT) throughout the project area in order to establish proper horizontal clearance along the roadway. The utility poles at Station 38+20 and 38+90 hold additional facilities owned by AT&T and Charter Communications. Two new poles will be installed by Oconomowoc Electric Utility, and AT&T and Charter Communications will relocate their facilities to the new poles. Oconomowoc Electric Utility will then remove the 2 existing utility poles. Oconomowoc Electric Utility also plans to raise overhead road crossings at Station 45+20 and 46+50 to meet the WisDOT minimum vertical clearance requirement of 17 feet. This utility work is planned to commence on 12/9/13 and take approximately 45 working days.

Oconomowoc Electric Utility will not be relocating six utility poles at Station 14+50, 39+75, 41+00, 42+40, 43+75, and 45+00. The utility pole at Station 14+50 has been granted exception under the Exception to Standards Report. As the curblane is being shifted inward approximately two feet on the south side of the roadway from Station 38+50 to 45+00, the remaining five poles will not be moved, and will not require an exception to standards.

One electric manhole will be adjusted during roadway construction by the contractor as part of this contract.

Contractor shall contact Oconomowoc Electric Utility before removing any electrical underground cables, to verify that they have been abandoned and carry no electrical current. Contractor must contact Oconomowoc Electric Utility at (262) 569-6424 to arrange for this verification. If a line has been damaged or severed, contractor must contact the Oconomowoc Electric Utility Emergency Line at (262) 569-2196 between the hours of 7:30 AM and 4:00 PM or (262) 569-3255 for after hours emergencies.

The Oconomowoc Electric Utility contact is Mr. Casey Lemke, (262) 569-6424.

Oconomowoc Sanitary Utility

The Oconomowoc Sanitary Utility has facilities located throughout the length of the project. A gravity sewer main enters Summit Avenue from the south at Cross Street and ends at Station 70+30. The sewer is located along the centerline of the roadway from Station 14+70 to 40+00, then shifts to the north driving lane from Station 40+00 to 58+00 and shift to the south drive lane from Station 40+00 to 58+00. The sewer main connects to additional gravity sewer lines at George Street and the old Forest Street location (Station 53+25). Services are provided to the residences and businesses throughout the project area. No conflict is anticipated with the existing sanitary sewer facilities.

Sanitary sewer manholes will be adjusted and/or repaired during roadway construction by the contractor as part of this contract.

The Oconomowoc Sanitary Utility contact is Mr. Thomas Steinbach, (262) 569-2192.

Oconomowoc Water Utility

The Oconomowoc Water Utility has facilities located throughout the length of the project. An 8-inch water main extends from Station 12+80 to 39+00 and is located in the north drive lane. A 12-inch main extends from 39+00 to 73+87 and is located in the north driving lane from Station 39+00 to 59+85 and in the south driving lane from Station 59+85 to 73+87. The water main connects to additional mains at every cross street along the project and provides services to the residences and businesses throughout the project area. No conflict is anticipated with existing water main or facilities.

Oconomowoc Water Utility will not be relocating two hydrants at Station 48+85 and Station 55+27. The hydrant at Station 55+27 has been granted exception under the Exception to Standards Report. As the curbline is being shifted inward approximately 2 feet on the south side of the roadway from Station 38+50 to 45+00, the hydrant at Station 48+85 will not be moved, and will not require an exception to standards.

Two hydrants at Station 64+10 at Station 66+80 will be relocated by the contractor during construction as part of this project due to a conflict with the proposed sidewalk. Water valve boxes will also be adjusted during roadway construction by the contractor as part of this project.

The Oconomowoc Water Utility contact is Mr. Scott Osborn, (262) 569-6421.

7. Municipality Acceptance of Sanitary Sewer and Water Main Construction.

Both the department and Oconomowoc Utilities personnel will inspect construction of sanitary sewer and water main under this contract. However, construction staking, testing, and acceptance of the sanitary sewer and water main construction will be by Oconomowoc Utilities.

105-001 (20140630)

8. Referenced Construction Specifications.

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

9. Other Contracts.

The department plans to contract for bridge structure replacements along IH 94, which has work that will be in progress concurrently with the work under this contract. Coordinate work operations and traffic requirements between this contract and the following:

- WisDOT Project 1060-38-70, IH 94 (Dousman Road) bridge replacement, contact WisDOT project manager, David Pittman at (262) 548-6439. (Scheduled for 2015 Construction)
- WisDOT Project 1060-38-71, IH 94 (Golden Lake, CTH BB) bridge replacement, contact WisDOT project manager, David Pittman at (262) 548-6439. (Scheduled for 2016 Construction)

Modifications to the traffic control plan may be required by the engineer to be safe and consistent with adjacent work by others. Contractor is responsible for implementing and coordinating traffic control measures with other contracts.

10. Erosion Control.

The contractor shall prepare and submit an erosion control implementation plan (ECIP) for the project including borrow sites, material disposal sites, dust control, and dewatering in accordance to Chapter TRANS 401 requirements. The erosion control implementation plan shall supplement information shown on the plans and shall not reproduce it. The erosion control implementation plan will identify how the contractor intends to implement the project’s erosion control plan.

Provide the ECIP 14) calendar days prior to the pre-construction conference. Provide one copy of the ECIP to WisDOT and one copy of the ECIP to the WDNR Liaison Craig Webster at (262) 574-2141. Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial removals and topsoil stripping

operations through the subsequent grading, paving, and re-topsoiling to minimize the period of exposure to possible erosion. Do not implement the ECIP until it has been approved by the department.

Complete an over-winter ECIP by the end of September prior to the winter shutdown of construction operations. Provide one copy of the over-winter ECIP to WisDOT and one copy of the over-winter ECIP to the WDNR Liaison Craig Webster at (262) 574-2141. Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-topsoiling to minimize the period of exposure to possible erosion. Do not implement the over-winter ECIP until it has been approved by the department.

When performing roadway cleaning operations, the contractor shall use equipment having vacuum or water spray mechanism to eliminate the dispersion of dust. If vacuum equipment is employed, it shall have suitable self-contained particulate collectors to prevent discharge from the collection bin into the atmosphere.

Stockpile excess material or spoils on upland areas away from wetlands, floodplains and waterways. Stockpiled soil shall be protected against erosion. If stockpiled material is left for more than 14 calendar days, seed the stockpile with temporary seed.

When performing stormwater pond site construction, pursue grading and finish landscaping construction operations in a timely and diligent manner, continuous methodical operation from the initial removals and topsoil stripping through the subsequent grading and re-topsoiling to minimize the period of exposure to possible erosion. Facilitate rapid restoration by completing all finish landscaping within fourteen (14) calendar days after initial removals and topsoil stripping begins on the site.

This next paragraph applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70:

Re-topsoil of graded areas, as designated by the engineer, immediately after grading is completed within those areas. Seed, fertilize, and mulch/erosion mat top-soiled areas, as designated by the engineer, within five calendar days after placement of topsoil. If graded areas are left exposed for more than 14 calendar days, seed those areas with temporary seed.

This next paragraph applies only to Project 2718-00-74:

Final restoration of disturbed areas shall occur within 7 calendar days of adjacent curb and gutter, sidewalk or driveway installation. If curb and gutter and sidewalk are not being installed concurrently, temporary stabilization may be utilized in place of final restoration, provided that temporary stabilization occurs within 7 calendar days, and final restoration occurs within 7 calendar days of final curb and gutter or sidewalk installation. Temporary stabilization shall be incidental to the cost of topsoiling and hydromulching.

11. Material and Equipment Staging.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

Submit a map showing all proposed material stockpile or equipment storage locations to the engineer 14 days prior to either preconstruction or proposed use, whichever comes first. Identify the specific purposes for the location. Obtain written permits from the property owner, and submit two copies to the engineer before use. Do not stockpile or store materials or equipment on wetlands.

SEF Rev. 13_0204

12. Pavement Breaking Equipment.

Use only hydraulic pavement breaking equipment for breaking pavement within 200 feet of any building. Do not use guillotine, drop hammer, falling weight, gravity impact breakers or equivalent equipment.

13. Lane Rental Assessment.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

A General

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

The contractor will incur a Lane Rental Fee Assessment for each lane closure outside of the designated times of lane closures. The contractor will not incur a Lane Rental Fee Assessment for closure of lanes during the designated times of lane closures. The designated times of lane closure are:

8:00 PM to 5:00 AM daily

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

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

A.1 Lane Rental Fee Assessment

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

\$1,500 per lane per 15 minutes

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

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

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

B (Vacant)

C (Vacant)

D Measurement

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

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

14. Work Force Opportunities.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

After contract award, attend the Work Force Opportunities workshop. The workshop will take place on the same day and be in the same location as the pre-construction meeting.

The Work Force Opportunities workshop will provide a venue for contractors to have meaningful dialogue with Transportation Alliance for New Solutions (TrANS) providers regarding the hiring of TrANS graduates. Reference ASP-1 for additional information regarding TrANS. The prime contractor and the five largest subcontractors according to let value of work shall provide staff with hiring authority to participate in a job-matching session during this workshop. Workshop participants will, at a minimum:

Review contractor hiring processes for general labor positions.
Listen to a presentation provided by TrANS providers regarding the TrANS training program, including details regarding how contractors can hire TrANS graduates.
Review TrANS graduate availability for working on the project.
Meet one-on-one for two minutes with each TrANS graduate in attendance at the meeting.
SEF Rev. 12_0510

15. Available Documents.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

The department will make all its information available to bidding contractors. The list of documents that are available for contractors' information includes but is not limited to:

- Design Study Report
- Exceptions to Standards Report
- Pavement Type Selection Report
- Environmental Assessment
- As-Built Drawings

These documents are available from David Pittman at 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-6439.

Reproduction costs will be applied to any copies requested.
SEF Rev. 13_1218

16. Geotechnical Investigation Information.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

Replace standard spec 102.5(3) 2 with the following:

Available information relative to subsurface exploration, borings, soundings, water levels, elevations or profiles are available for review at the department's Regions office. Contact David Pittman at 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-6439.

Geotechnical Exploration Report
Proposed Replacement Bridges B-67-276 and 277
January 18, 2013

Additional geotechnical information is available from studies and analyses that have been performed by CGC, Inc. for the Wisconsin Department of Transportation (WisDOT) for other aspects of this project. Review the available information to determine if it is of use. The use or not of the geotechnical information does not relieve performing the work in accordance to the plans and specifications.

SEF Rev. 12_0813

17. Contractor Notification.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

Replace standard spec 104.2.2.2(2) with the following:

If the contractor discovers the differing condition, provide a written notice, as specified in standard spec 104.3.3, of the specific differing condition before further disturbing the site and before further performing the affected work.

104.3.2 (Vacant)

104.3.3 Contractor Initial Written Notice

Replace standard spec 104.3.2 and 104.3.3 with the following:

If required by standard spec 104.2, or if the contractor believes that the department's action, the department's lack of action, or some other situation results in or necessitates a contract revision, promptly provide a written notice to the engineer. At a minimum, provide the following:

A written description of the nature of the issue.

The time and date of discovering the problem or issue.

If appropriate, the location of the issue.

Provide the additional information specified in standard spec 104.3.5 as early as possible to assist the engineer in the timely resolution of an identified issue. The engineer will not require, in subsequent submissions, duplication of information already provided.

SEF Rev. 12_0823

18. Information to Bidders, Use of Recovered Material.

The department encourages the use of waste materials and recovered industrial byproducts as material substitutions (standard spec 106.2.1), provided they meet standard specification gradation requirements, conform to NR 538 requirements, and/or follow standard engineering practice for their intended use.

SEF Rev. 12_1212

19. Leadership Partnering Meetings.

The department will implement mandatory leadership partnering meetings on this contract.

Key members of the contractor project team, major subcontractors project team shall meet with department leadership on a bi-weekly basis. Attendance at this meeting shall include project level supervisory personnel and contractor/state level management personnel. Project design engineers, key project personnel of the contractor's principal subcontractors and suppliers, and other stakeholders may also be invited to attend, as needed.

This meeting will facilitate communication between parties and review issues and issues resolution procedures, help resolve disputes timely, satisfactorily, and as near as possible to the originating level of the dispute.

20. Public Information Meetings.

Participate in department-sponsored public information meetings as the engineer requests. Ensure that representatives of subcontractors also participate in those meetings if the engineer requests.

21. Contractor Document Submittals.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

This special provision describes minimum requirements for submitting project documents to the department. This special provision does not apply to shop drawing submittals.

Provide one electronic copy of all documents requiring department review, acceptance, or approval. Attach a completed engineer-provided transmittal sheet to each email submittal. The department will reject submittals with incomplete transmittal sheets and require re-submittal.

The department will return one reviewed, accepted, or approved original to the contractor. Additional return originals can be requested. Submit an additional original for each additional return original requested.

Submit electronic copies in Adobe Acrobat (.pdf) format via email to an account the engineer determines. If possible, translate original documents from their native format (e.g. Word, Excel, AutoCAD, etc.) using an Adobe Acrobat translation routine. Scan other documents to Adobe Acrobat format with a minimum resolution of 600 dpi.

All costs for contractor document submittals are incidental to the contract.
SEF Rev. 14_0602

22. Labor Compliance Reporting – Payroll Requirements.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

Submit weekly certified payrolls verifying prevailing wage rates for all work performed under the contract as directed in the civil rights and labor compliance management system manual. Submit weekly certified payrolls within seven calendar days of the week covered by the weekly certified payroll.

SEF Rev. 12_1008

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

Standard spec 106.2 – Supply Source and Quality

Add the following to standard spec 106.2:

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

Department-Furnished Items
6-Count Fiber Optic Cable
CCTV Camera
Camera Pole Anchor Bolts
Microwave Vehicle Detector
Solar Power System Assembly

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

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

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

Standard spec 106.3 – Approval of Materials

Supplement standard spec 106.3 with the following:

Design/Shop Drawings

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

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

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

Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.

Mounting LED warning signs to the sign structure.

Mounting detail for dynamic message signs.

Any contractor-designed structure or foundation.

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

670-005 (20100709)

24. Intelligent Transportation Systems – General Requirements.

A Description

A.1 General

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

Unusual aspects of this project include:

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

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

A.2 Surge Protection

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

B Materials

B.1 General

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

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

B.2 Outdoor Equipment

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

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

B.3 Custom Equipment

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

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

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

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

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

in the drawings and maintenance manuals supplied to the department shall be permanently affixed to each board.

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

B.4 Environmental Conditions

Equipment shall continue to operate as specified under the following ranges of environmental conditions, except as noted in the specifications for individual pieces of equipment.

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.

Duty Cycle: Continuous

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.

Electrical Power:

- **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.
- **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.
- **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.

Temperature and Humidity:

- **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.
- **Equipment in Controlled Environments** shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

B.5 Patch Cables and Wiring

All cables and wiring between devices installed in a single cabinet, or in separate cabinets sharing a single concrete base, will be considered incidental to the installation of the devices and no separate payment will be made for them. It is anticipated that this will include fiber optic patch cables between termination panels and Ethernet switches, 10 /

100 MBPS Ethernet cables, RS-232 cables between individual devices and terminal servers, and power cables between individual devices and power sources within the cabinets.

B.6 Surge Protection

Low-voltage signal pairs, including twisted pair communication cable(s) entering each cabinet shall be protected by two-stage, plug-in surge protectors and shall be installed on both ends of camera control cables. The protectors shall meet or exceed the following minimum requirements:

The protectors shall suppress a peak surge current of up to 10k amps.

The protectors shall have a response time less than one nanosecond.

The protector shall clamp the voltage between the two wires at a voltage that is no more than twice the peak signal voltage, and clamp the voltage between each wire and ground at 50 volts.

The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.

The protector shall also contain a resettable fuse (PTC) to protect against excessive current.

There shall be no more than two pairs per protector.

It shall be possible to replace the protector without using tools.

Cables carrying power to curve signs shall be protected at the cabinet by grounded metal oxide varistors of appropriate voltages. The varistors must be at least 0.8 inch in diameter.

C Construction

C.1 Thread Protection

Provide rust, corrosion, and anti-seize protection at all thread assemblies of metallic parts by coating (non-spray) the mating surfaces with an approved compound. Failure to use an approved compound will result in no payment for the items to which coating was to have been applied.

C.2 Cable Installation

When installing new cables into conduits containing existing cables, remove the existing cables and reinstall the existing cables simultaneously with the new cables. Take every precaution necessary to protect the existing cables. In the event of avoidable damage to the existing cables, replace all damaged cables, in-kind, at no additional expense to the department. When cables are pulled into conduit, use a cable pulling lubricant approved by the cable manufacturer. Submit documentation supporting manufacturer approval of the lubricant to the engineer.

C.3 Wiring

Every conductor, except a conductor contained entirely within a single piece of equipment, must terminate either in a connector or on a terminal block. Provide and install the connectors and terminal blocks where needed, without separate payment. Use approved splice kits instead of connectors and terminal blocks for underground power cable splices.

Permanently label and key connectors to preclude improper connection. Obtain prior engineer approval for the labeling method(s) prior to use.

Terminal blocks must be affixed to panels that permanently identify the block and what wire connects to each terminal. This may be accomplished by silk screening or by installing a laminated printed card under the terminal block, with the labels on portions of the card that extend beyond the block. Installation of terminal blocks by drilling holes in the exterior wall of the cabinet is not acceptable.

Use barriers to protect personnel from accidental contact with all dangerous voltages.

Do not install conductors carrying AC power in the same wiring harness as conductors carrying control or communication signals.

Arrange wiring, including fiber optic pigtails, so that any removable assembly can be removed without disturbing wiring that is not associated with the assembly being removed.

Communication and control cables may not be spliced underground, except where indicated on the plans.

Cables in the Statewide Traffic Operations Center or in communication hubs, which are not contained within a single cabinet, shall have at least 10 feet of slack.

C.4 System Operations

If the contractor's operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

C.5 Surge Protection

Arrange the equipment and cabinet wiring to minimize the distance between each conductor's point of entry and its protector. Locate the protector as far as possible from electronic equipment. Ensure that all wiring between the surge protectors and the point of entry is free from sharp bends.

D Measurement

No separate measurement will be made for the work described in this article.

E Payment

No separate payment will be made for the work described in this article. All work described in this article shall be included under the ITS items in the contract.

670-010 (20100709)

25. Dust Control Implementation Plan.

A Description

Develop, update, and implement a detailed Dust Control Implementation Plan (DCIP) for all land-disturbing construction activities and associated impacts both within the project site boundaries and outside the project site boundaries. Incorporate contract bid items that this article specifies into the DCIP.

B (Vacant)

C Construction

C.1 General

Take responsibility for dust control on the project as specified in standard spec 107.18. Minimize dust emissions resulting from land disturbing activities. Do not generate excessive air borne particulate matter (PM) or nuisance dust conditions. Take 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.

Submit a DCIP to the engineer for review at least 14 calendar days before the preconstruction conference. Coordinate with the department, if requested, to resolve DCIP related issues before the preconstruction conference. The department will either approve the DCIP or request revisions. Do not initiate any land-disturbing activities without the department's approval of the DCIP.

C.2 Dust Control Implementation Plan Contents

Develop a DCIP tailored to the specific needs of the project. Consider potential impacts to businesses and residences adjacent to the job site. Describe in detail all land disturbing, dust generating activities. Identify strategies to prevent, mitigate, and collect excess dust. Provide proactive measures for work in the vicinity of Oconomowoc Memorial Hospital (Station 50+00 to Station 63+00) and the Oconomowoc Memorial Hospital Outpatient Clinic at 791 Summit Avenue (Station 63+00 to Station 68+00). Establish clear lines of communication with the engineer to ensure that all dust control issues can be dealt with promptly.

The DCIP shall include, but not be limited to, all of the following:

1. A single contact person with overall responsibility for the DCIP development as well as surveillance and remediation of job related dust. Include the following:
 - Name, firm, address, and working-hours phone number.
 - Non-working-hours phone number.
 - Email address.
2. Individual contact persons and their respective areas of responsibility. Include the following:
 - Name, firm, address, and working-hours phone number.
 - Non-working-hours phone number.
 - Email address.

3. A site map locating project features, the job site boundaries, all ingress and egress points, air intakes and other dust-sensitive areas, and all public and private paved surfaces within and immediately adjacent to the job site. Show where specific land disturbing, dust generating activities will occur and, to the extent possible, where employing various dust control or prevention strategies.
4. A matrix showing, for each anticipated land disturbing, dust generating activity, the following:
 - Preventive measures that shall be employed.
 - The applicable contact person.
 - The contractor's timetable and/or surveillance measures used to determine when remediation is required.
 - The specific dust control and remediation measures that shall be employed. List the specific contract bid items that shall be used for payment. Also indicate costs that are incidental to the contract.
 - Both maintenance and cleanup schedules and procedures.
 - How excess and waste materials shall be disposed of.
5. A description of how off-site impacts shall be monitored and dealt with.

C.3 Updating the Dust Control Implementation Plan

Update the DCIP throughout the term of the contract as the engineer directs. Obtain the engineer's approval for all DCIP alterations. Also obtain the engineer's approval for DCIP routine adjustments for weather, job conditions, or emergencies that will have an impact on payment under the bid items listed in the approved DCIP.

C.4 Dust Control Deficiencies

Correct engineer identified dust control deficiencies within the time the engineer specifies. The engineer will allow from 30 minutes to 24 hours from the time the engineer notifies the contractor in writing of the deficiency. Deficiencies include, but are not limited to, actions or lack of actions resulting in excessive dust, failing to comply with the contractor's dust control implementation plan or associated special provisions, and failing to properly maintain equipment.

D Measurement

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. The department will not measure work performed under a DCIP alteration unless the engineer specifically approves that alteration.

Measurement under the DCIP shall include, but is not limited to, the contract bid items listed below:

623.0200	Dust Control Surface Treatment
624.0100	Water
628.7560	Tracking Pads
SPV.0105.001	Pavement Cleanup Project 1060-30-70
SPV.0105.002	Pavement Cleanup Project 3030-08-70
SPV.0105.702	Pavement Cleanup Project 2718-00-74

The department will measure work completed under other existing contract bid items if approved as a part of the DCIP. The department will consider new bid items to the contract if proposed under the DCIP. The department will not measure work required under the DCIP that is not included in contract bid items.

E Payment

All costs associated with the development and updating of the DCIP are incidental to the contract. The department will pay separately for the work required to implement the actions approved in the DCIP under the contract bid items approved as a part of the DCIP. All other costs associated with work approved under the DCIP are incidental to the contract.

SEF Rev. 12_1004

26. Public Convenience and Safety.

This special provision article applies only to Project 2718-00-74.

Revise standard spec 107.8(6) as follows:

Check for and comply with local ordinances governing the hours of operation of construction equipment. Do not operate motorized construction equipment from 7:00 PM until the following 7:00 AM, unless prior written approval is obtained from the engineer.

107-001 (20060512)

27. Notice to Contractor – Contamination Beyond Construction Limits.

The department completed a Phase I Hazardous Materials Assessment for soil and ground water contamination for locations within this project where excavation is required. Assessment results indicated that petroleum-contaminated soil is present at the following site:

1. Station 333+00 NB RT to 337+00 NB RT (1004 E. Summit Avenue)

The contaminated soils at the above sites are expected to be beyond the excavation limits necessary to complete the work under this project. Control construction operations at these locations to ensure that they do not extend beyond the excavation limits indicated in the plans. If contaminated soils are encountered at these sites or elsewhere on the project during excavation, terminate excavation in the area and notify the engineer.

The Hazardous Materials Report is available by contacting: Andrew Malsom (262) 548-6705.

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

John Roelke, License Number All-119523, inspected Structure B-67-0188 for asbestos on August 9, 2012. No regulated Asbestos Containing Material (RACM) was found on this structure. A copy of the inspection report is available from: David Pittman, (262) 548-6439.

In accordance to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form to Mike Cape, (262) 548-5930 and DOT BTS-ESS attn: Hazardous Materials Specialist PO Box 7965, Madison, WI, 53707-7965. In addition, comply with all local or municipal asbestos requirements.

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

- Site Name: Structure B-67-0188, STH 67 southbound over IH-94.
- Site Address: 3.3 miles North of Junction USH 18.
- Ownership Information: WisDOT Transportation Southeast Region 141 NW Barstow Street, Waukesha Wisconsin 53187
- Contact: Michael Cape.
- Phone: (262) 548-5930.
- Age: 38 years old. This structure was constructed in 1976.
- Area: 9491 SF of deck

Insert the following paragraph in Section 6.g.:

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

29. Subletting the Contract.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

Replace standard spec 108.1.1 (3) with the following:

If proposing to have a party other than a subcontractor perform work, notify the engineer and submit details of this arrangement in writing. The engineer will determine if that arrangement constitutes subcontracting. Submit copies of all other agreements between any parties regarding the performance of work under the contract with the Request to Sublet.

SEF Rev. 13_0225

30. Coordination with Businesses.

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

108-060 (20030820)

31. Removing Old Structures.

Prior to removing Structures B-67-78 and B-67-188, submit a Structure Removal Plan to the engineer for review and set up a pre-demolition meeting. Do not remove Structures B-67-78 and B-67-188 until the engineer has approved the Structure Removal Plan.

32. Construction Vibration.

This special provision article applies only to Project 2718-00-74.

There is the potential for construction vibration to damage equipment at Oconomowoc Memorial Hospital. No vibratory rolling is to be used between Station 59+00 and Station 62+00. Only static rolling is to be used.

33. Pay Plan Quantity.

A Bid Items Designated as Pay Plan Quantity

Replace standard spec 109.1.1.2 with the following:

If the schedule of items designates a bid item with a ****P**** in the title, the department will not measure that bid item. The department will use the plan quantity, the approximate quantity shown on the schedule of items, for payment unless a contract revision affects a designated bid item.

If the engineer revises the contract under standard spec 104.2, the department will adjust the quantity of designated items that are affected by the revised work. The engineer will adjust the affected quantity, with a contract modification as defined in standard spec 101.3, regardless of the magnitude of the revised work, which may result in either an increase or a decrease from the quantity shown on the schedule of items. The department will measure revised work as specified in standard spec 109.1.1.1. If the engineer revises the contract to eliminate a designated item, the engineer will not pay for the designated item, except as specified in standard spec 109.5.

The approximate quantity shown on the schedule of items for a designated item is for information only and only an estimate. The engineer makes no guarantee that the quantity, which can be determined by computations based on contract information, will equal the

approximate quantity shown on the schedule of items. The engineer will not make a quantity adjustment for discrepancies.
SEF Rev. 12_0510

34. Pavement Removal.

This special provision article applies only to Project 2718-00-74.

Add the following to standard spec 204:

The asphalt roadway from Station 43+00 to Station 50+42 and Station 51+75 to Station 73+87 is underlain by concrete pavement.

Removal and disposal of both the asphalt roadway and the underlying concrete pavement shall be included in the cost of pavement removal.

35. QMP Subgrade.

This special provision article applies only to Project 1060-30-70, 2718-00-75, and 3030-08-70.

A Description

This special provision describes requirements for subgrade materials within the roadway foundation as defined in standard spec 101.3. Conform to standard spec 207 as modified in this special provision for all work within the roadway foundation at the following locations:

- STH 67, all temporary and permanent freeway ramps, IH 94 shoulder widening, all local roads and temporary crossovers

Provide and maintain a quality control program. A quality control program is defined as all activities, including process control inspection, sampling and testing, documentation, and necessary adjustments in the process that are related to the construction of subgrade which meets all the requirements of this provision.

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

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

B Materials

B.1 Quality Control Plan

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

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

An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.

The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.

An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

Location of the QC laboratory, retained sample storage, and control charts and other documentation.

A summary of the locations and calculated quantities to be tested under this provision.

An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

B.2 Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present at the site during all subgrade preparation, fill placement, compaction, and nuclear testing activities. Have a nuclear density technician certified under HTCP at level I perform field density and field moisture content testing.

B.3 Laboratory

Perform quality control testing in a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:

Materials Laboratory

3502 Kinsman Boulevard

Madison, Wisconsin 53704-2583

Telephone: (608) 246-7938

<http://www.dot.state.wi.us/business/engrserv/lab-qualification.htm>

B.4 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at <http://www.atwoodsystems.com/materials>. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge. Nuclear density gauge calibration verification is required daily when earthwork construction operations require

testing under this special provision article. This calibration verification shall be performed using the department's "Validator" apparatus which is located at the Zoo Interchange Construction Field Office: 2424 S. 102nd St., West Allis, Wisconsin 53227. Establish a standard gauge reading for the "Validator" using the ten test average method. The source emitter depth for calibration verification, in the direct transmission mode, will be determined by the engineer. This procedure will establish the "Validator" apparatus, as the contractor's project reference site.

Conform to ASTM D 2950 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

B.5 Soil Source Study

Conduct and submit a soil source study before beginning of grading operations. Ensure that this study identifies each distinct soil type on the project within the top 15 feet of cut areas and all borrow material. Provide the in-bank natural moisture content for each soil. Develop moisture-density curves for each identified soil type by utilizing AASHTO T 99, with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65. If a different specific gravity is used perform a specific gravity test. Determine the maximum density and corresponding optimum moisture level for each soil type. Develop a site-specific family of Proctor curves for this contract from the completed soil source study and submit to the engineer for review and acceptance.

Perform characterization tests on each of the soil types selected for the soil source study. The tests for roadway include AASHTO T 89, AASHTO T 90, AASHTO T 27, and AASHTO T 11. Classify each soil type selected according to the AASHTO soil classification system based on the characterization tests. Do not begin grading operations until the engineer accepts the soil source study.

Use the soil types identified in the soil source study with corresponding maximum densities and optimum moisture values to determine the compaction compliance on the project. Continue the soil source study in those areas of cuts greater than 15 feet that were not accessible during the initial study. Include data on additional soil types if project conditions change. Ensure that tests of additional soil types are complete and the engineer accepts the results before incorporating the material into the roadway foundation.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department at:

Regional Materials Laboratory
Attn: Paul Emmons
935 S. 60th Street
West Allis, Wisconsin 53214
Telephone: (414) 266-1158

Retain and identify two representative samples of each Proctor. Submit one sample to the engineer. Retain one sample on site for use when performing textural identification.

B.6 Quality Control Documentation

B.6.1 Control Charts

Maintain separate control charts for the field density and field moisture content of each grading area. Designate grading areas within the project as follows:

Embankment portions of the project, except within 200 feet of bridge abutments.

Embankment within 200 feet of bridge abutments.

Subgrade cut portions of the project.

Embankment in pipe culvert, sewer and waterline trenches.

Structure and granular backfill placed at bridge abutments.

Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random and engineer-requested testing but only include the contractor's randomly selected QC test results in the 4-point running average. The contractor may plot other contractor-performed process control or informational tests on the control charts, but do not include them in 4-point running averages.

Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable control limits, the contractor's individual test results, the running average of the last 4 data points, and the engineer's quality verification test data points. Use the control charts as part of a process control system for identifying potential problems and assignable causes. Format control charts according to the CMM.

Submit control charts to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.6.2 Records

Document all observations, inspection records, adjustments to fill placement procedures, soil changes, and test results daily. Note the results of the observations and inspection records as they occur in a permanent field record.

Provide copies of the field density and field moisture running average calculation sheets, the one-point Proctor tests, records of procedure adjustments, and soil changes to the engineer daily.

Submit original testing records to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.7 Contractor Testing

B.7.1 General

Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present during all subgrade preparation, fill placement, compaction, and testing. Have a nuclear density technician certified under

HTCP at level I perform the testing for field density and field moisture content. During subgrade construction, use sampling and testing methods identified in the CMM to perform the required tests at randomly selected locations at the indicated minimum frequency for each grading area.

Determine the cubic yards for testing based on a total load count system the engineer and contractor agree to.

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically. Use project stationing to determine horizontal location and grade stakes to determine vertical location.

Test areas of suspect compaction or areas which appear to be nonconforming as determined by the engineer.

B.7.2 Field Density and Field Moisture

Perform the field density and field moisture tests using the nuclear density meter method according to AASHTO T 310. Ensure that each field density test material is related to one of the specific soil types identified in the soil source study in determining the percent compaction. Use textural identification as the primary method of establishing this relationship. Utilize the representative samples retained from the soil source study when performing the textural identification. Use a coarse particle correction according to AASHTO T 224.

If field density and field moisture tests cannot be performed by the nuclear density method due to a high percentage of oversized particles as determined according to AASHTO T 99 for highway embankments, observe the placement of the embankment and document the basis of acceptance. Document daily quantities of untested embankment and locations where untested embankment is placed, and keep a cumulative quantity of untested embankment material for the duration of the project. Include the daily documentation and a summary of the cumulative quantity of untested embankment material with the project records.

B.7.3 One-Point Proctor

Obtain a representative sample of the fill material and test according to AASHTO T 272. Compare the sample to the curves developed in the soils source study to determine the maximum dry density and optimum moisture. Use the appendix for AASHTO T 272 as a guide in this determination.

B.7.4 Testing Frequency

B.7.4.1 Subgrade Embankment portions of the project, except within 200 Feet of bridge abutments

Perform the required tests at the following frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One per 2,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests.
One-Point Proctor (AASHTO T 272)	One per 9,000 cubic yards or when a change in fill material occurs.

B.7.4.2 Subgrade Embankment Within 200 Feet of Bridge Abutments

Perform the required tests at the following frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One per 1,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests.
One-Point Proctor (AASHTO T 272)	One per 9,000 cubic yards or when a change in fill material occurs.

B.7.4.3 Subgrade Cut

Perform the required tests at the following frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One test per 1,000 linear feet of cut or one test per cut area whichever yields the most tests. The testing will be completed at the finished subgrade elevation.

B.7.4.4 Subgrade Embankment in Pipe Culvert, Sewer and Waterline Trenches

Perform the required tests at the following minimum frequencies per trench run between structures. Test trenches individually at the frequency listed below. For example, lateral lines and trunk lines are to be considered individual trenches:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One test per 100 CY of backfill placed per lift or one test per day whichever yields the most tests.
One-Point Proctor (AASHTO T 272)	One per 3,000 cubic yards or when a change in fill material occurs.

B.7.4.5 Structure and Granular Backfill at Bridge Abutments

Perform the required tests at the following minimum frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One test per 2 feet of vertical backfill height per abutment.
One-Point Proctor (AASHTO T 272)	One per 3,000 cubic yards or when a change in fill material occurs.

B.7.5 Compaction Zones

B.7.5.1 Subgrade Embankment portions of the project, except within 200 Feet of Bridge Abutments

Embankment material placed within 6 feet of the finished subgrade elevation is classified as upper zone material. Material placed more than 6 feet below the finished subgrade elevation is classified as lower zone material.

B.7.5.2 Subgrade Embankment Within 200 Feet of Bridge Abutments

All embankment material placed within 200 feet of bridge abutments is subject to the quality controls for upper zone material.

B.7.5.3 Subgrade Cut

Subgrade material in cut areas is subject to the quality controls for upper zone material.

B.7.5.4 Subgrade Embankment in Culvert Pipe Trenches

Material placed within culvert pipe trenches is subject to the quality controls for the zone that the material is located in.

B.7.5.5 Structure and Granular Backfill at Bridge Abutments

All backfill material placed adjacent to bridge abutments is subject to the quality controls for upper zone material.

B.7.6 Control Limits

B.7.6.1 Field Density

B.7.6.1.1 General Conditions

The lower control limit for field density measurements in the upper zone is a minimum of 95.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 92.0% of the maximum dry density for any individual test.

The lower control limit for field density measurements in the lower zone is a minimum of 93.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 90.0% of the maximum dry density for any individual test.

B.7.6.2 Field Moisture Content

B.7.6.2.1 general conditions

The upper control limit for the field moisture content in the upper and lower zones is 105.0% of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average.

The lower control limit for the field moisture content in the upper and lower zones is 65.0% of the determined optimum moisture for the 4-point running average. There is no lower control limit for the field moisture of material having less than 5% passing the No. 200 sieve.

B.7.7 Corrective Action

Notify the engineer if an individual field density test falls below the individual test control limit. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the density of the subgrade material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

Notify the engineer if the field density or field moisture running average point falls below the running average control limit for field density or outside the control limits for field moisture. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the quality of the material represented by the running average point. Retest each corrected area at a new random location within its' represented quantity and determine a new 4-point running average. If the new running average is not acceptable, perform further corrective actions and retest at new random locations.

If the contractor's control data is proven incorrect resulting in a field density or field moisture point falling below the control limit for field density or outside the control limits for field moisture, the subgrade is unacceptable. Employ the methods described above for unacceptable material.

B.8 Department Testing

B.8.1 General

The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all verification and independent assurance personnel for the project.

The department will provide field density and field moisture test results to the contractor on the day of testing. Test results from Proctor split samples will be provided to the contractor within 7 business days after the sample has been received by the department.

B.8.2 Verification Testing

The department will have an HTCP technician, or ACT under the direction of a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified for contractor testing

personnel for each test being verified. The department will notify the contractor before testing so the contractor can observe QV testing.

The department will test field density and field moisture randomly at locations independent of the contractor's QC work. The department will use split samples for verification of Proctor testing. In all cases, the department will conduct the verification tests in a separate laboratory and with separate equipment from the contractor's QC tests.

The department will perform verification testing as follows:

The department will conduct verification tests on Proctor split samples taken by the contractor. These samples may be from the Soil Source Study or the one-point Proctor or sample locations chosen by the engineer from anywhere in the process. The minimum verification testing frequency is one per 90,000 cubic yards, with at least one for each soil type identified in the Soil Source Study.

The department will test the first split sample obtained by the contractor for the one-point Proctor. The engineer may select any contractor-retained sample for verification testing.

The department will conduct at least one verification test for field density and field moisture per 20,000 cubic yards.

Plot verification tests on the contractor's quality control charts as specified in B.6.1. Do not include verification tests in the 4-point running average.

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, 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 sampling and testing procedures and equipment. Both parties will document all investigative work.

Correct all deficiencies. If the contractor does not respond to an engineer request to correct a deficiency or resolve a testing discrepancy, the engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

B.8.3 Independent Assurance Testing

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, which may include one or more of the following:

- Split sample testing.

- Proficiency sample testing.

- Witnessing sampling and testing.

- Test equipment calibration checks.

- Reviewing required worksheets and control charts.

- Requesting that testing personnel perform additional sampling and testing.

Plot the independent assurance tests on the contractor's quality control charts as specified in B.6.1. Do not include independent assurance tests in the 4-point running average.

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 grading work until action is taken. Resolve disputes as specified in B.9.

B.9 Dispute Resolution

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

If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming 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 tests 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.

B.10 Acceptance

The department will accept the material tested under this provision based on the contractor QC tests unless it is shown through verification testing or the dispute resolution process that the contractor's test results are in error.

C (Vacant)

D (Vacant)

E Payment

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

SEF Rev. 14_0106

36. Abatement of Asbestos Containing Material Structure B-67-78, Item 203.0210.S.001.

A Description

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

B (Vacant)

C Construction

Thomas McCoy, License Number All-117261, inspected Structure B-67-78 for asbestos on March 14, 2007 Regulated Asbestos Containing Material (RACM) was found on this structure in the following locations and quantities: 11 square feet of Category 2 non-friable ACM found in light gray caulk at the Southeast bridge parapet.

The RACM on this structure must be abated by a licensed abatement contractor. A copy of the inspection report is available from David Pittman, (262) 548-6439. In accordance to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form and the abatement report to Mike Cape, (262) 548-5930 and DOT BTS-ESS attn: Hazardous Materials Specialist PO Box 7965, Madison, WI. 53707-7965. In addition, comply with all local or municipal asbestos requirements.

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

- Site Name: Structure B-67-78, STH 67 Northbound over IH-94.
- Site Address: 3.3 miles North of Junction USH 18.
- Ownership Information: WisDOT Transportation Southeast Region 141 NW Barstow Street, Waukesha Wisconsin 53187.
- Contact: Mike Cape.
- Phone: (262) 548-5930
- Age: 51 years old. This structure was constructed in 1963.
- Area: 9898 SF of deck

Insert the following paragraph in Section 6.g.:

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

D Measurement

The department will measure Abatement of Asbestos Containing Material (Structure) as a single complete lump sum unit of work, completed in accordance to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
203.0210.S.001	Abatement of Asbestos Containing Material Structure B-67-78	LS

Payment is full compensation for submitting necessary forms; removing all asbestos; properly disposing of all waste materials.

37. Debris Containment B-67-188, Item 203.0225.S.001; Debris Containment B-67-78, Item 203.0225.S.002.

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 IH-94 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:

David Pittman, WisDOT Southeast Region, 141 NW Barstow Street, Waukesha Wisconsin 53187-0798, phone (262) 548-6439

D Measurement

The department will measure Debris Containment B-67-188, and Debris Containment B-67-78 each as a single lump sum unit of work for each structure, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
203.0225.S.001	Debris Containment B-67-188	LS
203.0225.S.002	Debris Containment B-67-78	LS

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

38. Removing Pavement.

Perform this work in accordance to standard spec 204, as shown on the plans, and as hereinafter provided.

Remove existing concrete pavement in a manner that causes minimal disturbance to the underlying base material.

Use material removed under this item as aggregates or crushed materials, and recycle and use in the construction of work under this contract to the maximum extent feasible.

Any surplus salvaged material or unusable material shall become the property of the contractor and shall be disposed of by the contractor in an environmentally acceptable manner. The cost to dispose of all excess materials, including steel reinforcement, shall be included in the item of Removing Pavement.

The crushing, screening, and processing of the removed concrete pavement shall not be measured and paid for separately, but shall be considered as included in the cost of the item into which the produced aggregates are incorporated.

39. Removing Concrete Barrier.

Supplement standard spec 204.5 with the following:

Payment for removing concrete barrier includes all necessary saw cuts.

40. Removing or Abandoning Miscellaneous Structures.

Delete standard spec 204.5.1(3) in its entirety and replace with the following:

When backfilling with Backfill Granular as specified in this special provision articles or as directed by the engineer, the item Backfill Granular is considered incidental to the appropriate bid item.

At locations where Backfill Granular is not specified, contractor may choose to use either Backfill or Backfill Granular and no separate payments will be made for using Backfill Granular.

41. Select Borrow.

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

Material

Furnish and use material that consists of granular material meeting the following requirements: The material shall contain maximum of 15% by weight passing the No. 200 sieve.

208-005 (20031103)

42. Driveways and Resident Access.

This special provision article applies only to Project 2718-00-74.

This work shall conform to standard specs 300 and 400, and as shown on the plans.

Each driveway shall only be closed once, up to a maximum of seven days for concrete work. Provide residents a minimum of 48 hour notice prior to driveway closure.

For all driveways to be replaced, replace the driveway approaches, between the curb and gutter and the sidewalk, with concrete driveways, as shown on plans.

For all driveways to be replaced, if any portion of the driveway is to be replaced behind the sidewalk, use material behind the sidewalk that matches the existing material type (concrete, asphalt or aggregate).

Provide Oconomowoc Memorial Hospital a minimum of 48 hour notice prior to any closure or partial closure of the driveways at Station 56+15 Right, Station 63+75 Right and Station 64+50 Right.

Replace the Oconomowoc Memorial Hospital driveway at Station 63+75 Right, in two phases. Provide continuous tractor trailer access to this driveway at all times.

The driveway at Station 56+15 Right is the main entrance for Oconomowoc Memorial Hospital. Minimize closure time of this entrance. Provide temporary driveway access between initial pavement removal and the installation of base course during Stage 2B of construction.

Provide a minimum of 24 hour notice to the Pizza Hut located at 910 Summit Avenue prior to driveway closure for sidewalk replacement. Pizza Hut driveway closure shall not exceed three days, and concrete work shall take place on a Monday or Tuesday so as to minimize impact to weekend sales.

The Oconomowoc Memorial Outpatient Clinic at 791 Summit Avenue has two driveways at 65+65 RT and 66+15 RT. Keep one of these driveways open at all times.

Unless a driveway is closed for concrete curing, access shall be provided at all times. During reconstruction, provide temporary driveway access between initial pavement removal and the installation of base course.

Provide through access to Summit Avenue at the limits of construction for each stage. Maintain through access to all side streets at all times with the following exceptions: Close no more than two of the following roads at one time during Stage 2B excavation: Marymere Drive, Wood Drive, Crest Road and Maple Lane.

43. Retaining Wall.

This special provision article applies only to Project 2718-00-74.

The existing retaining wall located on private property from Station 38+70 to 45+60 RT shall be protected and preserved during construction.

Contractor shall provide sufficient support for retaining wall during construction to ensure that there is no damage to the structural integrity of the retaining wall.

Contractor shall cover and protect retaining wall to ensure that there is no surface damage done to retaining wall during construction

Any portion of the retaining wall damaged by contractor shall be replaced at contractor's expense.

44. 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, 305, and 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 ^{[1] [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 subplot with any property outside the specification limits is nonconforming. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

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 Boulevard

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

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:

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

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:
A gradation control limit for the No. 200 sieve is exceeded by more than 3.0 percent.
A gradation control limit for any sieve, except the No. 200, is exceeded by more than 5.0 percent.
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:
One non-random test on the first day of placement.
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:

Split sample testing.

Proficiency sample testing.

Witnessing sampling and testing.

Test equipment calibration checks.

Reviewing required worksheets and control charts.

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)

45. Base Aggregate Dense 1 1/4-Inch for Lower Base Layers.

This special provision article applies only to Project 2718-00-74.

Replace standard spec 305.2.2.1(2) with the following

Use 1 1/4-inch base throughout the full base depth.

46. 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. Include auxiliary lanes in Category I and II segments; crossroads with county, state or U.S. highway designations greater than 1500 feet in continuous length; bridges, bridge approaches; and railroad crossings. Exclude roundabouts and pavements within 150 feet of the points of curvature of roundabout intersections.

(3) The engineer may direct straightedging under standard spec 415.3.10 for pavement excluded from localized roughness under C.5.2 (1); for bridges; and for roundabouts and pavements within 150 feet of the points of curvature of roundabout intersections. Other surfaces being tested under this provision are exempt from straightedging requirements.

B (Vacant)

C Construction

C.1 Quality Control Plan

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

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of all quality control personnel.
2. The process by which quality control information and corrective action efforts will be disseminated to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.
3. The methods and timing used for monitoring and/or testing ride quality throughout the paving process. Also indicate the approximate timing of acceptance testing in relation to the paving operations.
4. The segment locations of each profile run used for acceptance testing.
5. Traffic Control Plan

C.2 Personnel

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

C.3 Equipment

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

<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.

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

C.4 Testing

C.4.1 Run and Reduction Parameters

(1) Enter the equipment-specific department-approved filter settings and parameters given in the approved profilers list on the department's QMP ride web site.

<http://roadwaystandards.dot.wi.gov/standards/qmp/profilers.pdf>

C.4.2 Contractor Testing

- (1) 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 subplot 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.

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 partial depth 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.
PCC III	Concrete pavement segments containing any portion of a bridge, bridge approach, railroad crossing, intersection or gap. 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 HTCP certified profiler operator will perform the QV testing. The department will provide the contractor with a listing of the names and telephone numbers of all verification personnel for the project.
- (2) The department will notify the contractor before testing so the contractor can observe the QV testing. Verification testing 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 one 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. Also, the contractor shall prepare the ProVAL Ride Quality Module Reports, showing the IRI for each segment and the areas of localized roughness exceeding an IRI of 200 in/mile. Use ride quality module report as follows:

	<u>Fixed Interval</u>	<u>Continuous (Localized Roughness)</u>
Base-length	500'	25'
Threshold	140"/Mile	200"/Mile

The ProVAL software is available for download at:

<http://www.roadprofile.com>.

- (2) As part of the profiler software outputs and ProVAL reports, document the areas of localized roughness. Field-locate the areas of localized roughness prior to the engineer's assessment for corrective actions. Document the reasons for areas excluded and submit to the engineer.
- (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 .ppf files for each profiler acceptance run data and Ride Quality Module Reports, in .pdf format using the department's Materials Reporting System (MRS) software available on the department's web site:

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

Notify the engineer when the Profiler Acceptance Run data and the Ride Quality Report have been submitted to the MRS system.

C.5 Corrective Actions

C.5.1 General

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

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.

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

1. Direct the contractor to correct the area to minimize the effect on the ride.
2. Leave the area of localized roughness in place with no pay reduction.
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)
> 200	(Length in Feet) x (IRI – 200)

^[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 ride quality module report to the reference documents section of the MRS 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 as approved by the engineer: Mill and replace the full lane width of the riding surface excluding the paved shoulder. Continuous diamond grinding or fine-tooth milling the full lane width, if required, of the riding surface including adjustment of the paved shoulders.
HMA II:	Correct to an IRI of 85 in/mile using whichever of the following methods as approved by the engineer: Mill and replace the full lane width of the riding surface excluding the paved shoulder. Continuous diamond grinding or fine-tooth milling of the full lane width, if required, of the riding surface including adjustment of the paved shoulders
PCC II:	Correct to an IRI of 85 in/mile using whichever of the following methods as approved by the engineer: Continuous diamond grinding of the full lane width, if required, of the riding surface including adjustment of the paved shoulders. Conform to sections C.1 through C.4 of Concrete Pavement Continuous Diamond Grinding Special provision contained elsewhere in the contract. Remove and replace the full lane width of the riding surface.

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

C.6 Dispute Resolution

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

(2) If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming 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. The department will pay separately for engineer-directed corrective action performed within the 25-foot exclusionary zones under C.5.2 as extra work.

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. If corrective action is required, 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 1.04” as follows:

HMA I	
Initial IRI (inches/mile)	Pay Adjustment^[1] (dollars per standard segment)
< 30	250
≥ 30 to <35	$1750 - (50 \times \text{IRI})$
≥ 35 to < 60	0
≥ 60 to < 75	$1000 - (50/3 \times \text{IRI})$
≥ 75	-250

HMA II and PCC II	
Initial IRI (inches/mile)	Pay Adjustment^{[1][2]} (dollars per standard segment)
< 50	250
≥ 50 to < 55	$2750 - (50 \times \text{IRI})$
≥ 55 to < 85	0
≥ 85 to < 100	$(4250/3) - (50/3 \times \text{IRI})$
≥ 100	-250

HMA IV and PCC IV	
Initial IRI (inches/mile)	Pay Adjustment^{[1][2]} (dollars per standard segment)
< 35	250
≥ 35 to < 45	$1125 - (25 \times \text{IRI})$
≥ 45	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 (20130615)

47. QMP HMA Pavement Nuclear Density.

A Description

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

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

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

Selection of test sites.

Testing.

Necessary adjustments in the process.

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.atwoodsyste.ms.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/ft³. Measure and record the density on the 5 additional test sites for each gauge.

(4) Calculate the average of the difference in density of the 10 test sites between the QC and QV gauges. Replace one or both gauges if the average difference of the 10 tests exceeds 1.0 lb/ft³ and repeat 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/ft³ of its reference

value. Conduct 5 additional tests at the reference site once the cause of deviation is corrected. Calculate and record the average of the 5 additional tests. Remove the gauge from the project if the 5-test average is not within 1.5 lb/ft³ of its reference value established in B.3.2.2(2).

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

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

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

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

Table 1

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

- (1) A lot represents a combination of the total daily tonnage for each layer and target density.
- (2) Each side road, crossover, turn lane, ramp, and roundabout must contain at least one 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 subplot and perform the number of random tests as specified in Table 2.

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

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

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

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

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

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

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

B.4.2.2.2 Width of 5 Feet or Less

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

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

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

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

B.4.2.4 Documentation

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

B.4.3 Corrective Action

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

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

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

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

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

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

B.5 Department Testing

B.5.1 Verification Testing

(1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will test randomly at locations independent of the contractor's QC work. The department will perform verification testing at a minimum frequency of 10 percent of the sublots and a minimum of one subplot per mix design. The 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 subplot using the same testing requirements and frequencies as the QC tester.
- (3) If the verification subplot average is not more than one percent below the specified minimum target density, use the QC tests for acceptance.
- (4) If the verification subplot average is more than one percent below the specified target density, compare the QC and QV subplot averages. If the QV subplot average is within 1.0 lb/ft³ of the QC subplot average, use the QC tests for acceptance.
- (5) If the first QV/QC subplot average comparison shows a difference of more than 1.0 lb/ft³ each tester will perform an additional set of tests within that subplot. Combine the additional tests with the original set of tests to compute a new subplot average for each tester. If the new QV and QC subplot averages compare to within 1.0 lb/ft³, use the original QC tests for acceptance.
- (6) If the QV and QC subplot averages differ by more than 1.0 lb/ft³ after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

- (1) The testers may perform investigation in the work zone by analyzing the testing, calculation, and documentation procedures. The testers may perform gauge 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 subplot density test results or retesting of the subplot in dispute within 48 hours of paving. Traffic control costs will be split between the department and the contractor.
- (4) If investigation finds that both gauges are in error, the contractor and engineer will reach a decision on resolution through mutual agreement.

B.7 Acceptance

(1) The department will not accept QMP HMA Pavement Nuclear Density if a non-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)

48. Asphaltic Surface Temporary.

Replace paragraph 465.2 (1) with the following:

Under the Asphaltic Surface Temporary bid item; submit a mix design. Furnish asphaltic mixture meeting the requirements specified for either type E-3 or E-10 under standard spec 460.2; except the engineer will not require the contractor to conform to the quality management program specified under standard spec 460.2.8.

SEF Rev. 12_1018

49. Concrete Masonry Structures.

A Description

A.1 General

Work under this item applies to cast in place concrete for structures. Conform to standard specs 501, 502, 504, 701, 710 and 715 and as modified in this special provision. Apply this special provision to all cast in place concrete placed under the following bid items:

502.0100	Concrete Masonry Bridges
502.0200	Concrete Masonry Bridges HES
502.1100	Concrete Masonry Seal
504.0100	Concrete Masonry Culverts
504.0200	Concrete Masonry Culverts HES
504.0500	Concrete Masonry Retaining Walls
504.0600	Concrete Masonry Retaining Walls HES
504.0900	Concrete Masonry Endwalls

A.2 Concrete Masonry Bridges

Work under the item Concrete Masonry Bridges applies to cast in place concrete for bridge substructures, which includes abutments and piers. Cast in place concrete for bridge superstructures, which includes bridge decks, raised medians, sidewalks, and parapets.

B (Vacant)

C Construction

Replace standard spec 501.3.8.2 with the following:

The contractor is responsible for the quality of the concrete placed in hot weather. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions taken to control concrete temperature if the concrete temperature at the point of placement exceeds 80° F (27° C). Do not place concrete without the engineer's written acceptance of that temperature control plan. Perform the work as outlined in the temperature control plan.

If the concrete temperature at the point of placement exceeds 90° F (32° C), do not place concrete under the following bid items:

- Concrete Masonry Bridges
- Concrete Masonry Bridges HES
- Concrete Masonry Retaining Walls
- Concrete Masonry Retaining Walls HES
- Concrete Masonry Culverts
- Concrete Masonry Culverts HES
- Concrete Masonry Endwalls

Notify the engineer whenever conditions exist that might cause the temperature at the point of placement to exceed 80° F (27° C). If project information is not available, obtain information from similar mixes placed for other nearby work.

Any additive or action taken to control the temperature of the Concrete Masonry to within the limits of this special provision, including but not limited to the addition of ice to the concrete mix, is considered incidental to the work and will not be measured or paid for separately.

Add the following standard spec 501.3.11:

501.3.11 Slip Forming

Do not place concrete by the slip-form method for any item covered by this special provision.

D (Vacant)

E (Vacant)

SEF Rev. 13_0807

- 50. Concrete Staining Structure B-67-276, Item 517.1010.S.001; Concrete Staining Structure B-67-277, Item 517.1010.S.002; Concrete Staining Structure R-67-113, Item 517.1010.S.003; Concrete Staining Structure R-67-114, Item 517.1010.S.004.**

A Description

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

B Materials

B.1 Mortar

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

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

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

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

B.2 Concrete Stain

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

Tri-Sheen Concrete Surfacer, Smooth by TK Products
Tri-Sheen Acrylic by TK Products
TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products
Safe-Cure and Seal EPX by Chem Masters
H&C Concrete Stain Solid Color Water Based by Sherwin-Williams

C Construction

C.1 General

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

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

C.2 Preparation of Concrete Surfaces

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

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

C.3 Staining Concrete Surfaces

Apply the concrete stain in accordance to the manufacturer's recommendations.

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

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

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

C.4 Test Areas

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

C.5 Surfaces to be Coated.

Apply concrete stain to the surfaces in accordance to the plan.

D Measurement

The department will not measure Concrete Staining (Structure). The department will use pay plan quantity according to the Pay Plan Quantity article.

E Payment

The department will pay for plan quantities according to the Pay Plan Quantity article at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.1010.S.001	Concrete Staining Structure B-67-276	SF
517.1010.S.002	Concrete Staining Structure B-67-277	SF
517.1010.S.003	Concrete Staining Structure R-67-113	SF
517.1010.S.004	Concrete Staining Structure R-67-114	SF

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

51. Concrete Staining Multi-Color Structure B-67-276, Item 517.1015.S.001; Concrete Staining Multi-Color Structure B-67-277, Item 517.1015.S.002.

A Description

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

B Materials

B.1 Mortar

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

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

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

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

B.2 Concrete Stain

Use concrete stain manufactured for use on exterior concrete surfaces. Use the following products, or equal as approved by the department:

Tri-Sheen Concrete Surfacers, Smooth by TK Products
Tri-Sheen Acrylic by TK Products
TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products
Safe-Cure and Seal EPX by Chem Masters
H&C Concrete Stain Solid Color Water Based by Sherwin-Williams

C Construction

C.1 General

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

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

C.2 Preparation of Concrete Surfaces

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

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

C.3 Staining Concrete Surfaces

Apply the concrete stain in accordance to the manufacturer's recommendations.

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

The color of the staining shall produce a multi-color effect that consists of multiple colors replicating varying natural stone coloration. Stain the joints between stones produced by the form liner to create the appearance of grouted joints.

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

C.4 Test Areas

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

C.5 Surfaces to be Coated.

