**HIGHWAY WORK PROPOSAL**

Proposal Number: 1 1

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

| COUNTY | STATE PROJECT ID | FEDERAL PROJECT ID | PROJECT DESCRIPTION | HIGHWAY |
|---|---|---|---|---|
| Waukesha | 2370-00-73 | WISC 2014 023 | Redford Boulevard<br>Busse Rd. - STH 190 EB Ramp | CTH F |

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

| | |
|---|---|
| Proposal Guaranty Required, $ 75,000.00<br>Payable to: Wisconsin Department of Transportation | Attach Proposal Guaranty on back of this PAGE. |
| Bid Submittal Due<br>Date: February 11, 2014<br>Time (Local Time): 9:00 AM | Firm Name, Address, City, State, Zip Code<br>**SAMPLE**<br>**NOT FOR BIDDING PURPOSES** |
| Contract Completion Time<br>August 28, 2014 | |
| Assigned Disadvantaged Business Enterprise Goal<br>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

Removing pavement, removing asphaltic surface milling, removing curb and gutter, rubbilizing pavement, base patching, concrete pavement repair, sawing pavement, pavement dowel bar retrofit, concrete pavement continuous diamond grinding, concrete curb and gutter, HMA pavement, beam guard, traffic control, pavement marking, erosion control, stormwater and landscaping.

| Notice of Award Dated | Date Guaranty Returned |
|---|---|
| | |

# PLEASE ATTACH
# PROPOSAL GUARANTY HERE

**Effective with November 2007 Letting**

## PROPOSAL REQUIREMENTS AND CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

**Effective with August 2007 Letting**

# BID PREPARATION

## Preparing the Proposal Schedule of Items

### A General

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

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

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

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

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

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

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

**(6)** Contractors are responsible for checking on the issuance of addenda and for obtaining the addenda. Notice of issuance of addenda is posted on the department's web site at http://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm or by calling the department at (608) 266-1631. Addenda can ONLY be obtained from the departments web site listed above or by picking up the addenda at the Bureau of Highway Construction, Room 601, 4802 Sheboygan Avenue, Madison, WI, during regular business hours.

### B Submitting Electronic Bids

#### B.1 On the Internet

(1) Do the following before submitting the bid:

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

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

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

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

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

(1) Download the latest schedule of items from the Wisconsin pages of the Bid Express™ web site reflecting the latest addenda posted on the department's web site at **http://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm**. Use Expedite ™ software to prepare and print the schedule of items. Provide a valid amount for all price fields. Follow instructions and review the help screens provided on the Bid Express™ web site to assure that the schedule of items is prepared properly.

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

**Bidder Name**

**BN00**

**Proposals: 1, 12, 14, & 22**

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

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

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

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

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

**C Waiver of Electronic Submittal**

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

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

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

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

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

# PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

**PRINCIPAL**

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

**NOTARY FOR PRINCIPAL**

(Date)

State of Wisconsin )
) ss.
_____ County )

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

**Notary Seal**

**NOTARY FOR SURETY**

(Date)

State of Wisconsin )
) ss.
_____ County )

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

**Notary Seal**

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

# CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

| |
|---|
| Time Period Valid (From/To) |
| Name of Surety |
| Name of Contractor |
| Certificate Holder<br>Wisconsin Department of Transportation |

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

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

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

(Signature of Authorized Contractor Representative) (Date)

**March 2010**

## LIST OF SUBCONTRACTORS

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

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

| Name of Subcontractor | Class of Work | Estimated Value |
|---|---|---|
| | | |
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| | | |
| | | |
| | | |
| | | |
| | | |

**DECEMBER 2000**

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Special Provisions

## Table of Contents

**SPECIAL PROVISIONS**

## 1. General.

Perform the work under this construction contract for Project 2370-00-73, Redford Boulevard (CTH F), Busse Road to STH 190 eastbound Ramp, 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, 2014 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 (20130615)

## 2. Scope of Work.

The work under this contract shall consist of removing pavement, removing asphaltic surface milling, removing curb and gutter, rubbilizing pavement, base patching, concrete pavement repair, sawing pavement, pavement dowel bar retrofit, concrete pavement continuous diamond grinding, concrete curb and gutter, HMA pavement, steel plate beam guard, traffic control, pavement marking, erosion control, stormwater, landscaping and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.
104-005 (20090901)

## 3. Prosecution and Progress.

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

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

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

Do not commence work under this contract until the required traffic control and erosion and sediment control devices are in place and have been approved by the engineer.

Conform to the construction staging as described herein and as shown in the plans, unless modifications are approved in writing by the engineer. The construction staging shown applies to both the northbound and southbound lanes of Redford Boulevard (CTH F).

**Definitions**
The following definitions apply to this contract:

**Peak Hours**
- 5:30 AM – 8:00 PM Monday, Tuesday, Wednesday, and Thursday
- 5:30 AM – 11:30 PM Friday
- 7:30 AM – 7:00 PM Saturday, Sunday

**Off-Peak Hours**
- 8:00 PM – 9:30 PM Monday, Tuesday, Wednesday, and Thursday
- 7:00 PM – 11:30 PM Saturday
- 7:00 PM – 9:30 PM Sunday

**Night Time Hours**
- 9:30 PM – 5:30 AM (Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
- 11:30 PM – 7:30 AM (Friday PM to Saturday AM, Saturday PM to Sunday AM)

**Freeway Service Ramp Lane Closures**
All ramp lanes shall be open to traffic at all times except for approved Night Time Hour or Off-Peak Hour closures.

**Stage 1A and 1B**
Rubblize the northbound and southbound Redford Boulevard (CTH F) pavement from the entrance of Steinhafels Furniture Store to the south limit of the IH 94 interchange and construct HMA overlay as shown in the plans.

**Stage 2A, 2B, 2C, and 2D**
Remove existing pavement of the center lanes of northbound and southbound Redford Boulevard (CTH F) from the north limit of the IH 94 interchange to Westwood Road and construct new concrete pavement as shown in the plans.

**Stage 3A and 3B**
Construct base patches, concrete pavement repairs, pavement dowel bar retrofits, concrete pavement continuous diamond grinding, concrete curb and gutter, and HMA pavement of northbound and southbound Redford Boulevard (CTH F) from Westwood Road to the north construction limits of the project as shown in the plans.

**Stage 4A and 4B**
Remove the Green Road Ramp pavement from Green Road to Redford Boulevard (CTH F) and construct new HMA pavement as shown in the plans.

A representative of the contractor will be required to attend weekly meetings with the engineer and Waukesha County officials. These meetings will also include any utilities affected by the project. Meetings shall be scheduled by the engineer and will be held onsite.

Do not close or remove any driveway access without 48 hours notice given to the occupants of the premises to remove their vehicles prior to closing the access. Maintain access at all times for each commercial property.

The department will not grant extensions for the following:

- Weather
- Labor disputes that are not industry wide.
- Delays in material deliveries.
- Utility coordination and/or utility construction.

## 4. Business Coordination Meeting.

Following the preconstruction conference and before the commencement of construction operations, a representative of the contractor, along with the engineer and Waukesha County officials, will be required to meet with interested adjoining property owners and businesses to discuss the proposed schedule and access during construction. Subsequent meetings with property and business owners will be held to discuss the progress of the project and any problems associated with construction, as needed. Waukesha County will provide a place for these meetings. The contractor is responsible for arranging and conducting the meeting.

## 5. Traffic.

**General**

Keep Redford Boulevard (CTH F) open to traffic at all times during the life of the contract. Follow the construction staging and traffic control shown in the plans. The contractor may not alter the construction staging and traffic control shown in the plans without the approval of the engineer and the department.

Maintain vehicular access along Redford Boulevard (CTH F) at all times for all emergency vehicles. Maintain vehicular access on existing or new pavement, crushed aggregate base course or on temporary roadways as approved by the engineer.

Maintain access to all business and private driveways on a minimum of crushed aggregate base course surface at all times. Provide and maintain crushed aggregate to traverse curb and gutter as approved by the engineer. Notify and coordinate with business and property owners a minimum of seven days prior to changes in driveway access. Protect the concrete curb and gutter adjacent to temporary access points and repair any damaged areas as directed by the engineer.

Mask out or cover all traffic control signs when not in use or when not applicable.

Do not park or store vehicles, equipment and materials of the contractor or contractor employees on or adjacent to roadways within 10 feet of the pavement edge except when approved by the engineer.

Maintain a 12 foot minimum width access to all businesses at all times or unless directed by the engineer.

Complete the construction sequence and the associated traffic control as detailed on the plans and as follows:

**Stage 1**
Maintain a minimum of one lane of traffic in each direction along Redford Boulevard (CTH F).

Maintain all side road and driveway access during construction operations.