Apply concrete stain to the surfaces in accordance to the plan.

D Measurement

The department will not measure Concrete Staining Multi-Color (Structure). The department will use pay plan quantity according to the Pay Plan Quantity article.

E Payment

The department will pay for plan quantities according to the Pay Plan Quantity article at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.1015.S.001	Concrete Staining Multi-Color Structure B-67-276	SF
517.1015.S.002	Concrete Staining Multi-Color Structure B-67-277	SF

Payment is full compensation for furnishing and applying the coloring system; for preparing the concrete surface; and for constructing and staining the sample panels.

- 52. Architectural Surface Treatment Structure B-67-276, Item 517.1050.S.001; Architectural Surface Treatment Structure B-67-277, Item 517.1050.S.002; Architectural Surface Treatment Structure R-67-112, Item 517.1050.S.003; Architectural Surface Treatment Structure R-67-113, Item 517.1050.S.004; Architectural Surface Treatment Structure R-67-114, Item 517.1050.S.005.**

A Description

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

B Materials

Use form liners that attach easily to the forming system, and do not compress more than 1/4-inch when poured at a rate of 10 vertical feet/hour.

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

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

C Construction

C.1 Equipment

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

C.2 Form Liner Preparation

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

Apply form release per manufacturer’s recommendations.

C.3 Form Liner Attachment

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

C.4 Surface Finishing

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

Grind or fill pouring blemishes.

D Measurement

The department will not measure Architectural Surface Treatment (Structure). The department will use pay plan quantities according to the Pay Plan Quantity article.

E Payment

The department will pay for plan quantities according to the Pay Plan Quantity article at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.1050.S.001	Architectural Surface Treatment Structure B-67-276	SF
517.1050.S.002	Architectural Surface Treatment Structure B-67-277	SF
517.1050.S.003	Architectural Surface Treatment Structure R-67-112	SF
517.1050.S.004	Architectural Surface Treatment Structure R-67-113	SF
517.1050.S.005	Architectural Surface Treatment Structure R-67-114	SF

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

53. Temporary Wall Wire Faced Mechanically Stabilized Earth, Item 532.0750.S.

A Description

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

B Materials

B.1 Proprietary Mechanically Stabilized Earth Wire Faced Wall Systems

The department specifies approved temporary wire faced mechanically stabilized earth wall products on the department's approved product list.

Proprietary wall systems may be used for this work, but must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures, Structures Development Section. The name of the companies supplying pre-approved material shall be furnished within 25 days after the award of contract. The department maintains a list of pre-approved systems of retaining walls. To be eligible for use on this project, a system requiring pre-approval must have been pre-approved and added to that list prior to the bid opening date.

To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision. Applications for pre-approval may be submitted at any time. Applications must be prepared in accordance to the requirements of chapter 14 of the department's Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Structures Development Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to supply a design and supporting documentation as required by this special provision for review by the department to show the proposed wall design is in compliance with the design specifications. Four copies of the following shall be submitted to the engineer for review and acceptance no later than 60 days from the date of notification to proceed with the project.

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

The design of the Mechanically Stabilized Earth Wire Faced Wall shall be in compliance with the latest AASHTO Standard Specification for Highway Bridges including interim specifications, the standard specifications, and standard engineering design procedures as determined by the department.

The design life shall be three years, or the length of time the temporary wall will be in service, whichever is greater. A fine metallic screen or geotextile filter fabric shall be used at the front face of the wall to retain the fines of the soil mass. The maximum allowable stress in the reduced section of wire-faced walls after sacrificial steel has been removed at the end of the design life is $0.47 F_y$, where F_y is the yield strength of the soil reinforcement. The minimum embedment of the MSE wire faced wall shall be 1 foot 6 inches, or as given in the plan, or as stated in AASHTO 5.8.1, whichever is greater. Frost depth shall not be considered. The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 3 inches per 10 feet. For systems with separate components for soil reinforcement and wall panels, the force in the soil reinforcement at the face of the panel shall not exceed 0.5 of the connection strength failure load as determined by tests.

The design of the MSE Wire Faced Wall shall consider the internal stability of the wall mass, including reinforcement pullout resistance. The design shall be in compliance with the current AASHTO specifications for Mechanically Stabilized Earth Walls, except that the maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees. Design the walls for the heights shown on the plans, and include the effects of highway surcharge loading. If a traffic rail or parapet is detailed within 3 feet of the top of the wall, the soil reinforcement at the top of the wall shall be designed for an additional horizontal traffic load as given in AASHTO. If the wall is installed in front of a bridge abutment, it shall also be designed to resist the applied abutment/bridge lateral forces. The minimum length of soil

reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height or as shown on the plan. In no case shall this length be less than 6 feet. The soil reinforcement shall extend 3 feet beyond the theoretical failure plane in all cases.

B.3 Wall System Components

B.3.1 Welded Wire Fabric

Provide welded wire fabric that is used to fabricate the wire-faced wall that has a yield stress of 65,000 psi. All steel shall be shop fabricated of cold drawn steel wire conforming to the minimum requirements of ASTM A-82 and be welded into the finished configuration in accordance to ASTM A-185. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department. Any geotextiles used in the construction of the wall and finally exposed to the sun shall be resistant to ultraviolet radiation for the design life of the wall.

B.3.2 Backfill

Provide and use material that consists of natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. It shall not contain foundry sand, bottom ash, blast furnace slag or other potentially corrosive material.

Provide material that conforms to the following gradation requirements.

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

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90.

In addition, backfill material shall meet the following requirements.

Test	Method	Value
pH	AASHTO T-289	4.5 – 10.0
Sulfate content	AASHTO T-290	200 ppm max.
Chloride content	AASHTO T-291	100 ppm max.
Electrical Resistivity	AASHTO T-288	3000 ohm/cm min.
Angle of Internal Friction	AASHTO T-236	30 degrees min.

Prior to placement of the backfill, obtain and furnish to the engineer current certified report of test results that the backfill material complies with the requirements of this specification. Tests will be performed by a certified independent laboratory. When backfill characteristics and/or sources change, a certified report of tests will be provided for the new backfill material.

C Construction

C.1 Methods

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

Compact all backfill behind the wall as specified in standard spec 207.3.6. For walls with a maximum height greater than 6 feet, compact the backfill to 95.0% of maximum density as determined by AASHTO T-99, Method C. Perform compaction testing on the backfill. When performing nuclear testing, use a nuclear gauge from the department's approved list, ensure that the operator is a HTCP certified Nuclear Density Technician I, and conform to CMM 8.15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 2-foot layer per 200 feet of wall, or major portion thereof. A minimum of one test for every 2-foot layer is required. Test sites shall be selected using ASTM Method D3665. Deliver documentation of all compaction testing results to the engineer at the time of testing. The cost of compaction testing shall be considered incidental to the cost of the wall.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

C.2 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. The allowable soil bearing capacity is given on the plan. After completing the excavation of the entire reinforced zone, the department's Regional Soils Engineer shall inspect the site and determine if the foundation is adequate for the intended loads. Allow the Regional Soils Engineer two working days to perform the inspection.

D Measurement

The department will measure Temporary Wall Wire Faced Mechanically Stabilized Earth in area by the square foot of face on a vertical plane between a line 1 foot 6 inches below the finished grade in front of the wall shown on the plan, and a line indicating the top of wall including wall cap or copings as required and shown on the plans. Unless ordered by the engineer, wall area constructed above or below these lines will not be measured for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
532.0750.S	Temporary Wall Wire Faced Mechanically Stabilized Earth	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional system including cap and copings; constructing the retaining system; providing backfill, backfilling and compacting; and performing compaction testing. Parapets, railings, abutment bodies and other items above the wall cap or coping will be paid for separately. Vehicle barrier and its support will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively.
532-037 (20110615)

54. Adjusting Covers and Repairing Manholes

This special provision article applies only to Project 2718-00-74.

This work shall conform to standard spec 611 and as shown on the plans.

Adjust each individual manhole cover and repair manholes located in pavement areas in one single operation to finish grade.

Do not utilize temporary cover plates. Do not cover existing manholes with asphaltic pavement or base materials.

Maintain access to manholes at all times.

55. 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 as units, acceptably completed in place.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
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)

56. Pipe Grates, Item 611.9800.S.**A Description**

This special provision describes furnishing and installing pipe grates on the ends of pipes as shown in the plans, and as hereinafter provided.

B Materials

Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish steel pipe conforming to the requirements of standard spec 506.2.3.6.

Furnish pipe grates galvanized according to ASTM A123.

Furnish angles and brackets galvanized according to ASTM A123.

Furnish required hardware galvanized according to ASTM A153.

C Construction

Repair pipes, rods, angles and brackets on which the galvanized coating has been damaged in accordance to the requirements of AASHTO M36M.

D Measurement

The department will measure Pipe Grates in units of work, where one unit is one grate, completed and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
611.9800.S	Pipe Grates	Each

Payment is full compensation for furnishing and installing all materials; and for drilling and connecting grates to pipes.

611-010 (20030820)

57. Fence Safety, Item 616.0700.S.

A Description

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

B Materials

Furnish notched conventional metal “T” or “U” shaped fence posts.

Furnish fence fabric meeting the following requirements.

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

C Construction

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

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

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

D Measurement

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

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

616-030 (20070510)

58. Stone or Rock Ditch Checks, Item 628.7565.S.

A Description

This special provision describes furnishing and installing stone or rock ditch checks as shown on the plans or as directed by the engineer, or both, and as hereinafter provided.

B Materials

Provide materials conforming to size requirements for size no. 2 coarse aggregate for concrete masonry or riprap in accordance to the standard spec 501.2.5.4.4. Railroad ballast or breaker run stone conforming to the following applicable gradations may also be used:

Railroad Ballast	
Percent by	
Sieve Size	Weight Passing
2 Inch	100
1 Inch	20 – 55
3/8 Inch	0 -5

Breaker Run Stone	
Percent by	
Sieve Size	Weight Passing
5 Inch	100
1½ Inch	0 – 50
3/8 Inch	0 - 5

Incorporate stone or rock in the ditch checks that is hard, sound, and durable, and meets the approval of the engineer.

C Construction

Place stone or rock ditch checks immediately after shaping of the ditches or slopes is completed. Place stone or rock ditch checks at right angles to the direction of flow and construct to the dimensions and in accordance to the details shown in the plans.

Remove sediment from behind the stone or rock ditch checks when it has accumulated to one half of the original height of the dam.

D Measurement

The department will measure Stone or Rock Ditch Checks in volume by the cubic yard of material incorporated in the work.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
628.7565.S	Stone or Rock Ditch Checks	CY

Payment is full compensation for furnishing, producing, crushing, loading, hauling, placing, and shaping and maintaining Stone or Rock Ditch Check.

The quantity of sediment removed shall be multiplied by a factor of ten and paid for as Common Excavation.
628-050 (20140630)

59. Signs Type I and II.

Furnish and install new 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. New mounting brackets are incidental to the sign being installed.

Modify standard spec 637.2.4 with the following:

Use stainless steel bolts, washers and nuts for type I and type 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. Contractor shall measure the width of the L-brackets on existing structures of determine the width needed for sign support beams

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. New I-beams are incidental to the sign being installed.

637-SER1 (20120401)

60. Blue Specific Service Signs.

Supplement standard spec 638.3.4 with the following:

Do not remove or move blue specific service signs or their associated posts. Specific service signs are signs with logos that identify commercial entities providing gas, food, lodging, camping, or attractions. A separate contractor, Interstate Logos - Wisconsin, is responsible for these signs. Contact Interstate Logos - Wisconsin at (844) 496-9163 a minimum of 14 calendar days in advance to coordinate removing, moving, or re-installation of these signs.

The contractor is responsible for damage done to these signs due to contractor operations.

638-010 (20140630)

61. Pond Liner Clay, Item 640.1303.S.

A Description

This special provision describes furnishing and installing low permeable clay in the areas shown on the plans.

B Materials

For each source, prior to excavating and hauling the low permeable clay to the project, submit the results of the laboratory tests described in Table 1. The laboratory testing shall document that the clay from the source meets or exceeds the requirements.

The sample for the hydraulic conductivity test shall be remolded clay at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test AASHTO T-99 and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test AASHTO T-99. Conduct the laboratory source testing at the frequency listed in Table 1. Submit the test results to the engineer for review, two weeks prior to construction.

C Construction

C.1 Low Permeable Clay Placement

C.1.1 Subgrade

Compact the subgrade to a minimum density as defined in standard spec 207.3.6.2, Standard Compaction, or as otherwise specified in the contract requirements.

C.1.2 Erosion Protection

Do not place the low permeable clay until after all adjacent site grading has been completed and only after silt fence has been installed completely around the area of low permeable clay placement.

C.1.3 Low Permeable Clay Placement

After the fine grading is complete, place and compact low permeable clay in completed 6-inch lifts. Place each lift of low permeable clay in one continuous lift. See plans for low permeable clay construction limits. Measure the thickness of the low permeable clay shown on the plans perpendicular to the surface.

Notify the engineer at least three days prior to starting construction of low permeable clay.

Table 1					
Reference	Number	Test Title	Requirements	Testing Frequency	
				Screening	QA/QC ¹²
AASHTO ¹	T99-01	Moisture –Density Relationships of Soils Using a 2.5-kg (5.5 lb) Rammer a 305 mm (12-in.) Drop (Standard Proctor)	NA ¹¹	1/source	NA
AASHTO	T-88-00	Particle Size Analysis of Soils	$P_{200}^3 \geq 50\%$	2/source	1/lift
AASHTO	T-89-02	Determining the Liquid Limit of Soils	$LL^4 \geq 22\%$	2/source	1/lift
AASHTO	T-90-00	Determining the Plastic Limit and Plasticity Index of Soils	$PI^5 \geq 12\%$	2/source	1/lift
AASHTO	T310-03	In-Place Density and Moisture Content of Soils and Soil-Aggregates by nuclear Methods (Shallow Depth)	$DD^6 \geq 95\%$ of the MDD ⁷	NA	100'x100' Grid/lift
ASTM ²	D5084-03	Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter	$K^8 \leq 1 \times 10^{-7}$ cm/sec	1/source ⁹	1/site ¹⁰

Notes:
AASHTO = American Association of State Highway and Transportation Officials
ASTM = American Society of Testing and Materials
P200 = Percent by weight passing the #200 sieve (%)
LL = Liquid Limit (%)
PI = Plasticity Index (%)
DD = Dry Density (pcf)
MDD = Maximum Dry Density (pcf) as determined by the Standard Proctor Test
K = Hydraulic Conductivity (cm/sec)
The sample for the test shall be remolded at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test.
An undisturbed sample from a thinned walled sampler (Shelby tube)
NA = Not applicable
QA/QC = Quality Assurance / Quality Control

Compact the low permeable clay to a minimum of 95% Standard Proctor AASHTO T-99 Maximum Dry Density with a footed compaction equipment having feet at least as long as the loose lift height. As needed, clay shall be disked or otherwise mechanically processed prior to compaction to break up clods and allow moisture content adjustment. Clod size shall be no greater than 4-inches. All compaction equipment utilized shall have a minimum static weight of 30,000 pounds.

Provide all equipment necessary to adjust low permeable clay to the proper moisture content for compaction.

Make sufficient number of passes of the compaction equipment over each lift of clay to ensure complete remolding of the clay.

Do not proceed with placement of additional lifts until all required low permeable clay testing and documentation has been completed for the previous lift.

During placement of the low permeable clay the minimum moisture content shall be as defined by the testing performed in the source evaluation and with the following limits:
No drier than the optimum moisture content as determined by the Standard Proctor test.

If the in-place low permeable clay fails to meet the requirements of Table 1, then remove and replace or rework any portion of the low permeable clay not meeting the project requirements until project specifications are met. There shall be no compensation for removing, replacing and reworking low permeable clay not meeting the requirements in Table 1.

C.1.4 QA/QC Testing of the Low Permeable Clay

The department will perform the QA/QC testing at the frequency shown in Table 1. The department will record the thickness of low permeable clay on a 100-foot x 100-foot grid pattern.

Provide the following:

Access for on-site testing, inspection, and documentation.

Machinery required to grade/blade density test locations.

Machinery required to collect undisturbed clay samples (i.e., with Shelby tubes).

Replace and recompact clay material removed for testing purposes.

D Measurement

The department will measure Pond Liner Clay in volume by the cubic yards, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
640.1303.S	Pond Liner Clay	CY

Payment is full compensation for dewatering areas of site where the low permeable clay is to be placed; for furnishing, placing and compacting the low permeable clay; and for performing all tests.

640-016 (20130615)

62. Sign Bridge Identification Plaques.

Supplement standard spec 641.5 with the following:

Payment for Sign Bridge and Overhead Sign Support is considered full compensation for providing and installing sign bridge identification plaques and mounting hardware as shown on the detail in the plans for each existing and new sign bridge or overhead sign support.

641-SER1 (20040910)

63. Traffic Control.

The work under this item shall be in accordance to the requirements of standard spec 643, and as shown on the plans, or as approved by the engineer, except as hereinafter set forth.

Place traffic control devices for work in the proper location before operations proceed. Traffic Control is subject to change at the direction of the engineer in the event of an emergency.

Provide the Waukesha County Sheriff's Department, City of Oconomowoc Police Department, Wisconsin State Patrol, the Statewide Traffic Operations Center, and the engineer a current telephone number with which the contractor or his representative can be contacted during non-working hours in the event a traffic control safety hazard develops.

Do not park or store equipment, vehicles, or construction materials within 30 feet of the edge of freeway traffic lanes without barrier separation for any roadway carrying freeway traffic; or within 20 feet off the edge of a freeway service interchange ramp during any time except as approved by the engineer. At such locations, the materials and equipment involved shall not constitute a hazard to the traveling public.

Do not park personal vehicles within the access control limits of the freeway. Do not cross live freeway traffic lanes with equipment or vehicles.

Do not use flag persons to direct, control, or stop freeway traffic. Obtain approval from the engineer to use a flag person to direct, control, or stop local street traffic. Adhere to Manual of Uniform Traffic Control Devices chapter 6E standard requirements for flagger control.

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

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

SEF Rev 13_0610

Replace standard spec 643.3.2 with:

Under the Traffic Control Surveillance and Maintenance bid items, provide personnel to inspect and maintain the traffic control devices, furnished, and installed, in proper condition. Personnel to verify that all traffic control devices required per the plans and specifications and as directed by the engineer are in place and in proper condition.

If this bid item is included in the contract, provide one person, called the traffic control specialist, responsible for inspecting, maintaining traffic control signs or devices, and reviewing the site for compliance with plans and special provisions; the contractor may need to provide other personnel to accomplish the inspection and maintenance; and provide all necessary vehicles, equipment, tools, and repair materials.

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

Ensure that the traffic control specialist inspects the traffic control signs and devices at least twice each workday and once each non-workday with at least one of the daily inspections during daytime. Separate inspections done on workdays by at least 8 hours or the amount of time from the beginning to the end of that day's work operations, whichever is less. During each inspection, clean, repair, replace, or install each traffic control sign or device not performing as intended, as necessary.

Ensure that the traffic control specialist inspects each reflective traffic control sign or device at least once each week during hours of darkness. View the signs and devices using low beam vehicle headlights to ensure reflectorization is unimpaired. Clean, repair, or replace each reflectorized traffic control sign or device not performing as intended, as necessary, before sunset of the next calendar day, or as the engineer directs otherwise.

Ensure that the traffic control specialist meets once each workday with the department representative responsible for traffic control on the project to discuss possible problems with the traffic control.

Ensure that the traffic control specialist submits a written report weekly to the engineer documenting both daytime and nighttime inspections.

Make the control specialist, or other contractor-designated person, available 24 hours per day, 7 days per week to clean, repair, replace or install traffic control devices not performing as intended throughout the period traffic control signs and devices are operating under this contract. Provide to the engineer, the County Sheriff, and the State Patrol Region Headquarters responsible for that county the telephone number to contact the control specialist or other contractor-designated person. The control specialist, or other designated person, shall respond to reach any location within the contract limits, or on detour routes, within 2 hours of being contacted, and shall promptly accomplish the necessary cleaning, repair, or replacement.

64. Traffic Signals, General.

This special provision article applies only to Project 2718-00-75.

All traffic signal work shall be in accordance to the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, 2014 edition, the plans, and these special provisions.

Note that the failure to comply with the state standards and specifications may result in the cost of corrections to be made at the contractor's expense. Also, any additional disruption of State-owned facilities shall be repaired or relocated as needed at the contractor's expense.

65. Flexible Tubular Markers.

Replace standard spec 643.2.5.2 with the following:

Only flexible tubular markers with bases that bolt to the pavement surface shall be allowed for installations in which the flexible tubular markers will be in place during December, January, February and March. Flexible tubular markers that will be in place during these four months that attach to the pavement surface using any other means than a bolt connection will not be accepted. Provide a base designed to hold the post securely using

locking pins, or other devices, to withstand a series of direct wheel impacts with speeds up to 65 mph.

SEF Rev. 12_0330

66. Traffic Control Signs Removal.

Supplement standard spec 643.3.8.3 with the following:

Remove all signs on temporary mounts and other potential associated hazards to the traveling public from the right-of-way when not in use.

SEF Rev. 14_0326

67. Traffic Control Detour Signs Not in Use.

Replace standard spec 643.3.8.6(6) with the following:

Immediately remove or cover signing when the detour is no longer in effect. When removing signs, remove all signs, posts, supports, and other potential associated hazards to the traveling public from within the right-of-way.

SEF Rev. 14_0402

68. Truck or Trailer-Mounted Attenuator 1060-30-70, Item 643.1055.S.001.

A Description

This special provision describes protecting work operations with a truck or trailer-mounted attenuator (TMA).

B Materials

Furnish and maintain a TMA conforming to NCHRP Report 350 test level 3 or to MASH crashworthiness criteria. Submit written certification from the manufacturer that the host vehicle/attenuator configuration provided conforms to crashworthiness criteria. Include the federal-aid reimbursement eligibility letter with that submittal.

Provide a host vehicle and mount the attenuator conforming to the attenuator manufacturer's specifications. Provide the engineer a copy of the manufacturer's specifications and installation instructions.

C Construction

Coordinate with the engineer at least 72 hours before its intended use so the engineer can determine if the work operation requires TMA protection.

Position the attenuator at a manufacturer-recommended location in advance of a stationary work operation. Position and maintain the attenuator consistently at the manufacturer-recommended distance from a mobile work operation. Ensure that an operator stays with the host vehicle while protecting a mobile work operation.

D Measurement

The department will measure Truck or Truck-Trailer-Mounted Attenuator by the day, acceptably completed, measured to the 1/2-day based on the engineer-determined time the attenuator is required to protect work operations. The department will measure 4 or less hours per calendar day as a half day and over 4 hours as a full day.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
643.1055.S.001	Truck or Trailer-Mounted Attenuator 1060-30-70	Day

Payment is full compensation for providing the portable attenuator, host vehicle, and operator.

643-015 (20140630)

69. Geotextile Fabric Type SR, Item 645.0135.

The work under this item shall be in accordance to the pertinent requirements of standard spec 645 and as hereinafter provided.

Modify standard spec 645.2.5 (1) to include the following:

- Furnish fabric conforming to physical properties similar to those required in standard spec 645.2.7 (1) for Geotextile Fabric, Type HR (Heavy Riprap).

70. 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 $\pm$ 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 ft³/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 ft³/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 ft³/min air flow and 90 psi air pressure to clean the groove.

C.6 Tape Application

Apply the tape when both the air and surface temperature are 40 degrees F and rising.

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

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

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

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

For the remainder counties:

Apply either adhesive.

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

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

D Measurement

The department will not measure Pavement Marking Grooved Wet Reflective Contrast Tape (Width). The department will use pay plan quantity according to the Pay Plan Quantity article.

E Payment

The department will pay for plan quantities according to the Pay Plan Quantity article 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.

71. Pavement Marking Grooved Wet Reflective Tape 4-Inch, Item 646.0881.S; 8-Inch, Item 646.0883.S.

A Description

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

B Materials

Furnish grooved wet reflective pavement marking tape and adhesive material per manufacturer's recommendations, 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 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 $\pm$ 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 pavement marking tape. Use a high-pressure air blower with at least 185 ft³/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 ft³/min air flow and 120 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 ft³/min air flow and 120 psi air pressure to clean the groove.

C.6 Tape Application

Apply the wet reflective pavement marking tape when both the air and surface temperature are 40 degrees F and rising.

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

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

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

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

For the remainder counties:

Apply either adhesive.

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

Tamp the wet reflective pavement marking 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 not measure Pavement Marking Grooved Wet Reflective Tape (Width). The department will use pay plan quantity according to the Pay Plan Quantity article.

E Payment

The department will pay for plan quantities according to the Pay Plan Quantity article at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
646.0881.S	Pavement Marking Grooved Wet Reflective Tape 4-Inch	LF
646.0883.S	Pavement Marking Grooved Wet Reflective 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.

646-018 (20120615)

72. 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 consult, 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)

- 73. Electrical Service Meter Breaker Pedestal STH 67 ITS, Item 656.0200.001; IH-94 EB Ramps and STH 67, Item 656.0200.201; IH-94 WB Ramps and STH 67, Item 656.0200.202; STH 67 and Oconomowoc Dr./Pabst Farms Blvd., Item 656.0200.203; STH 67 and CTH B (Valley Rd), Item 656.0200.204; STH 67 and Oconomowoc Pkwy, Item 656.0200.205; STH 67 and Center Dr./Pabst Rd., Item 656.0200.206; STH 67 and Robruck Drive, Item 656.0200.207; STH 67 and Summit Ave., Item 656.0200.208; STH 67 and Old Tower Rd., Item 656.0200.209**

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

Append standard spec 656.2.3 with the following:

The department will be responsible for the electrical service installation request for any department maintained facility. Notify the maintaining authority if the signal is not state maintained that it is their responsibility to arrange for the electrical service installation.

Electrical utility company service installation and energy cost will be billed to and paid for by the maintaining authority.

Install the cabinet base and meter breaker pedestal first, so the electrical utility company can install the service lateral. Install a 3" conduit from the point of service from the utility to the meter breaker pedestal. Finish grade the service trench, replace topsoil that is lost or contaminated with other materials, fertilize, seed, and mulch all areas that are disturbed by the electrical utility company.

Append standard spec 656.5(3) with the following:

Payment is full compensation for grading the service trench; replacing topsoil; and for fertilizing, seeding, and mulching to restore the disturbed area of the service trench.

- 74. Electrical Service Meter Breaker Pedestal, Intersection of Summit Avenue and Thackeray Trail, Item 656.0200.401.**

This special provision article applies only to Project 2718-00-75.

Append standard spec 656.3.4 with the following:

The contractor will be responsible for electrical service installation or relocation requests. The City of Oconomowoc will be responsible for any charges from We Energies.

Electrical utility company service installation or relocation and energy cost will be billed to and paid for by the maintaining authority.

Install the cabinet base and meter breaker pedestal first, so the electrical utility company can install the service lateral. Finish grade the service trench, replace topsoil that is lost or contaminated with other materials.

Append standard spec 656.5(3) with the following:

Payment is full compensation for grading the service trench and replacing topsoil; and for fertilizing, seeding, and mulching to restore the disturbed area of the service trench if necessary.

75. Traffic Signal Face, 658.0110 and 658.0115.

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

Append standard spec 658.3.2(3) with the following:

Connect all ungrounded conductors with wire nuts in the appropriate sections of the signal heads, when directed by WisDOT personnel. Connect the neutral conductors to the terminal strip. Be certain to twist wires prior to installing the wire nuts. All wire nuts must be installed facing up to prevent the entrance of water.

76. Pedestrian Signal Face, Item 658.0416

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

Append standard spec 658.2.4(1) with the following:

The contractor shall furnish 16 inch LED ready pedestrian signal housing, drilled for top/bottom pipe mount with the ability to rotate 270 degrees on poly mounting bracket. Black polycarbonate door with integral “Z” style protectors, egg-crate type visor, lens and gasket mounted to door with four 1-1/2 inch stainless steel tabs.

Append standard spec 658.2.4(2) with the following:

The contractor shall anchor a 5-position, 20a terminal block in the pedestrian signal face to the housing with threaded screws.

Append standard spec 658.2.4(3) with the following:

The contractor shall furnish 16-inch, incandescent look, full symbol, and dual pedestrian, countdown signal module with Portland Orange hand, Lunar White man and Portland Orange countdown symbols, made of an approved polycarbonate resin.

Append standard spec 658.3.4(3) with the following:

Connect all ungrounded conductors with wire nuts in the appropriate sections of the signal heads, when directed by WisDOT personnel. Connect the neutral conductors to the terminal strip. Be certain to twist wires prior to installing the wire nuts. All wire nuts must be installed facing up to prevent the entrance of water.

77. Pedestrian Push Buttons, Item 658.0500.

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

Append standard spec 658.2.5 with the following:

The contractor shall furnish vandal resistant, pressure activated, pedestrian push buttons, with die cast body type, in unfinished aluminum or yellow. Button constructed shall be constructed of stainless steel, with a Piezo driven solid state switch, display and beeper that sounds simultaneously with button push.

The contractor shall furnish low profile, unfinished cast aluminum, vandal resistant, and flush mounting pole mount.

The contractor shall place a Size 1, Type H reflective (R10-3EL, R, D) sign sticker (per state sign plate), message series – B, directly above each push button. Include a directional arrow or arrows on the sign as the plans show.

78. Temporary Traffic Signals for Intersections IH-94 EB Ramps and STH 67, Item 661.0200.201; IH-94 WB Ramps and STH 67, Item 661.0200.202; STH 67 and Oconomowoc Dr./Pabst Farms Blvd., Item 661.0200.203; STH 67 and CTH B (Valley Rd.), 661.0200.204; STH 67 and Oconomowoc Pkwy, Item 661.0200.205; STH 67 and Center Dr./Pabst Rd., Item 661.0200.206; STH 67 and Summit Ave., Item 661.0200.207; STH 67 and Old Tower Rd., Item 661.0200.208; STH 67 and Robruck Drive, Item 661.0200.209.

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

Append standard spec 661.2.1 with the following:

- (1) Furnish all temporary traffic signal equipment as shown on the plan. The signal controller shall be capable of operating with the temporary non-intrusive vehicle detection system. All wood poles shall be plumb and level. Provide primary and secondary temporary traffic signal contact names and phone numbers who will be responsible for implementing temporary traffic signal timing changes. The department may request traffic signal timing changes to an approved incident timing plan during the project. Implement any approved incident timing plan immediately upon notification of the change and immediately upon notification of switching the timing plan back to normal operation. Immediately notify the department of implementation of temporary traffic signal timing changes. Record the times of operation of the incident timing and subsequent return to normal operation and provide this information to the department.
- (2) Coordinate with the Traffic Control contractor for the installation of temporary stop signs during switch over of the signal service whenever a generator is used. Placement of signs shall be in accordance to the MUTCD, Signing Guidelines Manual and Work Zone Safety Guide.
- (3) Contractor shall use existing underground electric service and meter breaker pedestal for the operation of the Temporary Traffic Signal. The department will pay for all energy costs for the operation of the Temporary Traffic Signal. Furnish and install a generator to operate the Temporary Traffic Signal for the time required to switch the existing Permanent Traffic Signal over to the Temporary Traffic Signal as well as the time required to switch the Temporary Traffic Signal over to the new Permanent Traffic Signal.
- (4) Contractor shall contact the local electrical utility at least four days prior to making the switch from the existing Permanent Traffic Signal to the Temporary Traffic Signal. The contractor shall contact the local electrical utility at least four days prior to making the switch from the Temporary Traffic Signal to the new Permanent Traffic Signal.

Append standard spec 661.3.1.4 with the following:

- (1) Arrange for every other week inspections with the engineer to check the height of the span wire above the roadways to ensure that the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway. Make all height adjustments within 1-hour of an inspection indicating that adjustments are required. Notify the engineer in writing upon completion of all necessary adjustments. Maintain a written log to properly document the date of each every other week inspection, the heights above the roadway, the roadway clearance after adjustments have been made and acceptance by the engineer. Provide all documentation related to the every other week span wire height checks as well as all records related to maintenance performed on the temporary traffic signal installations to the engineer.

Append standard spec 661.5 with the following:

(2) Payment for the Temporary Traffic Signals for Intersections bid item is full compensation for providing, operating, maintaining, and repairing the complete temporary installation; and for removal. Payment also includes the following:

1. Furnishing and installing the replacement equipment.
2. The cost of delivery and pick-up of the cabinet assemblies.
3. Removal of service and site restoration.

Payment is full compensation for drilling holes; furnishing and installing all materials, including bricks, and coarse aggregate; for excavation, bedding, and backfilling, including any sand or other required materials; furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; for making inspections; for installing a generator to operate the Temporary Traffic Signal for the time required to switch the existing Permanent Traffic Signal over to the Temporary Traffic Signal as well as the time required to switch the Temporary Traffic Signal over to the new Permanent Traffic Signal; for cleaning up and properly disposing of waste; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

79. Temporary Traffic Signals for Intersections, STA 337+00NB, Item 661.0200.401.

This special provision article applies only to Project 2718-00-75.

Append standard spec 661.2.1 with the following:

- (1) The contractor shall furnish all temporary traffic signal equipment as shown on the plan. The signal controller shall be capable of operating with video camera detection.
- (3) Contractor shall use existing underground electric service and meter breaker pedestal for the operation of the temporary traffic signal. The city will pay for all energy costs for the operation of the temporary traffic signal.

Append standard spec 661.3.1.1 with the following:

- (2) Saw cut existing pavement and concrete curb and gutter as needed to install the wood poles and guy wire anchors. Saw cut existing pavement in accordance to the pertinent provisions in standard spec 690.3, Construction. Remove pavement and concrete curb and gutter as shown on the plans and if needed to install the wood poles and guy wire anchors. Remove only as much pavement as needed to install the wood poles. Remove pavement and curb and gutter in accordance to the pertinent provisions in standard spec 204.3, Construction. Hold any wood poles in place and/or move wood poles during construction due to conflicts with proposed work.

Append standard spec 661.3.1.4 with the following:

(1) Arrange for weekly inspections with the engineer to check the height of the span wire above the roadways to ensure that the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway. Make all height adjustments within 1-hour of an inspection indicating that adjustments are required. Notify the engineer in writing upon completion of all necessary adjustments. Maintain a written log to properly document the date of each monthly inspection, the heights above the roadway, the roadway clearance after adjustments have been made and acceptance by the engineer. Provide all documentation related to the weekly span wire height checks as well as all records related to maintenance performed on the temporary traffic signal installations to the engineer.

ITEM NUMBER	DESCRIPTION	UNIT
661.0200.401	Temporary Traffic Signals for Intersections STA 337+00NB Intersection of Summit Avenue and Thackeray Trail	LS
661.0300	Generators	Day

Payment for the Temporary Traffic Signals for Intersections bid item is full compensation for providing, operating, maintaining, and repairing the complete temporary installation; and for removal. Payment also includes the following:

Furnishing and installing any replacement equipment.

The cost of delivery and pick-up of the cabinet assemblies.

Removal of service (if necessary) and site restoration.

Payment is full compensation for drilling holes; furnishing and installing all materials, including bricks, and coarse aggregate; for excavation, bedding, and backfilling, including any sand or other required materials; furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; for making inspections; for cleaning up and properly disposing of waste; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

80. Ramp Closure Gates Solar 24-FT, Item 662.2024.S; Ramp Closure Gates Solar 30-FT, Item 662.2030.S; Ramp Closure Gates Solar 37-FT, Item 662.2037.S.

A Description

This special provision describes providing solar-powered freeway on-ramp closure gates on type 5 steel luminaire poles.

B Materials

B.1 General

Provide five user manuals and a listing of vendors and contact information for each manufactured component including flasher electrical components.

The engineer may allow alternates equal to specified manufactured components. The engineer may require plan detail modifications to accommodate alternates. The engineer may accept alternate arms or mounting adaptors only if the contractor can demonstrate that the department can easily remove and replace the arms.

B.2 Components

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

Furnish galvanized steel nuts and bolts conforming to ASTM A307 except where designated as high strength (HS), conform to ASTM A325. For the ramp closure gate locking mechanism, furnish a handle nut to fit on a 3/4-inch bolt.

Furnish grade A36 steel for the gate supports, gate pivot assembly, and associated hardware galvanized after fabrication by either a mechanical or hot-dip process. Grind welded connections, rough edges, and burrs smooth before galvanizing to ensure a finished appearance. Ensure that the galvanized coating conforms to ASTM A 153.

Provide aluminum/fiberglass gate arms of the nominal length the bid item indicates and conforming to plan dimensions. Cover gate arms on two sides with alternating red and white shop-applied type H reflective from the department's approved products list. Also provide a shear pin base that is the manufacturer's "permanent pivot" style. Obtain components from:

B&B Roadway
15191 Hwy 243
Russellville, AL 35654
Tel: (888) 560-2060
Gate arm: model MU605

Furnish a worm gear winch with a single line vertical lift capacity of 2000 lbs. Ensure that the winch has hardened steel gears, a handgrip, permanently lubricated bearings, a reinforced arc-welded reel assembly, and mounting plate. Ensure that the winch can be mounted to the winch mount plate shown on the construction details and the handgrip can be operated without conflict with the pole or ramp gate assembly. Furnish a 2-inch outdoor rated, rot resistant polyester strap for the connection between the worm gear winch and the gate arm pivot assembly.

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 which is keyed the same as the standard traffic control cabinets.

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. 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.

Furnish the cabinet with a 10 position terminal block for the 12 VDC power distribution. Furnish 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 shall 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 shall be available with the solar charge controller. In addition, colored LEDs shall display battery state. A green LED shall indicate full charge, amber LED shall indicate half charge, and a flashing red LED shall indicate low charge. A solid glowing red LED shall indicate the load has been disconnected. A separate green LED shall indicate the battery is being charged.

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

The solar charge controller shall 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 shall be self-cleaning, impact resistant, highly transmissive, tempered glass superstrate. The panel module frame shall be made of extruded, polymer coated aluminum alloy or similar approved construction. The panel module junction box shall 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 shall utilize T881 terminals. The positive terminal shall be covered with a rubber boot to protect the battery from accidental shorting. Place dielectric grease on battery terminals.

Furnish gate flasher assemblies conforming to the following:

A 2-conductor battery connector, rated 12 volts at 5 amps minimum.

A 2-amp weather resistant in-line fuse and fuse holder.

Wiring harness made from 6-conductor 14 AWG stranded insulated control cable.

A 12 V flasher controller, capable of providing LED flashers with 5% to 100% duty cycle at a one-second pulse repetition rate.

A 4-conductor male/female electrical connector pair, 10 amp capacity for each connection, weather resistant, and mounted to allow rapid gate arm replacement.

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.

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:

From Solar Panel to Controller Cabinet

- Positive = Blue
- Negative = White

From Controller Cabinet to Gate Arm Flashers

- Common = White
- Flasher Circuit #1 = Red
- Flasher Circuit #2 = Blue

Furnish a weatherproof hardened steel padlock with a minimum 2 1/4-inch shackle height and user programmable 4-digit combination.

C Construction

C.1 Ramp Closure Gates

Under the Ramp Closure Gates bid items, provide ramp closure gate at the locations the plans show. Apply marine grade anti seize compound to all bolt threads and to the interface between the aluminum base and steel pole. The engineer may direct adjustment of the gate arm assembly to ensure the correct vertical and angular orientation of the completed closure gate.

Install the 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.

Install structure identification plaques in the location the plan details show.

D Measurement

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
662.2024.S	Ramp Closure Gates Solar 24-FT	Each
662.2030.S	Ramp Closure Gates Solar 30-FT	Each
662.2037.S	Ramp Closure Gates Solar 37-FT	Each

Payment for the Ramp Closure Gate Solar bid items is full compensation for providing ramp closure gates including support poles; for gate arm assemblies including guides, collars, and gate arms; for cabinets, wiring, and power converters; for structure identification plaques; for gate flashers; and for padlock.

81. Install ITS Field Cabinet, Item 673.0200.S.**A Description**

This special provision describes installing a state-furnished type 170, size 334 field cabinet.

B Materials

The department will furnish the type 170, size 334 field cabinet. Provide all necessary miscellaneous mounting hardware and internal power cables. With the field cabinet, the department will furnish cabinet bolts to anchor the cabinet to the concrete base.

C Construction

Install the field cabinet on a new or existing concrete base paid separately. Make all power connections to the cabinet, isolating the neutral bus from the cabinet and equipment ground.

Effectively ground all cable grounding shields and any spare or unused conductors in the field cabinet to the equipment grounding terminal strip.

D Measurement

The department will measure Install ITS Field Cabinet by the unit, installed according to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
673.0200.S	Install ITS Field Cabinet	Each

Payment is full compensation for installing the state-furnished field cabinet; making all connections; and grounding as necessary.
673-005 (20100630)

82. Install Ethernet Switch, Item 675.0400.S.

A Description

This special provision describes installing an Ethernet switch, and providing all necessary associated wiring.

B Materials

The department will furnish the Ethernet switch. Provide all necessary cables between the Ethernet switch and terminal server or other device.

C Construction

Install the Ethernet switch in a new or existing field cabinet. Connect it to devices as shown on the plans, or as directed by the engineer.

D Measurement

The department will measure Install Ethernet Switch by the unit, installed according to the contract, tested, and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
675.0400.S	Install Ethernet Switch	Each

Payment is full compensation for installing an Ethernet switch; furnishing all necessary incidental hardware; and making all necessary connections.
675-040 (20100630)

83. Install Video Encoder, Item 677.0300.S.

A Description

This special provision describes installing a state-furnished video encoder in a pole mounted cabinet or field cabinet as shown on the plans and as hereinafter provided.

B Materials

Provide Category 5 or better Ethernet cable to connect the Ethernet video encoder to the Ethernet switch. The department will furnish the video encoder or it will be an existing and salvaged encoder.

C Construction

Make the necessary electrical and communication network connections to the video encoder. Mount the video encoder in the pole mounted cabinet or field cabinet. Program the video encoder according to the manufacturer's instructions.

D Measurement

The department will measure Install Video Encoder by each individual assembly, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
677.0300.S	Install Video Encoder	Each

Payment is full compensation for installing the video encoder in a pole mounted cabinet or field cabinet; for making all connections; and for furnishing all programming.
677-030 (20100630)

84. Salvage 50-Foot Camera Pole with Lowering System, Item 677.9050.S.**A Description**

This special provision describes removing an existing camera pole with lowering system and salvaging the pole for reinstallation.

B (Vacant)**C Construction**

Disconnect all cables and wiring that are mounted on or in the poles, and remove the pole from the concrete footing. Salvage and store the camera pole, lowering system, and other equipment attached to the pole for reinstallation on a new concrete base. Reinstallation of the camera pole and lowering system will be paid under the bid item Install Camera Pole, Item 677.0100.

The contractor may request a meeting with the engineer to assess the condition and operability of the pole and lowering system prior to beginning any work. Any damage or improper operation not noted at the meeting, or prior to the contractor starting work on the removal, will be assumed to be the fault of the contractor. The contractor shall repair or replace the camera pole and/or lowering system at no additional cost to the department.

D Measurement

The department will measure Salvage (Height) Camera Pole with Lowering System by the unit, acceptably removed and safely stored, according to the contract.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
677.9050.S	Salvage 50-Foot Camera Pole with Lowering System	Each

Payment is full compensation for removing and safely storing the existing camera pole with lowering system; disconnecting any necessary wiring; removing the equipment mounted on the poles; and properly disposing of cabling and wiring.
677-900 (20100630)

85. Removing CCTV Camera, Item 677.9200.S.

A Description

This special provision describes removing an existing CCTV camera from an existing camera pole as described in the plan.

B (Vacant)

C Construction

Disconnect all wiring at the control cabinet and at the top of the camera pole. Remove all fastening hardware and remove the existing camera and pan, tilt, and zoom mechanisms from the top of the pole. Salvage and store the cameras for pick up by the department; contact maintenance staff at (414) 227-2166 at the department's Statewide Traffic Operations Center to coordinate when the materials will be picked up.

The contractor may request a meeting with the engineer to assess the condition and operability of the camera prior to beginning work on removing the camera. Any damage or improper operation not noted at the meeting, or prior to the contractor starting work on the removal, will be assumed to be the fault of the contractor; repair or replace the camera at no additional cost to the department. Store the camera until the department picks up the camera.

D Measurement

The department will measure Removing CCTV Camera by the unit, acceptably and completely removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
677.9200.S	Removing CCTV Camera	Each

Payment is full compensation for removing an existing CCTV camera; for disconnecting all necessary cables and wiring; and properly storing the materials.
677-902 (20100630)

86. Install Fiber Optic Cable Outdoor Plant - 36 CT, Item 678.0036.

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

Append standard spec 678.3.1 with the following:

A 12 AWG XLP insulated, stranded, copper, 600 volt AC locate wire shall be furnished and installed in each run of conduit, which is to receive fiber optic cable. Connect the locate wire by using a silicone filled wire nut at each pull box, vault or other access point. Alternatively, use a single wire through the access points, leaving a six (6) foot coil in each pull box, vault or other access point for splicing. All material under this item shall meet the requirements of standard spec 655.

Append standard spec 678.5(2) with the following:

And for furnishing and installing fiber optic locate wire.

87. QMP Concrete Pavement Special Requirements.

This is a specialized QMP Concrete Pavement specification modified for southeast freeway projects.

Supplement standard specs 701, 710, 715 with the following:

A Description

A.1 General

Conform to standard spec 320, 415, 416, and 501 as modified in this special provision.

Apply this special provision only to the following bid items:

320.0100 – 0199	Concrete Base (inch)
415.0060 – 0199	Concrete Pavement (inch)
415.1080 – 1199	Concrete Pavement HES (inch)
415.0410	Concrete Pavement Approach Slab
415.0210	Concrete Pavement Gaps

A.2 Quality Control Program

A.2.1 Control Charts

Maintain control charts when required by the test reporting procedures. Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random, non-random, and engineer requested testing, but only include the contractor's randomly selected QC test results in the 4-point running average. Other process control or informational tests on the control charts may be plotted, but do not include them in 4-point running averages.

Post control charts in an engineer-approved location, and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable warning and control limits, the contractor's individual test results, the running average of the last 4 data points, and the engineer's verification and independent assurance test data points. Use the control charts as part of a process control system for identifying potential problems and assignable causes. Format control charts according to CMM 8.30.

A.2.2 Department Testing

A.2.2.1 Verification Testing

Supplement standard spec 701.4.2 with the following:

The department will perform verification testing as follows:

	Testing Frequency Guide ^[1]	Sampling Material and Location	Test Method	Alternate Test Methods
Air content	1 per lot	Plastic concrete, ahead or behind ^[2] the paver	AASHTO T 152 as modified	Hardened air content testing ^[2] after construction
28-day compressive strength	1 per lot	Cylinders	AASHTO T 22, T 23 and T 141 as modified	Random cores ^[2] after construction

^[1] The engineer may increase the frequency at start-up or as necessary to validate the quality of the materials.

^[2] Evaluation of test results shall account for systematic differences in testing methods or sampling locations.

Plot verification tests on the contractor's quality control charts as specified in B.4.1. Do not include verification tests in the 4-point running average.

A.2.2.1.1 Independent Assurance Testing

Supplement standard spec 701.4.3 with the following:

Plot the independent assurance tests on the contractor's quality control charts as specified in A.2.1. Do not include independent assurance tests in the 4-point running average.

A.2.3 Contractor Testing for Small Quantities

Supplement standard spec 701.2.2(3) with the following:

No concrete control charts are required. Submit test results to the engineer each day as they become available. Assure that all properties are within the limits specified in the standard specifications for each subplot tested.

B Materials

B.1 Class I Concrete Mixes

B.1.1 General

Supplement standard spec 501 with the following:

Use clean, hard, durable crushed limestone with 100% fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

Use virgin aggregates only.

B.1.2 Aggregates

B.1.2.1 Fine Aggregates

Delete standard spec 501.2.5.3.4.

B.1.2.2 Course Aggregates

B.1.2.2.1 Deleterious Substances

Replace standard spec 501.2.5.4.2(1) with the following:

The amount of deleterious substances shall not exceed the following percentages:

DELETERIOUS SUBSTANCE	PERCENT BY WEIGHT
Shale.....	1.0
Coal	1.0
Clay lumps	0.3
Soft fragments	3.0
Any combination of above.....	3.0
Thin or elongated pieces based on a 3:1 ratio.....	15.0
Materials passing the No. 200 (75 µm) sieve	1.5
Chert ^[1]	3.0

^[1] Material classified lithologically as chert and having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of chert by dividing the weight of chert in the sample retained on a 3/8-inch (9.5 mm) sieve by the weight of the total sample.

B.1.2.3 Combined Aggregate Gradation

Replace standard spec 715.2.2(1) items 2 and 3 with the following:

2. The percent passing the 1 inch (25 mm) sieve is less than or equal to 95.
3. The percent passing the No. 4 (4.75 mm) sieve is less than or equal to 47.

C Construction

C.1 Sampling and Testing

C.1.1 Aggregate Testing

C.1.1.1 General

Supplement standard spec 710.5.6.1 with the following:

Ensure that only results of randomly selected QC tests are included in the 4-point running average.

Use control limits for sieve sizes as identified in the project concrete mix report or, if the concrete mix report is not published at the time of testing, in the contractor's quality control plan. Gradation warning limits are inside the upper and lower control limit values by one percentage point for all sieves except as follows:

The upper warning limits for percent passing the No. 100 (150 µm) and No. 200 (75 µm) sieves are inside the control limit by 0.5 percent.

For sieves allowing 100 percent passing, there is no upper warning limit. For sieves with 0 percent passing, there is no lower warning limit.

C.2 Testing and Acceptance

C.2.1 Class I Concrete Testing

C.2.1.1 Lots by Lane-Feet

Supplement standard spec 715.3.1.2.2 with the following:

Lots and sublots may include concrete from more than one day of paving.

A subplot is 350 linear feet for 3-lane paving width or 2-lane plus shoulder.

Sublots at either end of a paving pass may be greater than 1000 lane-feet in size to accommodate the actual project length and staging requirements. For ease of layout, begin the first subplot at the first even station of the project. Place the resulting partial quantity into the first full subplot.

Document the locations and quantities of integral shoulders, and identify the travel lane subplot tests used for acceptance. For a shoulder pavement placed in a separate paving pass, designate separate lots and sublots.

C.3 Strength Evaluation

C.3.1 Pavement

Replace standard spec 715.3.2.2.1 with the following:

If a subplot strength is less than 3000 psi (17.2 MPa), the department may direct that subplot to be cored to determine its structural adequacy and whether to direct removal. Cut and test cores according to AASHTO T 24 as and where the engineer directs. Have an HTCP certified PCC technician I perform or observe the coring. Bear all coring and testing costs, fill all core holes with an approved grout, and provide traffic control during coring at no cost to the department.

The subplot pavement is conforming if the compressive strengths of all cores from the subplot are 3000 psi (17.2 MPa) or greater or the engineer does not require coring.

The subplot pavement is nonconforming if the compressive strengths of any core from the subplot is less than 3000 psi (17.2 MPa). The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.3.2 Acceptance

The department will accept concrete pavement based on the contractor QC tests unless it is shown through the verification or the dispute resolution process that the contractor's tests are in error.

D (Vacant)

E Payment

E.1 General

Replace standard spec 715.5.1(4) with the following:

The department will adjust pay for each lot using percent within limits (PWL) of the 28-day subplot average strengths for that lot. The department will measure PWL relative to the lower specification limit of 4500 psi.

E.2 Pavements

Replace standard specs 715.5.2(1) through 715.5.2(3) with the following:

- (1) The department will adjust pay for each lot using equation “QMP 3.03” as follows:

Percent Within Limits	Pay Adjustment^[1]
(PWL)	(dollars per square yard)
≥ 85 to 100	0
≥ 30 to < 85	$(1.5/55 \times \text{PWL}) - (127.5/55)$
< 30	-1.50

- (2) The department will not pay incentive if the lot standard deviation is greater than 400 psi.

- (3) For lots with less than 4 sublots, the department will assess a disincentive based on the individual subplot average strengths. The department will reduce pay for sublots with an average strength below 4500 psi by \$1.50 per square yard.

SEF Rev.14_0312

88. Abandoning Sewer Special, Item SPV.0035.001.

A Description

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

B Materials

Cellular concrete shall be a lightweight product consisting of portland cement, cement-silica, cement-pozzolan, lime pozzolan, lime-silica pastes, or pastes containing blends of these ingredients and having a homogeneous void or cell structure, attained with gas-forming chemicals or foaming agents.

C Construction

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

D Measurement

The department will measure Abandoning Sewer Special in volume by the cubic yard in accordance to standard spec 109.1.3, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.001	Abandoning Sewer Special	CY

Payment is full compensation for furnishing and placing all materials; and for excavating and backfilling where necessary.

89. Backfill Slurry Special, Item SPV.0035.002.**A Description**

This work shall consist of furnishing and placing Backfill Slurry in accordance to standard spec 209 except as hereinafter modified.

B Materials

Use aggregates that conform with 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

Discharge from the truck in a manner to prevent segregation. Completely fill excavation in a single operation. Consolidation or compaction effort will not be required. Twelve hours shall elapse before paving over the backfill.

D Measurement

The department will measure Backfill Slurry Special in volume by the cubic yard in accordance to standard spec 109.1.3, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.002	Backfill Slurry Special	CY

Payment is full compensation for furnishing and placing all materials; and for excavating and backfilling where necessary.

90. Topsoil Pond Special, Item SPV.0035.003.

A Description

This special provision describes excavating and disposing of topsoil material in accordance to tandard spec 205 and furnishing and installing topsoil in accordance to the requirements of tandard spec 625, the plans, and as hereinafter provided.

B Materials

Excavate materials in accordance to standard spec 205. Furnish topsoil materials in accordance to standard spec 625.

C Construction

Excavate materials as the plans show or the engineer directs in accordance to standard spec 205. Use excavated materials in the work to the extent that it is practical for other approved areas. Dispose of surplus or unsuitable material as specified in standard spec 205.3.12. Place Topsoil Special in accordance to standard spec 625 in locations shown on the plans, and to the depth shown in the plans.

D Measurement

The department will measure Topsoil Pond Special by the cubic yard of excavated material acceptably removed in accordance to standard spec 205.4.1 and acceptably replaced with topsoil in accordance to standard spec 625.4.1(3).

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.003	Topsoil Pond Special	CY

Payment is full compensation for excavating and disposing of materials, furnishing and placing all topsoil material, including excavating, loading, and hauling.

91. Mobilizations Emergency Pavement Repair, Item SPV.0060.001.

A Description

Furnish and mobilize personnel, equipment, traffic control, and materials to the project site to repair the existing pavement on an emergency basis as the engineer directs. An emergency is a sudden occurrence of a serious and urgent nature, beyond normal maintenance of the existing pavement.

B (Vacant)

C Construction

Mobilize with sufficient personnel, equipment, traffic control, materials and incidentals on the jobsite within 4 hours of the engineer's written order to repair the existing pavement on an emergency basis.

D Measurement

The department will measure Mobilizations Emergency Pavement Repair as each individual mobilization acceptably completed. The department will not include delivering and installing pavement repair or maintenance materials provided for in specific contract bid items. All traffic control items used for each Mobilization will be considered incidental to the Mobilization.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.001	Mobilizations Emergency Pavement Repair	Each

Payment is full compensation for the staged moving of personnel, moving equipment, setting up and removing traffic control, traffic control materials, and moving materials. The department will pay separately for delivery and installation of pavement repair materials under the other bid items in this contract. The department will not pay separately for traffic control items and materials even though they may be included in other bid items in this contract and will consider them incidental to each Mobilization.

SEF Rev. 14_0319

92. Silt Fence Drainage Outlet Erosion Control Filter Bags, Item SPV.0060.002.

A Description

This special provision describes construction of erosion control filter bags at openings/outlets in silt fence alignments where water may pond against the silt fence, to allow a path for water discharge while still maintaining erosion protection of the downstream/downslope area. Specifically, the protection provided by the erosion control filter bags will apply to environmentally sensitive areas such as wetlands and stream tributaries.

B Materials

Use bags made of synthetic net with a mesh size of 1/8-inches by 1/8-inches that is of sufficient strength to hold the aggregate and to be lifted vertically.

Obtain approval of the engineer before using clean, sound, hard, durable coarse aggregate fill material conforming to the size and gradation requirements for Size No. 1 coarse aggregate as specified in standard spec 501.2.5.4.4.

C Construction

Provide suitable erosion control filter bags to complete installations at locations shown on the plans or as the engineer directs.

Install erosion control filter bags at the silt fence outlets as directed by the engineer and per plan detail. Place erosion control filter bags immediately after the silt fence has been installed and before starting any construction operation that may cause sedimentation or siltation at the site of the proposed silt fence outlets.

Inspect all erosion control filter bags immediately after each rainfall and at least daily during prolonged rainfall. Immediately correct any deficiencies. In addition, make a daily review of the erosion control filter bags in areas where construction activity has changed the earth contour and drainage runoff to ensure that the bags are functioning properly. Where deficiencies exist, obtain engineer approval or direction to move or adjust existing erosion control filter bags or install additional erosion control filter bags at no additional cost to the department. Replace any bags that have been damaged.

Remove sediment deposits when the deposits reach approximately one-half of the height of the erosion control filter bag(s), or as directed by the engineer.

Dispose of accumulated sediment and restore the site. The contractor may spread accumulated sediment to form a surface suitable for seeding. Remove erosion control filter bags as part of the silt fence removal operation as specified in standard spec 628.3.4.1 and allowed by the engineer. Dispose of the filter bags when they are no longer needed to control erosion. Reshape the area where the bags were located, fill sumps and trenches, and restore the affected area to match the adjacent vegetation.

D Measurement

The department will measure Silt Fence Drainage Outlet, Erosion Control Filter Bags for each installation, acceptably completed.

Individual erosion control filter bags will not be measured.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.002	Silt Fence Drainage Outlet Erosion Control Filter Bags	Each

Payment is full compensation for providing, installing and removing erosion control filter bags used at silt fence drainage outlets at project completion or as the engineer directs; for inspecting and maintaining the erosion control filter bags as specified; for repairing and restoring damaged areas; and for removing and disposing of all surplus and waste material. SEF Rev. 13_0816

93. Landmark Reference Monuments Special, Item SPV.0060.003.

A Description

Coordinate with Southeast Wisconsin Regional Planning Commission (SEWRPC) and provide a backfilled hole for placement of a section corner monument.

B Materials

SEWRPC will provide a pre-cast monument for the section corners.

Furnish base aggregate dense materials that conform to standard spec 305.

C Construction

SEWRPC will perpetuate existing section corner landmarks. Contact Kurt Bauer or Donald Simon at SEWRPC at (262) 547-6721 two weeks before starting construction operations to allow for section corner perpetuation.

SEWRPC will install a pre-cast monument for the section corners. Contact SEWRPC two weeks prior to paving operations to coordinate installation of the monument. Provide a 2-foot diameter by 3-foot deep hole backfilled with base aggregate dense in the location of the section corner location.

D Measurement

The department will measure Landmark Reference Monuments Special by the individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.003	Landmark Reference Monuments Special	Each

Payment is full compensation for furnishing all excavating; for placing and compacting backfill material; for disposing of surplus materials; and for furnishing all coordination with SEWRPC.

94. Temporary Inlet Cover, Item SPV.0060.004.**A Description**

Furnish, install, adjust and remove temporary inlet covers on existing or proposed storm sewer structures to maintain drainage and allow for the installation of temporary pavement around the inlet, in accordance to the pertinent provisions of standard spec 611 and remove inlet covers, as shown on the plans and as hereinafter provided. Removed inlet covers become property of the contractor.

B Materials

Furnish mortar, risers and inlet covers according to standard spec 611.2. Furnish flush inlet covers with a traversable grate suitable for vehicular traffic with a minimum grate size of 3.3 square feet. Furnish Inlet Protection Type D according to standard spec 628.

C Construction

Install and adjust inlet covers according to standard spec 611.3. Install Inlet Protection Type D in the Temporary Inlet Cover.

D Measurement

The department will measure Temporary Inlet Cover 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.0060.004	Temporary Inlet Cover	Each

Payment is full compensation for removing and salvaging the existing cover; for providing temporary inlet cover including frames, grates, and all other required materials for installing and adjusting each cover; for removing temporary cover and adjusting rings; and for maintaining; for furnishing and installing Inlet Protection Type D.

95. Storm Sewer Tap, Item SPV.0060.005.**A Description**

This special provision describes tapping various sized storm sewer pipes into existing structures, including manholes or inlets, or other pipes at locations shown on the plans.

Perform the work in accordance to the applicable provisions of standard spec 607 and standard spec 611.

B (Vacant)**C Construction**

Tap into the existing structure to allow the pipe to be flush with the interior wall of the existing pipe or structure.

D Measurement

The department will measure Storm Sewer Tap as each individual storm sewer tap, 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.0060.005	Storm Sewer Tap	Each

Payment is full compensation for providing all materials, including saw cuts, for excavating; for removing concrete; and for providing and removing sheeting and shoring, making connections to new or existing facilities, cleaning out.

96. Temporary Drainage Inlet Median 1, Item SPV.0060.007, Temporary Drainage Manhole 4-Ft Diameter, Item SPV.0060.008.

A Description

Furnish, install and remove inlets in accordance to the pertinent provisions of standard specs 204 and 611, as shown on the plans and as hereinafter provided.

B Materials

Conform to standard spec 611.2.

C Construction

Conform to standard specs 204.3 and 611.3.

D Measurement

The department will measure Temporary Drainage Inlet Median 1 and Temporary Drainage Manhole 4-Ft Diameter as each individual units, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.007	Temporary Drainage Inlet Median 1	Each
SPV.0060.008	Temporary Drainage Manhole 5-Ft Diameter	Each

Payment is full compensation for providing all materials, including all masonry, conduit and sewer connections, steps and other fittings; for furnishing all excavating, backfilling, disposing of surplus material, removing the inlet or manhole and for cleaning out and restoring the work site after construction and removal; except that the department will pay for covers, including frames, grates and lids separately.

97. Remove Pipe and Cap Storm Sewer Structure, Item SPV.0060.009.

A Description

This item describes removing a pipe from a storm sewer structure and constructing a cap, with concrete and necessary reinforcement, to fill the void in the storm sewer structure, including required excavating and backfilling in accordance to construction details shown on the plan, the standard specifications, and as hereinafter provided.

B Materials

Furnish materials conforming to standard spec 501 for concrete, standard spec 505 for reinforcement, and standard spec 506 for structural steel and miscellaneous metals.

Furnish grade A concrete with Type II cement conforming to standard spec 501.2.

Furnish ASTM 617 Grade 60 reinforcing steel.

Furnish plastic waterstop conforming to standard spec 502.3.6.4.

Furnish support assemblies conforming to standard spec 611.2.2.

C Construction

Excavate and backfill as specified for excavation for Storm Sewer Structures in standard spec 206, except do not backfill concrete brick until at least 3 days after completing the unit. Use granular backfill material for backfilling.

Construct concrete as specified in standard spec 501, and as specified for culverts and retaining walls in standard spec 504.

Construct concrete brick as specified in standard spec 519.

Construct structural steel and miscellaneous metals as specified for steel bridges in standard spec 506.

Cure the concrete by one of the methods specified in standard spec 502.3.8 for curing concrete in sub Storm Sewer Structure units.

Construct the masonry and install waterstop material to provide a watertight joint between new masonry cap and existing manhole.

Clean and remove all materials and debris deposited or lodged in the manhole due to the contractor's operations during construction.

D Measurement

The department will measure Remove Pipe and Cap Storm Sewer Structure as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.009	Remove Pipe and Cap Storm Sewer Structure	Each

Payment is full compensation for providing all materials, including all masonry; for furnishing all excavating; for sheeting and shoring; for backfilling; for providing granular backfill material; for control of water; for temporary support and protection of existing utilities to construction; for removing sheeting and shoring; disposing of surplus material, and for cleaning out and restoring the work site. Granular backfill material required for backfilling is incidental to the work.

- 98. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2, Item SPV.0060.020; Arrows Type 3, Item SPV.0060.021; Words, Item SPV.0060.022; Yield Line Symbols 18-Inch, Item SPV.0060.025; Arrows Type 4, Item SPV.0060.028; Crosswalk 6-Inch, Item SPV.0090.023; Stop Line 18-Inch, Item SPV.0090.024.**

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 to standard spec 647, and as hereinafter provided.

B Materials

Furnish 125 mils preformed thermoplastic pavement marking from the department's approved products list. If required, furnish sealant material recommended by the manufacturer.

C Construction

C.1 General

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

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

C.2 Groove Depth

Cut the groove to a depth of 120 mils $\pm$ 10 mils deep from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Linear Markings

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

C.4 Groove Position

Position the groove edge in accordance to the plan details.

C.4.1 Linear Marking

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

C.4.2 Special Marking

Groove at a minimum of 4-inches from the perimeter of the special marking. Groove separate areas for Word Items.

C.5 Groove Cleaning

C.5.1 Concrete

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

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and prior to pavement marking application. Clean and dry the groove for proper application of the sealant, and placement of the pavement marking. Use a high-pressure air blower with at least 185 ft³/min air flow and 90 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 Asphalt

Use a high-pressure air blower with at least 185 ft³/min air flow and 90 psi air pressure to clean the groove.

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

C.6 Preformed Thermoplastic Application

Preheat the surface if necessary based on manufacturer's recommendation.

Apply preformed thermoplastic in the groove as per manufacturer's recommendations. If manufacturer's recommendations require a sealant, apply a sealant lower than 91g/l VOC during the following period of time due to Volatile Organic Compound Limitations:

May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee.

Use any sealant in the remainder counties and for the remainder of the year. The sealant must be wet.

D Measurement

The department will measure Pavement Marking Grooved Preformed Thermoplastic (Type) by each individual unit, acceptably completed.

The department will not measure Pavement Marking Grooved Preformed Thermoplastic (Type) with unit of measure linear foot. The department will use pay plan quantity according to the Pay Plan Quantity article.

E Payment

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

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
SPV.0060.020	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2	Each
SPV.0060.021	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 3	Each
SPV.0060.022	Pavement Marking Grooved Preformed Thermoplastic Words	Each
SPV.0060.025	Pavement Marking Grooved Preformed Thermoplastic Yield Line Symbols 18-Inch	Each
SPV.0060.028	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 4	Each
SPV.0090.023	Pavement Marking Grooved Preformed Thermoplastic Crosswalk 6-Inch	LF
SPV.0090.024	Pavement Marking Grooved Preformed Thermoplastic Stop Line 18-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface, and for furnishing and installing the material.

99. Traffic Control Flexible Tubular Marker Bases Left-In-Place, Item SPV.0060.026.

A Description

This item consists of providing Flexible Tubular Marker Bases Left-In-Place as shown on the plans.

Flexible Tubular Marker Bases Left-In-Place becomes property of the department after final acceptance by the engineer.

B Materials

Use materials in accordance to the pertinent provisions of standard spec 643.2.5 and as hereinafter provided. The color is to be yellow.

C Construction

Perform work in accordance to the pertinent provisions of standard spec 643.3.4, as shown on the plans, and as hereinafter provided.

D Measurement

The department will measure Traffic Control Flexible Tubular Marker Bases Left-In-Place as each individual base installation left-in-place, acceptably completed. The department will measure replacing damaged bases by each base replaced.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.026	Traffic Control Flexible Tubular Marker Bases Left-In-Place	Each

Payment is full compensation for furnishing, installing, and maintaining the flexible tubular marker bases. The department will not pay to replace bases inadequately secured to the pavement.

100. Traffic Control Flexible Tubular Marker Posts Left-In-Place, Item SPV.0060.027.

A Description

This item consists of providing Flexible Tubular Marker Posts Left-In-Place as shown on the plans.

Flexible Tubular Marker Posts Left-In-Place becomes property of the department after final acceptance by the engineer.

B Materials

Use materials in accordance to the pertinent provisions of standard spec 643.2.5 and as hereinafter provided. The color is to be yellow.

C Construction

Perform work in accordance to the pertinent provisions of standard spec 643.3.4, as shown on the plans, and as hereinafter provided.

D Measurement

The department will measure Traffic Control Flexible Tubular Marker Posts Left-In-Place as each individual post installation left-in-place, acceptably completed. The department will measure replacing damaged posts by each post replaced.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.027	Traffic Control Flexible Tubular Marker Posts Left-In-Place	Each

Payment is full compensation for furnishing, installing, and maintaining the flexible tubular marker posts.

101. Concrete Barrier Transition Type V42 to S42 Special, Item SPV.0060.101.

A Description

This special provision describes the furnishing and installing of a concrete barrier transition with an architectural surface treatment on the sidewalk side of the barrier to meet standard spec 603 and the construction detail shown on the plans.

B Materials**B.1 Concrete Barrier**

Furnish materials conforming to standard spec 603.2.

C Construction

Perform this work in accordance to standard spec 603.3.

D Measurement

The department will measure Concrete Barrier Transition Type V42 to S42 Special as each individual unit, acceptably completed. Measurement will conform to standard spec 603.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.101	Concrete Barrier Transition Type V42 to S42 Special	Each

Payment for the concrete barrier shall conform to standard spec 603.5. The architectural surface treatment and concrete staining will be paid for separately.

102. Removing Luminaires, Item SPV.0060.201.

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

The work under this item shall consist of removing existing luminaires from light poles intended to remain in service.

B (Vacant)**C Construction**

Dispose of all materials off the site, except sodium vapor lamps. Lamps shall be disposed of under the requirements of a separate pay item.

D Measurement

The department will measure Removing Luminaires by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.201	Removing Luminaires	Each

Payment is full compensation for removing, hauling, and properly disposing of materials; and for furnishing all labor, tools, materials.

103. Removing Lighting Unit, Item SPV.0060.301.

A Description

This special provision describes the removal of lighting units (pole, arm, luminaire, and breakaway device, if applicable). Lamp disposal shall be paid separately.

Removed lighting units shall be returned to the Oconomowoc Utilities located at 808 S. Worthington Street, Oconomowoc, WI 53066 as directed by the engineer.

Lamp disposal shall be paid separately.

Please contact Mr. Casey Lemke, Electrical Engineer at (262) 569-6424 no less than 3 working days prior to removal to coordinate the return of the lighting unit.

B (Vacant)

C Construction

No removal work will be permitted without approval from the engineer. Removal shall start as soon as the temporary lighting or permanent lighting, as applicable, is placed in approved operation. An inspection and approval by the engineer will take place before any associated proposed permanent or temporary lighting is approved for operation.

D Measurement

The department will measure Removing Lighting Units by each individual removed lighting unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.301	Removing Lighting Units	Each

Payment is full compensation for removing lighting units and returning to the Oconomowoc Utilities facility; and for disposal of all removed materials.

104. Removing and Salvage Lighting Units, Item SPV.0060.302.

A Description

This special provision describes the removing lighting units (pole, arm, luminaire, wires, breakaway device, and associated hardware and appurtenances) and salvaging pole, arm, luminaire, breakaway devices, and associated hardware and appurtenances for reuse.

Lamp disposal shall be paid separately.

B (Vacant)

C Construction

As shown in the plans, remove and salvage for re-installation on the site.

D Measurement

The department will measure Removing and Salvage Lighting Units by each individual removed and salvaged unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.302	Removing and Salvage Lighting Units	Each

Payment is full compensation for removing lighting units, salvage and re-installation; for disposal of all removed materials.

105. Lamp Disposal High Intensity Discharge, Item SPV.0060.303.**A Description**

This special provision describes packaging, palletizing, and returning HID (metal halide; mercury vapor and high-pressure sodium) lamps removed under this contract to the Oconomowoc Utilities facility located at 808 S. Worthington Street, Oconomowoc, WI 53066.

B (Vacant)**C Construction**

Lamps that the contractor turns in to the department will be considered the property of the department for proper future disposal. The contractor will have no further obligation for their disposal. The department will reject improperly packaged lamps.

Deliveries to the department shall be prearranged. Deliveries shall be consolidated into a truckload or more, except that where all the lamps removed under a contract measure less than a truckload, all shall be delivered as one load at one time.

Pack intact lamps in the packaging of the new lamps used to replace the old lamps, or packaging affording the equivalent protection. Deliver in full, closed, stackable cartons with the name of the contractor, the number and type/ wattage of lamps clearly written on each carton.

Pack broken lamps into minimum 6 mil plastic bags, which in turn shall be placed inside sturdy cardboard boxes or the equivalent, with the number of lamps clearly marked on each box. Mark the outer packaging "broken lamps". The department will reject metal containers.

Deliver all broken lamps, as noted above. The department will not pay broken lamps above a level of ten percent of the total number in the contract. Deliver broken lamps above the ten percent level to the department for no compensation.

If palletized, cartons shall be piled no more than two high and shall be secured with shrink-wrap to prevent shifting or falling loads. Label the pallets by the number and type/ wattage of lamps, and the name of the contractor.

The department will reject any lamps not removed as part of a contract pay item or otherwise required under this contract.

D Measurement

The department will measure Lamp Disposal High Intensity Discharge by each individual unit delivered, 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.0060.303	Lamp Disposal High Intensity Discharge	Each

Payment is full compensation for packaging, palletizing and delivering lamps without breakage.

This payment will be in addition to payment for the work under which the lamps are removed from service.

106. Install Salvaged Lighting Units, Item SPV.0060.304.

A Description

The work under this item shall consist of the re-installation of Oconomowoc Utilities lighting units removed from the site. Install a new lamp (incidental to this item) in each luminaire. Install new pole wire and fusing for separate payment.

B Materials

Furnish and install small parts and fittings as needed per each location. Lamp type and wattage shall be a contractor take-off based on the existing unit salvaged.

C Construction

Conform to the applicable requirements of standard specs 657 and 659.

D Measurement

The department will measure Install Salvaged Lighting Units by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.304	Install Salvaged Lighting Units	Each

Payment is full compensation for installing salvaged poles and new lamps.

107. Install Oconomowoc Furnished Lighting Units, Item SPV.0060.305.

A Description

This special provision describes the installing of lighting units furnished by the Oconomowoc Utilities.

B Materials

Provide small parts, fittings, fasteners, connectors, splice kits, etc., needed to complete the installation and approved by the engineer.

C Construction

Conform to the applicable requirements of standard specs 657 and 659.

Pick up and haul to the site from Oconomowoc Utilities facility, as described elsewhere in these special provisions.

D Measurement

The department will measure Install Oconomowoc Furnished Lighting Units as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.305	Install Oconomowoc Furnished Lighting Units	Each

Payment is full compensation for hauling and installing Oconomowoc Utilities Furnished Lighting Units.

108. Concrete Bases Type 10, Contractor Supplied Anchor Bolts and Rod Template, Item SPV.0060.401.

This special provision article applies only to Project 2718-00-75.

A Description

This special provision describes constructing concrete bases, including the use of contractor supplied anchor bolts and anchor rod templates.

B Materials

B1. Concrete Bases

Furnish grade A, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to standard spec 501.2 as modified in standard spec 716. Provide QMP for class III ancillary concrete as specified in standard spec 716.

Furnish bar steel reinforcement conforming to standard spec 505.2.

Use schedule 40 PVC electrical conduit conforming to the electrical conduit specified in standard spec 652.

B2. Anchor Bolts

Provide anchor bolts conforming to AASHTO M 314, grade 55 and Supplementary Specification S1, or ASTM F1554 Grade 55. Threads on bolts shall be formed by rolling.

Hot-dip galvanize the entire length of the anchor rods according to AASHTO M111. Hot-dip the nuts and washers according to AASHTO M232. Use zinc coated nuts manufactured with sufficient allowance to allow nuts to run freely on the threads.

B3. Anchor Rod Template

Furnish a steel top and bottom template conforming to ASTM A709, grade 36 as part of each anchor assembly. Provide a top template of sufficient gauge to hold the anchor rods securely in position at the top, and resist racking or twisting during the pour. Use a ½-inch thick bottom anchor plate-template and secure it to each anchor rod. Templates shall not be welded to the anchor rods.

C Construction

C1. Concrete Bases

Construct concrete bases, including necessary hardware, as specified in standard spec 501 of the standard specification and plan details, and provide the surface finish specified in standard spec 502.3.7.2. Inspect the forming and applicable reinforcement for concrete bases before pouring the concrete. Cure exposed portions of concrete bases as specified for concrete pavement in standard spec 415.3.12 except the contractor may use curing compound conforming to standard spec 501.2.9. Wait at least 7 days before installing poles.

C2. Anchor Bolts

Lubricate anchor bolt threads and nuts with bees wax or other high-wax lubricant. Set leveling nuts to the required elevation before installing the structure. Adjust top nuts and leveling nuts to align and plumb the structure. Ensure that all nuts are snug-tight with no gaps. Tighten each top nut 1/3 turn past snug for bolts 1 1/2 inch or smaller in diameter and 1/6 turn for larger diameter bolts conforming to the tightening sequence specified on department form DT 2321. If required, install jamb nuts wrench tight.

Complete department form DT 2321 for each structure. Indicate the parties responsible for the installation and submit the form to the engineer for inclusion in the permanent project record.

C3. Anchor Rod Templates

Secure the anchor rod template to all anchor rods at one time in its correct position as the plan details show. Ensure relative movement and misalignment does not occur. If any

twisting, racking, or other movement of the anchor rods out of plumb, projection, or pattern, or any damage to the threads exists the engineer will reject the entire base.

Maintain the clear distance between the soil and the reinforcing steel cage using the means the plan detail shows. Do not weld the anchor rods to each other, the reinforcing steel cage, and the templates or to any other component of the foundation.

If an anchor rod template is located above the concrete surface, it may be removed 24 hours after placing the concrete.

D Measurement

The department will measure Concrete Bases Type 10, Contractor Supplied Anchor Bolts and Anchor Rod Template by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.401	Concrete Bases Type 10, Contractor Supplied Anchor Bolts and Anchor Rod Template	Each

Payment for the Concrete Bases Type 10, Contractor Supplied Anchor Bolts and Anchor Rod Template is full compensation for providing concrete, reinforcing steel, and electrical conduit; for providing anchor rods, templates, nuts, and washers; for excavating; for installing electrical conduit, electrical ground, templates; for placing and curing concrete; for backfilling; and for disposing of surplus material and restoring the site.

109. Poles Type 10, Item SPV.0060.402.

This special provision article applies only to Project 2718-00-75.

A Description

Work under this item consists of furnishing and installing monotube poles.

B Materials

Design support structures conforming to the minimum wall thickness the plan details show and to AASHTO design and fabrication standards for structural supports for highway signs, luminaries, and traffic signals. Use a design life of 50 years. Design to withstand a 3 second gust wind speed of 90 mph (145 km/h). Do not use the methods of Appendix C of those AASHTO standards.

Use Category III criteria for Type 9 and Type 10 Poles. Use Category II criteria for Type 12 and Type 13 Poles.

For structures requiring a fatigue analysis, use 45 mph (72 km/h) for truck-induced gusts.

After welding and before zinc coating, clean the exterior surface of each steel pole free of all loose rust and mill scale, dirt, oil or grease, and other foreign substances.

Apply a zinc coating conforming to the process specified for steel sign bridges in standard spec 641.2.8. Ensure that the zinc coating is tight, free from rough areas or slag, and presents a uniform appearance.

After completing manufacturing, clean the exterior surfaces of each pole free of all loose scale, dirt, oil or grease, and other foreign substances.

Provide a reinforced hand hole measuring 4 inches by 6 inches (100 mm by 150 mm) as the plans show. Locate the hand hole 18 inches (450 mm) from the bottom of the pole base to the center of the door.

For the hand hole, include an access cover mounted to the pole by two 1/4"-20 x 3/4" (m6 x 1.00 x 19 mm) hex-head stainless steel bolts.

Provide a grounding lug complete with mounting hardware, as required, inside the pole as the plans show.

Provide access to the grounding lug from the hand hole. Weld the ground lug directly opposite the hand hole on the inside wall of the pole.

Equip the top of the shaft with a removable, ventilated cap held securely in place by at least 3 1/4" -20 x 3/4" (m6 x 1.00 x 19 mm) hex-head stainless steel set screws.

Ensure that all castings are clean, smooth, and with all details well defined and true to pattern.

Attach base plates firmly to the pole shaft by welding or other approved method.

Include anchor bolts meeting AASHTO standards applicable to the pole type and loading. Provide a mounting template that ensures correct installation of anchor bolts in foundation.

C Construction

Install poles as specified in the plan details and using appropriate contractor-furnished anchor bolts and hardware. Use the appropriate anchor bolt template to ensure correct installation. Secure pole to anchor assembly and document tensioning procedures conforming to standard spec 641.3.1.2.

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

D Measurement

The department will measure Poles Type 10 as each individual pole, acceptably completed.

E Payment

Poles Type 10 will be paid for measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.402	Poles Type 10	Each

Payment is full compensation for providing and installing poles including all hardware and fittings necessary to install the poles, and for installing identification plaques, if required.

110. Monotube Arms 30-FT, Item SPV.0060.403.

This special provision article applies only to Project 2718-00-75.

A Description

Work under this item consists of furnishing and installing monotube arms.

B Materials

Design support structures conforming to the minimum wall thickness the plan details show and to AASHTO design and fabrication standards for structural supports for highway signs, luminaires, and traffic signals. Use a design life of 50 years. Design to withstand a 3 second gust wind speed of 90 mph (145 km/h). Do not use the methods of appendix C of those AASHTO standards.

Use category III criteria for 15 to 30-foot arms. Use category II criteria for 35 to 55-foot arms.

For structures requiring a fatigue analysis, use 45 mph (72 km/h) for truck-induced gusts.

Base the designs on the completed maximum loading configuration the standard detail drawing shows. Along with the materials list, submit a certificate of compliance certifying that the arms as furnished, conform to the above structural performance requirements. Ensure that the certificate of compliance is on the manufacturer's letterhead, signed by an authorized company officer, and notarized. Send a copy of the certificate and a copy of the monotube arm shop drawings to the department electrical engineer.

Furnish monotube arms conforming to the following:

Consist of zinc coated steel round or oval members.

Have a mounting device welded to the pole end of the monotube arm that allows the attachment of the arm to a pole as the plans show.

Have stiffeners or gussets if required between the arm tube and the arm mounting device to provide adequate strength to resist side loads.

Have a clean, uniform natural finish. No paint or other corrosion preventive maintenance coating is required.

After welding and before zinc coating, clean exterior surfaces of each arm free of all loose rust and mill scale, dirt, oil or grease, and other foreign substances.

Apply zinc coating as specified for sign bridge components in standard spec 641.2.8. Ensure that the zinc coating is tight, free from rough areas or slag, and presents a uniform appearance.

After manufacturing is complete, clean the exterior surfaces of each pole free of all loose scale, dirt, oil, or grease, and other foreign substances.

C (Vacant)

D Measurement

The department will measure Monotube Arms 30-FT as each individual arm, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.403	Monotube Arms 30-FT	Each

Payment is full compensation for providing and installing all materials, including all hardware, fittings, mounting devices, shims, and attachments necessary to completely install the arms.

111. Luminaire Arms Steel 15-FT, Item SPV.0060.404.

This special provision article applies only to Project 2718-00-75.

A Description

Work under this item consists of furnishing and installing steel luminaire arms.

B Materials

Design support structures conforming to the minimum wall thickness the plan details show and to AASHTO design and fabrication standards for structural supports for highway signs, luminaires, and traffic signals. Use a design life of 50 years. Design to withstand a 3 second gust wind speed of 90 mph (145 km/h). Do not use the methods of appendix C of those AASHTO standards.

Use category III criteria if mounted on top of a Type 10 pole and category II criteria if mounted on top of a Type 13 pole.

For structures requiring a fatigue analysis, use 45 mph (72 km/h) for truck-induced gusts.

Base the designs on the completed maximum loading configuration the standard detail drawing shows. Along with the materials list, submit a certificate of compliance certifying that the arms as furnished conform to the above structural performance requirements. Ensure that the certificate of compliance is on the manufacturer's letterhead, signed by an authorized company officer, and notarized. Send a copy of the certificate and a copy of the luminaire arm shop drawings to the department electrical engineer.

Furnish luminaire arms conforming to the following:
Consist of zinc coated steel round or oval members.

Have a mounting device welded to the pole end of the luminaire arm that allows the attachment of the arm to a pole as the plans show.

Have stiffeners or gussets if required between the arm tube and the arm mounting device to provide adequate strength to resist side loads.

Have a clean, uniform natural finish. No paint or other corrosion preventive maintenance coating is required.

After welding and before zinc coating, clean exterior surfaces of each arm free of all loose rust and mill scale, dirt, oil or grease, and other foreign substances.

Apply zinc coating as specified for sign bridge components in standard spec 641.2.8. Ensure that the zinc coating is tight, free from rough areas or slag, and presents a uniform appearance.

After manufacturing is complete, clean the exterior surfaces of each pole free of all loose scale, dirt, oil, or grease, and other foreign substances.

C (Vacant)

D Measurement

The department will measure Luminaire Arms Steel 15-Foot as each individual arm, 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.0060.404	Luminaire Arms Steel 15-FT	Each

Payment is full compensation for providing and installing all materials, including all hardware, fittings, mounting clamps, shims if required and attachments necessary to completely install arms.

112. Contractor Provided High-Strength Bolt Assemblies for Monotube Poles, Item SPV.0060.405.

This special provision article applies only to Project 2718-00-75.

A Description

This special provision describes furnishing and installing high-strength bolt assemblies for monotube mast arm to pole connection on type 9, 10, 12, and 13 signal poles as shown on the plans.

B Materials

Furnish same lot/heat high-strength bolts, hex nuts, two flat washers and also provide DTI (Direct Tension Indicator) washer of the size as given on the plans, per pole manufacturer design requirements and that conform to standard spec 506.2.5. Also submit "Buy America" provision compliance material certification.

C Construction

Provide high-strength bolts, hex nuts, two flat washers and DTI washer for connection of monotube arm to pole upright flange connection plates. Install per standard spec 506.3.12. Ensure that spare bolt, nuts and washer for ready for field test requirements and stored well not exposed the environments. Lubricate the bolt/nut before test and install. Follow the bolt field tests procedures per standard specification standard specs 506.2.5.6 and 506.3.12. Complete and submit DT2113 and DT2114 forms to project manager.

D Measurement

The department will measure Contractor Provided High-Strength Bolt Assemblies for Monotube Arms Poles as each individual arm, 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.0060.405	Contractor Provided High-Strength Bolt Assemblies for Monotube Arms Poles	Each

Payment is full compensation for furnishing, installing and field testing high-strength bolt assemblies. All contractor provided high-strength bolt assemblies required for acceptable installation, field testing, and quality verification testing are incidental to this bid item.

113. Traffic Signal Controller and Cabinet 8-Phase Fully Actuated, Item SPV.0060.406.

This special provision article applies only to Project 2718-00-75.

A Description

This specification describes furnishing and installing a fully equipped and operational NEMA TS2 Type 1 traffic signal control cabinet.

B General Requirements

B.1 General

Furnish and install equipment and assemble the cabinet conforming to the latest revision of NEMA Standards Publication TS 2-2003, *Traffic Controller Assemblies with NTCIP Requirements*, National Electrical Manufacturers Association, hereinafter called NEMA TS2 Standard, except where modified in this specification. All work shall conform to the Wisconsin State Electrical Code (WSEC). All work shall conform to standard spec 651, 2012 Edition, as supplemented or modified in this specification.

Provide cabinets designed for TS2 Type 1 operation. Pre-wire cabinets for a minimum of sixteen phases as specified herein.

The traffic signal controller shall be an Econolite ASC/3.

Furnish and install at no extra cost any equipment and materials not specifically described but required in order to perform the intended functions in the cabinet.

Install the cabinet on the foundation and terminate all connections. Test for correct operation.

B.2 Definitions

Contractor or vendor – the firm under contract with the city or other entity for furnishing and installing the traffic signal cabinet

Construction contractor – the firm under contract with the city or another entity to construct a roadway facility. The construction contractor may designate a subcontractor, such as an electrical subcontractor, to represent them with regards to the signal cabinet installation.

City – City of Oconomowoc

Manufacturer – the firm that builds or produces the traffic signal equipment other than the cabinet. For example, the “controller manufacturer”

C Cabinet

C.1 Design

Furnish a door-in-door ground mounted (without anchor bolts) aluminum cabinet of clean-cut design and appearance. Provide a cabinet of minimum size 44 inches wide, minimum 24 inches deep and minimum 52 inches to maximum 60 inches high. The size of the cabinet shall provide ample space for housing the controller, all of the associated devices which are to be furnished with the controller, all other auxiliary devices herein specified, and all equipment to be furnished and installed by others as listed in the Description section of this specification.

The cabinet shall comply with the environmental and operating standards outlined in the NEMA TS2 Standard. The cabinet shall provide reasonable vandalism protection. The cabinet shall have a NEMA 3R rating.

Construct the cabinet from type 5052-H32 aluminum with a minimum thickness of 0.125 inches. Furnish the cabinet with a natural, uncoated, aluminum finish inside and outside. Continuously weld all seams. The surface shall be smooth, free of marks and scratches. Use stainless steel for all external hardware.

On the top of the cabinet, incorporate a 1-inch slope toward the rear to prevent rain accumulation. Incorporate a rain channel into the design of the main door opening to prevent liquids from entering the enclosure.

Include an exhaust plenum with a vent screen into the roof of the cabinet. Perforations in the vent screen shall not exceed 0.125 inches in diameter.

Equip the lower section of the cabinet door with a louvered air entrance. The air inlet shall be large enough to allow sufficient air flow per the rated fan capacity. Louvers must satisfy the NEMA rod entry test for Type 3R ventilated enclosures. Secure a washable, fiberglass, removable air filter to the air entrance. The filter shall fit snugly against the cabinet door wall. Attach an aluminum, easily removable, gasketed cover over the air filter and louver.

C.2 Doors

The cabinet door opening shall be a minimum of 80 percent of the front surface of the cabinet. The main door and police door-in-door shall each close against a weatherproof and dust-proof, closed-cell neoprene gasket seal. The gasket material for the main door shall be a minimum of 0.188 inches thick by 1.00 inch wide. The gasket material for the police door shall be a minimum of 0.188 inches thick by 0.500 inches wide. Permanently bond the gaskets to the cabinet.

Equip the main door with a three-point latching mechanism. The upper and lower locking points of the latching mechanism shall each have a pair of nylon rollers. The handle on the main door shall utilize a shank of stainless steel 3/4 inches minimum diameter. The handle shall include a hasp for the attachment of an optional padlock. The cabinet door handle may turn either clockwise or counterclockwise to open, and shall not extend outwards past the edge of the door at any time. Position the lock assembly so the key will not cause any interference with the handle, or a person's hand on the handle, when opening the cabinet door.

Include on the main door a solid stainless steel rod stop and catch mechanism capable of rigidly holding the door open at approximately 90, 120, and 180 degrees under windy conditions. The operator must be able to engage and disengage the catch with a shoed or booted foot.

The main door hinge shall be a one-piece, continuous piano hinge with a minimum 0.25 inch stainless steel pin running the entire length of the right side of the door (right-handed). Attach the hinge in such a manner that no rivets or bolts are exposed.

Equip the main door with a brass Corbin tumbler lock No. 2, swing away dust cap, and provide two keys No. 2. Equip the police door-in-door with a standard police lock and provide one key.

Electrically bond the door to the rest of the cabinet with a braided copper grounding conductor. The length of the grounding conductor shall allow the door to swing fully open, without using the stop bar, without stretching or breaking the grounding conductor. The grounding conductor shall not interfere with normal door operation.

Provide a door switch for the main cabinet door. When the door is opened the switch shall send a signal to the controller sufficient for the controller to log an alarm.

C.3 Shelves and Mountings

Mount a minimum of three vertical "C" channels, compatible with Unistrut channel nuts, on each interior side wall of the cabinet for the purpose of mounting the cabinet components. The channels shall accommodate spring mounted nuts or studs. Install three vertical "C" channels or three slotted rails on the interior back wall of the cabinet. All mounting channels and rails shall extend to within 7 inches of the top and bottom of the cabinets and shall be of sufficient strength to rigidly hold specified shelves and equipment.

Provide two full-width, 11-inch deep, fully adjustable, aluminum shelves to support the controller and other equipment. Mount the lower shelf at a height above the bottom of the cabinet such that the shelf and attached drawer does not interfere with the ability to tilt the terminal facility forward on its hinges for maintenance purposes. Mount the top shelf at least 13 inches above the surface of the lower shelf.

Locate the controller and Malfunction Management Unit (MMU) on the top shelf. Locate the loop detector racks and other auxiliary equipment on the lower shelf. The power supply may be mounted on either shelf.

Provide an under-shelf drawer under the lower shelf. The drawer shall be approximately 20 inches wide and the full depth of the shelf. The drawer shall operate easily and smoothly, and shall have a stop to prevent inadvertently pulling the drawer out of its support. Design the stop to allow purposeful complete removal of the drawer without the use of tools.

C.4 Auxiliary Cabinet Equipment

Ventilate the cabinet by means of a 120 VAC, 60HZ, tube axial compact type fan located in the top of the cabinet plenum. The fan's free delivery airflow shall be equal to or greater than 100 cubic feet per minute. The magnetic field of the fan motor shall not affect the performance of control equipment. The fan bearings shall operate freely. The fan unit shall not crack, creep, warp, or have bearing failure within a seven year duty cycle. The

maximum noise level shall be less than 40 decibels. The fan unit shall be corrosion resistant. The thermostat's turn on setting shall be adjustable from 90 to 120 degrees F. The fan shall run until the cabinet temperature decreases below the turn-on temperature setting by approximately 30 degrees F. The fan shall be fused.

Mount an incandescent lamp and socket in the cabinet to sufficiently illuminate the field terminals. Wire the lamp to a 15-amp ON/OFF toggle switch mounted on the rear cover of the police panel as specified in the Cabinet Switches section of this specification.

Provide a 250 watt element heater. Install the heater on the face of the aluminum, louvered air filter cover such that feed air is supplied through the cover. Provide a protective, ventilated cover over the heater. Provide a cord and twist-off plug to an electrical receptacle on the cabinet door. Provide a thermostat with an adjustable setting from 0 to 100 degrees F. Install the thermostat on the interior ceiling of the cabinet well away from the cabinet light or any heat source. Provide a thermal limit switch to prevent the heater's protective cover from exceeding 170 degrees F.

D Terminals and Facilities

D.1 Terminal Facility

The terminal facility panel shall be constructed from 5052-H32 brushed aluminum of 0.125 inches minimum thickness and formed so as to eliminate any flexing when plug-in components are installed.

Mount the bottom of the terminal facility a minimum of nine inches from the bottom of the cabinet. Hinge the terminal facility at the bottom to allow easy access with simple tools to all wiring on the rear of the panel. It shall not be necessary to remove the lower shelf, the shelf drawer, or any shelf-mounted equipment to hinge down the terminal facility. Provide sufficient slack in the load bay wiring to allow for dropping the load bay.

Fully wire the terminal facility with sixteen load switch sockets: eight phases of vehicular, four phases of pedestrian, and four phases of overlap operation; eight flash transfer relay sockets; one flasher socket; and two terminal facility Bus Interface Unit (BIU) rack slots. The use of printed circuit boards is not acceptable on the terminal facility, except printed circuit boards are acceptable for the BIU interface with the load bay. Position the 16 load switch sockets in two horizontal rows of eight sockets each. Support the load switches and flasher by a bracket or shelf extending at least three inches from the terminal facility.

Label all terminals, load switches, and flash transfer relay sockets. Label reference designators by silk-screening on the front and rear of the terminal facility to match drawing designations.

Provide rack mounted BIU's. Provide a dual-row, 64-pin female DIN 41612 Type B connector for each BIU rack position. Provide card guides for both edges of the BIU. Terminal and facilities BIU mounting shall be an integral part of the terminal facility.

Provide two each 16-channel, 8-position, TS2 detector racks, each with an integrally mounted BIU mounting. Racks shall be addressable. Power each detector rack by the cabinet power supply. Fasten the loop detector racks towards the left side of the lower shelf.

For BIU rack connectors, provide pre-wired address pins or jumper plugs corresponding to the requirements of the NEMA TS2 Standard. The address pins or jumper plugs shall control the BIU mode of operation. BIUs shall be capable of being interchanged with no additional programming.

For the terminal facility, contain all field wires within one or two rows of horizontally-mounted Marathon heavy duty terminal blocks. Terminate all field output circuits on an unfused terminal block with a minimum rating of 10 amps. Use mechanical connector lugs rated for copper wire. Angle the lower section of the terminal block out from the back of the cabinet at approximately a 45 degree angle.

Identify all field input/output (I/O) terminals by permanent alphanumeric labels. All labels shall use standard nomenclature per the NEMA TS2 Standard.

All field flash sequence programming at the field terminals shall be able to be accomplished with the use of only a screwdriver.

Wire field terminal blocks to use three positions per vehicle or overlap phase (green, yellow, red).

Wire one RC network in parallel with each flash transfer relay coil.

Permanently label all logic-level, NEMA-controller and MMU input and output terminations on the terminal facility. Identify the function of each terminal position on the cabinet drawings.

Terminal blocks for DC signal interfacing shall have a number 6-32 x 7/32 inch screw as minimum. Functions to be terminated shall be as specified in the listing of Input/ Output Terminals in Section 5 of the NEMA TS2 Standard.

Conform all terminal facility and cabinet wiring to the Wisconsin State Electrical Code (WSEC). The green/ walk, yellow, and red/ don't walk load switch outputs shall be minimum 16 gauge wire. The MMU (other than AC power), controller I/O, and logic ground shall be minimum 22 gauge wire. All wire colors shall be consistent in all cabinets furnished in one order.

D.2 Auxiliary Panels

D.2.1 Vehicle Detection Interface Panel

Provide a 32-position interface panel or two 16-position panels. Each interface panel shall allow for the connection of 32 or 16 independent field loops, respectively. The panels shall have barrier strip type terminals using 8-32 screws and be rated for 20 inch pounds of

torque. Provide a ground bus terminal between each loop pair terminal to provide a termination for the loop lead-in cable ground wire. Secure the interface panels to a mounting plate attached to the left interior side wall of the cabinet.

Provide a cable consisting of 20 AWG twisted pair wires to enable connection to and from the interface panel to a detector rack. The twisted pair wires shall be color-coded wires. Provide a cable of sufficient length to allow the detector rack to be placed on either shelf.

Identify all termination points by a unique number silk screened on the panel.

D.2.2 Intersection Lighting

Provide an intersection lighting control panel as described. The intersection lighting control panel shall consist of an aluminum panel 0.125 inches thick and approximately 5 inches by 10 inches. Determine the actual panel size by the cabinet's mounting rail placement. Attach to the panel a 2 pole-30 amp contactor-120vac coil (Square D #8910DPA32V02 or equal), and a heavy duty six position terminal block (Marathon DJ1606 or equal). Use wire sizes 10AWG for power and load wiring, and 16AWG for control wires. Wire the terminal strip as follows:

Control coil

L1 in

L2 in

Neutral in and control coil

L1 out

L2 out

Protect each output by a MOV (V150LA20A) wired between the output and neutral. Include a photo control (Intermatic #K4021C or equal). Mount the photo control just above the cabinet door and approximately 12 inches from the right side of the cabinet. Wire the photo control to a 3 position terminal strip using 16AWG wire color coded to match the photo control wiring connected to the intersection lighting control panel.

D.3 Conductors and Cabling

All conductors in the cabinet shall be copper 22 AWG or larger. All 14 AWG and smaller wire shall conform to MIL-W-16878/1, Type B, 600V, 19-strand tinned copper. The wire shall have a minimum of 0.010 inches thick PVC insulation without clear nylon jacket and rated to 105 degrees Celsius. All 12 AWG and larger wire shall be UL or NRTL listed THHN/THWN 90 degrees Celsius, 600V, 0.020 inches thick PVC insulation, and clear nylon jacketed.

Provide controller and MMU cables of sufficient length to allow the units to be placed on either cabinet shelf in the operating mode. Connecting cables shall be sleeved in a braided nylon mesh. Exposed tie-wraps and interwoven cables are unacceptable.

Provide the cabinet configuration with enough SDLC RS-485 Port 1 communication cables to allow full capabilities of that cabinet. Each communication cable connector shall be a 15-pin metal shell D subminiature type. The cable shall be a shielded cable suitable

for RS-485 communications. Secure all connecting cables and wire runs by mechanical clamps. Stick-on type clamps are not acceptable.

Pre-wire the terminal facility for a Type 16 MMU.

All wiring shall be neat in appearance. Stow excess cable behind the terminal facility or below the shelves in order to allow easy access to the terminal facility and cabinet components. All cabinet wiring shall be continuous from its point of origin to its termination point. Butt type connections/splices are not acceptable.

Wire the grounding system in the cabinet into three separate circuits: AC Neutral, Earth Ground, and Logic Ground.

Optoisolate all pedestrian pushbutton inputs from the field to the controller through the BIU and operate at 12 VAC.

Hook or loop all wire, size 16 AWG or smaller, at solder joints around the eyelet or terminal block post prior to soldering to ensure circuit integrity. Lap joint soldering is not acceptable.

D.4 Cabinet Switches

Locate the following switches on a maintenance panel on the inside of the cabinet door:

Controller On/Off

Cabinet Light

Stop Time (Three Position)

Manual Detector Switches (Three Position)

<u>Position</u>	<u>Switch Label</u>	<u>Function</u>
Upper	Stop Time	Place stop time on the controller
Center	Run	Remove the stop time input to the controller
Lower	Normal	Connects the MMU to the controller stop time input

Locate the following switches behind the police access door:

Signal/Off

Flash/Normal

Hand/ auto

Coiled hand control and cable

The above switches shall function as follows:

Off: Signals Dark

Signal: Signals On and operating as follows:

<u>Auto</u>		<u>Hand</u>
Flash:	Signals Flash	Signals Flash
Normal:	Signals Normal	Signals Advance by use of hand control

Provide manual detector switches. Provide a minimum of 16 vehicle detector switches, and four pedestrian detector switches. The switches shall be spring loaded and automatically return to the center position. Wire the vehicle detector switches to detector BIU slot 1. Wire the pedestrian switches to the T&F BIU slot 1. The switches shall operate as follows:

<u>Position</u>	<u>Function</u>
Up	Detector Disabled
Center	Detector Enabled
Down	Detector Called

E Power Panel

E.1 Design

The power panel shall consist of a separate module, securely fastened to the interior right side wall of the cabinet. Wire the power panel to provide the necessary power to the cabinet, controller, MMU, cabinet power supply, and all auxiliary equipment. Manufacture the power panel from 0.090-inch, 5052-H32 aluminum. Panel layout shall facilitate field inspection and maintenance accessibility without excessive disassembly or special tools.

Provide a light, tough, transparent, weather-resistant, non-yellowing, thermoplastic cover, rigidly mounted over the full power panel, with access holes for circuit breakers and other equipment, and open on the sides for ventilation.

E.2 Bus Bar

Provide a minimum 20-position neutral bus bar capable of connecting three #12 AWG wires per position.

E.3 Circuit Breakers

House in the power panel the following vertically mounted, single pole, 120 volts AC, 60 Hertz, circuit breakers, with the ON position being up:

One 30-amp signal breaker. This breaker shall supply power for all cabinet functions not powered through one of the other breakers or fuses listed below. Streetlights will be powered from outside the cabinet in the meter breaker pedestal. This breaker shall feed a signal bus supplied through a solid state bus relay and a radio interference line filter. The bus relay, in all cases, shall be a solid state contactor and shall not be jack mounted. Breakers shall be thermal magnetic type, UL or NRTL listed, with a minimum of 22,000 amp interrupting capacity.

One 15-amp auxiliary breaker. This breaker shall supply power to the fan and heater.

One 10-amp breaker. This breaker shall supply power for control equipment: controller, MMU, and cabinet power supply.

One 20-amp circuit breaker for future use.

Power the cabinet light through the GFI fuse, not a circuit breaker.

E.4 Radio Interference Suppressor

Equip each control cabinet with a single radio interference suppressor (RIS) of sufficient ampere rating to handle the load requirements. Install the RIS at the input power point. The RIS shall minimize interference in both the broadcast and the aircraft frequencies, and shall provide a maximum attenuation of 50 DB over a frequency range from 200 KHZ to 75 MHZ, when used in connection with normal installations. The RIS shall be hermetically sealed in a substantial metal case filled with a suitable insulating compound. The terminals shall be nickel-plated brass studs of sufficient external length to provide space to connect two #8 AWG wires and shall be so mounted that they cannot be turned in the case. Ungrounded terminals shall be properly insulated from each other, and shall maintain a surface leakage distance of not less than 6.35 mm between any exposed current conductor and any other metallic parts. The terminals shall have an insulation factor of 100-200 megohms dependent upon external conditions. The RIS shall be rated at minimum 50 amperes. Design the RIS for operation on 115 VAC +/- 10%, 60HZ, single-phase circuits, and to meet the standards of UL or a NRTL and Radio Manufacturer's Association.

E.5 Bus Relay

Provide a normally-open, 60 amp, solid state relay.

E.6 Surge Protector

Install a plug-in type EDCO SHA-1250, or Atlantic/Pacific approved equal, surge protector across the load terminal of the 10-amp circuit breaker. Install a General Electric Varistor, catalog #V130PA20A, at the load terminals of the circuit breaker from the hot line to the grounded current carrying neutral conductor.

E.7 Power receptacles

Mount a 120 VAC 20 amp, NEMA 5-20R GFCI duplex convenience outlet at each of these two locations:

On the interior right side wall above the power panel. The outlet shall be fully operational and fuse protected.

Near the power panel where it will not interfere with power panel maintenance. This outlet is to be wired by field installation personnel.

E.8 Suppressors and RC Network

Provide a suppressor for each 120 VAC circuit that serves an inductive device, such as a fan motor or a mechanical relay, to protect the controller's solid state devices from excessive voltage surges. Such suppressors shall be in addition to the surge protector at the input power point. Wire one RC network in parallel with each inductive device.

F Auxiliary Devices

F.1 Load Switches

Provide 16 solid state load switches conforming to the requirements of section 6.2 of the NEMA TS2 Standard.

F.2 Flashers

Provide one solid state flasher conforming to the requirements of section 6.3 of the NEMA TS2 Standard.

F.3 Flash Transfer Relays

Provide four flash transfer relays conforming to the requirements of section 6.4 of the NEMA TS2 Standard.

F.4 Inductive Loop Detector Units

Provide the quantity of inductive loop detector units required by the plans and conforming to the requirements of section 6.5 of the NEMA TS2 Standard for 2-channel, rack mount detector units, type C. Install all required units in one detector rack.

F.5 Cabinet Power Supply

Provide one cabinet power supply with each cabinet conforming to the requirements of section 5.3.5 of the NEMA TS2 Standard. Provide LED indicators for the 12 VDC, 12 VAC, and 24 VDC outputs. Provide jack plugs on the front panel for access to the +24 VDC for test purposes.

G Bus Interface Units (BIU)

Provide three BIUs conforming to the requirements of section 8 of the NEMA TS2 Standard. Provide two BIUs with the main panel and one BIU with one of the detector racks.

H Malfunction Management Unit (MMU)

Provide one shelf-mountable, 16 channel, solid-state MMU with Ethernet capability. The MMU shall meet the requirements of Section 4 of the NEMA TS2 Standard.

The MMU shall be capable of the following:

Detecting simultaneously active inputs of Green (Walk), Yellow, or Red (Don't Walk) on the same channel.

Determining if the field signal input states detected as active or inactive by the MMU correspond with the data provided by the Controller Unit.

Monitoring an optional external watchdog output from a Controller Unit or other external cabinet device.

Monitoring an intersection with up to four approaches using the Flashing Yellow Arrow (for protected/permissive left and right turn movements).

Event logging for the following; AC Line log, Prior/Previous Faults log, and Monitor Reset Log. All log entries shall include a date and time stamp.

All monitor functions shall be capable of being programmed through the front panel, without the need for computers or special programs cards.

A built-in Diagnostic Wizard shall be provided that displays detailed diagnostic information regarding the fault being analyzed. This mode shall provide a concise view of the signal states involved in the fault, pinpoint faulty signal inputs, and provide guidance on how the technician should isolate the cause of the malfunction.

The MMU shall have an LCD display that allows for viewing of log files and field indications, as well as the viewing and setting of date and time and configuration parameters.

I Traffic Signal Controller

The traffic signal controller provided shall be an Econolite ASC/3, compatible with the NEMA TS2 Type 1 specifications.

I.1 Firmware

Provide installed in the controller current, fully operational, controller firmware and software sufficient for the controller to perform all functions shown on the plans, sequence of operation plan sheet, specifications, and signal timing plan for the local intersection. Provide all software licenses.

The firmware and software shall be compatible with and able to fully communicate with:
All phase sequences used by the city, including flashing yellow for both left and right turns.

Communications, closed loop, and on-street control software designed for use with the provided controller and provided under separate bid items.

Both the controller and the MMU.

City PC laptop and desktop computers with Windows XP and Windows 7 operating systems.

the supplier's multi-level central operation software programs for potential future Application.

I.2 Features/ Functions

I.2.1 General

Provide shelf-mounted controller units.

Provide intersection controller units with up to 16-phase operation plus 16 programmable overlaps regardless of whether or not preemption, coordination, or other special programming is used.

Provide a four-ring, programmable for both single and dual entry concurrent timing, nine-phase frame or equivalent. Provide volume density timing for eight phases and pedestrian timing for all phases. Provide MUTCD flash capability. All controls shall be in accordance to the NEMA TS2 Standard.

All controller timing parameters shall be fully programmable from the front panel keyboard inputs, and memory storage features shall be non-volatile under power-off conditions for at least thirty days. A security code must be entered before any timing parameters can be changed. The locking, non-locking detection mode and per phase recall shall also be accessible on the front panel.

Provide a data key port on the controller to load and store intersection programming.

Internally buffer all logic circuit inputs to withstand transients and noise, such as might result from normal usage, without damage to any mechanism components.

I.2.2 Front Panel Display

Provide a display panel on the front panel consisting of a backlit alphanumeric LCD display. The face of the display shall be scratch, chemical, and solvent resistant. The operator shall access the controller through a menu system. By selecting various menu options, real time operational status or stored parameter tables shall be presented to the operator.

Show on the LCD display, in addition to information required elsewhere:

The status of each signal phase on.

The interval status.

Phase termination information.

The presence of vehicular and pedestrian calls for each phase.

I.2.3 Timing

The passage timer shall time concurrently with the minimum green timer, such that the duration of the minimum green time is directly adjustable and is independent of the passage time setting.

In the dual-ring application, no more than two phases shall be permitted to time concurrently, and no more than one phase per ring. Provide barrier protection against concurrent timing of two conflicting phases; no phases assigned to one side of the barrier shall be permitted to time concurrently, if a conflict will occur. Service calls on a single entry basis. Both rings shall cross the barrier simultaneously in accordance to the following logic:

Phases timing concurrently shall terminate simultaneously if both have a gap-out due to excessive time between actuations.

Phases timing concurrently shall terminate simultaneously if both have a maximum timeout.

Phases timing concurrently shall terminate simultaneously if one has a gap-out and the other has a maximum time-out.

In the event that one phase has not achieved a gap-out or maximum time-out, the other gapped-out phase shall be permitted to leave the gapped-out condition and retime an extension when an actuation is received.

Controllers shall not accept any operator input or stored timing parameters that would result in intervals shorter than the following:

Yellow clearance - 3.0 seconds

Standard minimum walk - 4.0 seconds

Preemption minimum walk = 0.0 seconds

Minimum pedestrian clearance - 6.0 seconds

At the beginning of each of the above intervals, the controller shall check the previously stored data against these minimums. If an operator attempts to load an incorrect timing parameter the controller unit shall output a unique error code on the front panel display. As an alternate to minimum timing control a coded keyboard entry security feature may be provided.

I.2.4 Manual (Police) Control

If manual control is used, actuation of the manual control shall permit manual advance of the Walk, Pedestrian Clearance, and Green interval terminations only. Manual termination of Yellow or All-Red clearance intervals shall not be permitted.

I.2.5 Coordination

The controller shall be capable of operation in progressive coordination systems and mutual coordination and shall contain, but not be limited to, the following external inputs, with all functions brought out:

Vehicle/Pedestrian Detectors (per phase)

Pedestrian Omit (per phase)

Phase Omit (per phase)

Hold (per phase)

Omit Red Clearance (per ring)

Internal Maximum Inhibit (per ring)

Maximum II (per ring)

Red Rest (per ring)

Stop Timing (per ring)

Force-Off (per ring)

Select Minimum Recall (per controller)

Manual Control (per controller)

Semi-Modes (per controller)

External Start (per controller)

I.2.6 Diagnostic Program

Provide a diagnostic program prepared by the manufacturer of the controller unit which will demonstrate the proper operation of all of the inputs, outputs, controls and indicators in the controller, and have visual confirmation on the front panel. The diagnostic program

shall be resident in each controller. The controller shall continuously run a diagnostic routine in the background to assure unit integrity.

I.2.7 Message Logging

Provide user programmable, data logging of local events or alarm events including, but not limited to: Conflict Flash, Remote Flash, Local Flash, Controller Voltage Monitor, Detector Failure, On Line and Data Change. The time and date shall be recorded as a part of the message logged. The logging function shall be resident in the controller unit. The logging function shall be viewed from the front panel LCD display. If the logging function cannot be viewed from the front panel LCD display, it shall be performed by supplemental auxiliary equipment supplied with this specification.

I.2.8 Closed Loop Operation

The controller shall be able to be used in a closed loop system using twisted pair copper, single mode fiber, multimode fiber, or wireless radio to connect to compatible equipment.

I.2.9 RS-232 Interface and Ethernet Port

Provide a RS-232C interface and connector for interconnecting to a conflict monitor, printer, another like controller unit, or a local personal computer, as well as a remote personal computer through an external modem. A modem is not required to be provided with this specification. Include Ethernet communications capability as a standard feature and provide an Ethernet port. Ports shall be on the front panel of the controller.

J Documentation

J.1 Cabinet Intersection Wiring Diagrams

For each individual cabinet ordered, within 10 calendar days after receipt of the procurement order, furnish to the city engineer two sets of 22X34-inch detailed printed cabinet intersection wiring diagrams for information only.

At the time of the cabinet delivery, furnish to the city engineer two sets of printed 22X34-inch cabinet intersection wiring diagrams per cabinet. Printing the 22X34-inch sheet in smaller sizes is not acceptable. Leave a third drawing in the under-shelf drawer in the signal cabinet. After cabinet acceptance is complete, if any cabinet wiring changes were made, revise the cabinet wiring diagrams, leave one drawing in the under-shelf drawer in the signal cabinet, and furnish to the city engineer two sets of as-built printed cabinet wiring diagrams per cabinet. If no changes were made from time of cabinet delivery, notify the city engineer in writing.

J.2 MMU and Controller Programming

At the time of cabinet delivery, furnish to the city engineer two printed copies of the MMU programming and two copies of the signal timing in the traffic signal controller. Leave a third copy in the under-shelf drawer in the signal cabinet. After cabinet acceptance is complete, if any MMU or controller timing changes were made, revise the documents, leave one copy in the under-shelf drawer in the signal cabinet, and furnish to the city engineer two copies per cabinet. If no changes were made from time of cabinet delivery, notify the city engineer in writing.

J.3 Manuals

At the time of the cabinet delivery, furnish to the city engineer one set of installation, operations, and maintenance manuals per cabinet including each type of equipment in the cabinet. The manuals shall as a minimum include the following information:

Table of contents

Operating procedure

Step-by-step maintenance and trouble-shooting information for the entire assembly

Schematic diagrams

Pictorial diagrams of parts locations

Itemized parts lists with parts numbers

Theory of operation

Maintenance checklists

The itemized parts lists shall include the manufacturer's name and parts number for all components (such as IC, diodes, switches, relays, etc.) used. The list shall include crossreferences to parts numbers of other manufacturers who make the same replacement parts.