**Stage 1A**
Close outside lanes along northbound and southbound Redford Boulevard (CTH F). between the southern project limits and net exception.

Pave all side roads and driveways during off-peak or nighttime hours while maintaining access or as directed by the engineer.

**Stage 1B**
Close inside lanes along northbound and southbound Redford Boulevard (CTH F) between the southern project limits and net exception.

Pave all median openings during off-peak or nighttime hours while maintaining access or as directed by the engineer.

**Stage 2**
Maintain all side road and driveway access during construction operations.

**Stage 2A**
Maintain a minimum of two lanes of traffic northbound along Redford Boulevard (CTH F). Maintain all lanes of traffic along southbound Redford Boulevard (CTH F).

Close outside lanes along northbound and southbound Redford Boulevard (CTH F) between the net exception and Westwood Drive and reconstruct center lane.

**Stage 2B**
Maintain a minimum of two lanes of traffic northbound along Redford Boulevard (CTH F). Maintain all lanes of traffic along southbound Redford Boulevard (CTH F).

Close inside lanes along northbound and southbound Redford Boulevard (CTH F) between the net exception and Westwood Drive and reconstruct center lane.

**Stage 2C**
Maintain a minimum of two lanes of traffic southbound along Redford Boulevard (CTH F). Maintain all lanes of traffic along northbound Redford Boulevard (CTH F).

Close outside lanes along northbound and southbound Redford Boulevard (CTH F) between the net exception and Westwood Drive and reconstruct center lane.

**Stage 3**
Maintain a minimum of one lane of traffic in each direction along Redford Boulevard (CTH F).

Maintain all side road and driveway access during construction operations.

**Stage 3A**
Close outside lanes along northbound and southbound Redford Boulevard (CTH F) between Westwood Drive and the North project limits.

Pave all side roads and driveways during off-peak or nighttime hours while maintaining access or as directed by the engineer.

**Stage 3B**
Close inside lanes along northbound and southbound Redford Boulevard (CTH F) between Westwood Drive and the North project limits.

Pave all median openings during off-peak or nighttime hours while maintaining access or as directed by the engineer.

**Stage 4**
Maintain a minimum of one lane of traffic along the Green Road Ramp.

Maintain all side road access during construction operations.

Employ flagging operations in accordance to standard spec 643 and WisDOT standard detail drawings.

**Stage 4A**
Close the southbound lane of Green Road Ramp.

**Stage 4B**
Close the northbound lane of Green Road Ramp.

**All Stages**
Move traffic control drums during off-peak construction hours to complete work adjacent to traffic lanes open to traffic. Maintain a minimum of 10-foot lanes. Drum location must be approved by the engineer.

**Alternate Route**
Provide a signed alternate route via STH 164 as shown in the plans. This signed route utilizes Busse Road, Watertown Road (CTH M) during Stages 1 and 2 and Busse Road, Bluemound Road (CTH JJ) and Capitol Drive (STH 190) during Stage 3.

**Waukesha County Fair**
Maintain two lanes of traffic in each direction along Redford Boulevard (CTH F) during Waukesha County Fair (July 16, 2014 through July 20, 2014).

**Advance Notification**
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.

| | |
|---|---|
| Ramp Closures | 3 business days |
| Lane Closures | 3 business days |
| Construction Stage Changes | 14 calendar days |

Notify the engineer and the WisDOT Regional Work Zone Engineer, (262) 548-6730, if there are any changes in the schedule, early completions, or cancellations of scheduled work.

## 6. Hauling Restrictions.

Conduct operations in a manner that will cause a minimum of inconvenience to the free flow of vehicles on roadways carrying Redford Boulevard (CTH F) and local streets traffic. The contractor will be allowed access to these at locations approved by the engineer.

When hauling across any public roads, provide the necessary flagging and signing to control the construction equipment movements. The flagging operations shall not impeded traffic flow on the public roads.

## 7. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying Redford Boulevard (CTH F) 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, April 18, 2014 to 6:00AM Monday, April 21, 2014 for Easter;
- From noon Friday, May 23, 2014 to 7:00 AM Tuesday, May 27, 2014 for Memorial Day;
- From noon Thursday, July 3, 2014 to 7:00 AM Monday, July 7, 2014 for Independence Day;
- From noon Friday, August 29 to 7:00 AM Tuesday, September 2, 2014 for Labor Day.