For each of the traffic signal controller and MMU, in addition to the above manual requirements, furnish one reference manual for the processor and components proposed to perform the controller and MMU functions. Include a complete set of schematics for the controller, MMU, and any auxiliary circuit boards either in the reference manual or in a separate volume. In addition, furnish a written narrative describing the controller and MMU operation and front panel configuration, and a conceptual flow chart illustrating the control logic for comparison with these specifications. The narrative shall include a discussion of any limitation or exceptions to the performance described in these specifications, and a discussion of any control capabilities provided in addition to that required in these specifications.

K Cabinet Delivery

The construction contractor will provide the traffic signal specifications and plans, including the sequence of operation, to the contractor. The vendor shall determine the required cabinet equipment and assembly requirements from the plans and specifications and provide the city engineer a list of procurement items. The city engineer will approve or request resubmittal of the procurement items list prior to the cabinet being built.

Provide the list of procurement items to the city engineer a minimum of 30 days before the cabinet is scheduled to be installed in the field. The vendor is responsible for coordinating with the project construction contractor to determine the scheduled cabinet installation date. Cabinets shall be completed, delivered, and accepted within 50 calendar days after the city engineer approves the procurement item list.

If the city makes a modification to any cabinet order before the entire cabinet is completely built in the vendor's shop, the delivery time does not change. If the city accepts a vendor requested cabinet order or other modification at any time, the delivery time does

not change. All cabinet modifications will be made without additional cost to the city, except if an additional equipment item is added at the city's request and the additional item is not to remedy any contractor or vendor error.

The contractor shall deliver the fully wired and equipped cabinets to the intersection where the cabinet will be installed, or other site as designated by the city or the project construction contractor. The contractor is responsible for arranging the unloading of the cabinet.

When the city exercises its right to test a cabinet as described in the Acceptance Testing section of this specification, deliver the cabinet to the location specified by the city engineer. When the testing is complete, pick up the cabinet from the shop within three business days of notification.

The contractor is notified that delivery times and schedules may be changed or delayed at any time for any reason. The contractor may be required to store completed cabinets at their facility for extended periods of time.

L Acceptance Testing

Complete on-site traffic signal acceptance testing in the presence of the city. The acceptance testing will occur after the signal cabinet is fully installed at the project intersection and before the traffic signal is turned on. The construction contractor and the city will determine the time for the acceptance testing. In addition to the cabinet as specified in this specification, add-on accessory items, traffic signal interconnect, system communication, and closed loop system operation are included in the acceptance testing.

Provide an IMSA certified Traffic Signal Bench Technician, Level II or an IMSA certified Traffic Signal Field Technician, Level II with a minimum of three years' experience in construction and operation of traffic signal cabinets similar to the cabinets specified in this specification. Alternatively, provide a technician or electrician with a minimum of three years' experience in construction and operation of traffic signal cabinets similar to the cabinets specified in this specification. The technician or electrician shall be on-site during the entire acceptance testing, and shall be capable and equipped to make in-field revisions / repairs to the signal cabinet and controller to conform to this specification.

Upon successful completion of the acceptance testing as determined by the city, a 30-day conditional acceptance of the signal cabinet will be provided to the contractor. Should the cabinet within the 30-day conditional acceptance period fail to perform in any way as determined by the city, the contractor shall repair the cabinet to bring it into conformance with this specification and the acceptance testing shall be repeated. Repair times shall conform to the warranty service response times in this specification. The acceptance testing shall be repeated. Upon successful completion of the retesting, a new 30-day conditional acceptance period shall begin. After the signal cabinet runs 30 days without failure, the cabinet will be fully accepted by the city. The contractor will be allowed up to two 30-day conditional acceptance periods. If the cabinet fails during the second 30-day period, an entirely new cabinet shall be furnished and installed in the field by the

contractor at no cost to the city and a new acceptance testing procedure shall begin. Cabinet replacement times shall conform to the warranty service response times in this specification. The original cabinet becomes the property of the contractor.

The city reserves the right to perform its own tests on the traffic signal cabinet at any time using the city's control equipment. Should an individual traffic signal cabinet be found to not meet the requirements of these specifications, the contractor shall pick up the traffic signal cabinet from the city or from the field, perform at their shop repairs / revisions as necessary to bring the traffic signal cabinet into conformance with these specifications, and deliver the repaired / revised traffic signal cabinet back to the designated location, all at no additional cost to the city.

M Certification

Provide a written certification with the cabinet delivery that the equipment meets the requirements of the plans and specifications and will fully run the sequence of operation and the signal timing, including closed loop system operation if applicable. The certification shall be on the contractor's company letterhead, shall be addressed to both the department and the construction contractor, and shall be signed by a company officer authorized to legally obligate the company.

N Warranty

(1) The contractor shall certify that the equipment meets the required specification and shall supply a complete catalog description. The following documents shall also be provided.

- a. A warranty statement which stipulates that equipment to be supplied shall be warranted by the manufacturer for two years from the date of purchase.
- b. Operations manuals.
- c. Maintenance manuals.
- d. Schematic diagrams.
- e. Component and equipment locations within the cabinet.

(2) Controller Operation. Consistent with customary trade practices, the manufacturer shall furnish a warranty for all electrical or mechanical equipment described herein. The contractor shall turn such warranty over to the owner for potential dealing with the guarantor.

(3) During the installation and testing of the controller, the contractor shall provide, at his own expense, a competent representative to oversee, direct and manage the installation and testing of the controller. In the final stages of the installation and testing, the manufacturer's representative shall be available at the job site for consultation until such time as the controller operation is tested and accepted.

O Measurement

The department will measure Traffic Signal Controller and Cabinet Fully Actuated 8-Phase as a complete lump sum unit of work, acceptably completed.

P Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.406	Traffic Signal Controller and Cabinet 8-Phase Fully Actuated	Each

Payment is full compensation for furnishing and installing a complete traffic signal cabinet, including the signal controller and conflict monitor together with cabinet, all required control units, all necessary wiring, switches, and fittings to assure that the controller will perform the functions required in the plans.

114. Salvage Controller Cabinet, Item SPV.0060.501.**A Description**

This special provision describes removing an existing controller cabinet and contents and for storing the cabinet and contents for later reinstallation.

B (Vacant)**C Construction**

Remove controller cabinets at the locations shown on the plans, or as directed by the engineer. Salvage and store the cabinets and all contents for reinstallation later in the project.

Do not remove the existing ITS control cabinets, or any other associated equipment until necessary, or as directed by the engineer. Carefully remove the existing cabinets from the concrete bases, together with all components in such a manner as to safeguard all parts and wiring from damage or loss. Salvage and store the cabinet and contents for reinstallation later in the project

Prior to removing the existing ITS control cabinets, remove all cables being terminated in the cabinet. Disposal of cables will be paid for with other pay items in this contract.

D Measurement

The department will measure Salvage Controller Cabinet by each individual unit, acceptably removed, salvaged, and stored, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.501	Salvage Controller Cabinet	Each

Payment is full compensation for removal and storage of the controller cabinet; disconnecting all associated wires and cables; for capping existing conduits.

115. Removing Controller Cabinet Base, Item SPV.0060.502.

A Description

This special provision describes removing an existing controller cabinet concrete base.

B Materials

Existing controller cabinet base, including concrete masonry, ground rods, masonry anchors, and restoration materials such as topsoil, seeding, mulch, and fertilizer in accordance to the pertinent provisions of standard specs 201, 625, 627, 629, 630, 636, and 640.

C Construction

Remove and dispose of the concrete foundation and all other pertinent materials, and restore the disturbed area by placing 4-inches of topsoil, and fertilize, seed, and mulch all disturbed areas in accordance to the pertinent requirements of the standard specifications.

D Measurement

The department will measure Removing Controller Cabinet Base by each individual removed unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.502	Removing Controller Cabinet Base	Each

Payment is full compensation for removing and disposing of a concrete controller cabinet base, including masonry anchors, ground rods, and concrete masonry; for topsoil, fertilizer, seed and mulch.

116. Removing Electrical Service Meter Breaker Pedestal, Item SPV.0060.503.

A Description

This special provision describes removing an existing electrical service meter breaker pedestal, disconnecting all connected power wires, and disposing of the equipment appropriately.

B Materials

Existing electrical service meter breaker pedestal.

C Construction

Coordinate for removal of the existing electrical service meter breaker pedestal with WE Energies.

Disconnect all connected power wires, remove the pedestal and dispose of all materials properly away from the project area.

D Measurement

The department will measure Removing Electrical Service Meter Breaker Pedestal by each individual removed unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.503	Removing Electrical Service Meter Breaker Pedestal	Each

Payment is full compensation for coordination with WE Energies; for disconnection of wires; for removal and disposal of the pedestal.

117. Removing Microwave Detector Assembly, Item SPV.0060.504.

A Description

This special provision describes removing an existing Microwave Detector Assembly.

B Materials

Materials included in Microwave Detector Assembly are:

- Microwave Detector;
- Type 5 Pole;
- Transformer Base;
- Mounting Hardware.

C Construction

Remove Microwave Detector Assembly at the locations shown in the plans, or as directed by the engineer. Salvage the Microwave Detector Assemblies for later reinstallation.

All work shall be in accordance to the applicable requirements of standard specs 655, 656, 657, and 658, the Wisconsin Electrical Code, these special provisions, and the details shown in the plans.

Salvage and store all removed materials for later reinstallation or for pickup by the department. Maintain all materials in a condition suitable for reutilization. Replace all items damaged during construction operations.

Electrical work under this item shall be completed by a journeyman electrician or be completed under the supervision of a journeyman electrician. Legal status or standing as a journeyman electrician shall be certified or otherwise documented to the engineer before any electrical work may begin.

D Measurement

The department will measure Microwave Detector Assembly by each individual removed unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.504	Microwave Detector Assembly	Each

Payment is full compensation for removal and storage of the Microwave Detector Assembly; disconnecting all wiring connections; removing all conduit connections; for any necessary restoration, including backfill, topsoil, and seeding.

118. Relocating Traveler Advisory Radio Transmitter, Item SPV.0060.505.**A Description**

This special provision describes removing, salvaging, and reinstalling an existing traveler advisory radio system consisting of antenna, antenna pole, transmitter in existing cabinet, associated cable, and for furnishing and installing a new ground plane system.

B Materials

Existing materials include a radio antenna, antenna pole, cabling, mounting hardware, transmitter cabinet, ground rods, and ground plane wiring.

Furnish a new antenna ground system meeting the following requirements:

Underground shaft style ground system;

Shaft length of 20-feet;

UL 467 listed;

Type K copper with a 0.083" nominal wall thickness hollow tube with 2'-1-1/2" outer diameter filled with non-hazardous salts;

Silver soldered couplings;

Ground wire termination shall be exothermic connection to No. 4 conductor;

Electrode must be permanently capped on the top and bottom with air breather holes in the top and drainage holes in the bottom;

System must be 100% self-activating and maintenance free with no required addition of salt or water;

Must be filled with non-hazardous salts;

Backfill material must be natural volcanic, non-corrosive form of Lynconite II clay grout backfill material free of polymer sealants;

Protective cover composite box intended for traffic applications;

C Construction

Construction shall be as detailed on the plans.

Install new ground plan system per manufacturer's recommended procedures.

D Measurement

The department will measure Relocating Traveler Advisory Radio Transmitter by each individual relocated unit, acceptably completed.

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.0060.505	Relocating Traveler Advisory Radio Transmitter	Each

Payment is full compensation for removing an existing CCTV camera; for disconnecting all necessary cables and wiring; and properly storing the materials.

119. Ground Rod, Item SPV.0060.506.**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 each individual unit, acceptably completed.

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.0060.506	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.

120. Install Wireless Modem, Item SPV.0060.507.**A Description**

This special provision describes installing a wireless cellular modem and antenna and providing all necessary associated wiring.

B Materials

The department will furnish the wireless cellular modem and antenna. Provide all necessary cables between the wireless modem and device to be connected to it.

C Construction

Drill a hole in the new or existing cabinet to install the wireless modem antenna cable through. Mount the antenna on top of the cabinet and seal the hole with purpose-made waterproof sealing device such as a grommet or gasket.

Install the wireless modem in a new or existing field cabinet. Connect it to the antenna and to devices as shown on the plans, or as directed by the engineer.

D Measurement

The department will measure Install Wireless Modem by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.507	Install Wireless Modem	Each

Payment is full compensation for installing a wireless modem; furnishing all necessary incidental hardware; and making all necessary connections, and testing.

121. Install Solar Power System Assembly, Item SPV.0060.508.**A Description**

This special provision describes installing a combination of state-furnished and contractor furnished materials to temporarily convert an existing microwave vehicle detector system to a solar-powered system and removing the temporary solar power system up reconnection of the detector site to new permanent hard-wire cabling.

B Materials

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

Department-furnished materials include the following:

- One solar power system consisting of 2-85W panels, 2-120 Amp-Hour batteries, a solar power controller, and one solar power cabinet to house the batteries and controller.

Contractor furnished materials include the following:

- Mounting hardware for solar power system.
- Cables and wires meeting the requirements of standard spec 655.

C Construction

Safely disconnect the existing hard-wired power connection.

Solar Power System Installation:

Install the solar panels facing south on the structure with the devices to be powered. If a compass is used, a correction must be made for the difference between magnetic north and true north. Install the solar panels at a tilt angle of approximately 60 degrees. The tilt angle shall be considered the angle from horizontal to the front, or face of the solar panel.

Mount the cabinet to the pole by the two cast aluminum mounting brackets which are already attached to the back of the cabinet. The brackets shall be attached to the structure using stainless steel bands or U-bolts.

Install the cabling, ensuring that cables enter the cabinet only through the bottom, and that strain relief fittings are used to seal cable entrance points. Connect the panel to the charge controller, connecting the white wire to the positive (+) terminal and the black wire to the negative terminal (-).

After reconnecting the vehicle detector system to new permanent hard-wire cabling, as paid for under other items in this contract, remove the temporary solar power system and salvage it for pick up by the department.

D Measurement

The department will measure Install Solar Power System Assembly as each individual unit, acceptably completed.

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.0060.508	Install Solar Power System Assembly	Each

Payment is full compensation for providing the contractor furnished materials, assembling the department-furnished and contractor furnished materials, installing the assembly, and making the assembly functional; and for removing the solar power system at the end of the project.

122. Adjusting Valve Boxes, Item SPV.0060.701.

A Description

This special provision describes adjusting water valve boxes to match proposed grades.

B (Vacant)

C Construction

Adjust the water valve box by screwing the existing valve box up or down. Existing broken or valve boxes damaged prior to construction operations will be replaced by the

City of Oconomowoc at their expense. Water valve boxes damaged by the contractor during construction shall be replaced at the contractor's expense.

D Measurement

The department will measure Adjusting Valve Boxes by each individual valve box adjustment acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.701	Adjusting Valve Boxes	Each

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

123. Internal-External Sanitary Manhole Seal, Item SPV.0060.703.

A Description

This special provision describes furnishing and installing internal-external seals as shown in the construction details on the plans for all adjusted sanitary manholes. Perform work in accordance to the Standard Specifications for Sewer and Water Constructions in Wisconsin, latest edition.

B Materials

Furnish an Adaptor, Inc. Internal-External Adaptor Sanitary Manhole Seal. The seal is shown in the construction details on the plans and shall meet the material requirements of section 6.42.3 and the performance requirements of section 6.42.4 of the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition.

C Construction

Install seals in accordance to the manufacturer's recommended installation procedures.

Water test the seal in the presence of the city engineer.

D Measurement

The department will measure Internal-External Sanitary Manhole Seal by each individual seal, 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.0060.703	Internal-External Sanitary Manhole Seal	Each

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

124. Oconomowoc Manhole Frame and Cover, Item SPV.0060.704.

A Description

This special provision describes furnishing and installing manhole frames and covers. Perform this work in accordance to standard spec 611 and as hereinafter provided.

B Materials

Furnish a Neenah 1550-0002 Oconomowoc standard frame. Furnish a Neenah 1050-5210 cover marked "Sanitary" with a self sealing concealed pick hole cover with no vents. Follow details in plans for frame and cover.

C Construction

Perform this work in accordance to standard spec 611.

Existing manhole frames and covers are city property and shall be delivered to Oconomowoc Public Works Building located at 630 S. Worthington Street within 1 week of removal.

D Measurement

The department will measure Oconomowoc Manhole Frame and Cover by each individual frame and cover unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.704	Oconomowoc Manhole Frame and Cover	Each

Payment is full compensation for the removal of the existing frame and cover, installation of the new frame and cover; and for furnishing all labor, tools, equipment and incidentals necessary to complete the contract work.

125. Hydrant Relocation, Item SPV.0060.705.

A Description

This special provision describes relocating existing hydrants. Perform this work in accordance to the Specifications for Sewer and Water Main Construction in Wisconsin (S.W.S).

B Materials

Provide materials in accordance to the Specifications for Sewer and Water Main Construction in Wisconsin (S.W.S). Hydrant Lead shall be 6-inch ductile iron class 52.

C Construction

Relocate existing hydrant as shown on plans. Hydrant shall be relocated with a minimum of two feet of clearance from the face of the adjacent curb to the closest appurtenance of

the hydrant. Hydrants damaged by the contractor during construction shall be replaced at the contractor's expense.

D Measurement

The department will measure Hydrant Relocation by each individual relocation, 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.0060.705	Hydrant Relocation	Each

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

126. Adjusting Sanitary Manhole Cover, Item SPV.0060.706.

A Description

This special provision describes Adjusting existing sanitary manhole covers to grade by adding or removing concrete adjusting rings. Perform this work in accordance to standard spec 611 and as hereinafter provided.

B Materials

Furnish concrete adjusting rings from a department-approved source; rings shall match the dimensions of existing rings and/or manhole castings. Reinforce concrete rings with one line of steel centered within the ring.

C Construction

Set adjusting rings and manhole frames with both butyl rubber sealant and non-shrink grout as follows: Use EZ-Stik or Kent-Seal butyl base sealant in trowelable grade or equal butyl rubber sealant and apply in a 1/4" thick layer to the outside 1" of the 6" wide horizontal surface of all adjusting rings and cone section. Apply a non-shrink grout in a 1/4" thick layer to the remaining 5" of inside horizontal surface of all adjusting rings and cone section.

Furnish and use non-shrink grout that is a premixed, non-metallic, cementitious, control expansion, high strength, versatile grout: PenngROUT by IPA Systems, Inc. or equal.

Cover the entire outside surface of the manhole chimney, including all adjusting rings, and overlap both the manhole cone or flat-top slab (a minimum of 4") and the manhole frame with the minimum 1/4" thick coating of butyl rubber sealant. The butyl rubber sealant shall be EZ-stick or Kent-Seal butyl base sealant in trowelable grade or equal.

Perform sanitary manhole cover adjustments prior to the installation of the binder layer of asphalt.

D Measurement

The department will measure Adjusting Sanitary Manhole Covers by each individual adjustment, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.706	Adjusting Sanitary Manhole Covers	Each

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

127. 3' x 2' Retrofit Inlet Frame and Grate, Item SPV.0060.707.

This special provision article applies only to Project 2718-00-74.

A Description

This special provision describes the replacement of 2 existing inlet frames and grates for the installation of temporary pavement during Stage 1B of construction. This involves the removal of the existing inlet frames and grates and installation of 1 temporary frame and grate during stage 1B of construction. It also involves the removal of the temporary frame and grate and the reinstallation of the original inlet frames and grates during stage 2B of construction. This does not include the work performed under the bid items "Adjusting manhole cover." This work shall include furnishing of the temporary frame and grate, storage and protection of the original frames and grates during construction, and disposal of the temporary frame and grate. Perform this work in accordance to standard spec 611 and as hereinafter provided.

B Materials

Furnish one of the following products, or equal, as approved by the engineer:

Neenah Foundry Type R3067C Frame and Grate.

East Jordan Iron Works Type 7030 Frame and Grate

U.S. Foundry and Manuf. Corp. Type 4120-6240 Frame and Grate

Furnish concrete adjusting rings and any other materials necessary to install and remove frames and grates.

C Construction

Perform this work in accordance to standard spec 611.

D Measurement

The department will measure Retrofit Inlet Frame and Grate by each frame and grate furnished, placed and replaced with the original frame and grate, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.707	3' x 2' Retrofit Inlet Frame and Grate	Each

Payment is full compensation for removing and protecting the existing frame and grate, installation of the temporary frame and grate, removal and disposal of the temporary frame and grate, reinstallation of the original frame and grate, and furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

128. 1.75' x 2' Retrofit Inlet Frame and Grate, Item SPV.0060.708.

This special provision article applies only to Project 2718-00-74.

A Description

This special provision describes the replacement of an existing inlet frame and grate for the installation of temporary pavement during Stage 1B of construction. This involves the removal of the existing inlet frame and grate and installation of a temporary frame and grate during Stage 1B of construction. It also involves the removal of the temporary frame and grate and the reinstallation of the original inlet frame and grate during stage 2B of construction. This does not include the work performed under the bid items "Adjusting manhole cover." This work shall include furnishing of the temporary frame and grate, storage and protection of the original frame and grate during construction, and disposal of the temporary frame and grate. Perform this work in accordance to standard spec 611 and as hereinafter provided.

B Materials

Furnish one of the following products, or equal, as approved by the engineer:

Neenah Foundry Type R3203B Frame and Grate.

East Jordan Iron Works Type 7582 Frame and Grate

U.S. Foundry and Manuf. Corp. Type 4127-6228 Frame and Grate

Furnish concrete adjusting rings and any other materials necessary to install and remove frames and grates.

C Construction

Perform this work in accordance to standard spec 611.

D Measurement

The department will measure Retrofit Inlet Frame and Grate by each frame and grate furnished, placed and replaced with the original frame and grate, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.708	1.75' x 2' Retrofit Inlet Frame and Grate	Each

Payment is full compensation for removing and protecting the existing frame and grate, installation of the temporary frame and grate, removal and disposal of the temporary frame and grate, reinstallation of the original frame and grate, and furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

129. 2.75' x 2.25' Retrofit Inlet Frame and Grate, Item SPV.0060.709.

This special provision article applies only to Project 2718-00-74.

A Description

This special provision describes the replacement of an existing inlet frame and grate for the installation of temporary pavement during Stage 1B of construction. This involves the removal of the existing inlet frame and grate and installation of a temporary frame and grate during Stage 1B of construction. It also involves the removal of the temporary frame and grate and the reinstallation of the original inlet frame and grate during stage 2B of construction. This does not include the work performed under the bid items "Adjusting manhole cover." This work shall include furnishing of the temporary frame and grate, storage and protection of the original frame and grate during construction, and disposal of the temporary frame and grate. Perform this work in accordance to standard spec 611 and as hereinafter provided.

B Materials

Furnish one of the following products, or equal, as approved by the engineer:

Neenah Foundry Type R3403F Frame and Grate.

East Jordan Iron Works Type V5140-1 Frame and Grate

U.S. Foundry and Manuf. Corp. Type 4139-6429 Frame and Grate

Furnish concrete adjusting rings and any other materials necessary to install and remove frames and grates.

C Construction

Perform this work in accordance to standard spec 611.

D Measurement

The department will measure Retrofit Inlet Frame and Grate by each frame and grate furnished, placed and replaced with the original frame and grate, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.709	2.75' x 2.25' Retrofit Inlet Frame and Grate	Each

Payment is full compensation for removing and protecting the existing frame and grate, installation of the temporary frame and grate, removal and disposal of the temporary frame and grate, reinstallation of the original frame and grate, and furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

130. Install Valve Box, Item SPV.0060.801.

A Description

This special provision describes the installation of a valve box over an existing water service curb stop. Perform this work in accordance to the City of Oconomowoc Specifications.

B Materials

Valve boxes:

Cast iron 3-piece assembly, size DD, cover marked "WATER".

Threaded base with notched top for adjustment.

Manufacturers: Tyler 6860, Sigma VB630DD, Star VB DHD DW.

SWS 8.29.0.

Valve box adaptors: Adaptors, Inc. - #6 base adaptor.

Use round base for 8-inch and smaller valves.

Use oval base for 10-inch and larger valves.

C Construction

C.1 Install Valve Box

Install valve box over an existing water service curb stop.

D Measurement

The department will measure Install Valve Box by each individual valve 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.0060.801	Install Valve Box	Each

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

131. Wet Reflective Removable Temporary Pavement Marking Tape 4-Inch, SPV.0090.001.

A Description

Apply temporary pavement markings in accordance to the standard spec 649.2.2, except as hereinafter modified.

B Materials

Provide 3M Stamark Wet Reflective Removable Tape Series 780 temporary pavement marking tape.

C Construction

Within the freeway mainline crossover areas, provide 3M Stamark Wet Reflective Removable Tape Series 780 temporary pavement marking tape for both directions of travel. Provide the wet reflective tape for pavement marking left and right edge lines and lane divider lines. Freeway mainline crossover areas are defined as lane shifting areas where the freeway mainline pavement marking lane divider skips are replaced with a solid 4" white line in the traffic control plan set.

Apply the wet reflective tape according to product application specifications.

D Measurement

The department will measure Wet Reflective Removable Temporary Pavement Marking Tape 4-Inch in length by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.001	Wet Reflective Removable Temporary Pavement Marking Tape 4-Inch	LF

Payment is full compensation for furnishing, applying, maintaining the wet reflective pavement marking tape for the duration of the contract, for pavement marking removal; including dust and residue collection and disposal.

SEF Rev. 12_0330

132. Removing Pavement Markings Water Blasting, Item SPV.0090.003.**A Description**

This special provision describes removing pavement markings using high pressurized water spray from locations shown on the plans or as the engineer directs. Conform to standard spec 646 as modified in this special provision.

B (Vacant)**C Construction**

Remove pavement marking using a high pressurized water spray with a vacuum recovery system to provide a clean, dry surface, without the use of a secondary cleanup process when pavement or ambient air temperature is 36 degrees F and rising. Remove all markings in their entirety. Provide equipment with a storage system that contains wastewater and debris. Control blast head at all times.

Obtain approval from engineer to perform alternative removal process, including grinding, when either restricted from using water blasting or water blasting alone was unsuccessful.

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.0090.003	Removing Pavement Markings Water Blasting	LF

Payment is full compensation for removal, repairing, associated damage, and disposal of residue.

SEF Rev. 14_0319

133. Fence Chain Link Polymer-Coated 4-Ft., Item SPV.0090.101.

A Description

This special provision describes furnishing and installing a new polymer-coated fence system on structures in accordance to the pertinent plan details, as directed by the engineer and as hereinafter provided. The color of all components in this fence system shall be the same and shall be as specified on the plans.

B Materials

All materials for this fence system shall be new stock, free from defects impairing strength, durability, and appearance. Fabric shall be produced by methods recognized as good commercial practice. Wire used in the manufacture of the fabric shall be capable of being woven into fabric without the polymer-coating cracking or peeling. Pipes used in framework shall be straight, true to section and free of defects. All burrs at the ends of pipes shall be removed before galvanizing. The polymer-coating shall be a dense impervious covering, applied without voids, tears or cuts that reveal the substrate. Excessive roughness, bubbles, blisters and flaking in the polymer-coating will be a basis for rejection.

B1 Fabric

Provide steel chain link fence fabric that conforms to the requirements of ASTM F668, Class 2b, a polymer-coating fused and adhered to wire that is zinc-coated. Provide fabric woven from 9-gage wire using plan specified mesh size, diamond pattern, with both the top and bottom selvages knuckled. The minimum breaking strength of the wire shall be 1290 lbs. The color of polymer-coating shall conform to the requirements of ASTM F934.

B2 Framework

Provide steel rails, posts and post sleeves conforming to the requirements of ASTM F1083, Standard Weight Pipe (Schedule 40) of the size (O.D.) and weight as shown on the plans. The minimum yield strength shall be 30,000 psi and the minimum

tensile strength shall be 48,000 psi. These components shall be zinc-coated inside and outside by the hot-dip process as stated in ASTM F1083. Provide polymer-coating over zinc-coating that conforms to ASTM F1043. The color of polymer-coating shall conform to the requirements of ASTM F934, and match the color of the other fence components. Weld base plate to posts or post sleeves and complete any additional welding of components before galvanizing.

B3 Fittings

Provide end post caps, line post caps, top rail sleeves, rail ends, line rail clamps, brace bands, tension bands, tension bars, and tie wires that are steel and conform to the requirements of ASTM F626. Tie wires shall be round and 9-gage wire. These components (excluding tie wires) shall be zinc-coated by the hot-dip process as stated in ASTM F626. Provide polymer-coating over zinc-coating on components (excluding tie wires) that conforms to the requirements of ASTM F626. For tie wires, provide polymer-coating on wire that is zinc-coated using the same procedure as used for the wires in the fence fabric. End post caps and line post caps shall fit tightly over posts to prevent moisture intrusion. Supply dome style caps for end posts and loop type caps for line posts. The color of polymer-coating shall conform to the requirements of ASTM F934, and match the color of the other fence components.

B4 Bolts

All bolts are to be supplied with lock washers and nuts. Use galvanized steel bolts, nuts and washers per plan details.

B5 Tests

B5.1 Fabric and Tie Wire

Breaking Strength:	ASTM A370
<u>Zinc-Coating Requirements</u>	
Weight of Zinc-Coating:	ASTM A90
<u>Polymer-Coating Requirements</u>	
Thickness of Polymer-Coating:	ASTM F668
Adhesion:	ASTM F668
Accelerated Aging Test:	ASTM F668, D1499
Mandrel Bend Test:	ASTM F668

B5.2 Framework

Tensile and Yield Strength:	ASTM E8
<u>Zinc-Coating Requirements</u>	
Weight of Zinc-Coating:	ASTM A90
<u>Polymer-Coating Requirements</u>	
Thickness of Polymer-Coating:	ASTM E376
Adhesion:	ASTM F1043
Accelerated Aging Test:	ASTM F1043, D1499

B5.3 Fittings

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM F626

Adhesion: ASTM F1043 (same test as for framework)

Accelerated Aging Test: ASTM F1043, D1499 (same test as for framework)

B6 Submittals

In addition to the engineer, send submittals listed in this section to the name below for informational purposes:

David Nelson
WisDOT (Bureau of Structures)
4802 Sheboygan Ave. (Room 601)
PO Box 7916
Madison, WI 53707

B6.1 Shop Drawings

Submit shop drawings showing the details of fence construction. Show the fence height, post spacing, rail location, and all dimensions necessary for the construction of the chain link fence. Label the end posts, line posts, rails, post sleeves, top rail sleeves, bolts and fittings. State the polymer-coating type used on the fabric, framework and fittings and the Class of coating used on the fabric. State the color of polymer-coating to be used on the fence components. For the fabric, state the wire gage, mesh size, and type of selvages used. For the framework, state the size (O.D.) and unit weight for the posts and rails. For the fittings, state the size for top rail sleeves, brace bands, tension bands, tension bars, line rail clamps, size and type of bolts, and the tie wire gage. State the material type used for fabric, framework, and fittings. Also give the breaking strength for the fabric wire and the tensile and yield strength properties for the framework.

B6.2 Specification Compliance

Submit certification of compliance with material specifications. Provide material certification and test documentation for fabric, framework, fittings and hardware that shows that all materials meet or exceed the specifications of this contract and the tests in B5. This document shall provide the name, address and phone number of the manufacturer, and the name of a contact person.

C Construction

C1 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Upon receipt at the job site, all materials shall be thoroughly inspected to ensure that no damage occurred during shipping or handling and condition of materials is in conformance with these specifications. If polymer-coating is damaged, contractor shall repair or replace components as necessary to the approval of the engineer at no additional cost to the Owner. Carefully store material off the ground to ensure proper ventilation and drainage and to provide protection against damage caused by ground moisture. Handle all polymer-coated material with care.

C2 Touch-up and Repair

For minor damage caused by shipping, handling or installation to polymer-coated surfaces, touch-up the finish in conformance with the manufacturer's recommendations. Provide touch-up coating such that repairs are not visible from a distance of 6-feet. If damage is beyond repair, the fencing component shall be replaced at no additional cost to the Owner. The contractor shall provide the engineer with a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings.

C3 General

Install the chain link fence in accordance to ASTM F567 and the manufacturer's instructions. The contractor shall provide staff that is thoroughly familiar with the type of construction involved and materials and techniques specified. Chain link fabric shall be installed on the side of the posts indicated on the plans. Fabric shall be attached to the end posts with tension bars and tension bands. It shall be attached to rails, and posts without tension bands, with tie wires. The fabric shall be installed and pulled taut to provide a smooth and uniform appearance free from sag, without permanently distorting the fabric diamond or reducing the fabric height. Install top rail to pass through line post caps and form a continuous brace between end posts. Minimum length of top rail between splices shall be 20-feet. Splice top rail at joints with sleeves for a rigid connection. Locate splices near 1/4 point of post spacing. Heads of bolts shall be on the side of the fence adjacent to pedestrian traffic.

D Measurement

The department will measure Fence Chain Link Polymer-Coated 4-Ft. by the linear foot acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.101	Fence Chain Link Polymer-Coated 4-Ft.	LF

Payment is full compensation for fabricating, galvanizing and polymer-coating all fence components, and transporting to jobsite; for erecting components to create a polymer-coated fence system, including any touch-up and repairs.

134. Fence Decorative Bridge, Item SPV.0090.102; Fence Decorative Retaining Wall, Item SPV.0090.103.

A Description

This special provision describes fabricating, galvanizing, painting, polymer coated mesh, delivering and installing decorative fencing.

B Materials

B.1 General

All materials shall meet the requirements as shown on the plans and the applicable provisions of the standard specifications as follows:

- Structural Steel: standard spec 506.2.2
- Steel Mesh: standard spec 505.2.5
- Painting: standard spec 517.2 and 517.3

After fabrication and prior to bolting and assembling the fence components, steel shall be blast cleaned per SSPC-SP 6 and galvanized according to ASTM A123. All bolts, nuts and washers shall be supplied as factory galvanized according to ASTM A153. Repair zinc coating damaged during fence assemblage as specified in standard spec 635.3.4. Grind the welded joints to a smooth finish where shown in the plans.

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

The fence fabric shall consist of 8 GA. 2 inch by 2 inch welded wire mesh galvanized to ASTM A 123 and then covered with a polymer-coating conforming to the following requirements:

Thickness of Polymer-Coating:	ASTM F668
Adhesion:	ASTM F668
Accelerated Aging Test:	ASTM F668, D1499
Mandrel Bend Test:	ASTM F668

The polymer coating shall be a dense impervious covering applied without voids, tears or cuts that reveal the galvanized mesh substrate. Excessive roughness, bubbles, blisters and flaking in the polymer coating will be a basis for rejection. The color of the polymer-coating shall be as specified in B3 and conform to the requirements of ASTM F934. The vertical wires of the mesh shall be placed on the inside (Pedestrian/Traffic side) face of the fence.

B.2 Painting

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

After cleaning provide a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized rail and prepare the surface for the top coat. Apply a top coat matching the specified color. The tie

and top coats should be of contrasting colors. Use a pre-approved top coat that is resistant to the effects of the sun, and is suitable for use in a marine environment. The various decorative fence components shall be painted with the tie and top coats before final assembly of the fence panels. Exercise care so as not to damage the painted surface during panel assembly or fence installation.

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

Producer	Coat	Products	Dry Film Minimum Thickness (mils)	Minimum Time Between Coats (hours)
Sherwin Williams 1051 Perimeter Drive, Suite 710 Schaumburg, IL 60173 (847) 330.1562	Tie	Recoat Epoxy Primer B67-5 Series/B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane , B65-650	2.0 to 4.0	NA
Carboline 350 Hanley Industrial St. Louis, MO 63144 (314) 644.1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Top	Carboline 133 LH	4	NA
Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

B.3 Color

The finished color for coating system for decorative fencing shall match Federal Color 27038 – Black

C Construction

Provide shop drawings in accordance to the requirements of standard spec 506.3.2. Shop drawings shall contain material sizes and types, weld sizes and locations, and all necessary details, dimensions, and information to allow fabrication of the fence in conformance with the requirements of the contract. State the polymer-coating type, Class, and color used on the mesh. Do not begin fabrication prior to shop drawing review and acceptance.

Contractor shall provide a full sized painted 6 foot by 10 foot test panel for the fence. The test panel shall be ten feet long. The test panel shall be delivered to the job site within 60 days of the award of the contract. Unload and set up a test panel in an area designated by the engineer. Do not begin fabrication of fences prior to the test panel acceptance.

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

All welding shall conform to the applicable requirements of standard spec 506. No field welding, field cutting, or drilling will be permitted without the approval of the engineer.

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

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

During handling, protect finish coating from damage. If damaged during handling the fencing may be rejected by the engineer or engineer may direct fabricator that the finish shall be repaired in accordance to the manufacturer's recommendations. Provide the engineer a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings on the steel fence components and on the polymer coated mesh.

D Measurement

The department will measure Fence Decorative Bridge and Fence Decorative Retaining Wall by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.102	Fence Decorative Bridge	LF
SPV.0090.103	Fence Decorative Retaining Wall	LF

Payment is full compensation for fabricating, polymer-coating welded wire mesh, galvanizing, painting, and delivering test panel to site; fabricating, furnishing, delivering and unloading fence panels, lighting access panels, posts; installing fence posts and panels and hardware; and for preparing shop drawings, painting, galvanizing metal fence components.

135. Concrete Barrier Type S42 Special, Item SPV.0090.104.

A Description

This special provision describes the furnishing and installing of a concrete barrier with an architectural surface treatment on the sidewalk side of the barrier to meet standard spec 603 and the construction detail shown on the plans

B.1 Concrete Barrier

Furnish materials conforming to standard spec 603.2.

C Construction

Perform this work in accordance to standard spec 603.3.

D Measurement

The department will measure Concrete Barrier Type S42 Special by the linear foot, acceptably completed. Measurement will conform to standard spec 603.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.104	Concrete Barrier Type S42 Special	LF

Payment for the concrete barrier shall conform to standard spec 603.5. The architectural surface treatment and concrete staining will be paid for separately.

136. Concrete Curb and Gutter 24-Inch Type D, Item SPV.0090.701.

This special provision article applies only to Project 2718-00-74.

A Description

This special provision describes the furnishing and installing of concrete curb and gutter that is 24 inches in width to meet standard spec 601 and the construction detail shown on the plans.

B Materials

Furnish materials conforming to standard spec 601.

C Construction

Perform this work in accordance to standard spec 611.

D Measurement

The department will not measure Concrete Curb and Gutter 24-Inch Type D. The department will use pay plan quantity according to the Pay Plan Quantity article.

E Payment

The department will pay for plan quantities according to the Pay Plan Quantity article at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.701	Concrete Curb and Gutter 24-Inch Type D	LF

Payment shall conform to standard spec 601.

137. New Sanitary Sewer 8-Inch C-900 Pipe, Item SPV.0090.801.

A Description

This special provision describes the installation of new sanitary sewer 8-Inch C-900 pipe. This sanitary sewer will be completed in conjunction with the new sanitary sewer manholes. The new sanitary sewer will replace the sanitary sewer in conflict with proposed Pond #6. Perform this work in accordance to the City of Oconomowoc Specifications.

B Materials

GRAVITY SANITARY SEWER

A. Pipe:

1. Polyvinyl chloride pipe:
 - a. 4 through 12 inch: Follow AWWA C900 SDR18 or less.

C Construction

C.1 New Sanitary Sewer 8" C-900 Pipe

GRAVITY SANITARY SEWER INSTALLATION

- A. Before starting, bulkhead and/or plug the connection to existing sewer. Leave in place until new sewer has been cleaned and accepted. No break-in connects allowed. All connections shall be a water tight connection.
- B. Bedding and cover:
 1. Stone ships.
 2. Follow SWS 3.2.6(b) Class B.
- C. Follow SWS Part III.
- D. Structures:
 1. Do not locate steps over pipe wall penetrations. Follow SWS File No. 13.
 2. Wrap external surface of all joints below the water table with MAC wrap.
 3. Exterior chimney treatment:
 - a. Provide 1/4-inch minimum thickness, trowelable mastic extending over chimney joints and frame.
 - b. Provide plastic wrap (4 mils minimum) around all mastic areas before backfilling.
 4. Do not backplaster chimney interiors.
 5. Pour benches to springline.
 6. Fill void above manhole pipe boot with mastic and towel mortar in place.
 7. Set manhole rims to 0 to 1/4-inch below final finish grade.
 8. Do not use wood shims.
 9. Place 10-foot radius ramp around manholes when binder course is placed.
 10. Manhole Vacuum testing:
 - a. Test time of mercury drop from 10-inches to 9-inches.
 - b. Follow SWS 3.7.6.
 - c. Test before placing frame.

11. Internal/External seal testing:
 - a. Test all internal seals prior to final completion.
 - b. Pour one gallon of dyed water into top of seal.
 - c. Seal must hold for minimum of one minute.
 - d. Retest until seal passes test.
 - e. Allow city to witness testing of seals.
- E. Laterals. Follow SWS Part V and:
 1. 1/4-inch per foot maximum slope.
 2. Provide 2 by 6-inch hardwood marker at end of lateral from invert of lateral to 2 feet above finish grade for new laterals.
 3. Provide test tee at right-of-way line.
 4. Stamp face of curb and gutter with "S" over sewer location.
 5. Engineer will stake laterals before construction.
 6. Maximum depth at property line shall be 12 feet to finish grade. Invert elevations shall be shown on the Drawings.
- F. Interceptor Connection:
 1. All interceptor connections will be evaluated and accepted on a case-by-case basis.
 2. All connections must be approved in writing by the WTF prior to connection to system.
- G. Sanitary sewer repairs/relays:
 1. Pump around Work zone.
 2. Do not allow sanitary flow to migrate through work zone, infiltrate into soils or be conveyed in any manner open to air or in contact with soil or groundwater.
 3. Submit a "pump around" operation plan to city for approval before starting construction. Include a detail of equipment to be used, location of equipment, hours of operation, and safeguards to assure proper operation, 24-hour emergency contact numbers.
 4. Submit a "flume" operation plan to the city for approval, prior to starting construction. Include a detail of equipment to be used, location of equipment, hours of operation, and safe guards to assure proper operation, 24-hour emergency contact numbers.
 5. Follow "pump around" plan during working hours. Follow "flume" plan during nonworking hours.
 6. City may stop work if the construction activities deviate from the "pump around" and/or "flume" plans or if construction activities are not performed to the satisfaction of the city.
- H. Pressure Test: SWS 3.7.3.
- I. Go-No-Go Test: SWS 3.2.6(i)4.

- J. Cleaning and televising of mains:
 - 1. City shall be responsible for video recording of sanitary sewer upon completion of following items:
 - a. Manhole benches poured.
 - b. Surfacing restored.
 - c. Pipe work successfully tested.
 - 2. Cost of all video recording and cleaning of lines shall be the responsibility of Developer.

INCIDENTAL CONSTRUCTION

- A. Follow Common Work Results for Utilities for:
 - 1. Connecting dissimilar pipe materials.
 - 2. Excavation in pavement.
 - 3. Bedding.
 - 4. Cover.
 - 5. Backfill.
 - 6. Location aids.
 - 7. Insulation.
 - 8. Polyethylene film.
 - 9. Excess excavated material.
 - 10. Surface restoration.

D Measurement

The department will measure the New Sanitary Sewer 8-Inch C-900 Pipe by the linear feet, 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.0090.801	New Sanitary Sewer 8-Inch C-900 Pipe	LF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

138. Pavement Cleanup Project 1060-30-70, Item SPV.0105.001; Pavement Cleanup Project 3030-08-70, Item SPV.0105.002; Pavement Cleanup Project 2718-00-75, Item SPV.0105.006; Pavement Cleanup Project 2718-00-74, Item SPV.0105.702.

A Description

This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site.

B Materials

B.1 Pavement Cleanup

Furnish a vacuum-type street sweeper equipped with a power broom, water spray system, and a vacuum collection system.

Vacuum equipment shall have a self-contained particulate collector capable of preventing discharge from the collection bin into the atmosphere.

Use a vacuum-type sweeper as the primary sweeper, except as specified herein or approved by the engineer.

C Construction

C.1 Pavement Cleanup

Keep all pavements, curb lanes and gutters both closed and open to public traffic within the job-site boundaries free of dust and debris generated from any activity under the contract. Keep all pavements, curb lanes and gutters 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 or as directed by the engineer. Perform cleanup operations in a safe manner.

Provide routine sweeping of all pavements, curb lanes and gutters on local street active haul routes a minimum of once a day as defined in the Dust Control Implementation Plan (DCIP) or as directed by the engineer. Include street names for routine sweeping.

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 4 hours.

If the vacuum-type sweeper breaks down, a mechanical broom sweeper may be substituted for no more than 24 hours total elapsed time. Repair the vacuum-type sweeper within that 24 hours or substitute a vacuum-type sweeper.

Skid steers with mechanical power brooms may only be utilized on sidewalks and driveways whose pavements will not support the weight of a street sweeper, unless otherwise approved by the engineer.

D Measurement

The department will measure Pavement Cleanup (Project) as a single lump sum unit of work, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.001	Pavement Cleanup Project 1060-30-70	LS
SPV.0105.002	Pavement Cleanup Project 3030-08-70	LS
SPV.0105.006	Pavement Cleanup Project 2718-00-75	LS
SPV.0105.702	Pavement Cleanup Project 2718-00-74	LS

Payment schedule for this item will be in accordance to the percentage of contract value earned.

Payment is full compensation for surveillance, mobilization, sweeping, disposing of materials and any other labor, tools or equipment necessary to complete the work.

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139. Survey Project 1060-30-70, Item SPV.0105.003; Survey Project 2718-00-75, Item SPV.0105.004; Survey Project 3030-08-70, Item SPV.0105.005; Survey Project 2718-00-74, Item SPV.0105.703.

A Description

Perform work according to standard spec 105.6 and 650.

This special provision describes modifying standard specs 105.6 and 650 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. Obtain engineer's approval prior to performing all survey required to lay out and construct the work under this contract.

The survey includes establishing horizontal and vertical position for all aspects of construction including but not limited to storm sewer, subgrade, base, curb and gutter, curb ramps, pipe culverts, structure layout, pavement, barriers (temporary and permanent), electrical installations, supplemental control, slope stakes, ponds, FTMS, parking lots, utilities, landscaping elements, traffic control items, fencing, etc.

The department may choose to perform quality assurance surveys during the project. These quality assurance surveys do not relieve the responsibility for performing all survey work required to lay out and construct the work under this contract.

Delete standard spec 650.1.

Project 2718-00-74

Survey and staking for sidewalk and curb ramps constructed as part of project 2718-00-74 are bid separately as items SPV.0060.702 Construction Staking Curb Ramp and SPV.0090.702 Construction Staking Sidewalk, and are not included under the Survey Project 2718-00-74 bid item.

B (Vacant)

C Construction

Conform to standard spec 650.3 and as modified in this special provision.

Replace standard spec 650.3.3.1 with the following:

Under the Survey Project bid item, global positioning system (GPS) machine guidance for conventional subgrade staking on all or part of the work may be substituted. The engineer may require reverting to conventional subgrade staking methods for all or part of the work at any point during construction if, in the engineer's opinion, the GPS machine guidance is producing unacceptable results.

Replace standard spec 650.3.3.3.4.1 with the following:

The department will provide the contractor staking packet as described in the Construction and Materials Manual (CMM) 7.10. At any time after the contract is awarded, the available survey and design information may be requested. The department will provide that information within 5 business days of receiving the contractor's request. The department incurs no additional liability beyond that specified in standard spec 105.6 or standard spec 650 by having provided this additional information.

Add the following to standard spec 650.3.3.3.6.2:

Record all subgrade elevation checks and submit a hard copy to the engineer at the completion of the project.

Add the following to standard spec 650.3.3.3.3:

The contractor shall provide a GPS rover to the department for department personnel use to verify contractor survey.

Add the following to standard spec 650.3.3.3.4.2:

The contractor shall provide GPS rover training to department personnel sufficient to the point that the GPS rover can be utilized by the department to verify contractor survey.

D Measurement

Replace standard spec 650.4 with the following:

The department will measure Survey Project (I.D.) 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.0105.003	Survey Project 1060-30-70	LS
SPV.0105.004	Survey Project 2718-00-75	LS
SPV.0105.005	Survey Project 3030-08-70	LS
SPV.0105.703	Survey Project 2718-00-74	LS

Payment is full compensation for performing all survey work required to lay out and construct all work under this contract. No additional payments will be made for restaking due to construction disturbance and knock-outs.

SEF Rev. 13_0925

140. Field Office Fixed, Item SPV.0105.007.

Replace standard spec 642 with the following:

A Description

Furnish, equip, and maintain field office facilities.

B Materials**B.1 General**

The contractor is encouraged to provide a permanent/fixed facility for use as a field office that is an existing office building, or an existing building converted to office-type use, located not more than one-half-mile (0.5 mile) from the project limits and approved by the engineer. In the case such a suitable permanent/fixed facility cannot be located, a temporary/modular facility shall be provided.

Supply a first aid kit in each field office provided under the contract. Ensure the kits are readily accessible to project personnel. Check and replenish the contents of each kit at least once a week. Ensure that each kit contains, at a minimum, a supply of latex-free examination gloves, CPR masks, adhesive tape, pressure and cling bandages, antiseptic wipes, bite/sting swabs, cold packs, and safety goggles.

Equip the facilities with Class A, B, and C fire extinguisher(s) conforming to all applicable codes and NFPA standards.

Minimum interior useable floor space shall be 2000 square feet, not including shared spaces, such as plan review areas, conference rooms, meeting areas, hallways, and restrooms.

Provide a suitably sized, open meeting area, including tables and folding chairs to accommodate regularly scheduled meetings of 50 people, as approved by the engineer.

Provide 20 private rooms each equipped with a lockable desk, a 4-shelf bookcase, a 4-drawer file cabinet, a 48" x 36" whiteboard with dry erase markers, a coat rack and two small waste baskets with liners. These rooms shall have an interior door with a lockset.

A layout of 20 large cubicles, equipped as described above, may be substituted for the 20 private rooms if approved by the engineer. Modular cubicle workstation furniture may be used if approved by the engineer.

Provide one ergonomically correct office chair in working condition, with, at a minimum, the following features, for each desk:

- Five-legged base with casters.
- High backrest.
- Seat adjustable from 15 inches (381 mm) to 22 inches (558 mm) from the floor with a seamless waterfall, rounded front edge.
- Adjustable arms.

Provide the field office with 20 high-speed computer Internet connection(s) at a setting of no less than 1 MB. The high-speed Internet connection must consist of a "small office/home networking" package. The package shall include a Dynamic IP Address (DHCP) and a Modem Router. The package must accommodate IPSec based VPN products.

Provide and install into the field office 2 two-line programmable touch-tone telephones and telephone exchanges with local and long distance service. At least one will be a cordless type operating at no less than 2.4 GHz. The voice exchanges are to be configured so that the incoming calls for any voice exchange utilize an open exchange. Furnish a voice mail answering service. The telephones and the communication services are for the sole use of the department staff.

Furnish a fax machine with a dedicated exchange service and the ability to copy, auto-feed, fax, and print on paper up to 11" x 17" in size.

Provide one new, leased, high-capacity color printer/photocopier/scanner capable of printing and copying up to 11" x 17" paper, with the ability to perform duplexing, sorting, stapling, and multiple sheet auto feeding, with a built-in scanner with the capability to scan black and white and color up to 11" x 17" at a minimum of 600 dpi, and with a network connection, as approved by the engineer.

Maintain the field office equipment and provide supplies for the fax machine and photocopiers as requested by the engineer.

Provide and maintain an adequate supply of bottled drinking water with cups. Provide one 18 cubic foot minimum size refrigerator with freezer and one microwave (900-watt minimum). Provide small waste basket liners, tall kitchen garbage bags and disinfecting wet wipes for the duration of the project, and as also requested by the engineer.

Provide clearly marked recycling and waste receptacles (9 gallon minimum) within the field office, and separate recycling and waste dumpsters near the field office. Cover outdoor containers to keep out rain, snow, and wind-driven debris. Provide regularly scheduled recycling and waste pick-up.

Maintain interior sanitary facilities conforming to State and local health requirements, in clean and good working condition, and stock with supplies (toilet paper, liquid hand soap, paper towels) for the duration of the contract, and as also requested by the engineer.

Provide for weekly professional cleaning of the field office during regular business hours.

Equip these facilities with suitable artificial lighting and adequate heating and air conditioning equipment along with the necessary fuel to maintain a minimum temperature of 68F (20C) during the hours occupied.

The contractor may furnish, if the contract allows, the field offices jointly in cooperation with other contractors on designated projects.

Do not combine field offices, or combine them with, or attach them to, any buildings used by the contractor, unless the engineer allows in writing.

The field office shall remain available for department use for 60 calendar days beyond the contract completion date or until the engineer approves its closure or removal.

These field facilities are for the sole use of the department.

B.2 Permanent/Fixed Facility Field Office

Provide a permanent/fixed facility that is an existing office building, or an existing building converted to office-type use, meeting all applicable codes and standards, located not more than one-half-mile (0.5 mile) from the project limits and approved by the engineer.

Include an adjacent, no-fee, lighted parking lot large enough to accommodate the needs of the field offices at peak usage, as approved by the engineer. Maintain the parking lot and egress, including snow removal.

Do not begin construction operations requiring the use of the field offices by the department until the required field offices are furnished, fully equipped, and made ready for use as the engineer directs.

B.3 Temporary/Modular Facility Field Office

Provide rented, modular field offices that are designed as mobile office units, no more than five years old, or other engineer-approved types that are floored, roofed, and weatherproofed, and have a minimum ceiling height of 8 feet-0 inches (2.44 m). Provide R-11 or better insulation in all walls, floors, and ceilings. Provide skirting around the perimeter of the mobile office units.

Equip these facilities with suitable artificial lighting and adequate central heating and cooling equipment designed to maintain a comfortable temperature during occupied hours, at the approval of the engineer.

Provide electrical power by connecting to the existing power grid.

Provide and maintain suitable interior or exterior sanitary facilities conforming to State and local health requirements, in clean and good working condition, and stock with sanitary supplies including hand sanitizer for the duration of the contract, at the approval of the engineer.

Provide a sufficient number and size of operable windows, located in order to promote effective cross ventilation, and equipped with required locks and metal screens. Windows are to be of the horizontal slider type. All rooms are to have at least one window.

The exterior doors shall be constructed of steel and equipped with heavy-duty locks with attached security plates. There shall be vandal-resistant exterior lights located at all exterior doors. Provide steps at all exterior doors.

Provide a level, graded CABC (at a minimum) site for field offices, including an adjacent, no-fee parking lot large enough to accommodate the needs of the field offices at peak usage, as approved by the engineer. Maintain the parking lot and egress, including snow removal.

Anchor or secure the field offices to prevent them from overturning by high velocity winds. Locate the field office in a dust-reduced and vibration-free environment.

Do not begin construction operations requiring the use of the field offices by the department until the required field offices are furnished, leveled, and secured in the approved locations, fully equipped, and made ready for use as the engineer directs.

C (Vacant)

D Measurement

The department will measure Field Office Fixed as a single lump sum unit of work for the entire field office(s), acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.007	Field Office Fixed	LS

Payment is full compensation for providing, equipping, securing, and maintaining the facility; and for providing all incidentals and sundries, including but not limited to utilities, fuel, security, toilet facilities, and office supplies as required, either independently or jointly, for the time specified B.1.

141. Railing Tubular Steel Galvanized Pedestrian R-67-113, Item SPV.0105.104, Railing Tubular Steel Galvanized Pedestrian R-67-114, Item SPV.0105.105.

A Description

This special provision describes fabricating, galvanizing, painting and installing railing in accordance to standard specs 506, 513 and 517 and the plan details, as directed by the engineer, and as hereinafter provided.

B Materials

All materials for railing shall be new stock, free from defects impairing strength, durability and appearance. Railing assemblies shall be galvanized and receive a two-coat paint system. Bubbles, blisters and flaking in the coating will be a basis for rejection.

B1 Coating System

B1.1 Galvanizing

After fabrication, blast clean steel railing assemblies per SSPC-SP6 and galvanize according to ASTM A123. Vent holes shall be drilled in members as required to facilitate galvanizing and drainage. Location and size of vent holes are to be shown on the shop drawings. All burrs at component edges, corners and at holes shall be removed and sharp edges chamfered before galvanizing. Condition any thermal cut edges before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed in accordance to AASHTO M 160 prior to blast cleaning. Lumps, projections, globules, or heavy deposits of galvanizing, which will provide surface conditions that when painted, will produce unacceptable aesthetic and/or visual qualities, will not be permitted.

B1.2 Two-Coat Paint System

After galvanizing, paint all exterior surfaces of steel railing assemblies and inside of rail elements at field erection and expansion joints as hereinafter provided. All galvanized surfaces to be painted shall be cleaned per SSPC-SP1 to remove chlorides, sulfates, zinc salts, oil, dirt, organic matter and other contaminants. The cleaned surface shall then be brush blast cleaned per SSPC-SP16 to create a slight angular surface profile per manufacturer's recommendation for adhesion of the tie coat. Blasting shall not fracture the galvanized finish or remove any dry film thickness. After cleaning, apply a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface, per manufacturer's recommendations. The tie coat shall etch the galvanized rail and prepare the surface for the top coat. Apply a top coat per manufacturer's recommendations, matching the specified color shown on the plans. Use a preapproved top coat that is resistant to the effects of the sun and is suitable for a marine environment. The tie and top coats should be of contrasting colors, and come from the same manufacturer.

Ensure that the paint manufacturer reviews the process to be used for surface preparation and application of the paint coating system with the paint applier. The review shall include a visit to the facility performing the work if requested by the paint manufacturer. Provide written confirmation, from the paint manufacturer to the engineer, that the review has taken place and that issues raised have been addressed before beginning coating work under the contract.

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

Manufacturer	Coat	Products	Dry Film Minimum Thickness (mils)	Min. Time¹ Between Coats (hours)
<u>Sherwin Williams</u> 1051 Perimeter Drive Suite 710 Schaumburg, IL 60173 (847) 330-1562	Tie	Recoatable Epoxy Primer B67-5 Series / B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
<u>Carboline</u> 350 Hanley Industrial St. Louis, MO 63144 (314) 644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Tie	Carboguard 60	4.0 to 6.0	10
	Tie	Carboguard 635	4.0 to 6.0	1
	Top	Carbothane 133 LH(satin)	4	NA
<u>Wasser Corporation</u> 4118 B Place NW Suite B Auburn, WA 98001 (253) 850-2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA
<u>PPG Protective and Marine Coatings</u> P.O. Box 192610 Little Rock, AR 72219-2610 (414) 339-5084	Tie	Amercoat 399	3.0 to 5.0	3
	Top	Amercoat 450H	2.0 to 4.0	NA

¹ Time is dependent on temperature and humidity. Contact manufacturer for more specific information.

B2 Shop Drawings

Submit shop drawings showing the details of railing construction. Show the railing height post spacing, rail location, weld sizes and locations and all dimensions necessary for the construction of the railing. Show location of shop rail splices, field erection joints and expansion joints. State the name of the paint manufacturer and the product name of the tie coat and top coat used along with the color. State the size and material type used for all components. Also show the size and location of any vent or drainage holes provided.

C Construction

C1 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Upon receipt at the job site, all materials shall be thoroughly inspected to ensure that no damage occurred during shipping or handling and conditions of materials is in conformance with these specifications. If coating is damaged, contractor shall repair or replace railing assemblies to the approval of the engineer at no additional cost to the Owner. Carefully store the material off the ground

to ensure proper ventilation and drainage. Exercise care so as not to damage the coated surface during railing installation. No field welding, field cutting or drilling will be permitted without the approval of the engineer.

C2 Touch-up and Repair

For minor damage caused by shipping, handling or installation to coated surfaces, touch-up the surface in conformance with the manufacturer's recommendations. If damage is excessive, the railing assembly shall be replaced at no additional cost to the Owner. The contractor shall provide the engineer with a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings.

D Measurement

The department will measure Railing Tubular Steel Galvanized Pedestrian (Structure) as a single lump sum unit of work for each structure where railing is 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.0105.104	Railing Tubular Steel Galvanized Pedestrian R-67-113	LS
SPV.0105.105	Railing Tubular Steel Galvanized Pedestrian R-67-114	LS

Payment is full compensation for fabricating, galvanizing, painting, transporting, and installing the railing, including any touch-up and repairs.

- 142. Install Fiber Optic Communications in Cabinet IH-94 EB Ramps and STH 67, Item SPV.0105.201; IH-94 WB Ramps and STH 67, Item SPV.0105.202; STH 67 and Oconomowoc Dr/PFB, Item SPV.0105.203; STH 67 and CTH B (Valley Rd), Item SPV.0105.204; STH 67 and Oconomowoc Pkwy, Item SPV.0105.205; STH 67 and Center Dr/Pabst Rd, Item SPV.0105.206; STH 67 and Robruck Drive, Item SPV.0105.207; STH 67 and Summit Ave, Item SPV.0105.208; STH 67 and Old Tower Rd, Item SPV.0105.209.**

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This special provision describes installing fiber optic communications equipment in traffic signal cabinets.

B Materials

The department will furnish pre-terminated fiber optic patch panels and managed Ethernet switches. The materials will be provided with the traffic signal cabinet. The patch panels will have pre-terminated fiber optic cable pigtails. Provide two each 1-meter lengths of ST-ST single mode fiber jumper (2 fibers per jumper) from the patch panel to the Ethernet switch. Provide a 1-meter length of CAT-5e cable from the Ethernet switch to the controller. Provide a 1-meter length of CAT-5e cable from the Ethernet switch to the Interface Panel. CAT-5e patch cords shall have factory pre-terminated RJ45 / 8P8C connectors on both ends per TIA/EIA T568B. Provide all patch panel, Ethernet switch, and Interface Panel attachment hardware.

Provide a 14 AWG XLP insulated, stranded, copper, 600 volt AC locate wire through the conduit run from the communication vault to the traffic signal cabinet. Connect the locate wire by using a silicone filled wire nut at each pull box, vault or other access point. Alternatively, use a single wire through the access points, leaving a 6 foot coil in each pull box, vault or other access point for splicing. All material under this item shall meet the requirements of standard spec 655.

C Construction

Install the patch panel and Ethernet switch on the side of the traffic signal cabinet opposite the electrical service at a location as approved by the engineer. With approval by the engineer, the Ethernet switch may be placed on a shelf near the patch panel. Install the pre-terminated fiber optic cable in conduit from the patch panel to the communication vault as specified in standard spec 678.3.1. Fiber optic cable ends shall be covered securely to protect open ends during installation in raceways. Leave the remainder of the fiber optic cable coiled in the communication vault.

Install the fiber jumpers and CAT-5e cable and provide a communications link from the communication vault to the controller. Install the CAT5-e cable from the Interface Panel to the Ethernet switch.

Connect the locate wire by using a wire nut at each access point. Alternatively, use a single wire through the access points.

D Measurement

The department will measure Install Fiber Optic Communications in Cabinet (Location) as a single lump sum unit of work, in place and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.201	Install Fiber Optic Communications in Cabinet IH-94 EB Ramps and STH 67	LS
SPV.0105.202	Install Fiber Optic Communications in Cabinet IH-94 WB Ramps and STH 67	LS

SPV.0105.203	Install Fiber Optic Communications in Cabinet STH 67 and Oconomowoc Dr/PFB	LS
SPV.0105.204	Install Fiber Optic Communications in Cabinet STH 67 and CTH B (Valley Rd)	LS
SPV.0105.205	Install Fiber Optic Communications in Cabinet STH 67 and Oconomowoc Pkwy	LS
SPV.0105.206	Install Fiber Optic Communications in Cabinet STH 67 and Center Dr./Pabst Rd	LS
SPV.0105.207	Install Fiber Optic Communications in Cabinet STH 67 and Robruck Drive	LS
SPV.0105.208	Install Fiber Optic Communications in Cabinet STH 67 and Summit Ave	LS
SPV.0105.209	Install Fiber Optic Communications in Cabinet STH 67 and Old Tower Rd	LS

Payment is full compensation for installing pre-terminated patch panels, Ethernet switches, and fiber optic cable in conduit; furnishing and installing attachment hardware, fiber jumpers, CAT-5e cable, and for locate wire.

143. Transport Traffic Signal and Lighting Materials IH-94 EB Ramps and STH 67, Item SPV.0105.210; IH-94 WB Ramps and STH 67, Item SPV.0105.211; STH 67 and Oconomowoc Dr/PFB, Item SPV.0105.212; STH 67 and CTH B (Valley Rd), SPV.0105.213; STH 67 and Oconomowoc Pkwy, Item SPV.0105.214; STH 67 and Center Dr/Pabst Rd, Item SPV.0105.215; STH 67 and Robruck Drive, Item SPV.0105.216; STH 67 and Summit Ave, Item SPV.0105.217; STH 67 and Old Tower Rd, Item SPV.0105.218.

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This special provision describes the transporting of department furnished materials for traffic signals and intersection lighting.

B Materials

Transport materials furnished by the department including: Anchor rods, monotube arms/poles and luminaire arms (to be installed on monotube assemblies).

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.

Provide all other needed materials in conformance with standard specs 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

C Construction

Perform work in accordance to standard specs 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

D Measurement

The department will measure Transport Traffic Signal and Lighting Materials [Location] 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.0105.210	Transport Traffic Signal and Lighting Materials IH-94 EB Ramps and STH 67	LS
SPV.0105.211	Transport Traffic Signal and Lighting Materials IH-94 WB Ramps and STH 67	LS
SPV.0105.212	Transport Traffic Signal and Lighting Materials STH 67 and Oconomowoc Dr/PFB	LS
SPV.0105.213	Transport Traffic Signal and Lighting Materials STH 67 and CTH B (Valley Rd)	LS
SPV.0105.214	Transport Traffic Signal and Lighting Materials STH 67 and Oconomowoc Pkwy	LS
SPV.0105.215	Transport Traffic Signal and Lighting Materials STH 67 and Center Dr/Pabst Rd	LS
SPV.0105.216	Transport Traffic Signal and Lighting Materials STH 67 and Robruck Drive	LS
SPV.0105.217	Transport Traffic Signal and Lighting Materials STH 67 and Summit Ave	LS
SPV.0105.218	Transport Traffic Signal and Lighting Materials STH 67 and Old Tower Rd	LS

Payment is full compensation for transporting the anchor rods, monotube poles/arms and luminaire arms (to be installed on monotubes). Installation of these materials is included under a separate pay item.

- 144. Remove Traffic Signals IH-94 EB Ramps and STH 67, Item SPV.0105.219; IH-94 WB Ramps and STH 67, Item SPV.0105.220; STH 67 and Oconomowoc Dr/Pabst Farms Blvd, Item SPV.0105.221; STH 67 and CTH B (Valley Rd), SPV.0105.222; STH 67 and Oconomowoc Pkwy, Item SPV.0105.223; STH 67 and Center Dr/Pabst Rd, Item SPV.0105.224; STH 67 and Summit Ave, Item SPV.0105.225; STH 67 and Old Tower Rd, Item SPV.0105.226.**

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This special provision describes removing existing traffic signals at the intersection of IH-94 WB Ramps and STH 67, IH-94 EB Ramps and STH 67, STH 67 and Oconomowoc Dr./Pabst Farms Blvd., STH 67 and CTH B (Valley Rd.), STH 67 and Oconomowoc Pkwy., STH 67 and Center Dr./Pabst Rd., STH 67 and Summit Ave., and STH 67 and Old Tower Rd. in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans.

B (Vacant)**C Construction**

Arrange for the de-energizing of the traffic signals with the local electrical utility after receiving approval from the engineer that the existing traffic signals can be removed.

Notify the department's Electrical Field Unit at (414) 266-1170 at least five working days prior to the removal of the traffic signals. Complete the removal work as soon as possible following shut down of this equipment.

The department assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working traffic signal equipment to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department.

Remove all standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the transformer bases from each pole. Remove the signal heads, emergency vehicle preemption heads (evp), mast arms, luminaires, wiring/cabling, and traffic signal mounting devices from each signal standard, arm or pole. Ensure that all access hand hole doors and all associated hardware remain intact. Dispose of the underground signal cable, internal wires and street lighting cable off the state right-of-way. Deliver the remaining materials to the West Allis Electrical Service Facility at 935 South 60th Street, West Allis, Milwaukee County. Contact the department's Electrical Field Unit at (414) 266-1170 at least five working days prior to delivery to make arrangements.

DOT forces shall remove the signal cabinet from the footing. The signal cabinet and associated signal cabinet equipment will be removed from the site by DOT forces and will remain the property of the department.

D Measurement

The department will measure Remove Traffic Signals (Location) as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.219	Remove Traffic Signals IH-94 EB Ramps and STH 67	LS
SPV.0105.220	Remove Traffic Signals IH-94 WB Ramps and STH 67	LS
SPV.0105.221	Remove Traffic Signals STH 67 and Oconomowoc Dr/Pabst Farms Blvd	LS
SPV.0105.222	Remove Traffic Signals STH 67 and CTH B (Valley Rd)	LS
SPV.0105.223	Remove Traffic Signals STH 67 and Oconomowoc Pkwy	LS
SPV.0105.224	Remove Traffic Signals STH 67 and Center Dr./Pabst Rd	LS
SPV.0105.225	Remove Traffic Signals STH 67 and Summit Ave	LS
SPV.0105.226	Remove Traffic Signals STH 67 and Old Tower Rd	LS

Payment is full compensation for removing, disassembling traffic signals, scrapping of some materials, disposing of scrap material, for delivering the requested materials to the department, and incidentals necessary to complete the contract work.

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145. Remove Loop Detector Wire and Lead-in Cable IH-94 EB Ramps and STH 67, Item SPV.0105.227; IH-94 WB Ramps and STH 67, Item SPV.0105.228; STH 67 and Oconomowoc Dr/PFB, Item SPV.0105.229; STH 67 and CTH B (Valley Rd), SPV.0105.230; STH 67 and Oconomowoc Pkwy, Item SPV.0105.231; STH 67 and Center Dr/Pabst Rd, Item SPV.0105.232; STH 67 and Summit Ave, Item SPV.0105.233; STH 67 and Old Tower Rd, Item SPV.0105.234.

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This special provision describes removing loop detector wire and lead-in cable at the IH-94 WB Ramps and STH 67, IH-94 EB Ramps and STH 67, STH 67 and Oconomowoc Dr./Pabst Farms Blvd., STH 67 and CTH B (Valley Rd.), STH 67 and Oconomowoc Pkwy., STH 67 and Center Dr./Pabst Rd., STH 67 and Summit Ave., and STH 67 and Old Tower Rd. Removal will be in accordance to standard spec 204, as shown in the plans, and as hereinafter provided.

B (Vacant)

C Construction

Notify the department's Electrical Field Unit at (414) 266-1170 at least five working days prior to the removal of the loop detector wire and lead-in cable.

Remove and dispose of detector lead-in cable including loop wire for abandoned loops off the right-of-way.

D Measurement

The department will measure Remove Loop Detector Wire and Lead-in Cable as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.227	Remove Loop Detector Wire and Lead in Cable, IH-94 EB Ramps and STH 67	LS
SPV.0105.228	Remove Loop Detector Wire and Lead in Cable, IH-94 WB Ramps and STH 67	LS
SPV.0105.229	Remove Loop Detector Wire and Lead in Cable, STH 67 and Oconomowoc Dr/PFB	LS
SPV.0105.230	Remove Loop Detector Wire and Lead in Cable, STH 67 and CTH B (Valley Rd)	LS
SPV.0105.231	Remove Loop Detector Wire and Lead in Cable, STH 67 and Oconomowoc Pkwy	LS
SPV.0105.232	Remove Loop Detector Wire and Lead in Cable, STH 67 and Center Dr/Pabst Rd	LS
SPV.0105.233	Remove Loop Detector Wire and Lead in Cable, STH 67 and Summit Ave	LS
SPV.0105.234	Remove Loop Detector Wire and Lead in Cable, STH 67 and Old Tower Rd	LS

Payment is full compensation for removing, scrapping, and disposing of material and incidentals necessary to complete the contract work.

- 146. Emergency Vehicle Preemption (EVP) Detector Head Installation, IH-94 EB Ramps and STH 67, Item SPV.0105.235; IH-94 WB Ramps and STH 67, Item SPV.0105.236; STH 67 and Oconomowoc Dr./Pabst Farms Blvd., Item SPV.0105.237; STH 67 and CTH B (Valley Rd.), SPV.0105.238; STH 67 and Oconomowoc Pkwy, Item SPV.0105.239; STH 67 and Center Dr./Pabst Rd., Item SPV.0105.240; STH 67 and Robruck Drive, Item SPV.0105.241; STH 67 and Summit Ave., Item SPV.0105.242; STH 67 and Old Tower Rd., Item SPV.0105.243.**

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This special provision describes the transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector Head Mounting Brackets at IH-94 WB Ramps and STH 67, IH-94 EB Ramps and STH 67, STH 67 and Oconomowoc Dr./Pabst Farms Blvd., STH 67 and CTH B (Valley Rd.), STH 67 and Oconomowoc Pkwy., STH 67 and Center Dr./Pabst Rd., STH 67 and Robruck Drive, STH 67 and Summit Ave., and STH 67 and Old Tower Rd.

B Materials

Use materials furnished by the department including: Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector Head Mounting Brackets.

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 three working days prior to picking the materials up.

C Construction

Install the EVP detector heads and EVP detector head mounting brackets as shown on the plans. The department will determine the exact location to ensure that the installation does not create a sight obstruction. The department will terminate the EVP cable ends and install the discriminators and card rack in the cabinet.

Notify the department's Electrical shop at (414) 266-1170 upon completion of the installation of the Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector Head Mounting Brackets.

D Measurement

The department will measure Emergency Vehicle Preemption (EVP) Detector Head and EVP Detector Head Installation (Location) 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.0105.235	Emergency Vehicle Preemption (EVP) Detector Head Installation, IH-94 EB Ramps and STH 67	LS
SPV.0105.236	Emergency Vehicle Preemption (EVP) Detector Head Installation, IH-94 WB Ramps and STH 67	LS
SPV.0105.237	Emergency Vehicle Preemption (EVP) Detector Head Installation, STH 67 and Oconomowoc Dr./Pabst Farms Blvd.	LS
SPV.0105.238	Emergency Vehicle Preemption (EVP) Detector Head Installation, STH 67 and CTH B (Valley Rd.)	LS
SPV.0105.239	Emergency Vehicle Preemption (EVP) Detector Head Installation, STH 67 and Oconomowoc Pkwy.	LS
SPV.0105.240	Emergency Vehicle Preemption (EVP) Detector Head Installation, STH 67 and Center Dr./Pabst Rd.	LS
SPV.0105.241	Emergency Vehicle Preemption (EVP) Detector Head Installation, STH 67 and Robruck Drive	LS
SPV.0105.242	Emergency Vehicle Preemption (EVP) Detector Head Installation, STH 67 and Summit Ave.	LS
SPV.0105.243	Emergency Vehicle Preemption (EVP) Detector Head Installation, STH 67 and Old Tower Rd.	LS

Payment is full compensation for transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector head Mounting Brackets.

- 147. Transport and Install Furnished Video Detection System, IH-94 EB Ramps and STH 67, Item SPV.0105.244; IH-94 WB Ramps and STH 67, Item SPV.0105.245; STH 67 and OD/PFB, Item SPV.0105.246; STH 67 and CTH B (VR), SPV.0105.247; STH 67 and OP, Item SPV.0105.248; STH 67 and Center Dr/PR, Item SPV.0105.249; STH 67 and Robruck Drive, Item SPV.0105.250; STH 67 and Summit Ave, Item SPV.0105.251; STH 67 and Old Tower Rd, Item SPV.0105.252.**

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This special provision describes the transporting and installing of department furnished traffic signal autoscope video detection system on monotube and luminaire arms.

B Materials

Pick up all the department furnished Autoscope Video Detection System for all state maintained traffic signals for the project 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 to make arrangements for picking up the department furnished materials at least five working days prior to material pick-up.

C Construction

Install the Traffic Signal Terra Power Cable 18/3, the camera manufacturer's connector cable whip, pole/arm mounting bracket, extension arm (if required) and camera as shown on the plans (the final determination of location will be made by the department's electrical personnel to ensure best line of sight). The department's Electrical Field Unit (EFU) shall install state-furnished Autoscope video detection equipment in the traffic signal control cabinet.

Install the Traffic Signal Terra Power Cable 18/3 to run continuously (without splices) from the traffic signal cabinet plus an additional 10 feet to the handhole or base. Leave 10 feet of cable in each pull box. Install the camera manufacturer's connector cable whip from the camera to the handhole or base.

Mark each end of the lead appropriately to indicate the equipment label (i.e. VID1, VID2, etc.). Splice, solder and shrink wrap the Terra power cable to the camera manufacturer's cable whip. Allow 3 feet of slack on each cable.

Notify department's Electrical Shop at (414) 266-1170 upon completion of the Monotube and Luminaire arm installation of the Traffic Signal Terra Power Cable 18/3, cable whip and camera at each intersection.

The department will provide notification of the video detection system vendor and provide the vendor's contact information. Coordinate directly with the department's video detection system vendor to arrange for the vendor to program the video detection. Notify the department and vendor at least five working days prior to the date of programming.

D Measurement

The department will measure Transport and Install Furnished Video Detection System (Location) as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.244	Transport and Install Furnished Video Detection System IH-94 EB Ramps and STH 67	LS
SPV.0105.245	Transport and Install Furnished Video Detection System IH-94 WB Ramps and STH 67	LS
SPV.0105.246	Transport and Install Furnished Video Detection System STH 67 and OD/PFB	LS
SPV.0105.247	Transport and Install Furnished Video Detection System STH 67 and CTH B (VR)	LS
SPV.0105.248	Transport and Install Furnished Video Detection System STH 67 and OP	LS
SPV.0105.249	Transport and Install Furnished Video Detection System STH 67 and Center Dr/PR	LS
SPV.0105.250	Transport and Install Furnished Video Detection System STH 67 and Robruck Drive	LS
SPV.0105.251	Transport and Install Furnished Video Detection System STH 67 and Summit Ave	LS
SPV.0105.252	Transport and Install Furnished Video Detection System STH 67 and Old Tower Rd	LS

Payment is full compensation for transporting and installing the intersection autoscope video detection system, traffic signal terra power cable 18/3, cable whips, mounting hardware, and cameras; arranging for and providing programming by the vendor.

- 148. Install State Furnished Traffic Signal Cabinet IH-94 EB Ramps and STH 67, Item SPV.0105.253; IH-94 WB Ramps and STH 67, Item SPV.0105.254; STH 67 and OD/PFB, Item SPV.0105.255; STH 67 and CTH B (VR), SPV.0105.256; STH 67 and Oconomowoc Pkwy, Item SPV.0105.257; STH 67 and Center Dr/PR, Item SPV.0105.258; STH 67 and Robruck Drive, Item SPV.0105.259; STH 67 and Summit Ave, Item SPV.0105.260; STH 67 and Old Tower Rd, Item SPV.0105.261.**

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This special provision describes the installing of the state furnished Traffic Signal Cabinet for traffic signals.

B Materials

Use materials furnished by the department including: the traffic signal controller and the traffic signal cabinet.

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 up the materials.

Provide all other needed materials in conformance with standard specs 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

Append standard spec 651.3.3 (6) with the following:

Operate the completed traffic signal installation for 30 days consecutively, using the specified signal sequence(s) and all special functions, such as preemption as the plans show or as specified by the engineer.

C Construction

Perform work in accordance to standard specs 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

Request a signal inspection of the completed signal installation to the engineer at least five working days prior to the time of the requested inspection. The departments' Region Electrical personnel will perform the inspection.

D Measurement

The department will measure Install State Furnished Traffic Signal Cabinet (Location) 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.0105.253	Install State Furnished Traffic Signal Cabinet IH-94 EB Ramps and STH 67	LS
SPV.0105.254	Install State Furnished Traffic Signal Cabinet IH-94 WB Ramps and STH 67	LS
SPV.0105.255	Install State Furnished Traffic Signal Cabinet STH 67 and OD/PFB	LS
SPV.0105.256	Install State Furnished Traffic Signal Cabinet	LS

ITEM NUMBER	DESCRIPTION	UNIT
	STH 67 and CTH B (VR)	
SPV.0105.257	Install State Furnished Traffic Signal Cabinet	LS
	STH 67 and Oconomowoc Pkwy	
SPV.0105.258	Install State Furnished Traffic Signal Cabinet	LS
	STH 67 and Center Dr/PR	
SPV.0105.259	Install State Furnished Traffic Signal Cabinet	LS
	STH 67 and Robruck Drive	
SPV.0105.260	Install State Furnished Traffic Signal Cabinet	LS
	STH 67 and Summit Ave	
SPV.0105.261	Install State Furnished Traffic Signal Cabinet	LS
	STH 67 and Old Tower Rd	

Payment is full compensation for installing and testing the Traffic Signal Cabinet; for furnishing and installing all other items necessary (such as, wire nuts, splice kits and/or connectors, tape, insulating varnish, ground lug fasteners, etc.) to make the proposed system complete from the source of supply to the most remote unit; for clean-up and waste disposal.

- 149. Temp Vehicle Detection System for Intersections, IH-94 EB Ramps and STH 67, Item SPV.0105.262; IH-94 WB Ramps and STH 67, Item SPV.0105.263; STH 67 and OD/PFB, Item SPV.0105.264; STH 67 and CTH B (Valley Rd), SPV.0105.265; STH 67 and Oconomowoc Pkwy, Item SPV.0105.266; STH 67 and Center Dr/PR, Item SPV.0105.267; STH 67 and Summit Ave, Item SPV.0105.268; STH 67 and Old Tower Rd, Item SPV.0105.269; STH 67 and Robruck Drive, Item SPV.0105.270.**

This special provision article applies only to Project 1060-30-70 and 3030-08-70.

A Description

This work shall consist of furnishing, installing, maintaining and placing into operation a temporary non-intrusive vehicle detection system (NIVDS) as shown on the plans, and as directed by the engineer in the field.

B Materials

This specification sets forth the minimum requirements for a system that detects vehicles on a roadway and provides detection outputs to a traffic signal controller. The materials shall also include all brackets, mounting hardware, cable, terminations, interface panels, and all other incidentals for the installation of the non-intrusive vehicle detection equipment. This equipment shall meet the NEMA environmental, power and surge ratings as set forth in NEMA TS2 specifications.

All detection equipment, components, and terminations supplied under this item shall be fully compatible with the temporary traffic signal controller supplied for the project. The system architecture shall fully support Ethernet networking of system components. All required interface equipment needed for transmitting and receiving data shall be provided with the NIVDS.

The NIVDS shall provide flexible detection zone placement anywhere and at any orientation. Preferred detector configurations shall be detection zones placed across lanes of traffic for optimal count accuracy, detection zones placed parallel to lanes of traffic for optimal presence detection accuracy of moving or stopped vehicles. Detection zones shall be able to be overlapped for optimal road coverage.

C Construction

The temporary NIVDS shall be installed by supplier factory-certified installers and as recommended by the supplier and documented in installation materials provided by the supplier.

In the event, at installation or turn on date, a noticeable obstruction is present in line with the detection zone(s), the contractor shall be obligated to advise the engineer before setting the zone.

The non-intrusive vehicle detection system, as shown in the traffic signal construction plans, shall be complete, in place, tested, and in full operation during each stage of construction.

Maintain all temporary vehicle detection zones as the plans show or as the engineer directs. The temporary vehicle detection zones shall be set near the vicinity and with approximate distance from the stop bar as shown on the plans. Check temporary vehicle detection zones every other week and at the opening of each stage of temporary traffic signal operation to ensure that they are working properly and aimed properly. Periodic adjustment of the detection zones and/or moving of the temporary vehicle detection sensors may be required due to changes in traffic control, staging, or other construction operations.

Ensure the non-intrusive vehicle detection system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

D Measurement

The department will measure Temp Vehicle Detection System for Intersections (Location) 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 items.

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.262	Temp Vehicle Detection System for Intersections, IH-94 EB Ramps and STH 67	LS
SPV.0105.263	Temp Vehicle Detection System for Intersections, IH-94 WB Ramps and STH 67	LS
SPV.0105.264	Temp Vehicle Detection System for Intersections, STH 67 and OD/PFB	LS
SPV.0105.265	Temp Vehicle Detection System for Intersections,	LS

ITEM NUMBER	DESCRIPTION	UNIT
	STH 67 and CTH B (Valley Rd)	
SPV.0105.266	Temp Vehicle Detection System for Intersections, STH 67 and Oconomowoc Pkwy	LS
SPV.0105.267	Temp Vehicle Detection System for Intersections, STH 67 and Center Dr/PR	LS
SPV.0105.268	Temp Vehicle Detection System for Intersections, STH 67 and Summit Ave	LS
SPV.0105.269	Temp Vehicle Detection System for Intersections, STH 67 and Old Tower Rd	LS
SPV.0105.270	Temp Vehicle Detection System for Intersections, STH 67 and Robruck Drive	LS

Payment is full compensation for furnishing and installing the temporary non-intrusive vehicle detection system, including cabling, mounting brackets, mounting hardware, terminations, interface panels, testing and set up; for periodic checking and resetting of detection zones; for periodic cleaning for dirt and dust build-up; and for removing all equipment at the completion of the project.

150. Emergency Vehicle Preemption System, Intersection of Summit Avenue and Thackeray Trail, Item SPV.0105.401.

This special provision article applies only to Project 2718-00-75.

A Description

This work shall consist of furnishing and installing an Emergency Vehicle Preemption (EVP) System at a single intersection, as shown on the plans and as hereinafter provided.

B Materials and Construction Methods

The Emergency Vehicle Preemption System shall include Opticom discriminator Model 454, Model 711 detectors, Model 138 detector cable, Type 1 LED confirmation lights, and appropriate wiring for power and signal to create a complete and functional system in accordance to the plans. This equipment shall be furnished and installed by the contractor. The discriminator shall be mounted in a card rack included as part of the signal cabinet.

Detectors shall be mounted on the trombone or luminaire arms as shown on the Plans.

The traffic signal arms and poles shall be drilled and tapped to accommodate the mounting of the detector units as shown in the Plans. The installation method shall be approved by the engineer.

In the event, at installation, a noticeable obstruction is present in line with the detector, the contractor shall be obligated to advise the engineer before installation.

Unless otherwise directed by the engineer, the detector shield tube shall be installed with the drain hole at the bottom.

There shall be NO detector cable splices from the detector assembly to the controller terminations.

The EVP detector cables shall be routed to the controller. Each lead shall be appropriately marked as to which street or avenue it is associated. The contractor will perform all terminations inside the cabinet.

The EVP as specified and shown in the Plans shall be complete in place, tested, and in full operation.

C (Vacant)

D Measurement

The department will pay for Emergency Vehicle Preemption System (Location) as a lump sum unit of work, acceptably completed in place per intersection.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.401	Emergency Vehicle Preemption System Intersection of Summit Avenue and Thackeray Trail	LS

Payment is full compensation for furnishing and installing all equipment, cabling, necessary additional items, testing and setting up the system.

151. Video Vehicle Detection System, Summit Avenue and Thackeray Trail, Item SPV.0105.402.

This special provision article applies only to Project 2718-00-75.

A Description

This work shall consist of furnishing, installing and placing into operation a vehicular video detection system (VVDS) as shown on the plans, and as directed by the engineer in the field. The VVDS shall be a four-camera system.

B Materials

This specification sets forth the minimum requirements for a system that detects vehicles on a roadway by processing video images and providing detection outputs to a traffic signal controller. The materials shall also include all brackets, mounting hardware, cable, terminations, interface panels, and all other incidentals for the installation of the video detection equipment. This equipment shall meet the NEMA environmental, power and surge ratings as set forth in NEMA TS2 specifications.

All video detection equipment, components, and terminations supplied under this item shall be fully compatible with Eagle EPAC 300 M51 and Econolite ASC/3 traffic signal controllers. The Vehicular Video Detection System shall be able to transmit and receive data by means of a hybrid single mode/multi-mode fiber optic cable. The system architecture shall fully support Ethernet networking of system components. All required interface equipment needed for transmitting and receiving data and video shall be provided for with the VVDS.

Some of the video cameras may be required to be mounted on a riser attached to a trombone or monotube arm. This item includes furnishing and installing risers as necessary and indicated on the plans.

The Video Vehicle Detection System shall be the Autoscope Encore system including all associated hardware and software to create a fully functioning vehicle detection system.

B.1 Hardware

The machine vision system hardware shall consist of three components: 1) a color, zoom, Machine Vision Processor (MVP) sensor 2) a modular cabinet interface unit 3) a communication interface panel. Additionally, an optional personal computer (PC) shall host the server and client applications that are used to program and monitor the system components. The real-time performance shall be observed by viewing the video output from the sensor with overlaid flashing detectors to indicate the current detection state (on/off). The MVP sensor shall optionally store cumulative traffic statistics internally in non-volatile memory for later retrieval and analysis.

The MVP shall communicate to the modular cabinet interface unit via the communications interface panel and the software applications using the industry standard TCP/IP network protocol. The MVP shall have a built-in, Ethernet-ready, Internet Protocol (IP) address and shall be addressable with no plug in devices or converters required. The MVP shall provide standard MPEG-4 streaming digital video.

The communication interface panel shall provide four sets of three electrical terminations for three wire power cables for up to eight MVP sensors that may be mounted on a pole or mast arm with a traffic signal cabinet or junction box. The communications interface panel shall provide single-point Ethernet connectivity via RJ45 connector for communication to and between the modular cabinet interface module and the MVP sensors.

B.2 Machine Vision Processor Sensor

The MVP sensor shall be an integrated imaging color CCD array with zoom lens optics, high-speed, dualcore image processing hardware bundled into a sealed enclosure. The CCD array shall be directly controlled by the dual-core processor, thus providing high-quality video for detection that has virtually no noise to degrade detection performance. It shall be possible to zoom the lens as required for setup and operation. It shall provide JPEG video compression as well as standard MPEG-4 digital streaming video with flashing detector overlay. The MVP shall provide direct real-time iris and shutter speed control. The MVP image sensor shall be equipped with an integrated 22x zoom lens that

can be changed using either configuration computer software. The digital streaming video output and all data communications shall be transmitted over the three-wire power cable.

B.3 Modular Cabinet Interface Unit

The modular cabinet interface unit shall provide the hardware and software means for up to 8 MVP sensors to communicate real-time detection states and alarms to a local traffic signal controller. It shall comply with the electrical and protocol specifications of the detector rack standards. The card shall have 1500 Vrms isolation between rack logic ground and street wiring. The modular cabinet interface unit shall be a simple interface card that plugs directly into a 170 input file rack or a NEMA type C or D detector rack. The modular cabinet interface unit shall occupy only 2 slots of the detector rack. The modular cabinet interface unit shall accept up to 16 phase inputs and shall provide up to 24 detector outputs.

B.4 Communications Interface Panel

The communications interface panel shall support up to eight MVPs. The communications interface panel shall accept 110/220 VAC, 50/60 Hz power and provide predefined wire termination blocks for MVP power connections, a Broadband-over-Power-Line (BPL) transceiver to support up to 10MB/s interdevice communications, electrical surge protectors to isolate the modular cabinet interface unit and MVP sensors, and an interface connector to cable directly to the modular cabinet interface unit.

The interface panel shall provide power for up to eight (8) MVP sensors, taking local line voltage 110/220 VAC, 50/60 Hz and producing 110/220 VAC, 50/60 Hz, at about 30 watts to each MVP sensor. Two 1/2-amp SLO-BLO fuses shall protect the communications interface panel.

B.5 Functional

The vision sensor shall be able to be programmed with a variety of detector types that perform specific functions selectable by software. Detector types shall include stopline detectors capable of providing presence of moving vehicle detection based upon phase status, presence detectors, directional presence and input detectors. Additionally, phase green or red shall be displayed.

The unit shall monitor video contrast and apply video-loss timing parameters to the output by implementing minimum, maximum, or user defined fixed time recall for the assigned phase(s). The detector shall be capable of having Boolean logic applied to multiple detectors or a minimum number of detectors out of a total present, prior to placing a call.

B.6 Minimum detector requirements

Minimum detector requirements shall include the following:

Count detection – provide bi-directional vehicle counts, occupancy, and headway, and provide means to output these traffic volume statistics.

Speed and classification detection – define vehicle by speed, classification and length, with a minimum of 3 different categories for each.

Presence detection – indicate presence of a vehicle, stopped vehicle, or a vehicle traveling in the wrong direction.

Detector function combination – monitor outputs of multiple detectors via Boolean logic functions.

Label display – provide information on the video output and pass input information to other detectors.

Detector Station – collect and report traffic data gathered over specified time intervals including 1, 5, 10, 15, 30, 60-minute intervals and per cycle.

Incident detection – monitor traffic parameters for conditions that indicate an incident has occurred, such as an accident or a stalled vehicle that results in a sudden reduction in roadway capacity or throughput.

Schedulers – define plans that can be used by other detectors to specify different parameters for each time-of-day plan.

Contrast Loss detection – monitor the quality of the video image that the vision sensor is processing.

Speed Alarm – generate alarm outputs based on user-defined algorithms based on vehicle speed.

B.7 Power

The vision sensor shall operate on 110/220 VAC 50/60 Hz at a maximum of 25 watts. The camera and processor electronics shall consume a maximum of 10 watts. The remaining 15 watts shall support an enclosure heater.

B.8 Sensor Operations Log

The vision sensor shall maintain a non-volatile operations log, which minimally contains:
Revision numbers for the current vision sensor hardware and software components in operation.

Title and comments for the detector configuration.

Date and time the last detector configuration was downloaded to the vision sensor.

Date and time the operation log was last cleared.

Date and time communications were opened or closed with the vision sensor.

Date and time of last power up.

Time stamped, self-diagnosed hardware and software errors that shall aid in system maintenance and troubleshooting.

B.9 Sensor Vehicle Detection Performance

The real time detection performance of the vision sensor shall be optimized by following the guidelines for the traffic application including vision sensor mounting location; the number of traffic lanes to monitor; the sizing, placement, and orientation of vehicle detectors; traffic approaching and/or departing from the sensor's field of view; and minimizing the effects of lane changing maneuvers.

B.10 Detection Zone Placement

The video detection system shall provide flexible detection zone placement anywhere and at any orientation within the field of view of the vision sensor. Preferred detector configurations shall be detection zones placed across lanes of traffic for optimal count

accuracy, detection zones placed parallel to lanes of traffic for optimal presence detection accuracy of moving or stopped vehicles. A single detection zone shall be able to replace one or more conventional detector loops connected in series. Detection zones shall be able to be overlapped for optimal road coverage. In addition, selective groups of detectors shall be able to be logically combined into a single output by using optional delay and extend timing and signal state information. Optimal detection shall be achieved when the vision sensor placement provides an unobstructed view of each traffic lane where vehicle detection is required.

B.11 Detection Zone Programming

Placement of detection zones shall be by means of a PC with a Windows XP or Vista operating system, a keyboard, and a mouse. The PC monitor shall be able to show the detection zones superimposed on images of traffic scenes.

The detection zones shall be created by using a mouse to draw detection zones on the PC monitor. Using the mouse and keyboard it shall be possible to place, size, and orient detection zones to provide optimal road coverage for vehicle detection. It shall be possible to download detector configurations from the PC to the MVP sensor and cabinet interface module, to retrieve the detector configuration that is currently running in the MVP sensor, and to back up detector configurations by saving them to the PC fixed disks or other removable storage media.

The supervisor computer's mouse and keyboard shall be used to edit previously defined detector configurations to permit adjustment of the detection zone size and placement, to add detectors for additional traffic applications, or to reprogram the MVP sensor for different traffic applications or changes in installation site geometry or traffic rerouting.

B.12 Optimal Detection

The video detection system shall provide optimal detection of vehicle passage and presence when the vision sensor is mounted 30 feet or higher above the roadway, the image sensor is adjacent to the desired coverage area and the distance to the farthest detection zone locations is not greater than ten times the mounting height of the vision sensor.

The vision sensor shall be able to view either approaching or departing traffic or both in the same field of view. The vision sensor, when placed at a mounting height that minimizes vehicle image occlusion and equipped with a lens to match the width of the road shall be able to monitor a minimum of six traffic lanes simultaneously.

B.13 Detection Zone Operation

The vision sensor's real-time detection operation shall be verifiable through the following means:

View the video output of the sensor with any standard video display device (monitor).

The video output of the vision sensor (differential twisted pair) shall be capable of selectively transmitting:

Camera video only.

Analog video overlaid with the current real-time detection state of each detector.

Camera video with overlaid, scaled crosshairs that are used for aiming the sensor (during installation).

Individual detectors shall have the option of being hidden.

Electrically monitor assigned contact closure pinouts from a detector port master such as a detector rack interface card. Each pin of an interface card shall have one associated LED output to reflect its output state.

View the associated output LED state on the detector port master:

An LED shall be ON when its assigned detector output or signal controller phase input is on.

An LED shall be OFF when its assigned detector or signal controller input is off.

B.14 Count Detection Performance

Using a vision sensor installed within the optimal viewing specifications described above for count station traffic applications the system shall be able to accurately count vehicles with at least 96% accuracy under normal operating conditions (day and night) and at least 93% accuracy under adverse conditions. Adverse conditions are combinations of weather and lighting conditions that result from shadows, fog, rain, snow, etc. The data shall be optionally stored internally in non-volatile memory for later retrieval and analysis.

B.15 Demand Presence Detection Performance

Using a vision sensor installed within the optimal viewing specifications described above for intersection control applications the system shall be able to accurately provide demand presence detection. The demand presence accuracy shall be based on the ability to enable a protected turning movement on an intersection stop line, when a demand exists. The probability of not detecting a vehicle for demand presence shall be less than 1% error under all operating conditions. In the presence of adverse conditions, the vision sensor shall minimize extraneous (false) protected movement calls to less than 7%.

B.16 Speed Detection Performance

The vision sensor shall accurately measure average (arithmetic mean) speed of multiple vehicles with more than 98% accuracy under all operating conditions for approaching and departing traffic. The average speed measurement shall include more than ten vehicles in the sample to ensure statistical significance. Optimal speed detection performance requires the sensor location to follow the specifications described above for count station traffic applications with the exception that the sensor must be higher than 40 feet. The vision sensor shall accurately measure individual vehicle speeds with more than 95% accuracy under all operating conditions for vehicles approaching the sensor (viewing the rear end of the vehicles). These specifications shall apply to vehicles that travel through both the count and speed detector pair and shall not include partial detection situations created by lane changing maneuvers.

C Construction

The Vehicular Video Detection System shall be installed by supplier factory-certified installers and as recommended by the supplier and documented in installation materials provided by the supplier.

The camera shall be mounted at the end of the luminaire arm. The cable shall be secured to the luminaire arms with a maximum of three feet between secured points. The cable shall be fed through the cap of the luminaire pole and sealed. Slack shall be provided in the cable at the camera and at the pole sufficient for drip loops.

C.1 Sensor Electrical

The video output of the vision sensor shall be isolated from earth ground. All video connections from the sensor to the interface panel shall also be isolated from earth ground. The video output communication, and power stages of the sensor shall include transient protection to prevent damage to the sensor due to voltage transients occurring on the cable leading from the vision sensor to other field terminations. Connections for video communications and power shall be made to the image sensor using a single 18-pin circular metal shell connector (Bendix PT07C-14-18P or equivalent). The mating cable shall use a right angle shell. The vision sensor shall have passed requirements for and received the CE mark. The power to the sensor shall be fused in the controller cabinet. Cable used between the vision sensor and the traffic control cabinet interface shall be a continuous unbroken run. This cable shall follow all local electrical codes, and be suitable for installation in conduit or overhead with appropriate span wire.

C.2 Auxiliary Equipment

The system shall be supplied with a color 10-inch monitor to display a camera field of view with detection areas overlaid. This monitor shall include sufficient cable and terminals to either be used in the controller cabinet or from within the engineer or technician's vehicle. The input to the monitor shall be selectable from any of the cameras in the system via a quad video processor. All camera field-of-view displays shall also be viewable in real time with the use of a laptop computer connected to the video detection system.

C.3 Training and Support

The supplier of the video detection system shall provide two days of training to maintenance and engineering personnel in the operation, setup, and maintenance of the video detection system.

The supplier shall maintain an ongoing program of technical support for the video detection system. This technical support shall be available via telephone, or via personnel sent to the installation site upon placement of an acceptable order at the supplier's then current pricing and terms of sale for on-site technical support services.

The supplier shall provide a two-year warranty on the video detection system from the date of installation. During the warranty period, technical support shall be available from the supplier via telephone within four hours of the time a call is made by a user, and this

support shall be available from factory-certified personnel or factory-certified installers. Updates to the video detection system software shall be available from the supplier without charge.

D Measurement

The department will measure Video Vehicle Detection System (Location) as a lump sum unit of work at each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.402	Video Vehicle Detection System, Summit Avenue and Thackeray Trail	LS

Payment is full compensation for furnishing all tools, materials and supplies necessary to complete the work providing a full functional vehicle detection system, and testing the installed system.

152. Remove Traffic Signals, Summit Avenue and Thackeray Trail, Item SPV.0105.403.

This special provision article applies only to Project 2718-00-75.

A Description

This special provision describes the removing of above- and under-ground existing traffic signal equipment at the signalized project intersections, as shown on the plans and not otherwise separately measured and paid.

B (Vacant)

C Construction

Arrange for the removal of the traffic signal equipment after receiving approval from the engineer that the existing equipment can be removed.

Above-ground traffic signal items shall be returned to the City of Oconomowoc after removal. Pull box lids and rims shall be removed and returned to the City of Oconomowoc. Corrugated pull box bodies, concrete bases, and all conductors and wire shall be removed and properly disposed of. Abandoned conduit shall be removed and properly disposed of.

D Measurement

The department will measure Remove Traffic Signals (Location) as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.403	Remove Traffic Signals, Summit Avenue and Thackeray Trail	LS

Payment is full compensation for removing and disassembling traffic signals and street lighting, scrapping of some materials, disposing of scrap material, and for delivering the indicated materials to the city.

153. Temporary Non-Intrusive Vehicle Detection System, Summit Avenue and Thackeray Trail, Item SPV.0105.404.

This special provision article applies only to Project 2718-00-75.

A Description

This special provision describes furnishing, installing, maintaining and placing into operation a temporary non-intrusive vehicle detection system (NIVDS) as shown on the plans, and as directed by the engineer in the field.

B Materials

This specification sets forth the minimum requirements for a system that detects vehicles on a roadway and provides detection outputs to a traffic signal controller. The materials shall also include all brackets, mounting hardware, cable, terminations, interface panels, and all other incidentals for the installation of the non-intrusive vehicle detection equipment. This equipment shall meet the NEMA environmental, power and surge ratings as set forth in NEMA TS2 specifications.

All detection equipment, components, and terminations supplied under this item shall be fully compatible with the temporary traffic signal controller supplied for the project. The system architecture shall fully support Ethernet networking of system components. All required interface equipment needed for transmitting and receiving data shall be provided with the temporary NIVDS.

The temporary NIVDS shall provide flexible detection zone placement anywhere and at any orientation. Preferred detector configurations shall be detection zones placed across lanes of traffic for optimal count accuracy, detection zones placed parallel to lanes of traffic for optimal presence detection accuracy of moving or stopped vehicles. Detection zones shall be able to be overlapped for optimal road coverage.

C Construction

The temporary NIVDS shall be installed by supplier factory-certified installers and as recommended by the supplier and documented in installation materials provided by the supplier.

In the event, at installation or turn on date, a noticeable obstruction is present in line with the detection zone(s), the contractor shall be obligated to advise the engineer before setting the zone.

The non-intrusive vehicle detection system, as shown in the traffic signal construction plans, shall be complete, in place, tested, and in full operation during each stage of construction.

Maintain all temporary vehicle detection zones as the plans show or as the engineer directs. The temporary vehicle detection zones shall be set near the vicinity and with approximate distance from the stop bar as shown on the plans. Check temporary vehicle detection zones every other week and at the opening of each stage of temporary traffic signal operation to ensure that they are working properly and aimed properly. Periodic adjustment of the detection zones and/or moving of the temporary vehicle detection sensors may be required due to changes in traffic control, staging, or other construction operations.

Ensure the non-intrusive vehicle detection system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

D Measurement

The department will measure Temporary Non-Intrusive Vehicular Detection System (Location) 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.0105.404	Temporary Non-Intrusive Vehicle Detection System, Summit Avenue and Thackeray Trail	LS

Payment is full compensation for furnishing and installing the temporary non-intrusive vehicle detection system, including cabling, mounting brackets, mounting hardware, terminations, interface panels, testing and set up; periodic checking and resetting of detection zones; periodic cleaning for dirt and dust build-up; and for removing all equipment at the completion of the project.

154. Removing Overhead Sign Support S-67-260 Item SPV.0105.601 and S-67-909, SPV.0105.602.

A Description

Work under this item shall consist of removing the overhead sign structure and footing. The sign on the structure is paid for under a separate pay item, i.e Removing signs type II. See signing plans for location.

B (Vacant)

C Construction

Remove overhead sign supports and concrete footings, backfill the resulting holes, and dispose of all materials outside of the right-of-way in accordance to standard specs 204.3 and 638.3. Concrete footing shall be removed to 2' below the existing ground. The reinforcement shall be cut off flush with the top of the concrete. The footing shall be then covered with topsoil and seeded. This is all incidental to Remove Overhead Sign Structure.

D Measurement

The department will measure Removing Overhead Sign Support, 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.0105.601	Removing Overhead Sign Support S-67-260	LS
SPV.0105.602	Removing Overhead sign support S-67-909	LS

Payment in full compensation for disassembling, removing, including concrete footings, backfilling, and disposal of all materials.

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155. Sign Removal, Item SPV.0105.701.

This special provision article applies only to Project 2718-00-74.

A Description

This special provision describes removing signs and supports as required during construction.

B (Vacant)**C Construction**

Remove existing signs and sign supports as required during construction (approximately 15-20 signs supports with any and all attached signs). This shall include any sign within 2 feet of the back of an existing curb to be replaced or a proposed curb, any sign that is in direct conflict with proposed construction, and any sign where the structural support is undermined during construction operations. All signs and supports are city property and shall be delivered to Oconomowoc Public Works Building within 1 week of removal.

D Measurement

The department will measure Sign Removal 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.0105.701	Sign Removal	LS

Payment schedule for this item will be in accordance to the percentage of item value earned.

Payment is full compensation for furnishing all labor, tools, and equipment incidentals necessary to complete the contract work.

156. Offset 16-Inch Water Main for Multi-Use Tunnel, Item SPV.0105.801.**A Description**

This special provision describes the offset of a 16" ductile iron water main in conflict with the proposed multi-use tunnel. This includes all appurtenances necessary to complete this work. The proposed offset will be constructed to provide 1.5 feet of cover between the proposed multi-use tunnel storm sewer and 16" water main. Perform this work in accordance to the City of Oconomowoc Specifications.

B Materials

A. Pipe, 3-inch and larger shall be ductile iron:

AWWA C-151, thickness Class 52 with cement lining.

Tyton-gasketed joint pipe.

Cable bond connectors.

SWS 8.18.0.

B. Fittings: SWS 8.22.0.

Joints:

Buried: Mechanical and restrained.

In structures: Flanged.

Pressure rating:

Full body: 250 PSI.

Compact: 350 PSI.

Material:

Ductile iron:

Class 52 wall thickness.

Bituminous exterior coating per ANSI/AWWA C153.

Cement lined and bituminous coated interior per ANSI/AWWA C104/A21.4.

Cor-Blue tee bolts.

C Construction

C.1 Offset 16" Water Main for Multi-Use Tunnel

WATER MAIN INSTALLATION

Follow SWS Part IV except wet-tap service connections at normal operating system pressure and do not use polyethylene wrap.

Bedding and cover: Sand. Use stone chips only for undercut areas. Follow SWS 4.3.3.

Ductile iron: Provide electric continuity using strapping.

Hydrants:

1. Secure hydrant valves directly to main lines with anchor tee.
2. Position to:

Provide minimum 6 foot cover over lead and 4-foot radius around barrel.

Set centerline of lowest hydrant outlet nozzle 24-inches above finish grade.

Provide 3 feet minimum separation from back-of-curb. Variances as approved by the Oconomowoc Water Utility.

Provide 4 feet unobstructed air space radius around barrel.

Set traffic 16-inch break flange at 2 to 4 inches above final grade.

3. Install hydrant marking post after final adjustments.
4. Use strapping for hydrant leads longer than one length of pipe.

Buttresses: SWS 4.3.13.

Services:

Design engineer shall field stake new services' location and grade before installation.

New services to be placed at the center of the buildable area of each lot.

Extend water services 10 feet beyond right-of-way if requested by Electric Utility.

Pressure test water services with water main.

For 2-inch and smaller follow SWS Part V and:

Provide curb stop and box 1 foot outside of public right-of-way line. (2 feet off edge of sidewalk).

Provide 2 by 6-inch hardwood marker at curb box location from invert of service to 2 feet above finished grade for new services.

Provide tail piece. Follow SWS File No. 51.

Bury depth from finish grade: Minimum 6 feet. Maximum 6 1/2 feet.

Allow a minimum of 4-inches of adjustment in both directions from final grade for all stop boxes. Set stop box 6 feet above top of curb stop.

Curb stop boxes installed within the sidewalk shall be removed and reinstalled per direction of Water Utility.

For 3-inch and larger follow SWS Part IV and V and:

Provide tee connection.

Anchor valve to tee with anchor tee or strapping.

Provide plug and buttress.

Provide 2 by 6-inch hardwood marker at end of service from invert of service to 2 feet above finished grade for new services.
Do not use polyethylene wrap.

Pressure test: SWS 4.15.0 and 3.01 J.

Disinfect pipelines:

SWS 4.3.12 and SWS 4.16.0.

After successful pressure test, perform bacteriological water sampling and laboratory testing following SWS 4.16.0 with Wisconsin DNR certified independent laboratory.
See 3.01 J for additional requirements.

Water wasted from pipeline that may reach bodies of surface water may not contain any substances in concentrations that adversely affect the water as determined by the Wisconsin Administrative Code NR 105 and 106. For chlorine, no total residual chlorine may be measured in water being discharged to a surface water. Advise Utility of proposed discharge schedule to arrange DNR-required measurements.

Water main tests and connections:

Perform pressure test after mains and services have been constructed. A minimum 24-hour notice must be given before pressure testing. Demonstrate to Oconomowoc Water Utility that main line and hydrant valves in test area are open.

Make no physical connection to existing water main without a safe water sample(s) from new Work. Filling of mains for chlorination will be done using hydrants. City of Oconomowoc Water Utility personnel are the only authorized individuals to operate these hydrants.

Safe water samples will be taken at locations specified by the Oconomowoc Water Utility. One working day notice must be provided to Water Utility before taking samples. Oconomowoc Water Utility or authorized personnel must be present.

Oconomowoc Water Utility must receive copies of the test results before connecting the new water main to the existing system.

After connection has been made, check all valves with Water Utility personnel to verify they are opened or closed as required.

Contact Oconomowoc Water Utility at (262) 569-3199 or fax to (262) 569-2164.

Valves to be operated by Oconomowoc Water Utility only.

Valve boxes: Initially set valve box elevation to binder course elevation. After asphalt surface course paving, adjust top-of-box flush to 1/2-inch below final grade with appropriate adjusting ring.

For connections or repairs to existing pipe, install copper jumper wire to maintain continuity of existing system and to protect employees. Install copper jumper before any physical cut is made to water main or service line.

As-built requirements. Survey elevation on top of main.

INCIDENTAL CONSTRUCTION

A. Follow Common Work Results for Utilities for:

Connecting dissimilar pipe materials.

Excavation in pavement.

Bedding.

Cover.

Backfill.

Location aids.

Insulation.

Polyethylene film.

Excess excavated material.

Surface restoration.

D Measurement

The department will measure Offset 16" Water Main for Multi-Use Tunnel as a 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.0105.801	Offset 16" Water Main for Multi-Use Tunnel	LS

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

157. Offset 16-Inch Water Main for Storm Sewer, Item SPV.0105.802.

A Description

This special provision describes the offset of a 16-Inch ductile iron water main in conflict with a proposed storm sewer. This includes all appurtenances necessary to complete this work. Perform this work in accordance to the City of Oconomowoc Specifications.

B Materials

- A. Pipe, 3-inch and larger shall be ductile iron:
 - 1. AWWA C-151, thickness Class 52 with cement lining.
 - 2. Tyton-gasketed joint pipe.
 - 3. Cable bond connectors.
 - 4. SWS 8.18.0.
- B. Fittings: SWS 8.22.0.
 - 1. Joints:
 - a. Buried: Mechanical and restrained.
 - b. In structures: Flanged.

2. Pressure rating:
 - a. Full body: 250 PSI.
 - b. Compact: 350 PSI.
3. Material:
 - a. Ductile iron:
 - 1) Class 52 wall thickness.
 - 2) Bituminous exterior coating per ANSI/AWWA C153.
 - 3) Cement lined and bituminous coated interior per ANSI/AWWA C104/A21.4.
 - 4) Cor-Blue tee bolts.

C Construction

C.1 Offset 16-Inch Water Main for Storm Sewer

WATER MAIN INSTALLATION

- A. Follow SWS Part IV except wet-tap service connections at normal operating system pressure and do not use polyethylene wrap.
- B. Bedding and cover: Sand. Use stone chips only for undercut areas. Follow SWS 4.3.3.
- C. Ductile iron: Provide electric continuity using strapping.
- D. Hydrants:
 1. Secure hydrant valves directly to main lines with anchor tee.
 2. Position to:
 - a. Provide minimum 6 foot cover over lead and 4-foot radius around barrel.
 - b. Set centerline of lowest hydrant outlet nozzle 24-inches above finish grade.
 - c. Provide 3 feet minimum separation from back-of-curb. Variances as approved by the Oconomowoc Water Utility.
 - d. Provide 4 feet unobstructed air space radius around barrel.
 - e. Set traffic 16-inch break flange at 2 to 4 inches above final grade.
 3. Install hydrant marking post after final adjustments.
 4. Use strapping for hydrant leads longer than one length of pipe.
- E. Buttresses: SWS 4.3.13.
- F. Services:
 1. Design engineer shall field stake new services' location and grade before installation.
 2. New services to be placed at the center of the buildable area of each lot.
 3. Extend water services 10 feet beyond right-of-way if requested by Electric Utility.
 4. Pressure test water services with water main.
 5. For 2-inch and smaller follow SWS Part V and:
 - a. Provide curb stop and box 1 foot outside of public right-of-way line. (2 feet off edge of sidewalk).
 - b. Provide 2 by 6-inch hardwood marker at curb box location from invert of service to 2 feet above finished grade for new services.