## 8. Railroad Insurance and Coordination.

### A Description

Comply with standard spec 107.17 for all work affecting Soo Line Railroad Company, d/b/a Canadian Pacific Railway Company property and any existing tracks.

### A.1 Railroad Insurance Requirements

In addition to standard spec 107.26, provide railroad protective liability insurance coverage as specified in standard spec 107.17.3. Insurance is filed in the name of Soo Line Railroad Company, d/b/a Canadian Pacific Railway Company.

Notify evidence of the required coverage, and duration to Canadian Pacific Railway Company at 11306 Franklin Avenue, Franklin Park, IL 60131, Attention Edward Oom. Include the following information on the insurance document:

Project: 2370-00-73
Route Name: CTH F, Waukesha County
Crossing No. 390 525S, Milepost 102.48
Watertown Subdivision

### A.2 Work by Railroad

The railroad will perform the work described in this section, except for work described in other special provisions and will be accomplished without cost to the contractor. None

### A.3 Names and addresses of Railroad Representatives for Consultation and Coordination

Contact Edward Oom, Manager of Public Works- US East Engineering, 11306 Franklin Avenue, Franklin Park, IL 60131, TELEPHONE (630) 701-5882, oom0001@cpr.ca, for consultation on railroad requirements during construction.

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

### A.4 Temporary Grade Crossing

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

**A.5 Train Operation**
Approximately 2 passenger trains and 24-26 through freight trains operate daily through the construction site. Passenger trains operate at up to 79 mph. Through freight trains operate at up to 60 mph.

## 9. Erosion Control.

*Supplement standard spec 107.20 with the following:*

The contractor shall pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial topsoil stripping operations through the subsequent grading and re-topsoiling of the disturbed areas to minimize the period of exposure to possible erosion.

Topsoil graded/disturbed areas, as designated by the engineer, immediately after grading is completed within those areas. Restore all topsoil areas within five working days after placement of topsoil.

## 10. Utilities.

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

The locations of existing utility installations are approximate. There may be other utility installations within the project limits that are not shown. This project involves public utility relocations and/or adjustments. Utility work will require coordination with the contractor's construction activities as outlined below. The contractor shall verify the location of all live underground facilities through Diggers Hotline and/or by a direct call to the utility and shall use caution to insure the integrity of all existing overhead and underground utility facilities.

Prospective bidders are cautioned that the arrangements set for in this Article represent the utility companies' best estimate of their plans to relocate and/or adjust conflicting facilities. Bidders are advised to contact each utility company listed in the plans, prior to preparing their bids, to obtain current information on the status of any utility relocation work stated herein.

It is the contractor's responsibility to coordinate all work with each utility. This includes giving proper notification when utility work is to be performed in conjunction with highway construction.

**ANR Pipeline Company**
ANR Pipeline Company has facilities in the project area but they are not anticipated to be affected.

**ATC Management, Inc.** has overhead transmission facilities on the east side of CTH F. There are distribution wires belonging to We Energies and fiber belonging to MWF and Time Warner Cable on the lower portions of these poles. No relocations or adjustments to the transmission line is anticipated.

Maintain OSHA Safe Working Clearance to the 138kV conductors at all times, based on the latest OSHA criteria.

The contact during construction is Michael Olsen, (920) 338-6582 or (920) 660-2390 (mobile).

**AT&T Wisconsin** has facilities located throughout the project.
A manhole at approximately Station 110+20, 65' LT may require adjustment during construction. AT&T will adjust this manhole before or during construction.

Facilities are located under culvert replacement at approximately Station 98+50, 90' RT; no adjustments are anticipated. Facilities are also located under culvert replacement at approximately Station 103+50, 90' RT; no adjustments are anticipated. If adjustments are determined to be necessary required, AT&T will adjust prior to the start of construction.

Notify AT&T of work in the vicinity of their facilities one month prior to construction. AT&T requires 3 weeks for relocation work and/or adjustments. Contact Alper Kolcu at (262) 970-8494 or ak308x@att.com.

**City of Pewaukee**
There is a 15-inch sanitary sewer running under the south side of Watertown Road. There is a 12-inch water main on the north side of Watertown Road and turns north to the east of CTH F.

At approximately Station 92+60 with offset of 70' RT, a water main valve must be located, excavated, repaired and raised to grade. At approximately Station 125+55 with offset of 80' LT, a water main valve box must be repaired.