- c. Provide tail piece. Follow SWS File No. 51.
 - d. Bury depth from finish grade: Minimum 6 feet. Maximum 6 1/2 feet.
 - e. Allow a minimum of 4-inches of adjustment in both directions from final grade for all stop boxes. Set stop box 6 feet above top of curb stop.
 - f. Curb stop boxes installed within the sidewalk shall be removed and reinstalled per direction of Water Utility.
 - 6. For 3-inch and larger follow SWS Part IV and V and:
 - a. Provide tee connection.
 - b. Anchor valve to tee with anchor tee or strapping.
 - c. Provide plug and buttress.
 - d. Provide 2 by 6-inch hardwood marker at end of service from invert of service to 2 feet above finished grade for new services.
 - 7. Do not use polyethylene wrap.
- G. Pressure test: SWS 4.15.0 and 3.01 J.
- H. Disinfect pipelines:
- 1. SWS 4.3.12 and SWS 4.16.0.
 - 2. After successful pressure test, perform bacteriological water sampling and laboratory testing following SWS 4.16.0 with Wisconsin DNR certified independent laboratory.
 - 3. See 3.01 J for additional requirements.
- I. Water wasted from pipeline that may reach bodies of surface water may not contain any substances in concentrations that adversely affect the water as determined by the Wisconsin Administrative Code NR 105 and 106. For chlorine, no total residual chlorine may be measured in water being discharged to a surface water. Advise Utility of proposed discharge schedule to arrange DNR-required measurements.
- J. Water main tests and connections:
- 1. Perform pressure test after mains and services have been constructed. A minimum 24-hour notice must be given before pressure testing. Demonstrate to Oconomowoc Water Utility that main line and hydrant valves in test area are open.
 - 2. Make no physical connection to existing water main without a safe water sample(s) from new Work. Filling of mains for chlorination will be done using hydrants. City of Oconomowoc Water Utility personnel are the only authorized individuals to operate these hydrants.
 - 3. Safe water samples will be taken at locations specified by the Oconomowoc Water Utility. One working day notice must be provided to Water Utility before taking samples. Oconomowoc Water Utility or authorized personnel must be present.
 - 4. Oconomowoc Water Utility must receive copies of the test results before connecting the new water main to the existing system.

5. After connection has been made, check all valves with Water Utility personnel to verify they are opened or closed as required.
 6. Contact Oconomowoc Water Utility at (262) 569-3199 or fax to (262) 569-2164.
- K. Valves to be operated by Oconomowoc Water Utility only.
- L. Valve boxes: Initially set valve box elevation to binder course elevation. After asphalt surface course paving, adjust top-of-box flush to 1/2-inch below final grade with appropriate adjusting ring.
- M. For connections or repairs to existing pipe, install copper jumper wire to maintain continuity of existing system and to protect employees. Install copper jumper before any physical cut is made to water main or service line.
- N. As-built requirements. Survey elevation on top of main.

INCIDENTAL CONSTRUCTION

- A. Follow Common Work Results for Utilities for:
1. Connecting dissimilar pipe materials.
 2. Excavation in pavement.
 3. Bedding.
 4. Cover.
 5. Backfill.
 6. Location aids.
 7. Insulation.
 8. Polyethylene film.
 9. Excess excavated material.
 10. Surface restoration

D Measurement

The department will measure Offset 16-Inch Water Main for Storm Sewer as a 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.0105.802	Offset 16-Inch Water Main for Storm Sewer	LS

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

158. Architectural Concrete Sidewalk 5-Inch, Item SPV.0165.001.

A Description

This work consists of furnishing and installing colored and imprinted concrete, complete and accepted in place, including base materials, sealer and samples in accordance to standard spec 602, the plans, details, and as provided herein.

B Materials

At least 15 working days prior to the start of colored and imprinted concrete installation, supply one 4-foot x 4-foot panel sample of the colored imprinted concrete. The final color and stamp pattern is to be approved by the engineer prior to placement of any colored imprinted concrete in the field.

The concrete shall be grade A2 or grade A-FA as specified in standard spec 501.3.2.2. All colored concrete shall originate from the same batch plant.

B.1 Water Evaporative Reducer (Con Film): Use a water evaporative reducer to hold in the bleed water for the dry shake color hardener application. The water evaporative reducer shall be Dayton Superior Sure Film (J-74), Master Builders Confilm, or equal as approved by the engineer. It is recommended that the contractor confirm the type of water evaporative reducer to be used with the manufacturer of color hardener.

B.2 Dry Shake Color Hardener: Use a dry shake color hardener with a color similar to Brickform Rafco Products color #425, Autumn Brown.

B.3 Release Agent: Use a powder release agent with a color similar to Brickform Rafco Products color #300, Nutmeg.

B.4 Curing Compound: The curing compound shall meet the specifications of ASTM C 1315 Type I Class A clear non-yellowing curing compound.

B.5 Imprinting Pattern: 6"x6" cobble stone pattern applied parallel to roadway centerline.

C Construction

Apply water evaporative reducer per manufacturer's recommendations. Protect all adjoining areas of concrete. Finish concrete and apply dry shake color hardener per manufacturer's recommendations. Color hardener shall be hand-broadcasted uniformly across the concrete in two separate broadcasting operations (shakes). Two-thirds of the material shall be applied in the first shake with one-third being withheld for the second shake and final touch-up as necessary. Applications shall be made at 90 degrees to each other. The necessary moisture for wetting the color hardener must come from the concrete substrate. Adding water to the concrete surface to work in the dry shake color hardener is not permitted.

Apply release agent per manufacturer's recommendations.

Stamping method shall be per manufacturer's specified methods. Check all depths of imprints by tool to tool surface leveling.

Tooling is to be completed as stamping tools are removed following imprinting. Eliminate all squeeze joints between stamping tools, if any, with hand tools prior to concrete setting.

Remove excess release agent from the concrete 72 hours after placement using a stiff brush and a mild muratic acid solution (approximately 4 oz per 2.5 gallons water) to achieve desired color. Rinse and let dry. Apply curing compound at 350 Sq. Ft/Gal coverage rate or per manufacturer's recommendations to seal the concrete immediately after drying.

Joint the concrete in accordance to standard spec 602.3.2.5 amended as follows: Delete paragraph (10). Joints shall be sawed such that the saw joint follows the concrete pattern recess.

Architectural concrete sidewalk shall match the visual appearance of the approved referee sample. Architectural concrete sidewalk not conforming to the referee sample shall be replaced at the contractor's expense.

D Measurement

The department will not measure Architectural Concrete Sidewalk 5-Inch. The department will use pay plan quantity according to the Pay Plan Quantity article.

E Payment

The department will pay for plan quantities according to the Pay Plan Quantity article at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.001	Architectural Concrete Sidewalk 5-Inch	SF

Payment is full compensation for installation of concrete.

159. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, Item SPV.0165.106.

A Description

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

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

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

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

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

B Materials

B.1 Proprietary Mechanically Stabilized Earth Concrete Panel Wall Systems

The supplied wall system must be from the department's approved list of Concrete Panel Mechanically Stabilized Earth Wall systems (Concrete Panel MSE Walls).

Proprietary wall systems may be used for this work, but must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures, Structures Design Section. The department maintains a list of pre-approved Concrete Panel Mechanically Stabilized Earth Wall systems. To be eligible for use on this project, a system must have been pre-approved and added to that list prior to the bid opening date. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the concrete panels shall be furnished to the engineer at least 14 days prior to the start of panel production.

To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision. Applications for pre-approval may be submitted at any time. Applications must be prepared in accordance to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Structures Design Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to supply a design and supporting documentation as required by this special provision, for review by the department, to show the proposed wall design is in compliance with the design specifications. Four copies of the following shall be submitted to the engineer for review and acceptance no later than 60 days from the date of notification to proceed with the project.

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

and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the Concrete Panel MSE Wall shall be in compliance with the *AASHTO LRFD Bridge Design Specifications 5th Edition 2010*, (AASHTO LRFD) with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current *Standard Specifications for Highway and Structure Construction* (Standard Specifications), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined in accordance to Table 11.5.6-1 LRFD.

Design and construct the walls in accordance to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. Where walls or wall sections intersect with an included angle of 130 degrees or less, a vertical corner element separate from the standard panel face shall abut and interact with the opposing standard panels. The corner element shall have ground reinforcement connected specifically to that panel and shall be designed to preclude lateral spread of the intersecting panels. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the contract plans.

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

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

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

The design of the Concrete Panel Mechanically Stabilized Earth Wall by the contractor shall consider the internal and compound stability of the wall mass in accordance to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits.

Facing panels shall meet the design requirements of AASHTO LRFD 11.10.2.3. The Facing panels shall also be designed to resist compaction stresses that occur during the wall erection. The minimum thickness of the Facing panel shall be 5.5 inches. The surface area of a standard single panel cannot exceed 60 square feet. The maximum height of a standard panel shall be 5 feet. The top and bottom panels may exceed 5 foot in height based on site topography subject to the approval by the Structures Design Section. The design of the steel reinforcement within the panels shall be based on one-way bending action. Design the wall panels and joints between panels to accommodate a maximum differential settlement of 1 foot over a 100-foot length, unless the plans indicate other.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 the wall height or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 31 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 18 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

All soil reinforcement steel required for the reinforced soil zone shall be connected to the face panels. The reinforcement and the reinforcement/facing connection strength shall be designed to resist maximum factored reinforcement loads in accordance to AASHTO LRFD Section 11.10.6. Facing connection strength shall be defined as the resistance factor times the failure load, or the load at 0.5 inch deformation times 0.9, whichever is less. The nominal long term design strength in steel reinforcement and connections shall be based upon assumed conditions at the end of the design life.

Soil reinforcement shall be prefabricated into single or multiple elements before galvanizing. Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Cutting or altering of the basic structural section of either the strip or grid at the site is prohibited unless approved by the Structures Design Section. A minimum clearance of 3" shall be maintained between any obstruction and reinforcement unless otherwise approved by the Structures Design Section. Splicing steel reinforcement is not allowed, unless approved by the Structures Design Section.

MSE facing panels shall be installed on concrete leveling pads. The minimum cross section of the leveling pad shall be 6-inches deep by 1-foot wide. Potential depth of frost penetration at the wall location shall not be considered in designing the wall for depth of leveling pad.

Submit the following to the engineer for review: complete design calculations, explanatory notes, supporting materials, specifications, and detailed plans and shop drawings for the proposed wall system. Sample analyses and hand output shall be submitted to verify the

output by the software. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal stabilities as defined in AASHTO LRFD.

The wall submittal package shall be submitted electronically to the engineer and Structures Design Section. Submit all required information no later than 30 days prior to beginning construction of the wall. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls.

B.3 Wall System Components

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

B.3.1 General

The walls shall have modular precast concrete face panels produced by a wet cast process, and have cast-in-place concrete pads or footings. The concrete panels shall have a minimum strength of 4000 psi at 28 days. The concrete for the panels shall be air entrained, with an air content of 6% +/- 1.5%. All materials for the concrete mixture for the panels shall meet the requirements of standard spec 501. The panel edges shall be configured so as to conceal the joints. The detail shall be a shiplap, tongue and groove or other detail adequate to prevent vandalism or ultraviolet light damage to the backside of the wall joint covering. Joints between panels shall be no more than 0.75 inch. Use full wall height slip joints at points of differential settlement when detailed on the plan. Horizontal joints must be provided with a compressible bearing material to prevent concrete to concrete contact.

A minimum of two bearing pads shall be used per panel. The allowable bearing stress shall not exceed 900 psi. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80, or high- density polyethylene pads with a minimum density of 0.034 lb/in³ in accordance to ASTM 1505.

An 18-inch wide geotextile shall be used on the backface of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile Fabric, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

All steel portions of the wall system exposed to earth shall be galvanized. All soil reinforcement and attachment devices shall be carefully inspected to ensure they are true size and free from defects that may impair the strength and durability.

For cast in place sections of cap and coping, use poured concrete masonry Grade A, A-FA, A-S, A-T, A-IS or A-IP concrete conforming to standard specification standard spec 501 as modified in standard specification standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard specification standard spec 716, Class II Concrete.

Use a wall leveling pad that consists of poured concrete masonry, Grade A, A-FA, A-S, A-T, A-IS or A-IP concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class II Concrete.

The minimum embedment to the top of the leveling pad shall be 1 foot 6 inches or as given on the contract plan. Step the leveling pad to follow the general slope of the ground line. The leveling pad's steps shall keep the bottom of the wall within one half the panel heights of the minimum embedment i.e. the minimum embedment plus up to one half the height of one panel. Additional embedment may be detailed by the contractor, but will not be measured for payment.

B.3.2 Backfill

Furnish and place backfill for Concrete Panel MSE Walls as shown on the plans and as hereinafter provided.

Provide and use backfill that consists of natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. It shall not contain foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

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

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

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

In addition, backfill material shall meet the following requirements:

Test	Method	Value
pH	AASHTO T-289	5 – 10.0
Sulfate content	AASHTO T-290	200 ppm max.
Chloride content	AASHTO T-291	100 ppm max.
Electrical Resistivity	AASHTO T-288	3000 ohm/cm min.
Organic Content	AASHTO T-267	1.0% max.
Angle of Internal Friction	AASHTO T-236*	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2.)

*If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

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

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

C Construction

C.1 Excavation and Backfill

Excavation will encompass preparing the leveling pad foundation and the area below the reinforcing strips in accordance to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil

or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

C.2 Compaction

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99, or as modified as follows. If the gradation of the granular backfill is such that the P-200 material is less than 7% and the P-40 is less than 30%, a one-point Proctor test can be conducted in place of the 5-point Proctor. To complete this one-point test, compact the sample at a moisture content of 6%, then compute the actual (as-tested) sample moisture after completion of the test. Use Method B or D, and perform this test without removing oversize particles and without correction for coarse particles, as per AASHTO T224. The one-point as-tested moisture content represents the optimum moisture, and the measured one-point density represents the maximum wet density of the material. From these values, the maximum dry density can be computed.

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

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

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

C.3 Panel Tolerances

As backfill material is placed behind a panel, maintain the panel in its proper inclined position according to the supplier specifications and as approved by the engineer. The supplier shall specify the back batter so that the final position of the wall is vertical. Vertical tolerances and horizontal alignment tolerances shall not exceed 3/4-inch when measured along a 10-foot straight edge. The maximum allowable offset in any panel joint shall be 3/4-inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed 1/2-inch per 10 feet of wall height. Erect the precast face panels to ensure that they are located within 1 inch from the contract plan offset at any location to ensure proper wall location at the top of the wall. Provide a 3/4-inch joint separation between all adjacent face panels to prevent direct concrete-to-concrete contact. Maintain this gap by the use of bearing pads and/or alignment pins. Failure to meet this tolerance shall cause the engineer to require the contractor to disassemble and re-erect the affected portions of the

wall. In addition, imperfect molding, honeycombing, cracking or severe chipping of panels shall be cause of panel rejection.

C4 Quality Management Program

C.4.1 Quality Control Plan

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

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

An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.

The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.

A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.

Descriptions of stockpiling and hauling methods.

An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

Location of the QC laboratory, retained sample storage, and other documentation.

A summary of the locations and calculated quantities to be tested under this provision.

C.4.2 Quality Control Personnel

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

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

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices

to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at <http://www.atwoodsystems.com/materials>. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D 6938 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department

C.4.4 Quality Control (QC) Testing

Perform compaction testing on the backfill. Conform to CMM 8.15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2000 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.5 Department Testing

C.4.5.1 General

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

C.4.5.2 Quality Verification (QV) Testing

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

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

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.5.3 Independent Assurance (IA)

(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:

Split sample testing.

Proficiency sample testing.

Witnessing sampling and testing.

Test equipment calibration checks.

Reviewing required worksheets and control charts.

Requesting that testing personnel perform additional sampling and testing.

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.5.4.

C.4.5.4 Dispute Resolution

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

testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

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

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

C.5 Geotechnical Information

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

D Measurement

The department will measure Wall Concrete Panel Mechanically Stabilized Earth Wall by the square foot, acceptably completed, measured as the vertical area within the pay limits the contract plans show. No other measurement of quantities shall be made in the field. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.106	Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional system including cap and copings; constructing the retaining system including drainage system; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, performing compaction testing. Parapets, railings, abutment bodies and other items above the wall cap or coping will be paid for separately. Vehicle barrier and its support will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively.
(20140716)

160. Wall Modular Block Mechanically Stabilized Earth LRFD, Item SPV.0165.107.

A Description

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

B Materials

B.1 Proprietary Mechanically Stabilized Earth Modular Block Wall Systems

The supplied wall system must be from the department's approved list of modular block mechanically stabilized earth wall systems.

Proprietary wall systems may be used for this work, but must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures, Structures Design Section. The department maintains a list of pre-approved systems of retaining walls. To be eligible for use on this project, a system must have been pre-approved and added to that list prior to the bid opening date. The name of the companies supplying pre-approved material shall be furnished within 25 days after the award of contract.

Applications for pre-approval may be submitted at any time. Applications must be prepared in accordance to the requirements of current Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Structures Design Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to supply a design and supporting documentation as required by this special provision for review by the department to show the proposed wall design is in compliance with the design specifications.

The design/shop plans shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the project identification number and structure number. Design calculations and notes shall be on 8 1/2 inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The wall shall be designed for the heights shown on the plans. The design shall be in compliance with the *AASHTO LRFD Design Specifications 5th Edition 2010* (AASHTO LRFD) with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current *Standard Specifications for Highway and Structure Construction* (Standard Specifications), Chapter 14 of the WisDOT LRFD Bridge Manual and standard design procedures as determined by the department. Loads, load combinations and load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined in accordance to Table 11.5.6-1 in AASHTO LRFD.

The design shall include a minimum overburden surcharge of 100 psf in accordance to Chapter 14 of the WisDOT LRFD Bridge Manual or as shown on the plans. The maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations is performed by the department or its design consultant and the Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing check is provided by the department or its consultant and shown on the plans.

The design of the Wall Modular Block Mechanically Stabilized Earth shall consider the internal stability of the wall mass (tensile stress, pullout resistance, and tensile stress at the connection with the facing) within each layer of reinforcement for the applicable strength limit and extreme event limit states. Maximum factored loads applied to reinforcements for pullout and the connection to the wall face shall be calculated using the Simplified Method or Coherent Gravity Method, as presented in AASHTO LRFD. In addition, compound stability shall be computed for the applicable strength limit and extreme event limit states in accordance to AASHTO LRFD.

The minimum embedment to the top of the leveling pad shall be as specified in the plans. Potential depth of frost penetration at the wall location shall not be considered in designing the wall for depth of leveling pad.

100% of the soil reinforcement shall be connected to the wall facings. The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height or as shown on the plans. In no case shall this length be less than 6 feet. The soil reinforcement shall extend a minimum of 3 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be two times the block depth (front face to back face) or 32 inches, whichever is less. The first (bottom) layer of reinforcement shall be placed no further than 12 inches above the top of the leveling pad or the height of the block, but at least one block height above the leveling pad. The last (top) layer of soil reinforcement shall be no further than 21 inches below the top of the uppermost block.

Submit the following to the engineer for review: complete design calculations, explanatory notes, supporting materials, specifications, and detailed plans and shop drawings for the proposed wall system. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal stabilities as defined in AASHTO LRFD.

The wall submittal package shall be submitted electronically to the engineer and Structures Design Section. Submit all required information no later than 30 days prior to beginning construction of the wall. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls.

B.3 Wall System Components

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

B.3.1 Leveling Pad

The leveling pad shall step to follow the general slope of the ground line. The leveling pad steps shall keep the bottom of the wall below the minimum embedment. Additional embedment that is greater than the minimum embedment will not be measured for payment. The leveling pad shall be as wide as the proposed blocks or a minimum of 12 inches, whichever is greater. The bottom row of blocks shall be horizontal and 100% of the block surface shall bear on the leveling pad.

Provide a 6 inches deep by 12 inch (minimum) wide wall leveling pad that consists of poured concrete masonry, Grade A , A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard specification. A concrete leveling pad shall be provided in following scenarios:

- a. When the wall height measured from the top of the leveling pad to the top of the wall exceeds 5 feet at any point along the entire wall length.
- b. A structure number has been assigned (such as R-XX-XXX), regardless of wall height.

Additionally, for walls that are less than or equal to 5 feet in height and do not have a wall number assigned to them, a compacted 1 foot deep by 2 foot wide leveling pad made from base aggregate dense 1 1/4-inch in conformance with standard spec 305 may be used.

B.3.2 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are cracked, chipped, or have other imperfections in accordance to ASTM C1372, or have excessive efflorescence shall not be used within the wall. A single block type and style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan or chosen by the engineer.

The top course of facing units shall be a solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material. A formed cast-in-place concrete cap may also be used to finish the wall. A cap of this type shall be designed to have texture, color, and appearance that complement the remainder of the wall. The vertical dimension of the cap shall not be less than 3 1/2 inches. Expansion joints shall be placed in the cap to correspond with each 24 inch change in vertical wall height and at maximum spacing of 10 feet. Concrete for all cast-in-place caps shall be Grade A and shall conform to the requirements of standard spec 501.

Block dimensions may vary no more than $\pm 1/8$ inch from the standard values published by the manufacturer in accordance to ASTM C1372. Blocks must have a minimum depth (front face to back face) of 12 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is 1 3/4 inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

Cementitious materials and aggregates for modular blocks shall conform to the requirements of ASTM C1372 Section 4.1 and 4.2. Modular blocks shall meet the following requirements.

Test	Method	Requirement
Compressive Strength (psi)	ASTM C140	5000 min.
Water Absorption (%)	ASTM C140	6 max.
Freeze-Thaw Loss (%)	ASTM C1262 ^[1]	
40 cycles, 5 of 5 samples		1.0 max. ^[2]
50 cycles, 4 of 5 samples		1.5 max. ^[2]

^[1] Test shall be run using a 3% saline solution.

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

All blocks shall be certified as to strength, absorption, and freeze-thaw requirements unless, due to contract changes after letting, certified blocks are not available when required. At the time of delivery of certified blocks, furnish the engineer a certified test report from a department-approved independent testing laboratory for each lot of modular blocks. The certified test report shall clearly identify the firm conducting the sampling and testing, the type of block, the date sampled, the name of the person who conducted the sampling, the represented lot, the number of blocks in the lot, and the specific test results for each of the stated requirements of this specification. The tests should have been conducted not more than 18 months prior to delivery. A lot shall not exceed 5000 blocks or fraction thereof produced in day. The certified test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without

supporting certified test reports will be rejected and shall be removed from the project at no expense to the department.

A department-approved independent testing laboratory shall control and conduct all modular block sampling and testing for certification. Prior to sampling, the manufacturer's representative shall identify all pallets of modular blocks contained in each lot. All pallets of blocks within the lot shall be numbered and marked to facilitate random sample selection.

The representative of the independent testing laboratory shall identify five pallets of blocks by random numbers and shall then select one block from each of these pallets. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. At no expense to the department, the contractor shall remove all rejected blocks from the project.

The department may conduct testing of certified or non-certified modular blocks lots delivered to the project. The department will not conduct freeze-thaw testing on blocks less than 45 days old. If a random sample of five blocks of any lot tested by the department fails to meet any of the requirements of this specification (nonconforming), the contractor shall remove from the project site all blocks from the failed lot not installed in the finished work at no cost to the department, unless the engineer allows otherwise. Nonconforming blocks installed in the finished work will be considered approved by the department as stated in standard spec 106.5(2) and any adjustment to the contract price will not exceed the price of the blocks charged by the supplier.

B.3.3 Geogrids

Geogrid supplied as reinforcing members shall be manufactured from long chain polymers limited to polypropylene, high-density polyethylene, polyaramid, and polyester. Geogrids shall form a uniform rectangular grid of bonded, formed, or fused polymer tensile strands crossing with a nominal right angle orientation. The minimum grid aperture shall be 0.5 inch. The geogrid shall maintain dimension stability during handling, placing, and installation. The geogrid shall be insect, rodent, mildew, and rot resistant. The geogrid shall be furnished in a protective wrapping that shall prevent exposure to ultraviolet radiation and damage from shipping or handling. The geogrid shall be kept dry until installed. Each roll shall be clearly marked to identify the material contained.

The wall supplier shall provide the nominal long-term design strength (T_{al}) and nominal long-term connection strength, T_{alc} as discussed below.

Nominal Long-Term Design Strength (T_{al})

The wall supplier shall supply the nominal long-term design strength (T_{al}) used in the design for each reinforcement layer and shall be determined by dividing the Ultimate Tensile Strength (T_{ult}) by the factors RF_{ID} , RF_{CR} , RF_D .

Hence,

$$T_{al} = \frac{T_{ult}}{RF_{ID} \times RF_{CR} \times RF_D}$$

where:

- T_{ult} = ultimate tensile strength of the reinforcement determined from wide width tensile tests (ASTM D6637) for geogrids based on the minimum average roll value (MARV) for the product
- RF_{ID} = strength reduction factor to account for installation damage to the reinforcement. In no case shall RF_{ID} be less than 1.1.
- RF_{CR} = strength reduction factor to prevent long-term creep rupture of the reinforcement. In no case shall RF_{CR} be less than 1.2.
- RF_D = strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation. In no case shall RF_D be less than 1.1.

Values for RF_{ID} , RF_{CR} , and RF_D shall be determined from product specific test results. Guidelines for determining RF_{ID} , RF_{CR} , and RF_D from product specific data are provided in FHWA Publication No. FHWA-NHI-10-024 and FHWA –NHI-10-025 “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes”.

Nominal Long-term Connection Strength T_{ac}

The nominal long term connection strength, T_{ac} , shall be based on laboratory geogrid connection tests between wall facing and geogrids. T_{ac} shall be as given below

$$T_{ac} = \frac{T_{ult} * CR_{cr}}{RF_D}$$

where:

- T_{ac} = nominal long-term reinforcement facing connection strength per unit reinforcement width at a specified confining pressure
- T_{ult} = ultimate tensile strength of the reinforcement for geogrids defined as the minimum average roll value (MARV) for the product
- CR_{cr} = long term connection strength reduction factor to account for reduced ultimate strength resulting from connection.

RF_D = strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation.

T_{ac} shall be developed from the tests conducted by an independent laboratory on the same facing blocks and geogrids as proposed for the wall and shall cover a range of overburden pressures comparable to those anticipated in the proposed wall. The connection strength reduction factor CR_{cr} shall be determined in accordance to long-term connection test as described in Appendix B of FHWA Publication No. FHWA-NHI 10-025 "Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes". CR_{cr} may also be obtained from the short term connection test meeting the requirements of NCMA test method SRWU-1 in Simac et al 1993 or ASTM D4884.

The contractor shall provide a manufacturer's certificate that the Tult (MARV) of the supplied geogrid has been determined in accordance to ASTM D4595 or ASTM D6637 as appropriate. Contractor shall also provide block to block and block to reinforcement connection test reports prepared and certified by an independent laboratory. Also provide calculations in accordance to AASHTO LRFD, and using the results of laboratory tests, that the block-geogrid connections shall be capable of resisting 100% of the maximum tension load in the soil reinforcements at any level within the wall, for the design life of the wall system.

B.3.4 Galvanized Metal Reinforcement

In lieu of polymeric geogrid earth reinforcement, galvanized metal reinforcement may be used. Design and materials shall be in accordance to Section 11.10.6.4.2 of the current *AASHTO LRFD Specifications*. The design life of steel soil reinforcements shall also comply with AASHTO LRFD.

B.3.5 Pins

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

B.3.6 Backfill Materials

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate No. 1 as given in standard spec 501.2.5.4.4. All backfill placed within a zone from the base of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

Wall Backfill, Type B, shall comply with the requirements for Grade 1 Granular Backfill as contained in standard spec 209.2.2. All backfill placed in a zone extending horizontally from 1 foot behind the back face of the wall to 1 foot beyond the end of the reinforcement and extending vertically from the base of the leveling pad to the top of the final layer of all facing units shall be Wall Backfill, Type B.

Backfill within the reinforced zone shall meet the following requirements:

Test	Method	Value
pH	AASHTO T-289	4.5 – 9.0
Sulfate content ¹	AASHTO T-290	200 ppm max.
Chloride content ¹	AASHTO T-291	100 ppm max.
Electrical Resistivity ¹	AASHTO T-288	3000 ohm/cm min.
Angle of Internal Friction	AASHTO T-236	30 degrees min.
Organic Content ¹	AASHTO T-267	1.0% max.

^[1] Requirement does not apply to walls with non-metallic reinforcement.

Prior to placement of the backfill, obtain and furnish to the engineer certified report of test results that the backfill material complies with the requirements of this specification. When backfill characteristics and/or sources change, a certified report of tests must be provided for the new backfill material.

All other backfill materials required to finish the wall and restore the ground surface may be select material available on the project that meets the engineer's approval.

C Construction

C.1 General

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

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

All excavation for the Wall Modular Block Mechanically Stabilized Earth shall conform to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back face of the wall.

C.2 Backfill

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

with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Compact wall backfill Type B as specified in standard spec 207.3.6. Compact Wall Backfill Type B to 95.0% of maximum density as determined by AASHTO T-99, Method C. Perform compaction testing on the backfill. When performing nuclear testing, use a nuclear gauge from the department's approved list, ensure that the operator is a HTCP certified Nuclear Density Technician I, and conform to CMM 8.15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 2 feet of vertical wall height, per 200 feet length of wall, or major portion thereof. A minimum of one test for every 2-foot layer of vertical wall height is required. Test sites shall be selected using ASTM Method D3665. Deliver documentation of all compaction testing results to the engineer at the time of testing.

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

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

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

C.3 Soil Reinforcement

Place soil reinforcement at the positions and to the lengths as indicated on the accepted shop drawings. Take care that backfill placement over the positioned soil reinforcement elements does not cause damage or misalignment of these elements. Correct any such damage or misalignment as directed by the engineer. Do not operate wheeled or tracked equipment directly on the soil reinforcement. A minimum cover of 6 inches is required before such operation is allowed.

C.4 Geogrid Layers

Place and anchor geogrid material between wall unit layers in the same manner as used to determine the Geogrid Block-to-Connection Strength. Place the grid material so that the machine direction of the grid is perpendicular to the wall face. Each grid layer shall be continuous throughout the lengths indicated on the plans. Join grid strips with straps, rings, hooks or other mechanical devices to prevent movement during backfilling operations. Prior to placing backfill on the grid, pull the grid taut and hold in position with pins, stakes or other methods approved by the engineer.

C.5 Steel Layers

Place the steel reinforcement full width in one piece as shown on the plans. No splicing will be allowed. Maintain elements in position during backfilling.

C.6 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completion of wall excavation, notify the department and allow two days for the Regional Soil Engineer to review the foundation.

D Measurement

The department will measure Wall Modular Block Mechanically Stabilized Earth LRFD in area by the square foot, acceptably completed, measured as the vertical area within the pay limits the contract plan show. No other measurement of quantities shall be made in the field unless the engineer directs in writing a change to the limits indicated on the contract plans.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.107	Wall Modular Block Mechanically Stabilized Earth LRFD	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of surplus materials; supplying all necessary wall components to produce a functional system including cap, copings and leveling pad; constructing the retaining system and wall drainage systems if applicable; and for providing backfill, backfilling and compacting, and performing compaction testing. Parapets, railings, and other items above the wall cap or coping will be paid for separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively.
LRFD 532-031S (071612)

161. Concrete Staining Roadway, Item SPV.0165.108.

A Description

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

B Materials

B.1 Mortar

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

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

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

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

B.2 Concrete Stain

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

Tri-Sheen Concrete Surfacers, Smooth by TK Products
Tri-Sheen Acrylic by TK Products
TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products
Safe-Cure and Seal EPX by Chem Masters
H&C Concrete Stain Solid Color Water Based by Sherwin-Williams

C Construction

C.1 General

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

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

C.2 Preparation of Concrete Surfaces

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

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

C.3 Staining Concrete Surfaces

Apply the concrete stain in accordance to the manufacturer's recommendations.

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

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

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

C.4 Test Areas

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

C.5 Surfaces to be Coated.

Apply concrete stain to the surfaces in accordance to the plan.

D Measurement

The department will measure Concrete Staining Roadway in area by the square foot of surface, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.108	Concrete Staining Roadway	SF

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

162. Concrete Staining Multi-Color Roadway, Item SPV.0165.109.

A Description

Furnish and apply a multi-color concrete stain to the exposed face of the special concrete barrier, as detailed in the plans and as hereinafter provided.

B Materials

B.1 Mortar

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

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

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

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

B.2 Concrete Stain

Use concrete stain manufactured for use on exterior concrete surfaces. Use the following products, or equal as approved by the department:

Tri-Sheen Concrete Surfer, Smooth by TK Products
Tri-Sheen Acrylic by TK Products
TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products
Safe-Cure and Seal EPX by Chem Masters
H&C Concrete Stain Solid Color Water Based by Sherwin-Williams

C Construction

C.1 General

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

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

C.2 Preparation of Concrete Surfaces

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

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

C.3 Staining Concrete Surfaces

Apply the concrete stain in accordance to the manufacturer's recommendations.

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

The color of the staining shall produce a multi-color effect that consists of multiple colors replicating varying natural stone coloration. Stain the joints between stones produced by the form liner to create the appearance of grouted joints.

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

C.4 Test Areas

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

C.5 Surfaces to be Coated.

Apply concrete stain to the surfaces in accordance to the plan.

D Measurement

The department will measure Concrete Staining Multi-Color Roadway in area by the square foot of surface, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.109	Concrete Staining Multi-Color Roadway	SF

Payment is full compensation for furnishing and applying the coloring system; for preparing the concrete surface; and for constructing and staining the sample panels.

163. Architectural Surface Treatment Roadway, Item SPV.0165.110.

A Description

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

B Materials

Use form liners that attach easily to the forming system, and do not compress more than 1/4-inch when poured at a rate of 10 vertical feet/hour.

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

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

C Construction

C.1 Equipment

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

C.2 Form Liner Preparation

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

Apply form release per manufacturer’s recommendations.

C.3 Form Liner Attachment

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

C.4 Surface Finishing

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

Grind or fill pouring blemishes.

D Measurement

The department will measure Architectural Surface Treatment Roadway in area by the square foot of architectural surface, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.110	Architectural Surface Treatment Roadway	SF

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

164. Install 4-Inch Foam Board Over Crossing, Item SPV.0165.801.

A Description

This special provision describes the installation of installing 4-Inch foam board over crossing. Install 4-Inch foam board over water main where the proposed storm sewer crosses the water main. Perform this work in accordance to the City of Oconomowoc Specifications.

B Materials

Furnish 4-Inch foam board, also called blue board.

C Construction

C.1 Install 4-Inch Foam Board Over Crossing

Install 4-Inch foam board over water main where the proposed storm sewer crosses the water main.

D Measurement

The department will measure Install 4-Inch Foam Board Over Crossing in square feet, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.801	Install 4-Inch Foam Board Over Crossing	SF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

165. Proof Rolling, Item SPV.0170.701.

This special provision article applies only to Project 2718-00-74.

A Description

This special provision describes the testing of the stability of the compacted subgrade and base material by rolling with a tri-axle dump truck.

B Equipment

Fully load a tri-axle dump truck to within 3 tons of the vehicle legal load limit and provide a minimum gross vehicle weight of 30 tons. Uniformly inflate all tires to the pressure recommended by the manufacturer for the applicable wheel load.

C Construction

Completely compact and shape the subgrade to approximate grade. Test roll at normal walking speed under the direction of the engineer or his representative.

Roll the road subgrade and base across the width of the entire roadway. Make multiple passes throughout the length of the test area. Center each pass on a proposed lane or applicable parking lane.

Excavation and backfill are paid for under other bid items.

D Measurement

The department will measure Proof Rolling by the station along the roadway centerline or reference line, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0170.701	Proof Rolling	STA

Payment is full compensation for performing the Proof Rolling and for retesting as determined by the engineer.

166. Topsoil Special, Item SPV.0180.002.

A Description

This special provision section describes furnishing, placing, spreading, and finishing humus-bearing soil, adapted to sustain plant life, commonly known as topsoil, from locations the contractor furnishes beyond the limits of the right-of-way.

This special provision also describes removing topsoil from the sites of proposed roadway excavations and embankments in amounts and depths available and necessary to cover the work slopes. This work also includes reclamation, placing, spreading, and finishing of this topsoil.

B Materials

Furnish material that is relatively free from large roots, sticks, weeds, brush, stones, litter, and waste products.

Furnish material, either obtained offsite, or material obtained within project limits, consisting of loam, sandy loam, silt loam, silty clay loam, or clay loam humus-bearing soils adapted to sustain plant life. Do not use surface soils from ditch bottoms, drained ponds, and eroded areas, or soils which are supporting growth of NR 40 listed plants and noxious weeds or other undesirable vegetation. Ensure that the material conforms to the following:

Topsoil Requirements	Minimum Range	Maximum Range
Material Passing 2.00 mm (#10) Sieve*	90%	100%
PH Range	6.0	7.0
Organic Matter**	5%	20%
Clay	5%	30%
Silt	10%	70%
Sand and Gravel	10%	70%

*See standard spec 625.3.3 for sieve requirements when using either sod or seed mixture 40.

**Organic matter determined by loss on ignition test of samples oven dried to constant weight at 212 F (100 C).

C Construction

C.1 Preparing the Roadway for Topsoil

Undercut or underfill all areas designated to receive topsoil to a degree that if covered to the required depth with topsoil the finished work conforms to the required lines, grades, slopes and cross sections the plans and drawings show.

C.2 Processing Topsoil

Mow topsoil procurement areas to a height of approximately 6 inches. Remove litter such as brush, rock, and other materials that will interfere with subsequent vegetation establishment.

Strip off the humus-bearing soil. Take care to minimize removing the underlying sterile soil. Then stockpile the topsoil on the right-of-way or place it directly on the designated areas.

Obtain topsoil from embankment areas outside the roadway foundation only if that additional material is required to cover the slopes, and conforms to the requirements of section B above. Utilize excess topsoil on the project or dispose of as specified in standard spec 205.3.12.

C.3 Placing Topsoil

After preparing and finishing the areas designated for topsoil to the required lines, grades, slopes and cross section, place and spread the topsoil to a uniform depth as the plans show or the contract requires. If no depth is shown, place and spread the topsoil to a minimum depth of 4 inches in rural areas and a minimum depth of 6 inches in urban areas, or as the engineer designates.

Break down all clods and lumps using appropriate equipment to provide a uniformly textured soil.

Where using either sod or seed mixture 40 ensure that, for the upper 2 inches, 100 percent of the material passes a one-inch sieve and at least 90 percent passes the No. 10 sieve.

Remove rocks, twigs, foreign material, and clods that cannot be broken down. Dress the entire surface to present a uniform appearance. The engineer will not require rolling.

If light sandy soils are covered with heavier clay bearing loam topsoil, then mix or blend the two types of soils to a more or less homogeneous mixture by using the appropriate equipment.

D Measurement

The department will measure Topsoil Special by the square yard, acceptably completed. The measured quantity shall equal the actual number of square yards of topsoiled area to the depth specified within the limits of construction designated on the plans, or in the contract, or as the engineer directs.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.002	Topsoil Special	SY

Payment for Topsoil is full compensation for removing, stockpiling, reclaiming, providing, processing, excavating, loading, hauling, and placing this material; and for undercutting excavations, or underfilling embankments necessary to receive this material. The department will make no allowance, adjustment, or measurement for payment under the Excavation bid items for undercutting cut sections, underfilling embankments, or deductions for materials obtained from areas of cut sections.

If an area is damaged by erosion after partial acceptance, the department will pay for restoring topsoil in these areas at a unit price determined by multiplying the contract unit price bid for Topsoil multiplied by 3. The department will pay for restoration under the Restoration Post Acceptance Topsoil administrative item.

The department will not pay for removing topsoil from outside the roadway foundation in embankment areas unless that material is necessary to cover the slopes.

SEF Rev.13_0626

167. Temporary Crosswalk/Sidewalk, Item SPV.0180.003.

A Description

Work under this item consists of furnishing, maintaining, moving, and removing material at locations where temporary crosswalks, sidewalks, and multi-use paths are maintained as designated by the engineer and as shown on the plans. Provide a temporary walkway or path; consisting of existing pavement, new pavement, or temporary surface material; constructed to match the width of the existing facility being maintained; located outside the immediate work area as approved by the engineer and as shown on the plans; and meets the requirements of the current Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Reconstruct or move the temporary crosswalk/sidewalk if required for work operations.

B Materials

Provide a hard temporary surface material approved by the engineer, of either asphalt (2" minimum) or concrete (4" minimum) in accordance to the pertinent sections of the standard specifications for these items, skid resistant steel plating, or alternative material as approved by engineer. Gravel or base course material is not acceptable.

C Construction

Construct temporary crosswalk/sidewalk with a maximum 1.5 percent cross slope. Level and compact the base prior to placing surface material.

D Measurement

The department will measure Temporary Crosswalk/Sidewalk by the square yard of hard temporary surface material, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.003	Temporary Crosswalk/Sidewalk	SY

Payment is full compensation for furnishing, loading, and hauling; for excavation and preparing the foundation; for placing, maintaining, removing, and restoring the temporary site; for reconstructing or moving; and for providing a hard temporary surface material.

168. Hydromulching, Item SPV.0180.701.

This special provision article applies only to Project 2718-00-74.

A Description

This special provision describes the furnishing and installing of a hydromulch cover.

B Materials

Furnish hydraulically applied wood fiber or wood fiber blend mulch.

C Construction

Apply hydromulch and a tackifier over seeded areas using sprayed water at a rate to produce a mulch coverage of uniform depth following manufacturer's instructions. Blow from a machine over the designated area at a rate of 1800-2000 lb/acre. Protect seeded areas to prevent damage to completed installation. Seed may be hydraulically applied as part of the hydromulching process.

D Measurement

The department will measure Hydromulching by the square yard, acceptably completed. All seed installed as part of this work will be measured and covered under Bid Item 630.0140 Seeding Mixture No. 40.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.701	Hydromulching	SY

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

169. Cold Patch, Item SPV.0195.001.**A Description**

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

B Materials**B.1 General**

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

B.2 Gradations

Conform to the following gradation requirements:

SIEVE SIZE	PERCENT PASSING (by weight)
3/8 Inch (9.5mm)	96 - 100
No. 4 (4.75 mm)	76 - 82
No. 8 (2.38mm)	50 - 60
No. 50 (.297mm)	15 - 20
No. 200 (.074mm)	2 - 5
Bitumen	4.8 - 5.2

C Construction**C.1 General**

Choose a smooth, firm, and well-drained area for an on-site stockpile that is cleared of vegetation and foreign material that may contaminate the cold patch. Make the stockpile easily accessible, maintainable and replenishable at any time during the project. The stockpile is not to exceed 10 tons on site at any given time unless approved by the engineer. Remove and dispose of any unused portions of the stockpile at the completion of the project unless otherwise directed by the engineer. Complete this work at no additional expense to the department.

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

D Measurement

The department will measure Cold Patch by the ton stockpiled on site, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.001	Cold Patch	Ton

Payment for cold patch is full compensation for the patch; furnishing and providing a stockpile of material; preparing the pothole/void for material placement, stockpiling, placing, compacting, and maintenance. Payment includes compensation for any unused stockpile quantities remaining on site at the completion of the project.

SEF Rev. 13_0814

170. Manhole Repair, Item SPV.0200.701.

A Description

This special provision describes repair of existing sanitary or storm manholes by removing existing rings or bricks and replacing them with new rings. This does not include the work performed under the bid items "Adjusting manhole cover" or "adjusting sanitary manhole cover." This repair work shall not include replacement of any precast cone or barrel sections. Perform this work in accordance to standard spec 611 and as hereinafter provided.

B Materials

Furnish concrete adjusting rings from a department-approved source; rings shall match the dimensions of existing rings and/or manhole castings. Reinforce concrete rings with one line of steel centered within the ring.

C Construction

C.1 Sanitary Manhole Repair

Set adjusting rings with both butyl rubber sealant and non-shrink grout as follows. Use EZ-Stik, Kent-Seal, or approved equal butyl base sealant in trowelable grade or equal butyl rubber sealant and apply in a 1/4" thick layer to the outside 1" of the 6" wide horizontal surface of all adjusting rings and cone section. Apply a non-shrink grout in a 1/4" thick layer to the remaining 5" of inside horizontal surface of all adjusting rings and cone section.

Furnish and use non-shrink grout that is a premixed, non-metallic, cementitious, control expansion, high strength, versatile grout: PenngROUT by IPA Systems, Inc. or equal.

Cover the entire outside surface of the manhole chimney, including all adjusting rings, and overlap both the manhole cone or flat-top slab (a minimum of 4") and the manhole frame with the minimum 1/4" thick coating of butyl rubber sealant. The butyl rubber sealant shall be EZ-stick, Kent-Seal, or approved equal butyl base sealant in trowelable grade or equal.

C.2 Storm Manhole Repair

Perform this work in accordance to standard spec 611

D Measurement

The department will measure Manhole Repair by the vertical foot of manhole repaired, 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.0200.701	Manhole Repair	VF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

171. New Sanitary Sewer Manhole, Item SPV.0200.801.

A Description

This special provision describes the installation of new 48" Sanitary Sewer Manholes. This manhole will be completed in conjunction with the new sanitary sewer. The new sanitary sewer will replace the sanitary sewer in conflict with proposed Pond #6. Perform this work in accordance to the City of Oconomowoc Specifications.

B Materials

A. Structures:

1. Manholes: SWS 3.5.0. and 8.39.0.
2. Steps:
 - a. Follow SWS 3.5.4.(g).
 - b. Epoxy coated steel.
3. Frame:
 - a. SWS File No. 14A.
 - b. Neenah 1550 heavy.
 - c. Follow Exhibit SAN-03.
4. Cover: Self sealing, concealed pick hole, no vents. Follow Exhibit SAN 03 of "City of Oconomowoc Specifications".
 - a. Neenah 1050-5210
 - b. Marked "Sanitary".
 - c. Manhole adjusting rings (steel riser) not allowed.

5. Bolt-down frame/cover: SWS File No. 32 except use Neenah 1916C. Use bolt down cover for manholes located on private property, outlots or as directed by city.
6. Frame/chimney seal: Internal/External Adaptor Seal by Adaptor, Inc.
7. Pipe to manhole connection: Follow SWS 3.5.7. up to 21-inch pipe.
8. Pipe to manhole seal: 24-inches and larger, use NPC Contour Seal.
9. Frame and chimney sealants: SWS 8.42.0.
10. Flat decks - HS20 loading.
11. Mastic: Trowable Tremco-60.
12. Provide one green fiberglass post 4 feet high for manholes in easements (part No.USA Bluebook 70457).
13. XYPEX admixture may be required at city direction, based on anticipated exposure to hydrogen sulfide.

C Construction

C.1 New Sanitary Sewer Manhole

GRAVITY SANITARY SEWER INSTALLATION

- A. Before starting, bulkhead and/or plug the connection to existing sewer. Leave in place until new sewer has been cleaned and accepted. No break-in connects allowed. All connections shall be a water tight connection.
- B. Bedding and cover:
 1. Stone ships.
 2. Follow SWS 3.2.6(b) Class B.
- C. Follow SWS Part III.
- D. Structures:
 1. Do not locate steps over pipe wall penetrations. Follow SWS File No. 13.
 2. Wrap external surface of all joints below the water table with MAC wrap.
 3. Exterior chimney treatment:
 - a. Provide 1/4-inch minimum thickness, trowelable mastic extending over chimney joints and frame.
 - b. Provide plastic wrap (4 mils minimum) around all mastic areas before backfilling.
 4. Do not backplaster chimney interiors.
 5. Pour benches to springline.
 6. Fill void above manhole pipe boot with mastic and towel mortar in place.
 7. Set manhole rims to 0 to 1/4-inch below final finish grade.
 8. Do not use wood shims.
 9. Place 10-foot radius ramp around manholes when binder course is placed.
 10. Manhole Vacuum testing:
 - a. Test time of mercury drop from 10-inches to 9-inches.
 - b. Follow SWS 3.7.6.
 - c. Test before placing frame.

11. Internal/External seal testing:
 - a. Test all internal seals prior to final completion.
 - b. Pour one gallon of dyed water into top of seal.
 - c. Seal must hold for minimum of one minute.
 - d. Retest until seal passes test.
 - e. Allow city to witness testing of seals.

INCIDENTAL CONSTRUCTION

- A. Follow Common Work Results for Utilities for:
 1. Connecting dissimilar pipe materials.
 2. Excavation in pavement.
 3. Bedding.
 4. Cover.
 5. Backfill.
 6. Location aids.
 7. Insulation.
 8. Polyethylene film.
 9. Excess excavated material.
 10. Surface restoration.

D Measurement

The department will measure New Sanitary Sewer Manhole in vertical feet, and accepted by the city engineer.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0200.801	New Sanitary Sewer Manhole	VF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

**ADDITIONAL SPECIAL PROVISION 1 (ASP 1)
FOR TRANSPORTATION ALLIANCE FOR NEW SOLUTIONS (TrANS)
PROGRAM EMPLOYMENT PLACEMENTS AND APPRENTICESHIPS**

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Section 5204(e) – Surface Transportation Workforce Development Training and Education, provides for 100 percent Federal funding if the core program funds are used for training, education, or workforce development purposes, including “pipeline” activities. The core programs includes: Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Highway Bridge Program (HBP), Interstate Maintenance (IM), National Highway System (NHS), and Surface Transportation Program (STP). These workforce development activities cover surface transportation workers, including OJT/SS programs for women and minorities as authorized in 23 U.S.C. §140(b).

TrANS is an employment program originally established in 1995 in Southeastern Wisconsin. Currently TrANS has expanded to include TrANS program locations to serve contractors in Southeast (Milwaukee and surrounding counties), Southcentral (Dane County and surrounding counties including Rock County), and most Northeastern Wisconsin counties from locations in Keshena, Rhinelander and surrounding far Northern areas. TrANS attempts to meet contractor’s needs in other geographic locations as possible. It is an industry driven plan of services to address the outreach, preparation, placement and retention of women, minorities and non-minorities as laborers and apprentices in the highway skilled trades. These candidate preparation and contractor coordination services are provided by community based organizations. For a list of the TrANS Coordinators contact the Disadvantaged Business Enterprise Office at (414) 438-4583 in Milwaukee or (608) 266-6961 in Madison. These services are provided to you at no cost.

I. BASIC CONCEPTS

Training reimbursements to employing contractors for new placements, rehires or promotions to apprentice of TrANS Program graduates will be made as follows:

- 1) **On-the-Job Training, Item ASP.1T0G, ASP 1 Graduate.** At the rate of \$5.00 per hour on federal aid projects when TrANS graduates are initially hired, or seasonally rehired, as unskilled laborers or the equivalent.

Eligibility and Duration: To the employing contractor, for up to 2000 hours from the point of initial hire as a TrANS program placement.

Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that 18 (number) TrANS Graduate(s) be utilized on this contract.

- 2) **On-the-Job Training, Item ASP.1T0A, ASP 1 Apprentice.** At the rate of \$5.00 per hour on federal aid projects at the point when an employee who came out of the TrANS Program is subsequently entered into an apprenticeship contract in an underutilized skilled trade (this will include the Skilled Laborer Apprenticeship when that standard is implemented).

Eligibility and Duration: To the employing contractor, for the length of time the TrANS graduate is in apprentice status.

Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that 10 (number) TrANS Apprentice(s) be utilized on this contract.

- 3) The maximum duration of reimbursement is two years as a TrANS graduate plus time in apprentice status.
- 4) If a TrANS program is not available in the contractor's area and another training program is utilized, payment of On-the-Job Training hours may be approved by the Wisconsin Department of Transportation (WisDOT) if the training program meets the established acceptance criteria. Only On-the-Job Training Hours accumulated after WisDOT approval will be reimbursed as specified under Items ASP.1T0G and ASP.1T0A. For more information, contact the Disadvantaged Business Enterprise Office at the phone numbers listed above.
- 5) WisDOT reserves the right to deny payments under items ASP.1T0G and ASP.1T0A if the contractor either fails to provide training or there is evidence of a lack of good faith in meeting the requirements of this training special provision.

I. RATIONALE AND SPECIAL NOTE

The \$5.00 per hour now being paid for TrANS placements is intended to cover the duration of two years to allow for reaching entry-level laborer status. An additional incentive, the \$5.00 rate, would promote movement into the underutilized skilled trades' apprenticeships and applies until the individual completes their apprenticeship. These incentives benefit TrANS candidates by giving them a better opportunity to enter a skilled trade; benefits contractors who will be assisted in meeting their EEO profiles and goals; and benefits the public who will see the program reinforce larger public-private employment reform in Wisconsin. The pool of TrANS graduates was created for the purpose of addressing underutilization in the skilled trades, an objective that is further reinforced by a parallel retention pilot program, known as the Companywide Reporting. *Whether or not reimbursement is involved, the WisDOT reassures contractors who are in the Companywide Program that TrANS placements still contribute toward fulfilling the new hire goal of 50% women and minorities.* Based on data administered by United States Department of Labor (US DOL), the highway skilled trades remain underutilized for women statewide (less than 6.9%); and for minorities in all counties (% varies by county).

NOTE: *Unless using other advancement strategies, contractors are encouraged to use some or all of this monetary incentive to offset the cut in hourly wages an individual may incur when entering an apprenticeship if the full general laborer hourly rate has been previously paid. No special accounting measures are required.*

II. IMPLEMENTATION

The implementation of ASP 1 is intended to cover only the amount of time it takes for underutilization to be resolved across the trades. This will be measured annually at the county and/or state levels using data administered by WisDWD in relation to goals set by the USDOL-

OFCCP. With appropriate state and federal approvals, we may also do some measurement at the company level.

It is the contractor's responsibility to note on their Certified Payrolls if their employee is a TrANS graduate or a TrANS apprentice. The District EEO Coordinators utilize the information on the Certified Payrolls to track the hours accumulated by TrANS Graduates and TrANS apprentices on WisDOT contracts. Payment under this ASP 1 is made based on the hours recorded off of the Certified Payrolls. Tracking may eventually include improved linkages with the WisDWD apprentice database, information from company and committee level sources.

TrANS is nondiscriminatory by regulation, and is a tool for optional use by contractors to address the underutilization of women and minorities as laborers and apprentices in our industry's skilled trades.

IV. TRANS TRAINING

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided to employees enrolled in apprenticeship and on-the-job training programs as follows:

The contractor shall provide on-the-job training aimed at developing full journey workers in the type of trade or job classifications involved. In the event the contractor subcontracts a portion of the contract work, the contractor shall determine how many, if any, of the trainees are to be trained by the subcontractor provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract.

Training and upgrading of minorities and women toward journey workers status is a primary objective of this training special provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority trainees and women trainees); to the extent such persons are available within a reasonable area of recruitment. The contractor will be given an opportunity and will be responsible for demonstrating the steps that they have taken in pursuance thereof, prior to determination as to whether the contractor is in compliance with this training special provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journey workers status or in which they have been employed as a journey worker. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the contractor's records should document the findings in each case.

V. APPRENTICESHIP TRAINING

The Federal Highway Administration's (FHWA) policy is to require full use of all available training and skill improvement opportunities to assure increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The FHWA On-the-Job Training (OJT) Program requires the State transportation agencies (STAs) to establish apprenticeships and training programs targeted to move women, minorities, and disadvantaged individuals into journey-level positions to ensure that a competent workforce is available to meet highway construction hiring needs, and to address the historical under-representation of members of these groups in highway construction skilled crafts.

The OJT Supportive Services (OJT/SS) Program was established in Title 23 Code of Federal Regulations (CFR), Part 230) to supplement the OJT program and support STA training programs by providing services to highway construction contractors and assistance to highway construction apprentices and trainees. The primary objectives of OJT/SS are:

- (1) To increase the overall effectiveness of the State highway agencies' approved training programs.
- (2) To seek other ways to increase the training opportunities for women, minorities, and disadvantaged individuals.

The STAs are responsible for establishing procedures, subject to the availability of Surface Transportation and Bridge Funds under 23 U.S.C. §140(b) (Nondiscrimination), for the provision of supportive services with respect to training programs approved under 23 CFR, Part 230(a) (Equal Employment Opportunity on Federal and Federal-aid Construction Contracts – including Supportive Services).

The contractor and subcontractor shall maintain records to demonstrate compliance with these apprenticeship requirements. Reasonable exemptions and modifications to and from any or all of these requirements will be determined by the Wisconsin Department of Transportation-Civil Rights Office. A request for an exemption or modification, with justification, shall be made in writing, addressed to WisDOT Civil Rights Office, 4802 Sheboygan Avenue, P.O. Box 7965, Rm. 451, Madison, WI 53707.

ADDITIONAL SPECIAL PROVISION 3 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

1. Description

General

- a. The disadvantaged business enterprise (DBE) requirements of 49 CFR Part 26 apply to this contract. The department's DBE goal is shown on the cover of the bidding proposal. The contractor can meet the specified contract DBE goal by procuring services or materials from a DBE or by subcontracting work to a DBE. The department calculates the DBE participation as the dollar value of DBE participation included in the bid expressed as a percentage of the total contract bid amount.
- b. Under the contract, the contractor agrees to provide the assistance to participating DBE's in the following areas:
 - i. Produce accurate and complete quotes.
 - ii. Understand highway plans applicable to their work.
 - iii. Understand specifications and contract requirements applicable to their work.
 - iv. Understand contracting reporting requirements.
- c. The department encourages the contractor to assist and develop DBE firms to become fully knowledgeable contractors to successfully perform on its contracts.
- d. For information on the disadvantaged business program, visit the department's Civil Rights and Compliance Section website at:

<http://www.dot.wisconsin.gov/business/engrserv/dbe-main.htm>

2. Definitions

- a. Interpret these terms, used throughout this additional special provision, as follows:
 - i. **Bid Percentage:** The DBE percentage indicated in the bidding proposal at the time of bid.
 - ii. **DBE:** A disadvantaged business enterprise (DBE) certified as a DBE by the department and included on the department's list of certified DBE's who are determined to be ready, willing and able.
 - iii. **DBE goal:** The amount of DBE participation expected in the contract as shown on the cover of the Highway Work Proposal.
 - iv. **Discretionary Goal:** A contractor assigned DBE goal, typically abbreviated as "Disc" on the cover of the Highway Work Proposal, which is enforced as committed.
 - v. **Manufacturer:** A firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract.
 - vi. **Supplier:** A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment required under the contract are bought, kept in stock, and regularly sold or leased to the public.
 - vii. **Voluntary Achievement:** The amount of DBE participation achieved and reported in the contract in excess of the assigned goal.

3. DBE Percentage Required at Bid Submission

Indicate the bid percentage (i.e. 0% through 100%) of DBE participation on the completed bidding proposal, including projects with discretionary goals. For electronic submittals, show the percentage in the miscellaneous data folder, Item 3, DBE Percent. For paper submittals, show the percentage on the sheet included after the schedule of items. By submission of the bid, the bidder contractually commits to DBE participation at or above the bid percentage, or certifies that they have utilized

comprehensive good faith efforts to solicit and utilize DBE firms to meet the DBE participation requirements of this contract proposal, and that the bid percentage is reflective of these good faith efforts. If the bidder does not indicate the bid percentage of DBE participation on the completed bidding proposal, the department will consider the bid irregular and may reject the bid.

4. Department's DBE Evaluation Process

a. Documentation Submittal

Within 10 business days after the notification of contract award, the contractor is to identify, by name, the DBE firms whose utilization is intended to satisfy this provision, the items of work of the DBE subcontract or supply agreement and the dollar value of those items of work by completing the Commitment to Subcontract to DBE Form [DT1506] and all necessary attachment A forms, as well as, Good Faith Waiver Form [DT1202] and supporting documentation as necessary. If the contractor fails to furnish the required forms within the specified time, the department may cancel the award. Delay in fulfilling this requirement is not a cause for extension of the contract time and shall not be used as a tool to delay execution.

i. Bidder Meets DBE Goal

If the bidder indicates that the contract DBE goal is met, after award and before execution, the department will evaluate the Commitment to Subcontract to DBE Form DT1506 and attachment A(s) to verify the actual DBE percentage achieved. If the DBE commitment is verified, the contract is eligible for execution with respect to the DBE commitment.

ii. Bidder Does Not Meet DBE Goal

- (1) If the bidder indicates a bid percentage on the Commitment to Subcontract to DBE Form [DT1506] that does not meet the contract DBE goal, the bidder must submit a Good Faith Waiver Form [DT1202] and supporting documentation. After award and before execution, the department will evaluate the bidder's DBE commitment and consider the bidder's good faith waiver request.
- (2) The department will review the bidder's good faith waiver request and notify the bidder of one of the following:
 - a. If the department grants a good faith waiver, the bid is eligible for contract execution with respect to DBE commitment.
 - b. If the department rejects the good faith waiver request, the department may declare the bid ineligible for execution. The department will provide a written explanation of why the good faith waiver request was rejected. The bidder may appeal the department's rejection as allowed under 7 a. & b.

5. Department's Criteria for Good Faith Effort

The Code of Federal Regulations {CFR}, 49 CFR Part 26-Appendix A, is the guiding regulation concerning good faith efforts. However, the federal regulations do not define "good faith" but states that bidder must actively and aggressively attempt to meet the goal. The federal regulations are general and do not include every factor or effort that can be considered. As a result, each state must establish its own processes and consider the factors established in its own process when making a determination of good faith.

- a. The department will only grant a good faith waiver if the bidder has made the effort, given the relevant circumstances under the contract that a bidder actively and aggressively seeking to meet the goal would make. The department will evaluate the bidder's good faith effort to determine whether a good faith waiver will be granted. The bidder must demonstrate, on the DT1202 that they have aggressively solicited DBE participation in an attempt to meet the contract DBE goal and attaining the stated DBE goal is not feasible.

- b. The department, in conjunction with industry stakeholders, has developed the following guidance for contractor good faith effort. The guidance and the attached appendices provide a framework for the actions required by all parties in the processing and evaluation of bidder's total efforts to achieve the project specific DBE goal prior to the bid letting date.
- c. Prime Contractors should:
 - i. Document all efforts and decisions made toward achieving the DBE goal on the contract. The bidder should use the Civil Rights & Compliance System [CRCS] and related WisDOT-approved DBE outreach tools, including the Bid Express Small Business Network, to foster DBE participation on all applicable contracts.
 - ii. Request quotes by identifying potential items to subcontract and solicit. Prime contractors are strongly encouraged to include in their initial contacts a single page including a detailed list of items for which they are accepting quotes, by project, within a letting. *See attached sample entitled "Sample Contractor Solicitation Letter" in Appendix A.* Prime contractors should also indicate a willingness to accept quotes in areas they are planning to perform themselves, **as required by federal rules**. In some cases, it might be appropriate to use DBE's to do work in a prime contractor's area of specialization.
 - (1) Solicit quotes through all reasonable and available means from certified DBE firms who match 'possible items to subcontract' and send copies to DBESS office, highlighting areas in which you are seeking quotes. Email is acceptable.
 - (2) SBN is the preferred outreach tool. <https://www.bidx.com/wi/main>. Other acceptable means include postal mail, email, fax, phone call.
 - a. Primes must ask DBE firms for a response in their solicitations. See *Sample Contractors Solicitation Letter* in Appendix. This letter can be included as an attachment to the SBN sub-quote request.
 - b. Solicit quotes at least 10 calendar days prior to the letting date {ideally two Fridays before the letting} to allow DBE firms sufficient time to respond. Prime contractors should contact DBE firms early, asking them if they need help in putting together a quote, or helping to arrange for equipment needs, or solve other problems.
 - (3) Second solicitation should take place within 5 days
 - a. An email solicitation is highly recommended for this second solicitation
 - (4) Upon request, provide interested DBE firms with adequate information about plans, specifications and the requirements of the contract by letter, information session, email, phone call and/or referral.
 - (5) When potential exists, advise interested DBE firms on how to obtain bonding, line of credit or insurance as may be requested.
 - (6) Document DBE firm's interest in quoting by taking appropriate steps to follow up initial solicitation with:
 - a. Email to all prospective DBE firms in relevant work areas
 - b. Phone call log to DBE firms who express interest via written response or call.
 - c. Fax/letter confirmation
 - d. Copy of the DBE quotes
 - e. Signed copy of Bid Express SBN Record of Subcontractor Outreach Effort.
- d. Evaluate DBE quotes as documentation is critical if the prime does not utilize the DBE firm's quote for any reason.
 - i. Evaluate DBE firm's capability to perform 'possible items to subcontract' using legitimate reasons, including but not limited to, **a discussion with the DBE firm** regarding its

- capabilities prior to the bid letting. If lack of capacity is your reason for not utilizing the DBE quote, you are required to contact the DBE directly regarding their ability to perform the work indicated in the UCP directory as their work area [NAICS code]; only the work area and/or NAICS code listed in the UCP directory will be counted for DBE credit. Documentation of the conversation is required.
- ii. In striving to meet a DBE conscious contract goal, prime contractors are expected to use DBE quotes that are responsive and reasonable. This includes DBE quotes that are not the low quote.
 - iii. **Special Circumstance:** Evaluation of DBE quotes with tied bid items. "Tied quotes are the condition in which a subcontractor submits quotes including multiple areas of expertise across multiple work areas noting that the items and price are tied. Typically this type of quoting represents a cost saving to the prime but is not clearly stated as a discount; tied quotes are usually presented as 'all or none' quote to the prime." When non-DBE subcontractors submit tied bid items in their quotes to the prime, the DBE firms' quote may seem not competitive. In such a case, the following steps are taken in comparing the relevant quotes. These are qualitative examples.
 - (1) Compare bid items common to both quotes, noting the reasonableness in the price comparison.
 - (2) Review quotes from other firms for the bid items not quoted by the DBE firm to see if combining both can provide the same competitive advantage that the tied bid items offered.
- e. After notification of contract award, submit '**Commitment to Subcontract**' form within the time period specified in the contract.
 - i. Provide the following information along with department form DT1202:
 - (1) The names, addresses, e-mail addresses, telephone numbers of DBE's contacted. The dates of both initial and follow-up contact. A printed copy of SBN solicitation is acceptable.
 - (2) A description of information provided to the DBE's regarding the plans, specifications, and estimated quantities for portions of the work to be performed by that DBE.
 - (3) Photocopies or electronic copies of all written solicitations to DBE's.
 - (4) Documentation of each quote received from a DBE and, if rejected, the reason for that rejection.
 - (5) Bidder attendance at any pre-solicitation or pre-bid meetings the department held to inform DBE's of participation opportunities available on the project.
 - f. The department's DBE Support Services Office is available by phone, email or in writing to request assistance in meeting the DBE goal:

DBE Support Services Office
6150 Fond du Lac Ave.
Milwaukee, WI 53218
Phone: 414-438-4583 / 608-266-6961
Fax: 414-438-5392
E-mail: DOTDBESupportServices@dot.wi.gov

6. Bidder's Appeal Process

- a. A bidder can appeal the department's decision to deny the bidder's good faith waiver request. The bidder must provide written documentation refuting the specific reasons for rejection as stated in the department's rejection notice. The bidder may meet in person with the department if so

requested. Failure to appeal within 7 calendar days after receiving the department's written notice of rejection of a good faith waiver request under constitutes a forfeiture of the bidder's right of appeal. If the bidder does not appeal, the department may declare the bid ineligible for execution.

- b. The department will appoint a representative, who did not participate in the original determination, to assess the bidder's appeal. The department will issue a written decision within 7 calendar days after the bidder presents all written and oral testimony. In that written decision, the department will explain the basis for finding that the bidder did or did not meet the contract DBE goal or make an adequate good faith effort to meet the contract DBE goal. The department's decision is final. If the department finds that the bidder did not meet the contract DBE goal or did not make adequate efforts to meet the DBE goal, the department may declare the bid ineligible for execution.

7. Department's Criteria for DBE Participation

Department's DBE List

- a. The department maintains a DBE list on the department's website at <http://app.mylcm.com/wisdot/Reports/WisDotUCPDirectory.aspx>
- b. The DBE office is also available to assist at 414-438-4583 or 608-266-6961.

8. Counting DBE Participation

Assessing DBE Work

- a. The department will only count the DBE usage towards the contract DBE goal if the DBE firm is certified as a DBE by one of the unified certification program agencies. If a firm becomes DBE certified before entering into a subcontract, the department may consider that DBE usage towards the contract goal. The department only counts the value of the work a DBE actually performs towards the DBE goal. The department assesses the DBE work as follows:
- b. The department counts work performed by the DBE's own resources. The department includes the cost of materials and supplies the DBE obtains for the work. The department also includes the cost of equipment the DBE leases for the work. The department will not include the cost of materials, supplies, or equipment the DBE purchases or leases from the prime contractor or its affiliate, except the department will count non-project specific leases the DBE has in place before the work is advertised.
- c. The department counts fees and commissions the DBE charges for providing a bona fide professional, technical, consultant, or managerial services. The department also counts fees and commissions the DBE charges for providing bonds or insurance. The department will only count costs the engineer deems reasonable based on experience or prevailing market rates.
- d. If a DBE subcontracts work, the department counts the value of the subcontracted work only if the DBE's subcontractor is also a DBE.
- e. The contractor shall maintain records and may be required to furnish periodic reports documenting its performance under this item.
- f. It is the prime contractor's responsibility to determine the DBE's ability to perform the work with the use of the UCP directory.

9. Commercially Useful Function

- a. The department counts expenditures of a DBE toward the DBE goal only if the DBE is performing a commercially useful function on that contract.
- b. A DBE is performing a commercially useful function if the following conditions are met:
- c. For contract work, the DBE is responsible for executing a distinct portion of the contract work and it is carrying out its responsibilities by actually performing, managing, and supervising that work.
- d. For materials and supplies, the DBE is responsible for negotiating price, determining quality and quantity, ordering, and paying for those materials and supplies.

10. Trucking

All bidders are expected to adhere to the department's current trucking policy posted on the HCCI website at

<http://www.dot.wisconsin.gov/business/engrserv/docs/dbe-trucking-notice.pdf>

11. Manufacturers and Suppliers

The department counts material and supplies a DBE provides under the contract. The department will give full credit toward the DBE goal if the DBE is a manufacturer of those materials or supplies. The department will give 60 percent credit toward the DBE goal if the DBE is merely a supplier of those materials or supplies. It is the bidder's responsibility to find out if the DBE is considered a supplier or a manufacturer before listing them on Commitment to Subcontract to DBE form DT1506.

12. DBE Prime

If the prime contractor is a DBE, the department will only count the work the contractor performs with its own forces, the work DBE subcontractors perform, and the work DBE suppliers or manufacturers perform.

13. Joint Venture

If a DBE performs as a participant in a joint venture, the department will only count that portion of the total dollar value of the contract equal to that portion of the work that the DBE performs with its own forces.

14. Mentor Protégé

- a. If a DBE performs as a participant in a mentor protégé agreement, the department will credit the portion of the work performed by the DBE protégé firm
- b. On every other project that the mentor protégé team identifies itself on.
- c. For no more than one half of the total contracted DBE goal on any WisDOT project.

15. DBE Replacement

In the event a Prime Contractor needs to replace a DBE firm originally listed on the approved DBE Commitment Form DT1506, the Prime Contractor must comply with the department's DBE Replacement Policy located on the DBE page on the following web site:

<http://www.dot.wi.gov/business/dbe/docs/policyreplacingdbe.pdf>

16. Changes to the approved DBE Commitment Form DT1506

If there are any changes to the approved Commitment to Subcontract to DBE Form DT1506, the prime contractor must submit a revised DBE Commitment Form DT1506 and relevant attachment A(s) to the DBE Programs Office within 5 business days.

17. Contract Modifications

When additional opportunity is available by contract modifications, the Prime Contractor shall utilize DBE Subcontractors, that were committed to equal work items, in the original contract.

18. Payment

Costs for conforming to this Additional Special Provision (ASP) and any associated DBE requirements are incidental to the contract.

APPENDIX A
Sample Contractor Solicitation Letter Page 1
This sample is provided as a guide not a requirement

GFW SAMPLE MEMORANDUM

TO: DBE FIRMS

FROM: POTENTIAL PRIME CONTRACTOR OR MAJOR SUBCONTRACTOR

SUBJECT: REQUEST FOR DBE QUOTES

LET DATE & TIME

DATE: MONTH DAY YEAR

CC: DBE OFFICE ENGINEER

Our company is considering bidding on the projects indicated on the next page, as a prime and/or a subcontractor for the Wisconsin Department of Transportation Month- date -year Letting. Page 2 lists the projects and work items that we may subcontract for this letting. We are interested in obtaining subcontractor quotes for these projects and work categories. Also note that we are willing to accept quotes in areas we may be planning to perform ourselves as required by federal rules.

Please review page 2, respond whether you plan to quote, highlight the projects and work items you are interested in performing and return it via fax or email within 3 days. Plans, specifications and addenda are available through WisDOT at the DBE Support Services office or at the Highway Construction Contract Information (HCCI) site at <http://roadwaystandards.dot.wi.gov/hcci/>

Your quote should include all of the costs required to complete the items you propose to perform including labor, equipment, material, and related bonding or insurance. The quote should note items that you are DBE certified to perform, tied items, and any special terms. Page 2, with the indicated projects and items you plan to quote, should be used as a cover sheet for your quote.

Please make every effort to have your quotes into our office by time deadline the prior to the letting date. **Make sure the correct letting date, project ID and proposal number, unit price and extension are included in your quote.** We prefer quotes be sent via SBN but prime's alternative's are acceptable. Our office hours are include hours and days. Please call our office as soon as possible prior to the letting if you need information/clarification to prepare your quote at contact number.

If you wish to discuss or evaluate your quote in more detail, contact us after the contract is awarded. Status of the contract can be checked at WisDOT's HCCI site at <http://roadwaystandards.dot.wi.gov/hcci/>

All questions should be directed to:

Project Manager, John Doe,
Phone: (000) 123-4567
Email: Joe@joetheplumber.com
Fax: (000) 123- 4657

Sample Contractor Solicitation Letter Page 2

This sample is provided as a guide not a requirement

REQUEST FOR QUOTATION

Prime's Name: _____

Letting Date: _____

Project ID: _____

Please check all that apply

- .. Yes, we will be quoting on the projects and items listed below
- .. No, we are not interested in quoting on the letting or its items referenced below
- .. Please take our name off your monthly DBE contact list
- .. We have questions about quoting this letting. Please have some one contact me at this number

Prime Contractor 's Contact Person

Phone: _____
Fax: _____
Email: _____

DBE Contractor Contact Person

Phone _____
Fax _____
Email _____

Please circle the jobs and items you will be quoting below

Proposal No.	1	2	3	4	5	6	7
County							

WORK DESCRIPTION:

Clear and Grub	X		X	X		X	X
Dump Truck Hauling	X		X	X		X	X
Curb & Gutter/Sidewalk, Etc.	X		X	X		X	X
Erosion Control Items	X		X	X		X	X
Signs and Posts/Markers	X		X	X		X	X
Traffic Control		X	X	X		X	X
Electrical Work/Traffic Signals		X	X	X		X	
Pavement Marking		X	X	X	X	X	X
Sawing Pavement		X	X	X	X	X	X
QMP, Base	X	X		X	X	X	X
Pipe Underdrain	X			X			
Beam Guard				X	X	X	X
Concrete Staining							X
Trees/Shrubs	X						X

Again please make every effort to have your quotes into our office by time deadline prior to the letting date.We prefer quotes be sent via SBN but prime's preferred alternative's are acceptable.If there are further questions please direct them to the prime contractor's contact person at phone number.

APPENDIX B
BEST PRACTICES FOR PRIME CONTRACTOR & DBE
SUBCONTRACTOR GOOD FAITH EFFORT

This list is not a set of requirements; it is a list of potential strategies

Primes

- Ø Prime contractor open houses inviting DBE firms to see the bid “war room” or providing technical assistance
- Ø Participate in speed networking and mosaic exercises as arranged by DBE office
- Ø Host information sessions not directly associated with a bid letting;
- Ø Participate in a formal mentor protégé or joint venture with a DBE firm
- Ø Participate in WisDOT advisory committees i.e. TRANSAC, or Mega Project committee meetings
- Ø Facilitate a small group DBE ‘training session’ Clarifying how your firm prepares for bid letting, evaluates subcontractors, preferred qualifications and communication methods
- Ø Encourage subcontractors to solicit and highlight DBE participation in their quotes to you
- Ø Quality of communication, not quantity creates the best results. Contractors should do as thorough a job as possible in communicating with DBE firms before the bid and provide any assistance requested to assure best possible bid.

DBE

- Ø DBE firms should contact primes as soon as possible with questions regarding their quotes or bid; seven days prior is optimal.
- Ø Continually check for contract addendums on the HCCI website through the Thursday prior to letting to stay abreast of changes.
- Ø Review the status of contracts on the HCCI website reviewing the ‘apparent low bidder’ list, and bid tabs at a minimum.
- Ø Prepare a portfolio or list of related projects and prime and supplier references; be sure to note transportation-related projects of similar size and scope, firm expertise and staffing.
- Ø Participate in DBE office assessment programs
- Ø Participate on advisory and mega-project committees
- Ø Sign up to receive the DBE Contracting Update
- Ø Consider membership in relevant industry or contractor organizations
- Ø Active participation is a must. Quote as many projects as you can reasonably work on; quoting the primes and bidding as a prime with the department are the only ways to get work.

APPENDIX C

Types of Efforts considered in determining GFE

This list represents concepts being assessed; analysis requires additional steps

1. Whether the contractor attended any pre-solicitation or pre-bid meetings that were scheduled by WisDOT to inform DBEs of contracting and subcontracting opportunities;
2. Whether the contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract was being solicited, in sufficient time to allow the DBEs to participate effectively;
3. Whether the contractor followed up initial solicitations of interest by contacting DBEs to determine if the DBEs were interested; returned the phone calls of interested DBE firms.
4. Whether the contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goal;
5. Whether the contractor provided interested DBEs with adequate information about the plans, specifications and requirements of the contract;
6. Whether the contractor negotiated in good faith with interested DBEs, not rejected DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities;
7. Whether the contractor made efforts to assist interested DBEs in being more competitive.
8. Whether the contractor effectively used the services of available minority community organizations: minority contractors groups, local, state, and Federal minority business assistance offices, and other organizations that provide assistance to small businesses and DBE firms.
9. Whether Prime used CRCS to identify DBE who specialize in relevant work areas.
10. Whether the contractor used available resources including contacting the DBE office, using WisDOT's website
11. Whether the contractor returned calls of firms expressing interest in a timely manner.

APPENDIX D
Good Faith Effort Evaluation Guidance
Excerpt from Appendix A of 49 CFR Part 26

APPENDIX A TO PART 26 -- GUIDANCE CONCERNING GOOD FAITH EFFORTS

- I. When, as a recipient, you establish a contract goal on a DOT assisted contract, a bidder must, in order to be responsible and/or responsive, make good faith efforts to meet the goal. The bidder can meet this requirement in either of two ways. First, the bidder can meet the goal, documenting commitments for participation by DBE firms sufficient for this purpose. Second, even if it doesn't meet the goal, the bidder can document adequate good faith efforts. This means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful.
- II. In any situation in which you have established a contract goal, part 26 requires you to use the good faith efforts mechanism of this part. As a recipient, it is up to you to make a fair and reasonable judgment whether a bidder that did not meet the goal made adequate good faith efforts. It is important for you to consider the quality, quantity, and intensity of the different kinds of efforts that the bidder has made. The efforts employed by the bidder should be those that one could reasonably expect a bidder to take if the bidder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE contract goal. Mere pro forma efforts are not good faith efforts to meet the DBE contract requirements. We emphasize, however, that your determination concerning the sufficiency of the firm's good faith efforts is a judgment call: meeting quantitative formulas is not required.
- III. The Department also strongly cautions you against requiring that a bidder meet a contract goal (i.e., obtain a specified amount of DBE participation) in order to be awarded a contract, even though the bidder makes an adequate good faith efforts showing. This rule specifically prohibits you from ignoring bona fide good faith efforts.
- IV. The following is a list of types of actions which you should consider as part of the bidder's good faith efforts to obtain DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.
 - A. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
 - B. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
 - C. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

- D.
 - (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.
 - (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- E. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non solicitation of bids in the contractor's efforts to meet the project goal.
- F. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.
- G. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- H. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.
- V. In determining whether a bidder has made good faith efforts, you may take into account the performance of other bidders in meeting the contract. For example, when the apparent successful bidder fails to meet the contract goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts, the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the goal, but meets or exceeds the average DBE participation obtained by other bidders, you may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made good faith efforts.

Appendix E

Small Business Network [SBN] Overview

The Small Business Network is a part of the Bid Express® service that was created to ensure that prime bidders have a centralized online location to find subs - including small and disadvantaged business enterprises (DBEs). It is available for prime bidders to use as part of their Basic Service subscription. Within the Small Business Network, Prime Contractors can:

1. Easily select proposals, work types and items:
 - a. After adding applicable work types, select items that you wish to quote. Enter the sub-quote quantities and add comments, if desired. Adding or removing items and work types can be done quickly. If needed, you can save the sub-quote for completion at a later time.
2. Create sub-quotes for the subcontracting community:
 - a. Create sub-quotes with ease using the intuitive sub-quote creator. In seven short steps, you can rapidly create a custom sub-quote directed to all subcontractors that bid on the applicable work types. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.
 - b. Create a sub-quote to send to subcontractors or suppliers that lists the items in a proposal that you want quoted
 - c. Create an unlimited number of sub-quotes for items you want quoted, and optionally mark them as a DBE-preferred request
 - d. Add attachments to sub-quotes
3. View sub-quote requests & responses:
 - a. After logging into the Bid Express service, you can quickly review all of your sub-quote requests and all unsolicited sub-quote requests from subcontractors. To simplify the Small Business Network home screen, sub-quote requests can be hidden with one click if they are not applicable.
 - b. View or receive unsolicited sub-quotes that subcontractors have posted, complete with terms, conditions and pricing
4. View Record of Subcontractor Outreach Effort:
 - a. For each sub-quote produced, a *Record of Subcontractor Outreach Effort* is generated that shows the response statistics for a particular sub-quote. If accepted by the letting agency, this report may serve as proof of a “Good Faith” effort in reaching out to the DBE community.
 - b. Easily locate pre-qualified and certified small and disadvantaged businesses
 - c. Advertise to small and disadvantaged businesses more efficiently and cost effectively
 - d. Document your interactions with subs/DBEs by producing an Outreach Report (may be accepted as proof of DBE outreach at the discretion of each agency)

The Small Business Network is a part of the Bid Express® service that was created to ensure that small businesses have a centralized area to access information about upcoming projects. It can help small businesses learn more about opportunities, compete more effectively, network with other contractors and subcontractors, and win more jobs.

1. View and reply to sub-quote requests from primes:
 - a. After logging into the Bid Express service, you can quickly review all incoming sub-quote requests and all unsolicited sub-quotes created by your company. Receive notifications by selected work type. To simplify on the Small Business Network home screen, sub-quote requests can be filtered by work types relevant to your interests, or hidden with one click if they are not applicable.
2. Select items when responding to sub-quote requests from primes:
 - a. You have the freedom to choose and price any number of items when responding to a sub-quote request. Quantities can be modified, and per-item comments are also available.
 - b. View requests for sub-quotes for work that primes have posted for projects they are bidding, add your pricing, terms, and conditions, and submit completed sub-quotes to the requesting primes
 - c. Add attachments to a sub-quote
3. Create and send unsolicited sub-quotes to specific contractors:
 - a. Create unsolicited sub-quotes with ease using the intuitive sub-quote creator. In eight short steps, you can rapidly create a custom sub-quote directed at any number of specific vendors of your choosing. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.
4. Easily select and price items for unsolicited sub-quotes:
 - a. After adding applicable work types, select items that you wish to quote. The extended price calculates automatically, cutting out costly calculation errors. Comments can be provided on an per-item basis as well.
 - b. Create an unsolicited sub-quote that lists the items from a proposal that you want to quote, include pricing, terms and conditions, and send it to selected prime/plan holder
 - c. Add attachments to a sub-quote
 - d. Add unsolicited work items to sub-quotes that you are responding to
5. Easy Access to Valuable Information
 - a. Receive a confirmation that your sub-quote was opened by a prime
 - b. View Bid Tab Analysis data from past bids, including the high, average and low prices of items.
 - c. View important notices and publications from DOT targeted to small and disadvantaged businesses
6. Accessing Small Business Network for WisDOT contracting opportunities
 - a. If you are a contractor not yet subscribing to the Bid Express service, go to www.bidx.com and select "Order Bid Express." The Small Business Network is a part of the Bid Express Basic Service.
 - b. DBE firms can request a Bid Express Small Business Network Account at no cost by calling 414-438-4588

ADDITIONAL SPECIAL PROVISION 4

Payment to First-Tier Subcontractors

Within 10 calendar days of receiving a progress payment for work completed by a subcontractor, pay the subcontractor for that work. The prime contractor may withhold payment to a subcontractor if, within 10 calendar days of receipt of that progress payment, the prime contractor provides written notification to the subcontractor and the department documenting "just cause" for withholding payment.

The prime contractor may also withhold routine retainage from payments due subcontractors.

Payment to Lower-Tier Subcontractors

Ensure that subcontracting agreements at all tiers provide prompt payment rights to lower-tier subcontractors that parallel those granted first-tier subcontractors in this provision.

Release of Routine Retainage

After granting substantial completion the department may reduce the routine retainage withheld from the prime contractor to 75 percent of the original total amount retained.

When the Department sends the semi-final estimate the department may reduce the routine retainage withheld from the prime contractor to 10 percent of the original total amount retained.

Within 30 calendar days of receiving the semi-final estimate from the department, submit written certification that subcontractors at all tiers are paid in full for acceptably completed work and that no routine retainage is being withheld. The department will pay the prime contractor in full and reduce the routine retainage withheld from the prime contractor to zero when the department approves the final estimate.

This special provision does not limit the right of the department, prime contractor, or subcontractors at any tier to withhold payment for work not acceptably completed or work subject to an unresolved contract dispute.

ADDITIONAL SPECIAL PROVISIONS 5**Fuel Cost Adjustment****A Description**

Fuel Cost Adjustments will be applied to partial and final payments for work items categorized in Section B as a payment to the contractor or a credit to the department. ASP-5 shall not apply to any force account work.

B Categories of Work Items

The following items and Fuel Usage Factors shall be used to determine Fuel Cost Adjustments:

(1) Earthwork.		Unit	Gal. Fuel Per Unit
205.0100	Excavation Common	CY	0.23
205.0200	Excavation Rock	CY	0.39
205.0400	Excavation Marsh	CY	0.29
208.0100	Borrow	CY	0.23
208.1100	Select Borrow	CY	0.23
209.0100	Backfill Granular	CY	0.23
350.0102	Subbase	CY	0.28
350.0104	Subbase	Ton	0.14
350.0115	Subbase 6-Inch	SY	0.05
350.0120	Subbase 7-Inch	SY	0.05
350.0125	Subbase 8-Inch	SY	0.06
350.0130	Subbase 9-Inch	SY	0.07
350.0135	Subbase 10-Inch	SY	0.08
350.0140	Subbase 11-Inch	SY	0.09
350.0145	Subbase 12-Inch	SY	0.09

C Fuel Index

A Current Fuel Index (CFI) in dollars per gallon will be established by the Department of Transportation for each month. The CFI will be the price of No. 2 fuel oil, as reported in U.S. Oil Week, using the first issue dated that month. The CFI will be the average of prices quoted for Green Bay, Madison, Milwaukee and Minneapolis.

The base Fuel Index (BFI) for this contract is \$2.90 per gallon.

D Computing the Fuel Cost Adjustment

The engineer will compute the ratio CFI/BFI each month. If the ratio falls between 0.85 and 1.15, inclusive, no fuel adjustment will be made for that month. If the ratio is less than 0.85 a credit to the department will be computed. If the ratio is greater than 1.15 additional payment to the contractor will be computed. Credit or additional payment will be computed as follows:

- (1) The engineer will estimate the quantity of work done in that month under each of the contract items categorized in Section B.
- (2) The engineer will compute the gallons of fuel used in that month for each of the contract items categorized in Section B by applying the unit fuel usage factors shown in Section B.
- (3) The engineer will summarize the total gallons (Q) of fuel used in that month for the items categorized in Section B.
- (4) The engineer will determine the Fuel Cost Adjustment credit or payment from the following formula:

$$FA = \left(\frac{CFI}{BFI} - 1 \right) \times Q \times BFI$$

(plus is payment to contractor; minus is credit to the department)

Where	FA	=	Fuel Cost Adjustment (plus or minus)
	CFI	=	Current Fuel Index
	BFI	=	Base Fuel Index
	Q	=	Monthly total gallons of fuel

E Payment

A Fuel Cost Adjustment credit to the department will be deducted as a dollar amount each month from any sums due to the contractor. A Fuel Cost Adjustment payment to the contractor will be made as a dollar amount each month.

Upon completion of the work under the contract, any difference between the estimated quantities and the final quantities will be determined. An average CFI, calculated by averaging the CFI for all months that fuel cost adjustment was applied, will be applied to the quantity differences. The average CFI shall be applied in accordance with the procedure set forth in Section D.

ADDITIONAL SPECIAL PROVISION 6

ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

455.3.2.1 General

Replace paragraph two with the following effective with the December 2014 letting:

- (2) Use tack material of the type and grade the contract specifies. The contractor may, with the engineer's approval, dilute tack material as allowed under 455.2.4. Provide calculations using the asphalt content as-received from the supplier and subsequent contractor dilutions to show that as-placed material has 50 percent or more residual asphalt content. Apply at 0.050 to 0.070 gallons per square yard, after dilution, unless the contract designates otherwise. The engineer may adjust the application rate based on surface conditions. Limit application each day to the area the contractor expects to pave during that day.

460.2.2.3 Aggregate Gradation Master Range

Replace paragraph one with the following effective with the December 2014 letting:

- (1) Ensure that the aggregate blend, including recycled material and mineral filler, conforms to the gradation requirements in table 460-1. The values listed are design limits; production values may exceed those limits.

TABLE 460-1 AGGREGATE GRADATION MASTER RANGE AND VMA REQUIREMENTS

SIEVE	PERCENTS PASSING DESIGNATED SIEVES						
	NOMINAL SIZE						
	37.5 mm	25.0 mm	19.0 mm	12.5 mm	9.5 mm	SMA 12.5 mm	SMA 9.5 mm
50.0-mm	100						
37.5-mm	90 – 100	100					
25.0-mm	90 max	90 - 100	100				
19.0-mm	—	90 max	90 - 100	100		100	
12.5-mm	—	—	90 max	90 - 100	100	90 - 97	100
9.5-mm	—	—	—	90 max	90 - 100	58 - 72	90 - 100
4.75-mm	—	—	—	—	90 max	25 - 35	35 - 45
2.36-mm	15 – 41	19 - 45	23 - 49	28 - 58	20 - 65	15 - 25	18 - 28
75-µm	0 – 6.0	1.0 - 7.0	2.0 - 8.0	2.0 - 10.0	2.0 - 10.0	8.0 - 12.0	10.0 - 14.0
% MINIMUM VMA	11.0	12.0	13.0	14.0 ^[1]	15.0 ^[2]	16.0	17.0

^[1] 14.5 for E-0.3 and E-3 mixes.

^[2] 15.5 for E-0.3 and E-3 mixes.

465.2 Materials

Replace paragraph two with the following effective with the December 2014 letting:

- (2) Under the other section 465 bid items, the contractor need not submit a mix design. Furnish aggregates mixed with a type AC asphaltic material, except under the Asphaltic Curb bid item furnish PG58-28 asphaltic material. Use coarse and fine mineral aggregates uniformly coated and mixed with the asphaltic material in an engineer-approved mixing plant. The contractor may include reclaimed asphaltic pavement materials in the mixture.

Errata

Make the following corrections to the standard specifications:

501.3.2.4.4 Water Reducer

Correct errata by deleting the reference to footnote 6 for grade D concrete.

- (1) Add a water reducing admixture conforming to 501.2.3. Determine the specific type and rate of use based on the atmospheric conditions, the desired properties of the finished concrete and the manufacturer's recommended rate of use. The actual rate of use shall at least equal the manufacturer's recommended rate, and both the type and rate used require the engineer's approval before use.

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://www.dot.wi.gov/business/civilrights/laborwages/index.htm>

(2) Ensure that all tiers of subcontractors, as well as all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Tess Mulrooney at 608-267-4489 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator send several sample electronic files to Tess two months before a payroll needs to be submitted. Not every contractor's payroll system is capable of producing export files. For details, see pages 17-22 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at:

<http://www.dot.wi.gov/business/civilrights/laborwages/docs/crc-payroll-manual.pdf>

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

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

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

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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

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

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

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

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

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

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

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

SEPTEMBER 2002

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Offeror's or Bidder's attention is called to the "Employment Practices" and "Equal Opportunity Clause" set forth in the Required Contract Provisions, FHWA 1273.
2. The goals and timetables for minority and female participation expressed in percentage terms for the contractor's aggregate work force in each trade, on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade:

<u>County</u>	<u>%</u>	<u>County</u>	<u>%</u>	<u>County</u>	<u>%</u>
Adams	1.7	Iowa	1.7	Polk	2.2
Ashland	1.2	Iron	1.2	Portage	0.6
Barron	0.6	Jackson	0.6	Price	0.6
Bayfield	1.2	Jefferson	7.0	Racine	8.4
Brown	1.3	Juneau	0.6	Richland	1.7
Buffalo	0.6	Kenosha	3.0	Rock	3.1
Burnett	2.2	Kewaunee	1.0	Rusk	0.6
Calumet	0.9	La Crosse	0.9	St. Croix	2.9
Chippewa	0.5	Lafayette	0.5	Sauk	1.7
Clark	0.6	Langlade	0.6	Sawyer	0.6
Columbia	1.7	Lincoln	0.6	Shawano	1.0
Crawford	0.5	Manitowoc	1.0	Sheboygan	7.0
Dane	2.2	Marathon	0.6	Taylor	0.6
Dodge	7.0	Marinette	1.0	Trempealeau	0.6
Door	1.0	Marquette	1.7	Vernon	0.6
Douglas	1.0	Menominee	1.0	Vilas	0.6
Dunn	0.6	Milwaukee	8.0	Walworth	7.0
Eau Claire	0.5	Monroe	0.6	Washburn	0.6
Florence	1.0	Oconto	1.0	Washington	8.0
Fond du Lac	1.0	Oneida	0.6	Waukesha	8.0
Forest	1.0	Outagamie	0.9	Waupaca	1.0
Grant	0.5	Ozaukee	8.0	Waushara	1.0
Green	1.7	Pepin	0.6	Winnebago	0.9
Green Lake	1.0	Pierce	2.2	Wood	0.6

Goals for female participation for each trade: 6.9%

These goals are applicable to all the contractor's construction work, (whether or not it is federal or federally assisted), performed in the covered area. If the contractor performs construction work in the geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The contractor's compliance with the Executive Order and the Regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the Regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

As referred to in this section, the Director means:

Director
Office of Federal Contract Compliance Programs
Ruess Federal Plaza
310 W. Wisconsin Ave., Suite 1115
Milwaukee, WI 53202

The "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

4. As used in this notice, and in the contract resulting from solicitation, the "covered area" is the county(ies) in Wisconsin to which this proposal applies.

APRIL 2013

ADDITIONAL FEDERAL-AID PROVISIONS

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidding collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

DECEMBER 2013

BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or \$2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this "Buy America" provision.

<http://roadwaystandards.dot.wi.gov/standards/cmm/cm-02-28.pdf#cm2-28.5>

Upon completion of the project certify to the engineer, in writing using department form WS4567, that all steel, iron, and coating processes for steel or iron incorporated into the contract work conform to these "Buy America" provisions. Attach a list of exemptions and their associated costs to the certification form. Department form WS4567 is available at:

<http://roadwaystandards.dot.wi.gov/standards/forms/ws4567.doc>

**WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS AND TRANSPORTATION FACILITIES**

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

- I. Wage Rates, Hours of labor and payment of Wages
- II. Payroll Requirements
- III. Postings at the Site of the Work
- IV. Affidavits
- V. Wage Rate Redistribution
- VI. Additional Classifications

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 contracts.

While the wage rates shown are the minimum rates required by the contract to be paid during its life, this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price 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
WAUKESHA COUNTY**

Compiled by the State of Wisconsin - Department of Workforce Development
for the Department of Transportation
Pursuant to s. 103.50, Stats.
Issued on May 1, 2014

CLASSIFICATION: Contractors are required to call the Department of Workforce Development if there are any questions regarding 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.

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
Bricklayer, Blocklayer or Stonemason	35.80	16.87	52.67
Carpenter	32.93	19.99	52.92
Cement Finisher	31.56	18.53	50.09
Future Increase(s): 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	32.20	21.04	53.24
Fence Erector	22.15	1.73	23.88
Ironworker	30.52	23.47	53.99
Future Increase(s): Add \$.80/hr on 6/1/2014.			
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.			
Line Constructor (Electrical)	38.25	17.63	55.88
Painter	21.87	11.37	33.24
Pavement Marking Operator	30.00	0.00	30.00
Piledriver	30.98	19.11	50.09
Roofer or Waterproofer	29.40	15.55	44.95
Teledata Technician or Installer	24.75	16.08	40.83
Tuckpointer, Caulker or Cleaner	34.57	16.42	50.99
Underwater Diver (Except on Great Lakes)	34.48	15.90	50.38
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	34.43	15.24	49.67
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	30.60	14.86	45.46
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.78	13.63	40.41

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.86	12.97	37.83
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.35	34.10

TRUCK DRIVERS

Single Axle or Two Axle	34.22	19.90	54.12
Three or More Axle	25.24	15.20	40.44
Articulated, Euclid, Dumptror, Off Road Material Hauler	29.27	20.40	49.67
Future Increase(s): Add \$1.75/hr on 6/1/14); Add \$1.25/hr on 6/1/15); Add \$1.30/hr on 6/1/16); Add \$1.25/hr on 6/ 1/ 17.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:// www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm .			
Pavement Marking Vehicle	25.24	15.20	40.44
Shadow or Pilot Vehicle	34.22	19.90	54.12
Truck Mechanic	25.24	15.20	40.44

LABORERS

General Laborer	26.06	19.43	45.49
Future Increase(s): 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	19.00	0.00	19.00
Landscaper	26.06	19.43	45.49
Future Increase(s): Add \$1.60/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).			
Flagperson or Traffic Control Person	22.55	19.43	41.98
Future Increase(s): 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)	17.69	15.50	33.19
Railroad Track Laborer	13.50	3.59	17.09

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
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 \$1.75/hr on 6/1/2014); Add \$1.25/hr on 6/1/2015); Add \$1.30/hr on 6/1/2016); Add \$1.25/hr on 6/ 1/ 2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:// www.dot.wi.gov/business/civilrights/laborwages/pwc. htm .	36.72	20.40	57.12
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 \$1.75/hr on 6/1/2014); Add \$1.25/hr on 6/1/2015); Add \$1.30/hr on 6/1/2016); Add \$1.25/hr on 6/ 1/ 2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:// www.dot.wi.gov/business/civilrights/laborwages/pwc. htm .	36.22	20.40	56.62
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	35.72	20.40	56.12

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$

& A- Frames.			
Future Increase(s): Add \$1.75/hr on 6/1/2014); Add \$1.25/hr on 6/1/2015); Add \$1.30/hr on 6/1/2016); Add \$1.25/hr on 6/ 1/ 2017.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:// www.dot.wi.gov/business/civilrights/laborwages/pwc.htm .			

Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (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.	35.46	20.40	55.86
Future Increase(s): Add \$1.75/hr on 6/1/2014); Add \$1.25/hr on 6/1/2015); Add \$1.30/hr on 6/1/2016); Add \$1.25/hr on 6/ 1/ 2017.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:// www.dot.wi.gov/business/civilrights/laborwages/pwc.htm .			

Air 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.	35.17	20.40	55.57
Future Increase(s): Add \$1.75/hr on 6/1/2014); Add \$1.25/hr on 6/1/2015); Add \$1.30/hr on 6/1/2016); Add \$1.25/hr on 6/ 1/ 2017.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:// www.dot.wi.gov/business/civilrights/laborwages/pwc.htm .			

Fiber Optic Cable Equipment.	26.69	16.65	43.34

SUPERSEDES DECISION WI20120010
U. S. DEPARTMENT OF LABOR
(DAVIS-BACON ACT, MINIMUM WAGE RATES)

STATE: Wisconsin

GENERAL DECISION NUMBER: WI140010

DESCRIPTION OF WORK: Highways and Airport Runway and Taxiway Construction

DATE: August 1, 2014

LABORERS CLASSIFICATION:	Basic Hourly Rates	Fringe Benefits	Truck Drivers:	Basic Hourly Rates	Fringe Benefits
Group 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence and Bridge Builder; Landscaper, Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, Utility Man); Batch Truck Dumper; or Cement Handler; Bituminous Worker; (Dumper, Ironer, Smoother, Tamper); Concrete Handler	\$27.06	18.73	1 & 2 Axles	25.18	18.31
Group 2: Air Tool Operator; Joint Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer	27.21	18.73	Three or More Axles; Euclids, Dumptrucks & Articulated, Truck Mechanic	25.38	18.31
Group 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off man	27.41	18.73			
Group 4: Line and Grade Specialist	27.56	18.73			
Group 5: Blaster and Powderman	27.71	18.73			
Group 6: Flagperson traffic control person	23.55	18.73			

CLASSES OF LABORER AND MECHANICS

Bricklayer	35.37	18.47
Carpenter	30.52	14.41
Pile Driver	27.25	19.46
Ironworker	30.52	23.47
Cement Mason/Concrete Finisher	30.69	17.53
Electrician	See Page 3	
Line Construction		
Lineman	39.50	32% + 5.00
Heavy Equipment Operator	37.53	32% + 5.00
Equipment Operator	31.60	32% + 5.00
Heavy Groundman Driver	26.78	14.11
Light Groundman Driver	24.86	13.45
Groundsman	21.73	32% + 5.00
Millwrights	26.32	13.98
Painter, Brush	29.52	20.04
Painter, Spray and Sandblaster	30.27	20.04
Painter, Bridge	29.87	20.04
Well Drilling:		
Well Driller	16.52	3.70

Notes: Welders receive rate prescribed for craft performing operation to which welding is incidental. Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5(a)(1)(ii)). Includes Modification #0, dated January 3, 2014; Modification #1, dated February 7, 2014; Modification #2, dated March 14, 2014; Modification #3, dated May 2, 2014; Modification #4, dated June 27, 2014; Modification #5, dated July 4, 2014; Modification #6, dated July 25, 2014; Modification #7, dated August 1, 2014.

SUPERSEDES DECISION WI20120010
U. S. DEPARTMENT OF LABOR
(DAVIS-BACON ACT, MINIMUM WAGE RATES)

STATE: Wisconsin

GENERAL DECISION NUMBER: WI140010

DESCRIPTION OF WORK: Highways and Airport Runway and Taxiway Construction

DATE: August 1, 2014

<u>POWER EQUIPMENT OPERATORS CLASSIFICATION:</u>	<u>Basic Hourly Rates</u>	<u>Fringe Benefits</u>	<u>POWER EQUIPMENT OPERATORS CLASSIFICATION: (Continued)</u>	<u>Basic Hourly Rates</u>	<u>Fringe Benefits</u>
Group 1: Cranes, tower cranes and derricks, with or without attachments, with a lifting capacity of over 100 tons or cranes, tower cranes and derricks with boom, leads and/or jib lengths measuring 176 feet or longer	\$37.72	\$20.93	(scraper, dozer, pusher, loader); scraper - rubber tired (single or twin engine); endloader hydraulic backhoe (tractor-type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller (over 5 tons); percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches and A-frames; post driver; material hoist operator.	\$36.72	\$20.93
Group 2: Cranes, tower cranes and derricks, with or without attachments, with a lifting capacity of 100 tons or less or cranes, tower cranes and derricks with boom, leads and/or jib lengths measuring 175 feet or less, and backhoes (excavators) having a manufacturer's rated capacity of 3 cu. yds. and over, caisson rigs, pile driver, dredge operator, dredge engineer.	\$37.22	\$20.93	Group 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self-propelled; tractor (mounted or towed compactors and light equipment); shouldering machine; self-propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint saw (multiple blade) belting machine; burlap machine; texturing machine; tractor, endloader (rubber tired) - light; jeep digger; fork lift; mulcher; launch operator; fireman; environmental burner.	\$36.46	\$20.93
Group 3: Mechanic or welder - heavy duty equipment, cranes with a lifting capacity of 25 tons or less, concrete breaker (manual or remote); vibrator/sonic concrete breaker; concrete laser screed; concrete slipform paver; concrete batch plant operator; concrete pavement spreader - heavy duty (rubber tired); concrete spreader and distributor, automatic subgrader (concrete); concrete grinder and planing machine; concrete slipform curb and gutter machine; slipform concrete placer; tube finisher; hydro blaster (10,000 psi and over); bridge paver; concrete conveyor system; concrete pump; stabilizing mixer (self propelled); shoulder widener; asphalt plant engineer; bituminous paver; bump cutter and grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer and scarifier; backhoes (excavators) having a manufacturers rated capacity of under 3 cu. yds.; grader or motor patrol; tractor			Group 5: Air compressor; power pack; vibratory hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; concrete proportioning plants generators; mudjack operator; rock breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator; oiler; pump (over 3 inches); drilling machine helper.	\$36.17	\$20.93
			Group 6: Off - road material hauler with or without ejector	\$30.27	\$20.93
			Premium Pay: EPA Level "A" protection - \$3.00 per hour EPA Level "B" protection - \$2.00 per hour EPA Level "C" protection - \$1.00 per hours		

SUPERSEDES DECISION WI20120010
U. S. DEPARTMENT OF LABOR
(DAVIS-BACON ACT, MINIMUM WAGE RATES)

STATE: Wisconsin

GENERAL DECISION NUMBER: WI140010

DESCRIPTION OF WORK: Highways and Airport Runway and Taxiway Construction

DATE: August 1, 2014

LABORERS CLASSIFICATION:		Rates	Benefits		
Electricians				Area 4 -	BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE (Wausauke and area south thereof), OCONTO, MENOMINEE (East of a line 6 miles West of the West boundary of Oconto County), SHAWANO (except area North of Townships of Aniwa and Hutchins) COUNTIES.
Area 1		\$28.40	16.676		
Area 2:					
Electricians.....		29.13	17.92	Area 5 -	ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Area North of the town of Wausauke), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Area North of the townships of Aniwa and Hutchins), VILAS AND WOOD COUNTIES
Area 3:					
Electrical contracts under \$130,000		26.24	16.85		
Electrical contracts over \$130,000		29.41	16.97		
Area 4:		28.50	28.75% + 9.27		
Area 5		28.96	24.85% + 9.70		
Area 6		35.25	19.30	Area 6 -	KENOSHA COUNTY
Area 8					
Electricians.....		30.60	24.95% + 10.33	Area 8 -	DODGE, (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington township), ROCK and WALWORTH COUNTIES
Area 9:					
Electricians.....		32.94	18.71		
Area 10		29.64	20.54	Area 9 -	COLUMBIA, DANE, DODGE, (area west of Hwy. 26, except Chester & Emmet Townships), GREEN LAKE (except townships of Berlin, Seneca and St. Marie), IOWA, MARQUETTE (except townships of Neshkoka, Crystal Lake, Newton and Springfield), and SAUK COUNTIES
Area 11		32.54	24.07		
Area 12		32.87	19.23	Area 10 -	CALUMET (Township of New Holstein), DODGE (East of Hwy. 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES
Area 13		32.82	22.51		
Teledata System Installer				Area 11 -	DOUGLAS COUNTY
Area 14					
Installer/Technician		21.89	11.83	Area 12 -	RACINE (except Burlington township) COUNTY
Sound & Communications					
Area 15				Area 13 -	MILWAUKEE, OZAUKEE, WASHINGTON and WAUKESHA COUNTIES
Installer		16.47	14.84		
Technician		24.75	16.04	Area 14 -	Statewide.
Area 1 -	CALUMET (except township of New Holstein), GREEN LAKE (N. part, including Townships of Berlin, St. Marie and Seneca), MARQUETTE (N. part, including Townships of Crystal Lake, Neshkoro, Newton & Springfield), OUTAGAMIE, WAUPACA, WAUSHARA and WINNEBAGO COUNTIES.			Area 15 -	DODGE (East of Hwy 26 including Chester Twp, excluding Emmet Twp), FOND DU LAC (Except Waupun), MILWAUKEE, OZAUKEE, MANITOWOC (Schleswig), WASHINGTON, AND WAUKESHA COUNTIES.
Area 2 -	ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Mayville, Colby, Unity, Sherman, Fremont, Lynn and Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST. CROIX, SAWYER, TAYLOR, TREMPLEAU, VERNON and WASHBURN COUNTIES				
Area 3 -	FLORENCE (townships of Aurora, Commonwealth, Fern, Florence and Homestead), MARINETTE (Niagara township)				

FEBRUARY 1999

**NOTICE TO BIDDERS
WAGE RATE DECISION**

The wage rate decision of the Secretary of Labor which has been incorporated in these advertised specifications is incomplete in that the classifications may be omitted from the Secretary of Labor's decision.

Since the bidder is responsible, independently, for ascertaining area practice with respect to the necessity, or lack of necessity, for the use of these classifications in the prosecution of the work contemplated by this project, no inference may be drawn from the omission of these classifications concerning prevailing area practices relative to their use. Further, this omission will not, per se, be construed as establishing any governmental liability for increased labor cost if it is subsequently determined that such classifications are required.

There may be omissions and/or errors in the federal wage rates. The bidder is responsible for evaluating and determining the correct applicable rate. The higher of state or federal rate will apply.

SCHEDULE OF ITEMS

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CONTRACT:
20141209005PROJECT(S):
1060-30-70
2718-00-74
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3030-08-70FEDERAL ID(S):
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WISC 2014438

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS

SECTION 0001 ROADWAY ITEMS

0010	108.4400 CPM PROGRESS SCHEDULE	EACH	1.000	.	.
0020	201.0105 CLEARING	STA	66.000	.	.
0030	201.0205 GRUBBING	STA	66.000	.	.
0040	203.0100 REMOVING SMALL PIPE CULVERTS	EACH	17.000	.	.
0050	203.0200 REMOVING OLD STRUCTURE (STATION) 001. 224+44SB	LUMP		LUMP	.
0060	203.0200 REMOVING OLD STRUCTURE (STATION) 002. 244+40 NB	LUMP		LUMP	.
0070	203.0210.S ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 001. B-67-78	LUMP		LUMP	.
0080	203.0225.S DEBRIS CONTAINMENT (STRUCTURE) 001. B-67-188	LUMP		LUMP	.
0090	203.0225.S DEBRIS CONTAINMENT (STRUCTURE) 002. B-67-78	LUMP		LUMP	.

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			DOLLARS	CTS	DOLLARS	CTS
0100	204.0100 REMOVING PAVEMENT	147,682.000 SY	.		.	
0110	204.0105 REMOVING PAVEMENT BUTT JOINTS	500.000 SY	.		.	
0120	204.0110 REMOVING ASPHALTIC SURFACE	6,039.000 SY	.		.	
0130	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS	117.000 SY	.		.	
0140	204.0150 REMOVING CURB & GUTTER ***	10,258.000 LF	.		.	
0150	204.0155 REMOVING CONCRETE SIDEWALK ***	6,553.000 SY	.		.	
0160	204.0157 REMOVING CONCRETE BARRIER ***	442.000 LF	.		.	
0170	204.0165 REMOVING GUARDRAIL ***	2,071.000 LF	.		.	
0180	204.0170 REMOVING FENCE	3,790.000 LF	.		.	
0190	204.0185 REMOVING MASONRY	259.000 CY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0200	204.0190 REMOVING SURFACE DRAINS	2.000 EACH	.		.	
0210	204.0195 REMOVING CONCRETE BASES	132.000 EACH	.		.	
0220	204.0210 REMOVING MANHOLES	24.000 EACH	.		.	
0230	204.0220 REMOVING INLETS	99.000 EACH	.		.	
0240	204.0245 REMOVING STORM SEWER (SIZE) 001. 12-INCH	1,857.000 LF	.		.	
0250	204.0245 REMOVING STORM SEWER (SIZE) 002. 15-INCH	967.000 LF	.		.	
0260	204.0245 REMOVING STORM SEWER (SIZE) 003. 18-INCH	2,282.000 LF	.		.	
0270	204.0245 REMOVING STORM SEWER (SIZE) 004. 8-INCH	316.000 LF	.		.	
0280	204.0245 REMOVING STORM SEWER (SIZE) 006. 21-INCH	220.000 LF	.		.	
0290	204.0245 REMOVING STORM SEWER (SIZE) 007. 24-INCH	580.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0300	204.0245 REMOVING STORM SEWER (SIZE) 008. 30-INCH	960.000 LF	.		.	
0310	204.0245 REMOVING STORM SEWER (SIZE) 009. 30-INCH X 42-INCH	28.000 LF	.		.	
0320	205.0100 EXCAVATION COMMON	168,276.000 CY	.		.	
0330	206.1000 EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 001. B-67-276	LUMP	LUMP		.	
0340	206.1000 EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 002. B-67-277	LUMP	LUMP		.	
0350	206.2000 EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 003. C-67-087	LUMP	LUMP		.	
0360	208.0100 BORROW	102,961.000 CY	.		.	
0370	208.1100 SELECT BORROW	135,144.000 CY	.		.	
0380	209.0100 BACKFILL GRANULAR	14,860.000 CY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0390	210.0100 BACKFILL STRUCTURE	1,725.000 CY	.		.	
0400	211.0100 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 001. 2718-00-74	LUMP	LUMP		.	
0410	211.0500 PREPARE FOUNDATION FOR BASE AGGREGATE	60.000 STA	.		.	
0420	213.0100 FINISHING ROADWAY (PROJECT) 001. 1060-30-70	1.000 EACH	.		.	
0430	213.0100 FINISHING ROADWAY (PROJECT) 002. 2718-00-75	1.000 EACH	.		.	
0440	213.0100 FINISHING ROADWAY (PROJECT) 003. 3030-08-70	1.000 EACH	.		.	
0450	213.0100 FINISHING ROADWAY (PROJECT) 004. 2718-00-74	1.000 EACH	.		.	
0460	305.0110 BASE AGGREGATE DENSE 3/4-INCH	5,970.000 TON	.		.	
0470	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	121,793.000 TON	.		.	
0480	311.0110 BREAKER RUN	29,242.000 TON	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0490	312.0110 SELECT CRUSHED MATERIAL	42,558.000 TON	.		.	
0500	320.0155 CONCRETE BASE 9-INCH **P**	1,420.000 SY	.		.	
0510	415.0090 CONCRETE PAVEMENT 9-INCH **P**	169,679.000 SY	.		.	
0520	415.0210 CONCRETE PAVEMENT GAPS	20.000 EACH	.		.	
0530	415.0410 CONCRETE PAVEMENT APPROACH SLAB **P**	873.000 SY	.		.	
0540	415.1090 CONCRETE PAVEMENT HES 9-INCH	1,000.000 SY	.		.	
0550	416.0170 CONCRETE DRIVEWAY 7-INCH	175.000 SY	.		.	
0560	416.0260 CONCRETE DRIVEWAY HES 6-INCH	560.000 SY	.		.	
0570	416.0610 DRILLED TIE BARS	1,346.000 EACH	.		.	
0580	416.0620 DRILLED DOWEL BARS	390.000 EACH	.		.	

Wisconsin Department of Transportation

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			DOLLARS	CTS	DOLLARS	CTS
0590	416.1010 CONCRETE SURFACE DRAINS	7.000 CY	.		.	
0600	440.4410.S INCENTIVE IRI RIDE	31,105.000 DOL	1.000000		31105.00	
0610	455.0120 ASPHALTIC MATERIAL PG64-28	711.000 TON	.		.	
0620	455.0605 TACK COAT	1,169.000 GAL	.		.	
0630	460.1101 HMA PAVEMENT TYPE E-1	4,328.000 TON	.		.	
0640	460.1103 HMA PAVEMENT TYPE E-3	5,496.000 TON	.		.	
0650	460.1110 HMA PAVEMENT TYPE E-10	1,291.000 TON	.		.	
0660	460.2000 INCENTIVE DENSITY HMA PAVEMENT	6,356.250 DOL	1.000000		6356.25	
0670	465.0105 ASPHALTIC SURFACE	2,254.000 TON	.		.	
0680	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	26.000 TON	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0690	465.0125 ASPHALTIC SURFACE TEMPORARY	8,855.000 TON	.		.	
0700	465.0315 ASPHALTIC FLUMES	20.000 SY	.		.	
0710	465.0400 ASPHALTIC SHOULDER RUMBLE STRIPS	5,694.000 LF	.		.	
0720	502.0100 CONCRETE MASONRY BRIDGES **P**	2,310.000 CY	.		.	
0730	502.3200 PROTECTIVE SURFACE TREATMENT **P**	5,379.000 SY	.		.	
0740	503.0155 PRESTRESSED GIRDER TYPE I 54W-INCH **P**	6,451.000 LF	.		.	
0750	504.0100 CONCRETE MASONRY CULVERTS **P**	501.000 CY	.		.	
0760	504.0900 CONCRETE MASONRY ENDWALLS	19.000 CY	.		.	
0770	505.0110 BAR STEEL REINFORCEMENT CULVERTS **P**	32,720.000 LB	.		.	
0780	505.0405 BAR STEEL REINFORCEMENT HS BRIDGES **P**	31,730.000 LB	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0790	505.0605 BAR STEEL REINFORCEMENT HS COATED BRIDGES **P**	524,060.000 LB	.		.	
0800	505.0610 BAR STEEL REINFORCEMENT HS COATED CULVERTS **P**	27,400.000 LB	.		.	
0810	506.0105 STRUCTURAL STEEL CARBON **P**	339.000 LB	.		.	
0820	506.2605 BEARING PADS ELASTOMERIC NON-LAMINATED **P**	96.000 EACH	.		.	
0830	506.4000 STEEL DIAPHRAGMS (STRUCTURE) 001. B-67-276 **P**	40.000 EACH	.		.	
0840	506.4000 STEEL DIAPHRAGMS (STRUCTURE) 002. B-67-277 **P**	48.000 EACH	.		.	
0850	511.1200 TEMPORARY SHORING (STRUCTURE) 001. B-67-276	3,203.000 SF	.		.	
0860	511.1200 TEMPORARY SHORING (STRUCTURE) 002. C-67-087	839.000 SF	.		.	
0870	512.1000 PILING STEEL SHEET TEMPORARY	473.000 SF	.		.	
0880	516.0500 RUBBERIZED MEMBRANE WATERPROOFING **P**	619.000 SY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0890	517.1010.S CONCRETE STAINING (STRUCTURE) 001. B-67-276 **P**	SF 5,570.000	.		.	
0900	517.1010.S CONCRETE STAINING (STRUCTURE) 002. B-67-277 **P**	SF 6,144.000	.		.	
0910	517.1010.S CONCRETE STAINING (STRUCTURE) 003. R-67-113 **P**	SF 3,321.000	.		.	
0920	517.1010.S CONCRETE STAINING (STRUCTURE) 004. R-67-114 **P**	SF 3,611.000	.		.	
0930	517.1015.S CONCRETE STAINING MULTI-COLOR (STRUCTURE) 001. B-67-276 **P**	SF 2,250.000	.		.	
0940	517.1015.S CONCRETE STAINING MULTI-COLOR (STRUCTURE) 002. B-67-277 **P**	SF 3,042.000	.		.	
0950	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 001. B-67-276 **P**	SF 2,250.000	.		.	
0960	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 002. B-67-277 **P**	SF 3,042.000	.		.	
0970	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 003. R-67-112 **P**	SF 14,029.000	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
0980	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 004. R-67-113 **P**	SF 3,123.000	.		.	
0990	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 005. R-67-114 **P**	SF 3,413.000	.		.	
1000	520.4012 CULVERT PIPE TEMPORARY 12-INCH	LF 169.000	.		.	
1010	520.4018 CULVERT PIPE TEMPORARY 18-INCH	LF 176.000	.		.	
1020	520.4024 CULVERT PIPE TEMPORARY 24-INCH	LF 64.000	.		.	
1030	520.7000 CLEANING CULVERT PIPES	EACH 5.000	.		.	
1040	520.8000 CONCRETE COLLARS FOR PIPE	EACH 23.000	.		.	
1050	522.0118 CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF 48.000	.		.	
1060	522.0124 CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	LF 430.000	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1070	522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH	80.000 LF	.		.	
1080	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH	11.000 EACH	.		.	
1090	522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH	9.000 EACH	.		.	
1100	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	7.000 EACH	.		.	
1110	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	20.000 EACH	.		.	
1120	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	6.000 EACH	.		.	
1130	522.1042 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 42-INCH	2.000 EACH	.		.	
1140	522.1054 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 54-INCH	1.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1150	523.0519 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 19X30-INCH	2.000 EACH	.		.	
1160	532.0750.S TEMPORARY WALL WIRE FACED MECHANICALLY STABILIZED EARTH	2,176.000 SF	.		.	
1170	550.0500 PILE POINTS	153.000 EACH	.		.	
1180	550.1140 PILING STEEL HP 14-INCH X 73 LB	14,580.000 LF	.		.	
1190	601.0407 CONCRETE CURB & GUTTER 18-INCH TYPE D **P**	767.000 LF	.		.	
1200	601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A **P**	8,862.000 LF	.		.	
1210	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D **P**	9,049.000 LF	.		.	
1220	601.0452 CONCRETE CURB & GUTTER INTEGRAL 30-INCH TYPE D **P**	2,600.000 LF	.		.	
1230	601.0511 CONCRETE CURB AND GUTTER INTEGRAL 6-INCH SLOPED 36-INCH **P**	9,350.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1240	601.0555 CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE A **P**	33,400.000 LF	.		.	
1250	601.0557 CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D **P**	75.000 LF	.		.	
1260	601.0580 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE R **P**	134.000 LF	.		.	
1270	601.0600 CONCRETE CURB PEDESTRIAN **P**	348.000 LF	.		.	
1280	602.0405 CONCRETE SIDEWALK 4-INCH **P**	16,150.000 SF	.		.	
1290	602.0410 CONCRETE SIDEWALK 5-INCH **P**	160,876.000 SF	.		.	
1300	602.0420 CONCRETE SIDEWALK 7-INCH **P**	1,410.000 SF	.		.	
1310	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW	2,008.000 SF	.		.	
1320	603.1142 CONCRETE BARRIER TYPE S42 **P**	1,006.000 LF	.		.	
1330	603.1242 CONCRETE BARRIER TYPE S42A **P**	537.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1340	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	4,775.000 LF	.		.	
1350	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	10,350.000 LF	.		.	
1360	604.0400 SLOPE PAVING CONCRETE **P**	183.000 SY	.		.	
1370	606.0200 RIPRAP MEDIUM	242.000 CY	.		.	
1380	607.0406 STORM SEWER PIPE COMPOSITE 6-INCH	15.000 LF	.		.	
1390	608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH	8,582.000 LF	.		.	
1400	608.0315 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH	2,387.000 LF	.		.	
1410	608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	1,044.000 LF	.		.	
1420	608.0324 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH	4,484.000 LF	.		.	
1430	608.0330 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 30-INCH	1,748.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1440	608.0336 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 36-INCH	1,332.000 LF	.		.	
1450	608.0342 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 42-INCH	1,313.000 LF	.		.	
1460	608.0348 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 48-INCH	1,162.000 LF	.		.	
1470	608.0354 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 54-INCH	210.000 LF	.		.	
1480	608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH	294.000 LF	.		.	
1490	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH	301.000 LF	.		.	
1500	608.0418 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH	365.000 LF	.		.	
1510	608.0424 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH	193.000 LF	.		.	
1520	608.0430 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 30-INCH	143.000 LF	.		.	
1530	608.0512 STORM SEWER PIPE REINFORCED CONCRETE CLASS V 12-INCH	27.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1540	610.0119 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 19X30-INCH	222.000 LF	.		.	
1550	610.0429 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 29X45-INCH	45.000 LF	.		.	
1560	611.0530 MANHOLE COVERS TYPE J	82.000 EACH	.		.	
1570	611.0550 MANHOLE COVERS TYPE M	2.000 EACH	.		.	
1580	611.0600 INLET COVERS TYPE A	2.000 EACH	.		.	
1590	611.0606 INLET COVERS TYPE B	3.000 EACH	.		.	
1600	611.0610 INLET COVERS TYPE BW	4.000 EACH	.		.	
1610	611.0612 INLET COVERS TYPE C	3.000 EACH	.		.	
1620	611.0624 INLET COVERS TYPE H	74.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1630	611.0627 INLET COVERS TYPE HM	288.000 EACH	.		.	
1640	611.0636 INLET COVERS TYPE HM-S	35.000 EACH	.		.	
1650	611.0639 INLET COVERS TYPE H-S	17.000 EACH	.		.	
1660	611.0642 INLET COVERS TYPE MS	6.000 EACH	.		.	
1670	611.0654 INLET COVERS TYPE V	1.000 EACH	.		.	
1680	611.0660 INLET COVERS TYPE WM	2.000 EACH	.		.	
1690	611.1003 CATCH BASINS 3-FT DIAMETER	1.000 EACH	.		.	
1700	611.2003 MANHOLES 3-FT DIAMETER	2.000 EACH	.		.	
1710	611.2004 MANHOLES 4-FT DIAMETER	38.000 EACH	.		.	
1720	611.2005 MANHOLES 5-FT DIAMETER	31.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1730	611.2006 MANHOLES 6-FT DIAMETER	14.000 EACH	.		.	
1740	611.2007 MANHOLES 7-FT DIAMETER	10.000 EACH	.		.	
1750	611.2008 MANHOLES 8-FT DIAMETER	3.000 EACH	.		.	
1760	611.2055 MANHOLES 5X5-FT	2.000 EACH	.		.	
1770	611.2066 MANHOLES 6X6-FT	2.000 EACH	.		.	
1780	611.3003 INLETS 3-FT DIAMETER	4.000 EACH	.		.	
1790	611.3004 INLETS 4-FT DIAMETER	84.000 EACH	.		.	
1800	611.3225 INLETS 2X2.5-FT	4.000 EACH	.		.	
1810	611.3230 INLETS 2X3-FT	316.000 EACH	.		.	
1820	611.3901 INLETS MEDIAN 1 GRATE	4.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1830	611.3902 INLETS MEDIAN 2 GRATE	1.000 EACH	.		.	
1840	611.8110 ADJUSTING MANHOLE COVERS	12.000 EACH	.		.	
1850	611.8115 ADJUSTING INLET COVERS	18.000 EACH	.		.	
1860	611.8120.S COVER PLATES TEMPORARY	4.000 EACH	.		.	
1870	611.9705 SALVAGED MANHOLE COVERS	2.000 EACH	.		.	
1880	611.9800.S PIPE GRATES	1.000 EACH	.		.	
1890	612.0406 PIPE UNDERDRAIN WRAPPED 6-INCH **p**	3,409.000 LF	.		.	
1900	614.0150 ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	5.000 EACH	.		.	
1910	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH **p**	58.000 LF	.		.	
1920	614.0220 STEEL THRIE BEAM BULLNOSE TERMINAL	4.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
1930	614.0230 STEEL THRIE BEAM **P**	424.000 LF	.		.	
1940	614.0905 CRASH CUSHIONS TEMPORARY	13.000 EACH	.		.	
1950	614.1000 MGS GUARDRAIL TEMPORARY	100.000 LF	.		.	
1960	614.1100 MGS GUARDRAIL TEMPORARY THRIE BEAM TRANSITION	80.000 LF	.		.	
1970	614.1200 MGS GUARDRAIL TEMPORARY TRANSITION EAT	2.000 EACH	.		.	
1980	614.2300 MGS GUARDRAIL 3 **P**	250.000 LF	.		.	
1990	614.2500 MGS THRIE BEAM TRANSITION **P**	160.000 LF	.		.	
2000	614.2610 MGS GUARDRAIL TERMINAL EAT	8.000 EACH	.		.	
2010	614.2620 MGS GUARDRAIL TERMINAL TYPE 2	4.000 EACH	.		.	
2020	616.0100 FENCE WOVEN WIRE (HEIGHT) 001. 4-FT	1,650.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
2030	616.0700.S FENCE SAFETY	2,450.000				
		LF	.		.	
2040	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 001.	1.000				
	1060-30-70	EACH	.		.	
2050	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 003.	1.000				
	3030-08-70	EACH	.		.	
2060	619.1000 MOBILIZATION	1.000				
		EACH	.		.	
2070	620.0100 CONCRETE CORRUGATED MEDIAN	550.000				
		SF	.		.	
2080	620.0200 CONCRETE MEDIAN BLUNT NOSE	1,360.000				
		SF	.		.	
2090	620.0300 CONCRETE MEDIAN SLOPED NOSE	4,870.000				
		SF	.		.	
2100	623.0200 DUST CONTROL SURFACE TREATMENT	159,735.000				
		SY	.		.	
2110	624.0100 WATER	4,425.000				
		MGAL	.		.	
2120	625.0100 TOPSOIL	2,870.000				
		SY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
2130	627.0200 MULCHING	12,200.000				
		SY	.		.	
2140	628.1104 EROSION BALES	400.000				
		EACH	.		.	
2150	628.1504 SILT FENCE	19,244.000				
		LF	.		.	
2160	628.1520 SILT FENCE MAINTENANCE	11,644.000				
		LF	.		.	
2170	628.1905 MOBILIZATIONS EROSION CONTROL	25.000				
		EACH	.		.	
2180	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL	48.000				
		EACH	.		.	
2190	628.2004 EROSION MAT CLASS I TYPE B	74,633.000				
		SY	.		.	
2200	628.2006 EROSION MAT URBAN CLASS I TYPE A	22,597.000				
		SY	.		.	
2210	628.2008 EROSION MAT URBAN CLASS I TYPE B	49,400.000				
		SY	.		.	
2220	628.2027 EROSION MAT CLASS II TYPE C	650.000				
		SY	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2230	628.7005 INLET PROTECTION TYPE A	531.000 EACH	.		.	
2240	628.7010 INLET PROTECTION TYPE B	16.000 EACH	.		.	
2250	628.7015 INLET PROTECTION TYPE C	28.000 EACH	.		.	
2260	628.7020 INLET PROTECTION TYPE D	457.000 EACH	.		.	
2270	628.7504 TEMPORARY DITCH CHECKS	575.000 LF	.		.	
2280	628.7555 CULVERT PIPE CHECKS	65.000 EACH	.		.	
2290	628.7560 TRACKING PADS	66.000 EACH	.		.	
2300	628.7560.S STONE OR ROCK DITCH CHECKS	15.000 CY	.		.	
2310	628.7570 ROCK BAGS	80.000 EACH	.		.	
2320	629.0210 FERTILIZER TYPE B	134.800 CWT	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2330	630.0120 SEEDING MIXTURE NO. 20	625.000 LB	.		.	
2340	630.0130 SEEDING MIXTURE NO. 30	429.000 LB	.		.	
2350	630.0140 SEEDING MIXTURE NO. 40	996.000 LB	.		.	
2360	630.0200 SEEDING TEMPORARY	2,610.000 LB	.		.	
2370	631.0300 SOD WATER	1,574.000 MGAL	.		.	
2380	631.1000 SOD LAWN	61,784.000 SY	.		.	
2390	631.1100 SOD EROSION CONTROL	95.000 SY	.		.	
2400	633.5200 MARKERS CULVERT END	36.000 EACH	.		.	
2410	634.0618 POSTS WOOD 4X6-INCH X 18-FT	420.000 EACH	.		.	
2420	634.0622 POSTS WOOD 4X6-INCH X 22-FT	28.000 EACH	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2430	637.1220 SIGNS TYPE I REFLECTIVE SH	124.000 SF	.		.	
2440	637.2210 SIGNS TYPE II REFLECTIVE H	4,742.088 SF	.		.	
2450	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING	604.580 SF	.		.	
2460	637.2230 SIGNS TYPE II REFLECTIVE F	663.500 SF	.		.	
2470	638.2102 MOVING SIGNS TYPE II	124.000 EACH	.		.	
2480	638.2602 REMOVING SIGNS TYPE II	467.000 EACH	.		.	
2490	638.3000 REMOVING SMALL SIGN SUPPORTS	334.000 EACH	.		.	
2500	640.1303.S POND LINER CLAY	1,150.000 CY	.		.	
2510	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 001. S-67-616	LUMP	LUMP		.	
2520	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 002. S-67-955	LUMP	LUMP		.	

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			DOLLARS	CTS	DOLLARS	CTS
2530	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 003. S-67-954	LUMP	LUMP			.
2540	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 004. S-67-953	LUMP	LUMP			.
2550	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 005. S-67-956	LUMP	LUMP			.
2560	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 006. S-67-957	LUMP	LUMP			.
2570	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 007. S-67-958	LUMP	LUMP			.
2580	641.8100 OVERHEAD SIGN SUPPORT (STRUCTURE) 008. S-67-959	LUMP	LUMP			.
2590	642.6001 FIELD LABORATORY	1.000 EACH	.			.
2600	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 001. 1060-30-70	458.000 DAY	.			.
2610	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 002. 3030-08-70	458.000 DAY	.			.

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			DOLLARS	CTS	DOLLARS	CTS
2620	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 003. 2718-00-75	458.000 DAY	.		.	
2630	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 004. 2718-00-74	125.000 DAY	.		.	
2640	643.0300 TRAFFIC CONTROL DRUMS	446,275.000 DAY	.		.	
2650	643.0410 TRAFFIC CONTROL BARRICADES TYPE II	660.000 DAY	.		.	
2660	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	42,800.000 DAY	.		.	
2670	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	1,193.000 EACH	.		.	
2680	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	1,108.000 EACH	.		.	
2690	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	86,105.000 DAY	.		.	
2700	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C	60,996.000 DAY	.		.	
2710	643.0800 TRAFFIC CONTROL ARROW BOARDS	4,603.000 DAY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
2720	643.0900 TRAFFIC CONTROL SIGNS	110,335.000 DAY	.		.	
2730	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	92.000 EACH	.		.	
2740	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE	885.000 SF	.		.	
2750	643.1050 TRAFFIC CONTROL SIGNS PCMS	3,045.000 DAY	.		.	
2760	643.1055.S TRUCK OR TRAILER MOUNTED ATTENUATOR 001. 1060-30-70	30.000 DAY	.		.	
2770	643.2000 TRAFFIC CONTROL DETOUR (PROJECT) 001. 1060-30-70	1.000 EACH	.		.	
2780	643.3000 TRAFFIC CONTROL DETOUR SIGNS	69,125.000 DAY	.		.	
2790	645.0105 GEOTEXTILE FABRIC TYPE C	560.000 SY	.		.	
2800	645.0120 GEOTEXTILE FABRIC TYPE HR	525.000 SY	.		.	
2810	645.0135 GEOTEXTILE FABRIC TYPE SR	78,700.000 SY	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
2820	645.0140 GEOTEXTILE FABRIC TYPE SAS	12,550.000 SY	.		.	
2830	646.0103 PAVEMENT MARKING PAINT 4-INCH	13,406.000 LF	.		.	
2840	646.0106 PAVEMENT MARKING EPOXY 4-INCH	97,487.000 LF	.		.	
2850	646.0126 PAVEMENT MARKING EPOXY 8-INCH	13,490.000 LF	.		.	
2860	646.0600 REMOVING PAVEMENT MARKINGS	31,449.000 LF	.		.	
2870	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH **P**	36,931.000 LF	.		.	
2880	646.0843.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH **P**	16,394.000 LF	.		.	
2890	646.0881.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH **P**	1,124.000 LF	.		.	
2900	646.0883.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH **P**	2,562.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
2910	647.0153 PAVEMENT MARKING ARROWS PAINT TYPE 1	2.000 EACH	.		.	
2920	647.0156 PAVEMENT MARKING ARROWS EPOXY TYPE 1	15.000 EACH	.		.	
2930	647.0163 PAVEMENT MARKING ARROWS PAINT TYPE 2	17.000 EACH	.		.	
2940	647.0166 PAVEMENT MARKING ARROWS EPOXY TYPE 2	102.000 EACH	.		.	
2950	647.0176 PAVEMENT MARKING ARROWS EPOXY TYPE 3	14.000 EACH	.		.	
2960	647.0203 PAVEMENT MARKING ARROWS BIKE LANE PAINT	2.000 EACH	.		.	
2970	647.0303 PAVEMENT MARKING SYMBOLS BIKE LANE PAINT	26.000 EACH	.		.	
2980	647.0353 PAVEMENT MARKING WORDS PAINT	3.000 EACH	.		.	
2990	647.0356 PAVEMENT MARKING WORDS EPOXY	72.000 EACH	.		.	
3000	647.0456 PAVEMENT MARKING CURB EPOXY	860.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
3010	647.0563 PAVEMENT MARKING STOP LINE PAINT 18-INCH	160.000 LF	.		.	
3020	647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH	1,875.000 LF	.		.	
3030	647.0606 PAVEMENT MARKING ISLAND NOSE EPOXY	32.000 EACH	.		.	
3040	647.0713 PAVEMENT MARKING DIAGONAL PAINT 8-INCH	653.000 LF	.		.	
3050	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH	2,381.000 LF	.		.	
3060	647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	1,350.000 LF	.		.	
3070	647.0773 PAVEMENT MARKING CROSSWALK PAINT 12-INCH	662.000 LF	.		.	
3080	647.0856 PAVEMENT MARKING CONCRETE CORRUGATED MEDIAN EPOXY	215.000 SF	.		.	
3090	647.0955 REMOVING PAVEMENT MARKINGS ARROWS	19.000 EACH	.		.	
3100	647.0965 REMOVING PAVEMENT MARKINGS WORDS	11.000 EACH	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3110	649.0100 TEMPORARY PAVEMENT MARKING 4-INCH	3,697.000 LF	.		.	
3120	649.0200 TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH	110,680.000 LF	.		.	
3130	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	101,452.000 LF	.		.	
3140	649.0600 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 6-INCH	550.000 LF	.		.	
3150	649.0701 TEMPORARY PAVEMENT MARKING 8-INCH	9,200.000 LF	.		.	
3160	649.0801 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH	12,730.000 LF	.		.	
3170	649.1100 TEMPORARY PAVEMENT MARKING STOP LINE 18-INCH	3,450.000 LF	.		.	
3180	649.1200 TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 18-INCH	26.000 LF	.		.	
3190	649.1700 TEMPORARY PAVEMENT MARKING ARROWS	58.000 EACH	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3200	649.1800 TEMPORARY PAVEMENT MARKING ARROWS REMOVABLE TAPE	168.000 EACH	.		.	
3210	649.1900 TEMPORARY PAVEMENT MARKING WORDS	45.000 EACH	.		.	
3220	649.2000 TEMPORARY PAVEMENT MARKING WORDS REMOVABLE TAPE	112.000 EACH	.		.	
3230	652.0205 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3/4-INCH **P**	206.000 LF	.		.	
3240	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH **P**	10,151.000 LF	.		.	
3250	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH **P**	14,935.000 LF	.		.	
3260	652.0335 CONDUIT RIGID NONMETALLIC SCHEDULE 80 3-INCH **P**	95.000 LF	.		.	
3270	652.0605 CONDUIT SPECIAL 2-INCH **P**	610.000 LF	.		.	
3280	652.0615 CONDUIT SPECIAL 3-INCH **P**	915.000 LF	.		.	
3290	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM	5.000 EACH	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3300	652.0800 CONDUIT LOOP DETECTOR ***P**	2,854.000 LF	.		.	
3310	653.0135 PULL BOXES STEEL 24X36-INCH	44.000 EACH	.		.	
3320	653.0140 PULL BOXES STEEL 24X42-INCH	150.000 EACH	.		.	
3330	653.0180 PULL BOXES STEEL COMMUNICATIONS (INCH) 001. 24-INCHES X 36 INCHES	5.000 EACH	.		.	
3340	653.0905 REMOVING PULL BOXES	204.000 EACH	.		.	
3350	654.0101 CONCRETE BASES TYPE 1	56.000 EACH	.		.	
3360	654.0102 CONCRETE BASES TYPE 2	10.000 EACH	.		.	
3370	654.0105 CONCRETE BASES TYPE 5	60.000 EACH	.		.	
3380	654.0110 CONCRETE BASES TYPE 10	22.000 EACH	.		.	
3390	654.0113 CONCRETE BASES TYPE 13	19.000 EACH	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3400	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL	10.000 EACH	.		.	
3410	654.0220 CONCRETE CONTROL CABINET BASES TYPE 10	4.000 EACH	.		.	
3420	655.0102 CABLE IN DUCT 2-2 AWG **P**	1,801.000 LF	.		.	
3430	655.0220 CABLE TRAFFIC SIGNAL 4-14 AWG **P**	160.000 LF	.		.	
3440	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG **P**	7,076.000 LF	.		.	
3450	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG **P**	9,564.000 LF	.		.	
3460	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG **P**	21,361.000 LF	.		.	
3470	655.0290 CABLE TRAFFIC SIGNAL 21-14 AWG **P**	337.000 LF	.		.	
3480	655.0305 CABLE TYPE UF 2-12 AWG GROUNDED **P**	15,703.000 LF	.		.	
3490	655.0320 CABLE TYPE UF 2-10 AWG GROUNDED **P**	705.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
3500	655.0505 ELECTRICAL WIRE TRAFFIC SIGNALS 14 AWG **P**	3,045.000 LF	.		.	
3510	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG **P**	24,853.000 LF	.		.	
3520	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG **P**	13,212.000 LF	.		.	
3530	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG **P**	480.000 LF	.		.	
3540	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG **P**	40.000 LF	.		.	
3550	655.0700 LOOP DETECTOR LEAD IN CABLE **P**	11,857.000 LF	.		.	
3560	655.0800 LOOP DETECTOR WIRE **P**	12,668.000 LF	.		.	
3570	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE **P**	11,622.000 LF	.		.	
3580	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 001. STH 67 ITS	LUMP	LUMP		.	

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			DOLLARS	CTS	DOLLARS	CTS
3590	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 201. IH-94 EB RAMPS & STH 67	LUMP	LUMP			.
3600	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 202. IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
3610	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 203. STH 67 & OCONOMOWOC DR. /PABST FARMS BLVD.	LUMP	LUMP			.
3620	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 204. STH 67 & CTH B (VALLEY RD.)	LUMP	LUMP			.
3630	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 205. STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.
3640	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 206. STH 67 & CENTER DR. /PABST RD.	LUMP	LUMP			.
3650	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 207. STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
3660	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 208. STH 67 & SUMMIT AVE.	LUMP	LUMP			.
3670	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 209. STH 67 & OLD TOWER RD.	LUMP	LUMP			.
3680	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 401. INTERSECTION OF SUMMIT AVENUE & THACKERAY TRAIL	LUMP	LUMP			.
3690	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 001. STH 67 ITS	LUMP	LUMP			.
3700	657.0100 PEDESTAL BASES	60.000 EACH		.		.
3710	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	57.000 EACH		.		.
3720	657.0305 POLES TYPE 2	2.000 EACH		.		.
3730	657.0310 POLES TYPE 3	8.000 EACH		.		.
3740	657.0322 POLES TYPE 5-ALUMINUM	43.000 EACH		.		.

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			DOLLARS	CTS	DOLLARS	CTS
3750	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3. 5-FT	4.000 EACH	.		.	
3760	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	31.000 EACH	.		.	
3770	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	11.000 EACH	.		.	
3780	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	14.000 EACH	.		.	
3790	657.0609 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT	16.000 EACH	.		.	
3800	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT	36.000 EACH	.		.	
3810	657.1345 INSTALL POLES TYPE 9	2.000 EACH	.		.	
3820	657.1350 INSTALL POLES TYPE 10	20.000 EACH	.		.	
3830	657.1355 INSTALL POLES TYPE 12	9.000 EACH	.		.	
3840	657.1360 INSTALL POLES TYPE 13	10.000 EACH	.		.	

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3850	657.1515 INSTALL MONOTUBE ARMS 15-FT	6.000 EACH	.		.	
3860	657.1520 INSTALL MONOTUBE ARMS 20-FT	3.000 EACH	.		.	
3870	657.1525 INSTALL MONOTUBE ARMS 25-FT	3.000 EACH	.		.	
3880	657.1530 INSTALL MONOTUBE ARMS 30-FT	10.000 EACH	.		.	
3890	657.1535 INSTALL MONOTUBE ARMS 35-FT	3.000 EACH	.		.	
3900	657.1540 INSTALL MONOTUBE ARMS 40-FT	3.000 EACH	.		.	
3910	657.1545 INSTALL MONOTUBE ARMS 45-FT	3.000 EACH	.		.	
3920	657.1550 INSTALL MONOTUBE ARMS 50-FT	5.000 EACH	.		.	
3930	657.1555 INSTALL MONOTUBE ARMS 55-FT	5.000 EACH	.		.	
3940	657.1815 INSTALL LUMINAIRE ARMS STEEL 15-FT	43.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
3950	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL	157.000 EACH	.		.	
3960	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL	25.000 EACH	.		.	
3970	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH	157.000 EACH	.		.	
3980	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH	25.000 EACH	.		.	
3990	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH	82.000 EACH	.		.	
4000	658.0500 PEDESTRIAN PUSH BUTTONS	88.000 EACH	.		.	
4010	658.0600 LED MODULES 12-INCH RED BALL	129.000 EACH	.		.	
4020	658.0605 LED MODULES 12-INCH YELLOW BALL	120.000 EACH	.		.	
4030	658.0610 LED MODULES 12-INCH GREEN BALL	118.000 EACH	.		.	
4040	658.0615 LED MODULES 12-INCH RED ARROW	53.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
4050	658.0620 LED MODULES 12-INCH YELLOW ARROW	94.000 EACH	.		.	
4060	658.0625 LED MODULES 12-INCH GREEN ARROW	57.000 EACH	.		.	
4070	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH	82.000 EACH	.		.	
4080	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 201. IH-94 EB RAMPS & STH 67	LUMP	LUMP		.	
4090	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 202. IH-94 WB RAMPS & STH 67	LUMP	LUMP		.	
4100	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 203. STH 67 & OCONOMOWOC DR./ PABST FARMS BLVD.	LUMP	LUMP		.	
4110	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 204. STH 67 & CTH B (VALLEY RD.)	LUMP	LUMP		.	
4120	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 205. STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP		.	
4130	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 206. STH 67 & CENTER DR. /PABST RD.	LUMP	LUMP		.	

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			DOLLARS	CTS	DOLLARS	CTS
4140	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 207. STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.
4150	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 208. STH 67 & SUMMIT AVE.	LUMP	LUMP			.
4160	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 209. STH 67 & OLD TOWER RD.	LUMP	LUMP			.
4170	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 401. STA. 337+00NB	LUMP	LUMP			.
4180	659.1125 LUMINAIRES UTILITY LED C	100.000 EACH	.			.
4190	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 201. IH-94 EB RAMPS & STH 67	LUMP	LUMP			.
4200	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 202. IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
4210	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 203. STH 67 & OCONOMOWOC DR./PABST FARMS BLVD.	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
4220	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 204. STH 67 & CTH B (VALLEY RD.)	LUMP	LUMP			.
4230	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 205. STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.
4240	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 206. STH 67 & CENTER DR. /PABST RD.	LUMP	LUMP			.
4250	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 207. STH 67 & SUMMIT AVE.	LUMP	LUMP			.
4260	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 208. STH 67 & OLD TOWER RD.	LUMP	LUMP			.
4270	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 209. STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.
4280	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 401. STA. 337+00NB	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
4290	661.0300 GENERATORS	1.000				
	DAY		.		.	
4300	662.2024.S RAMP CLOSURE GATES SOLAR 24-FT	1.000				
	EACH		.		.	
4310	662.2030.S RAMP CLOSURE GATES SOLAR 30-FT	1.000				
	EACH		.		.	
4320	662.2037.S RAMP CLOSURE GATES SOLAR 37-FT	2.000				
	EACH		.		.	
4330	670.0100 FIELD SYSTEM INTEGRATOR 001. 1060-30-70 FTMS/ITS	LUMP	LUMP			.
4340	670.0100 FIELD SYSTEM INTEGRATOR 002. 1060-30-70 TRAFFIC SIGNALS	LUMP	LUMP			.
4350	670.0100 FIELD SYSTEM INTEGRATOR 003. 3030-08-70 TRAFFIC SIGNALS	LUMP	LUMP			.
4360	670.0200 ITS DOCUMENTATION 001. 1060-30-70 FTMS/ITS	LUMP	LUMP			.
4370	670.0200 ITS DOCUMENTATION 002. 1060-30-70 TRAFFIC SIGNALS	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
4380	670.0200 ITS DOCUMENTATION 003. 3030-08-70 TRAFFIC SIGNALS	LUMP	LUMP			.
4390	671.0132 CONDUIT HDPE 3-DUCT 2-INCH **P**	12,155.000 LF		.		.
4400	671.0232 CONDUIT HDPE DIRECTIONAL BORE 3-DUCT 2-IN **P**	187.000 LF		.		.
4410	671.0300 FIBER OPTIC CABLE MARKER	3.000 EACH		.		.
4420	672.0100 BASE ITS CONTROLLER CABINET	1.000 EACH		.		.
4430	672.0250 BASE CAMERA POLE 50-FT	1.000 EACH		.		.
4440	673.0105 COMMUNICATION VAULT TYPE 1	15.000 EACH		.		.
4450	673.0200.S INSTALL ITS FIELD CABINET	1.000 EACH		.		.
4460	674.0200 CABLE MICROWAVE DETECTOR **P**	6,310.000 LF		.		.
4470	674.0300 REMOVE CABLE **P**	3,230.000 LF		.		.

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			DOLLARS	CTS	DOLLARS	CTS
4480	675.0300 INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR ASSEMBLY	3.000 EACH	.		.	
4490	675.0400.S INSTALL ETHERNET SWITCH	1.000 EACH	.		.	
4500	677.0100 INSTALL CAMERA POLE	1.000 EACH	.		.	
4510	677.0200 INSTALL CAMERA ASSEMBLY	1.000 EACH	.		.	
4520	677.0300.S INSTALL VIDEO ENCODER	1.000 EACH	.		.	
4530	677.9050.S SALVAGE 50-FOOT CAMERA POLE WITH LOWERING SYSTEM	1.000 EACH	.		.	
4540	677.9200.S REMOVING CCTV CAMERA	1.000 EACH	.		.	
4550	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT **P**	690.000 LF	.		.	
4560	678.0036 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 36-CT **P**	18,210.000 LF	.		.	
4570	678.0200 FIBER OPTIC SPLICE ENCLOSURE	10.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
4580	678.0300 FIBER OPTIC SPlice	95.000 EACH	.		.	
4590	678.0400 FIBER OPTIC TERMINATION	6.000 EACH	.		.	
4600	678.0500 COMMUNICATION SYSTEM TESTING 001. 1060-30-70 FTMS/ITS	LUMP	LUMP		.	
4610	678.0500 COMMUNICATION SYSTEM TESTING 002. 1060-30-70 TRAFFIC SIGNALS	LUMP	LUMP		.	
4620	678.0500 COMMUNICATION SYSTEM TESTING 003. 3030-08-70 TRAFFIC SIGNALS	LUMP	LUMP		.	
4630	690.0150 SAWING ASPHALT	10,025.000 LF	.		.	
4640	690.0250 SAWING CONCRETE	16,440.000 LF	.		.	
4650	715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT	32,063.000 DOL	1.00000		32063.00	
4660	715.0502 INCENTIVE STRENGTH CONCRETE STRUCTURES	13,860.000 DOL	1.00000		13860.00	

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			DOLLARS	CTS	DOLLARS	CTS
4670	ASP.1T0A ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	8,000.000 HRS	5.00000		40000.00	
4680	ASP.1T0G ON-THE-JOB TRAINING GRADUATE AT \$5. 00/HR	10,000.000 HRS	5.00000		50000.00	
4690	SPV.0035 SPECIAL 001. ABANDONING SEWER SPECIAL	438.000 CY	.		.	
4700	SPV.0035 SPECIAL 002. BACKFILL SLURRY SPECIAL	100.000 CY	.		.	
4710	SPV.0035 SPECIAL 003. TOPSOIL POND SPECIAL	3,750.000 CY	.		.	
4720	SPV.0060 SPECIAL 001. MOBILIZATIONS EMERGENCY PAVEMENT REPAIR	4.000 EACH	.		.	
4730	SPV.0060 SPECIAL 002. SILT FENCE DRAINAGE OUTLET EROSION CONTROL FILTER BAGS	8.000 EACH	.		.	
4740	SPV.0060 SPECIAL 003. LANDMARK REFERENCE MONUMENTS SPECIAL	2.000 EACH	.		.	
4750	SPV.0060 SPECIAL 004. TEMPORARY INLET COVER	58.000 EACH	.		.	
4760	SPV.0060 SPECIAL 005. STORM SEWER TAP	1.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
4770	SPV.0060 SPECIAL 007. TEMPORARY DRAINAGE INLET MEDIAN 1	3.000 EACH	.		.	
4780	SPV.0060 SPECIAL 008. TEMPORARY DRAINAGE MANHOLE 4-FT DIAMETER	1.000 EACH	.		.	
4790	SPV.0060 SPECIAL 009. REMOVE PIPE AND CAP STORM SEWER STRUCTURE	2.000 EACH	.		.	
4800	SPV.0060 SPECIAL 020. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2	97.000 EACH	.		.	
4810	SPV.0060 SPECIAL 021. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 3	2.000 EACH	.		.	
4820	SPV.0060 SPECIAL 022. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS	60.000 EACH	.		.	
4830	SPV.0060 SPECIAL 025. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE SYMBOLS 18-INCH	14.000 EACH	.		.	
4840	SPV.0060 SPECIAL 026. TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES LEFT-IN-PLACE	26.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
4850	SPV.0060 SPECIAL 027. TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS LEFT-IN-PLACE	26.000 EACH	.		.	
4860	SPV.0060 SPECIAL 028. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 4	2.000 EACH	.		.	
4870	SPV.0060 SPECIAL 101. CONCRETE BARRIER TRANSITION TYPE V42 TO S42 SPECIAL	1.000 EACH	.		.	
4880	SPV.0060 SPECIAL 201. REMOVING LUMINAIRES	4.000 EACH	.		.	
4890	SPV.0060 SPECIAL 301. REMOVING LIGHTING UNITS	12.000 EACH	.		.	
4900	SPV.0060 SPECIAL 302. REMOVING AND SALVAGE LIGHTING UNITS	2.000 EACH	.		.	
4910	SPV.0060 SPECIAL 303. LAMP DISPOSAL HIGH INTENSITY DISCHARGE	17.000 EACH	.		.	
4920	SPV.0060 SPECIAL 304. INSTALL SALVAGED LIGHTING UNITS	2.000 EACH	.		.	
4930	SPV.0060 SPECIAL 305. INSTALL OCONOMOWOC FURNISHED LIGHTING UNITS	9.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
4940	SPV.0060 SPECIAL 401. CONCRETE BASES TYPE 10, CONTRACTOR SUPPLIED ANCHOR BOLTS & ROD TEMPLATE	4.000 EACH	.		.	
4950	SPV.0060 SPECIAL 402. POLES TYPE 10	4.000 EACH	.		.	
4960	SPV.0060 SPECIAL 403. MONOTUBE ARMS 30-FT	4.000 EACH	.		.	
4970	SPV.0060 SPECIAL 404. LUMINAIRE ARMS STEEL 15-FT	4.000 EACH	.		.	
4980	SPV.0060 SPECIAL 405. CONTRACTOR PROVIDED HIGH-STRENGTH BOLT ASSEMBLIES FOR MONOTUBE POLES	4.000 EACH	.		.	
4990	SPV.0060 SPECIAL 406. TRAFFIC SIGNAL CONTROLLER AND CABINET 8-PHASE FULLY ACTUATED	1.000 EACH	.		.	
5000	SPV.0060 SPECIAL 501. SALVAGE CONTROLLER CABINET	1.000 EACH	.		.	
5010	SPV.0060 SPECIAL 502. REMOVING CONTROLLER CABINET BASE	1.000 EACH	.		.	
5020	SPV.0060 SPECIAL 503. REMOVING ELECTRICAL SERVICE METER BREAKER PEDESTAL	1.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
5030	SPV.0060 SPECIAL 504. REMOVING MICROWAVE DETECTOR ASSEMBLY	2.000 EACH	.		.	
5040	SPV.0060 SPECIAL 505. RELOCATING TRAVELER ADVISORY RADIO TRANSMITTER	1.000 EACH	.		.	
5050	SPV.0060 SPECIAL 506. GROUND ROD	3.000 EACH	.		.	
5060	SPV.0060 SPECIAL 507. INSTALL WIRELESS MODEM	1.000 EACH	.		.	
5070	SPV.0060 SPECIAL 508. INSTALL SOLAR POWER SYSTEM ASSEMBLY	1.000 EACH	.		.	
5080	SPV.0060 SPECIAL 701. ADJUSTING VALVE BOXES	59.000 EACH	.		.	
5090	SPV.0060 SPECIAL 703. INTERNAL-EXTERNAL SANITARY MANHOLE SEAL	17.000 EACH	.		.	
5100	SPV.0060 SPECIAL 704. OCONOMOWOC MH FRAME AND COVER	20.000 EACH	.		.	
5110	SPV.0060 SPECIAL 705. HYDRANT RELOCATION	12.000 EACH	.		.	
5120	SPV.0060 SPECIAL 706. ADJUSTING SANITARY MANHOLE COVER	27.000 EACH	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
5130	SPV.0060 SPECIAL 707. 3' X 2' RETROFIT INLET FRAME AND GRATE	1.000 EACH	.		.	
5140	SPV.0060 SPECIAL 708. 1. 75' X 2' RETROFIT INLET FRAME AND GRATE	2.000 EACH	.		.	
5150	SPV.0060 SPECIAL 709. 2. 75' X 2.25' RETROFIT INLET FRAME AND GRATE	1.000 EACH	.		.	
5160	SPV.0060 SPECIAL 801. INSTALL VALVE BOX	1.000 EACH	.		.	
5170	SPV.0090 SPECIAL 001. WET REFLECTIVE REMOVABLE TEMPORARY PAVEMENT MARKING TAPE 4-INCH	7,000.000 LF	.		.	
5180	SPV.0090 SPECIAL 003. REMOVING PAVEMENT MARKING WATER BLASTING	67,650.000 LF	.		.	
5190	SPV.0090 SPECIAL 023. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 6-INCH **P**	5,563.000 LF	.		.	
5200	SPV.0090 SPECIAL 024. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 18-INCH **P**	1,479.000 LF	.		.	
5210	SPV.0090 SPECIAL 101. FENCE CHAIN LINK POLYMER-COATED 4-FT.	1,371.000 LF	.		.	

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			DOLLARS	CTS	DOLLARS	CTS
5220	SPV.0090 SPECIAL 102. FENCE DECORATIVE BRIDGE	624.000 LF	.		.	
5230	SPV.0090 SPECIAL 103. FENCE DECORATIVE RETAINING WALL	1,120.000 LF	.		.	
5240	SPV.0090 SPECIAL 104. CONCRETE BARRIER TYP S42 SPECIAL	126.000 LF	.		.	
5250	SPV.0090 SPECIAL 701. CONCRETE CURB & GUTTER 24-INCH TYPE D **P**	248.000 LF	.		.	
5260	SPV.0090 SPECIAL 801. NEW SANITARY SEWER 8-INCH C-900 PIPE	370.000 LF	.		.	
5270	SPV.0105 SPECIAL 001. PAVEMENT CLEANUP PROJECT 1060-30-70	LUMP	LUMP		.	
5280	SPV.0105 SPECIAL 002. PAVEMENT CLEANUP PROJECT 3030-08-70	LUMP	LUMP		.	
5290	SPV.0105 SPECIAL 003. SURVEY PROJECT 1060-30-70	LUMP	LUMP		.	
5300	SPV.0105 SPECIAL 004. SURVEY PROJECT 2718-00-75	LUMP	LUMP		.	
5310	SPV.0105 SPECIAL 005. SURVEY PROJECT 3030-08-70	LUMP	LUMP		.	

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			DOLLARS	CTS	DOLLARS	CTS
5320	SPV.0105 SPECIAL 006. PAVEMENT CLEANUP PROJECT 2718-00-75	LUMP	LUMP			.
5330	SPV.0105 SPECIAL 007. FIELD OFFICE FIXED	LUMP	LUMP			.
5340	SPV.0105 SPECIAL 104. RAILING TUBULAR STEEL GALVANIZED PEDESTRIAN R-67-113	LUMP	LUMP			.
5350	SPV.0105 SPECIAL 105. RAILING TUBULAR STEEL GALVANIZED PEDESTRIAN R-67-114	LUMP	LUMP			.
5360	SPV.0105 SPECIAL 201. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET IH-94 EB RAMPS & STH 67	LUMP	LUMP			.
5370	SPV.0105 SPECIAL 202. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
5380	SPV.0105 SPECIAL 203. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET STH 67 & OCONOMOWOC DR./PFB	LUMP	LUMP			.
5390	SPV.0105 SPECIAL 204. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET STH 67 & CTH B(VALLEY RD.)	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
5400	SPV.0105 SPECIAL 205. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET STH 67 & OCNOMOWOC PKWY.	LUMP	LUMP			.
5410	SPV.0105 SPECIAL 206. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET STH 67 & CENTER DR./PABST RD.	LUMP	LUMP			.
5420	SPV.0105 SPECIAL 207. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.
5430	SPV.0105 SPECIAL 208. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET STH 67 & SUMMIT AVE.	LUMP	LUMP			.
5440	SPV.0105 SPECIAL 209. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET STH 67 & OLD TOWER RD.	LUMP	LUMP			.
5450	SPV.0105 SPECIAL 210. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS IH-94 EB RAMPS & STH 67	LUMP	LUMP			.
5460	SPV.0105 SPECIAL 211. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS IH-94 WB RAMPS & STH 67	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
5470	SPV.0105 SPECIAL 212. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS STH 67 & OCONOMOWOC DR./PFB	LUMP	LUMP			.
5480	SPV.0105 SPECIAL 213. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS STH 67 & CTH B (VALLEY RD.)	LUMP	LUMP			.
5490	SPV.0105 SPECIAL 214. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.
5500	SPV.0105 SPECIAL 215. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS STH 67 & CENTER DR./PABST RD.	LUMP	LUMP			.
5510	SPV.0105 SPECIAL 216. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.
5520	SPV.0105 SPECIAL 217. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS STH 67 & SUMMIT AVE.	LUMP	LUMP			.
5530	SPV.0105 SPECIAL 218. TRANSPORT TRAFFIC SIGNAL & LIGHTING MATERIALS STH 67 & OLD TOWER RD.	LUMP	LUMP			.
5540	SPV.0105 SPECIAL 219. REMOVE TRAFFIC SIGNALS IH-94 EB RAMPS & STH 67	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
5550	SPV.0105 SPECIAL 220. REMOVE TRAFFIC SIGNALS IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
5560	SPV.0105 SPECIAL 221. REMOVE TRAFFIC SIGNALS STH 67 & OCONOMOWOC DR. /PABST FARMS BLVD.	LUMP	LUMP			.
5570	SPV.0105 SPECIAL 222. REMOVE TRAFFIC SIGNALS STH 67 & CTH B (VALLEY RD.)	LUMP	LUMP			.
5580	SPV.0105 SPECIAL 223. REMOVE TRAFFIC SIGNALS STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.
5590	SPV.0105 SPECIAL 224. REMOVE TRAFFIC SIGNALS STH 67 & CENTER DR. /PABST RD.	LUMP	LUMP			.
5600	SPV.0105 SPECIAL 225. REMOVE TRAFFIC SIGNALS STH 67 & SUMMIT AVE.	LUMP	LUMP			.
5610	SPV.0105 SPECIAL 226. REMOVE TRAFFIC SIGNALS STH 67 & OLD TOWER RD.	LUMP	LUMP			.
5620	SPV.0105 SPECIAL 227. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE IH-94 EB RAMPS & STH 67	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
5630	SPV.0105 SPECIAL 228. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
5640	SPV.0105 SPECIAL 229. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE STH 67 & OCONOMOWOC DR./PFB	LUMP	LUMP			.
5650	SPV.0105 SPECIAL 230. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE STH 67 & CTH B(VALLEY RD.)	LUMP	LUMP			.
5660	SPV.0105 SPECIAL 231. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.
5670	SPV.0105 SPECIAL 232. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE STH 67 & CENTER DR/PABST RD.	LUMP	LUMP			.
5680	SPV.0105 SPECIAL 233. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE STH 67 & SUMMIT AVE.	LUMP	LUMP			.
5690	SPV.0105 SPECIAL 234. REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE STH 67 & OLD TOWER RD.	LUMP	LUMP			.
5700	SPV.0105 SPECIAL 235. EVP DETECTOR HEAD INSTALLATION IH-94 EB RAMPS & STH 67	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
5710	SPV.0105 SPECIAL 236. EVP DETECTOR HEAD INSTALLATION IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
5720	SPV.0105 SPECIAL 237. EVP DETECTOR HEAD INSTALLATION STH 67 & OCONOMOWOC DR./PABST FARMS BLVD.	LUMP	LUMP			.
5730	SPV.0105 SPECIAL 238. EVP DETECTOR HEAD INSTALLATION STH 67 & CTH B (VALLEY RD.)	LUMP	LUMP			.
5740	SPV.0105 SPECIAL 239. EVP DETECTOR HEAD INSTALLATION STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.
5750	SPV.0105 SPECIAL 240. EVP DETECTOR HEAD INSTALLATION STH 67 & CENTER DR./PABST RD.	LUMP	LUMP			.
5760	SPV.0105 SPECIAL 241. EVP DETECTOR HEAD INSTALLATION STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.
5770	SPV.0105 SPECIAL 242. EVP DETECTOR HEAD INSTALLATION STH 67 & SUMMIT AVE.	LUMP	LUMP			.
5780	SPV.0105 SPECIAL 243. EVP DETECTOR HEAD INSTALLATION STH 67 & OLD TOWER RD.	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
5790	SPV.0105 SPECIAL 244. TRANSPORT & INSTALL FURNISHED VIDEO DETECTION SYSTEM IH-94 EB RAMPS & STH 67	LUMP	LUMP			.
5800	SPV.0105 SPECIAL 245. TRANSPORT & INTALL FURNISHED VIDEO DETECTION SYSTEM IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
5810	SPV.0105 SPECIAL 246. TRANSPORT & INSTALL FURNISHED VIDEO DETECTION SYSTEM STH 67 & OD/PFB	LUMP	LUMP			.
5820	SPV.0105 SPECIAL 247. TRANSPORT & INSTALL FURNISHED VIDEO DETECTION SYSTEM STH 67 & CTH B(VR)	LUMP	LUMP			.
5830	SPV.0105 SPECIAL 248. TRANSPORT & INSTALL FURNISHED VIDEO DETECTION SYSTEM STH 67 & OP	LUMP	LUMP			.
5840	SPV.0105 SPECIAL 249. TRANSPORT & INSTALL FURNISHED VIDEO DETECTION SYSTEM STH 67 & CENTER RD/PR	LUMP	LUMP			.
5850	SPV.0105 SPECIAL 250. TRANSPORT & INTALL FURNISHED VIDEO DETECTION SYSTEM STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.

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			DOLLARS	CTS	DOLLARS	CTS
5860	SPV.0105 SPECIAL 251. TRANSPORT & INSTALL FURNISHED VIDEO DETECTION SYSTEM STH 67 & SUMMIT AVE.	LUMP	LUMP			.
5870	SPV.0105 SPECIAL 252. TRANSPORT & INSTALL FURNISHED VIDEO DETECTION SYSTEM STH 67 & OLD TOWER RD.	LUMP	LUMP			.
5880	SPV.0105 SPECIAL 253. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET IH-94 RAMPS & STH 67	LUMP	LUMP			.
5890	SPV.0105 SPECIAL 254. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
5900	SPV.0105 SPECIAL 255. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET STH 67 & OD/PFB	LUMP	LUMP			.
5910	SPV.0105 SPECIAL 256. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET STH 67 & CTH B(VR)	LUMP	LUMP			.
5920	SPV.0105 SPECIAL 257. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5930	SPV.0105 SPECIAL 258. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET STH 67 & CENTER DR./PR.	LUMP	LUMP			.
5940	SPV.0105 SPECIAL 259. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.
5950	SPV.0105 SPECIAL 260. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET STH 67 & SUMMIT AVE.	LUMP	LUMP			.
5960	SPV.0105 SPECIAL 261. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET STH 67 & OLD TOWER RD.	LUMP	LUMP			.
5970	SPV.0105 SPECIAL 262. TEMP. VEHICLE DETECTION SYSTEM FOR INTERSECTIONS IH-94 EB RAMPS & STH 67	LUMP	LUMP			.
5980	SPV.0105 SPECIAL 263. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS IH-94 WB RAMPS & STH 67	LUMP	LUMP			.
5990	SPV.0105 SPECIAL 264. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS STH 67 & OD/PFB	LUMP	LUMP			.
6000	SPV.0105 SPECIAL 265. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS STH 67 & CTH B (VALLEY RD.)	LUMP	LUMP			.

SCHEDULE OF ITEMS

REVISED:

CONTRACT:
20141209005PROJECT(S):
1060-30-70
2718-00-74
2718-00-75
3030-08-70FEDERAL ID(S):
WISC 2014435
WISC 2014228
WISC 2014436
WISC 2014438

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6010	SPV.0105 SPECIAL 266. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS STH 67 & OCONOMOWOC PKWY.	LUMP	LUMP			.
6020	SPV.0105 SPECIAL 267. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS STH 67 & CENTER DR./PR.	LUMP	LUMP			.
6030	SPV.0105 SPECIAL 268. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS STH 67 & SUMMIT AVE.	LUMP	LUMP			.
6040	SPV.0105 SPECIAL 269. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS STH 67 & OLD TOWER RD.	LUMP	LUMP			.
6050	SPV.0105 SPECIAL 270. TEMP VEHICLE DETECTION SYSTEM FOR INTERSECTIONS STH 67 & ROBRUCK DRIVE	LUMP	LUMP			.
6060	SPV.0105 SPECIAL 401. EMERGENCY VEHICLE PREEMPTION SYSTEM SUMMIT AVE & THACKERAY TRAIL	LUMP	LUMP			.
6070	SPV.0105 SPECIAL 402. VIDEO VEHICLE DETECTION SYSTEM SUMMIT AVE AND THACKERAY TRAIL	LUMP	LUMP			.
6080	SPV.0105 SPECIAL 403. REMOVE TRAFFIC SIGNALS SUMMIT AVE & THACKERAY TRAIL	LUMP	LUMP			.

SCHEDULE OF ITEMS

REVISED:

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2718-00-75
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WISC 2014435
WISC 2014228
WISC 2014436
WISC 2014438

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6090	SPV.0105 SPECIAL 404. TEMP. NON-INTRUSIVE VEHICLE DETECTION SYSTEM SUMMIT AVE. & THACKERAY TRL.	LUMP	LUMP			.
6100	SPV.0105 SPECIAL 601. REMOVING OVERHEAD SIGN SUPPORT S-67-260	LUMP	LUMP			.
6110	SPV.0105 SPECIAL 602. REMOVING OVERHEAD SIGN SUPPORT S-67-909	LUMP	LUMP			.
6120	SPV.0105 SPECIAL 701. SIGN REMOVAL	LUMP	LUMP			.
6130	SPV.0105 SPECIAL 702. PAVEMENT CLEANUP PROJECT 2718-00-74	LUMP	LUMP			.
6140	SPV.0105 SPECIAL 703. SURVEY PROJECT 2718-00-74	LUMP	LUMP			.
6150	SPV.0105 SPECIAL 801. OFFSET 16-INCH WATER MAIN FOR MULTI-USE TUNNEL	LUMP	LUMP			.
6160	SPV.0105 SPECIAL 802. OFFSET 16-INCH WATER MAIN FOR STORM SEWER	LUMP	LUMP			.
6170	SPV.0165 SPECIAL 001. ARCHITECTURAL CONCRETE SIDEWALK 5-INCH **P**	2,210.000 SF				.

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WISC 2014435
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WISC 2014436
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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6180	SPV.0165 SPECIAL 106. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD/QMP	22,072.000 SF	.		.	
6190	SPV.0165 SPECIAL 107. WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH LRFD	1,931.000 SF	.		.	
6200	SPV.0165 SPECIAL 108. CONCRETE STAINING ROADWAY	104.000 SF	.		.	
6210	SPV.0165 SPECIAL 109. CONCRETE STAINING MULTI-COLOR ROADWAY	440.000 SF	.		.	
6220	SPV.0165 SPECIAL 110. ARCHITECTURAL SURFACE TREATMENT ROADWAY	440.000 SF	.		.	
6230	SPV.0165 SPECIAL 801. INSTALL 4-INCH FOAM BOARD OVER CROSSING	32.000 SF	.		.	
6240	SPV.0170 SPECIAL 701. PROOF ROLLING	120.000 STA	.		.	
6250	SPV.0180 SPECIAL 002. TOPSOIL SPECIAL	202,426.000 SY	.		.	
6260	SPV.0180 SPECIAL 003. TEMPORARY CROSSWALK/SIDEWALK	1,600.000 SY	.		.	
6270	SPV.0180 SPECIAL 701. HYDROMULCHING	2,870.000 SY	.		.	

Wisconsin Department of Transportation

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DATE: 10/29/14

REVISED:

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20141209005PROJECT(S):
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2718-00-74
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WISC 2014228
WISC 2014436
WISC 2014438

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6280	SPV.0195 SPECIAL 001. COLD PATCH	35.000 TON	.		.	
6290	SPV.0200 SPECIAL 701. MANHOLE REPAIR	29.000 VF	.		.	
6300	SPV.0200 SPECIAL 801. NEW SANITARY SEWER MANHOLE	23.000 VF	.		.	
	SECTION 0001 TOTAL				.	
	TOTAL BID				.	

PLEASE ATTACH SCHEDULE OF ITEMS HERE