These two repairs have been included in the project and the contractor will be responsible to repair. The contact during construction is Jane Mueller, (262) 691-0804.

**TDS Telecom** has facilities in the project area but they are not anticipated to be affected.

**Time Warner Cable-** has fiber on the east side of CTH F.

At the intersection of CTH F and Paul/Duplainville Road, underground fiber facilities will be relocated between Station 109+50 to Station 112+50, 100' LT and 90' RT.

TWC will relocate its facilities prior to construction, 20 days after receiving permit approvals. The contact during construction is Steve Cramer, (414) 277-4045 or (414) 688-2385 (mobile).

**Village of Pewaukee**
Village of Pewaukee has facilities in the area; no relocations are anticipated.

There are 30-inch and 20-inch sanitary force mains, approximately ten feet deep, running in the WB lane of Watertown Rd. Force mains are located approximately perpendicular between Station 86+00 to Station 86+75, with offsets from the alignment to the west and east edge of the project limits.

There is also a valve vault frame and grate located 280 feet east of CTH F.

The contact during construction is David J. White, (262) 691-5694, (414) 418-5694 (mobile) and dwhite@villageofpewaukee.com.

**WE Energies - Electric**
WE Energies Electric has distribution wires on the east side of CTH F from Station 50+46 to Station 170+02.24, approximately 110' RT. Various underground electric facilities are within or adjacent to the project limits but are not in conflict with proposed work. No relocations are anticipated.

The contact during construction is Terry Connelly, (262) 968-5771 or terry.connelly@we-energies.com

**WE Energies - Gas**
WE Energies Gas has a 6-inch gas line running under Watertown Road that will be relocated prior to construction.

At the intersection of CTH F and CTH M, gas main replacement will be between Station 85+00 to Station 88+00, with offsets from the alignment of 160' LT and 115' RT.

At the intersection of Paul/Duplainville Road and CTH F, gas main replacement will be between Station 109+00 to 110+50, with offsets from the alignment of 60' LT and 175' RT.

WE Energies will relocate its facilities prior to construction. Construction is anticipated to begin by January 2014 and be complete within 45 working days. The contact during construction is Danielle Fink, (414) 944-5627 or Danielle.fink@we-energies.com

## 11. Notice to Contractor – Contamination Beyond Construction Limits.

The department completed testing for soil and ground water contamination for locations within this project where excavation is required. Testing indicated that petroleum-contaminated soil is present at the following site(s):

1. Station 84+40 to 90+40 from 53 feet RT of centerline to 425 feet RT of centerline.

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: Gary Evans, P.E. 1320 Pewaukee Road, Waukesha, WI 53188, (262) 548-7746.
107-100 (20050901)

## 12. Removing Endwalls, Item 204.9060.S.01.

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

**B (Vacant)**

**C (Vacant)**

**D Measurement**
The department will measure Removing Endwalls by each endwall, acceptably completed.

**E Payment**
*Supplement standard spec 204.5 to include the following:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.01 | Removing Endwalls | Each |

204-025 (20041005)

## 13. Excavation Below Subgrade.

No areas of poor and/or organic soils have been identified within the project limits; however an undistributed quantity of EBS is included in the contract below areas of pavement repairs. A corresponding undistributed quantity of Breaker Run is also included in the contract below areas of pavement repairs; however, the engineer may allow any material conforming to standard spec 205.3.4(3).

Should undercutting of the subgrade be required, the actual limits to be excavated shall be determined in the field by the engineer based upon the observed presence of unsuitable soils or on the basis of the results of proof rolling the earth subgrade. The quantity of EBS may be adjusted depending on the conditions found in the field and the proof rolling results.

## 14. Base Aggregate Dense.

All work under this item shall conform to standard spec 304, except that the aggregate material shall be crushed limestone obtained from quarries.

## 15. Breaker Run.

*Supplement standard spec 311 with the following:*

Do not use reclaimed asphaltic pavement for breaker run. The engineer may reject material deemed unsuitable.

## 16. QMP Base Aggregate.

### A Description

### A.1 General

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

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

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

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

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

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

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

### A.2 Contractor Testing for Small Quantities

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

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

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

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

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

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

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

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

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

## B Materials

### B.1 Quality Control Plan

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

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

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.

3. A list of source and processing locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Test results for wear, sodium sulfate soundness, freeze/thaw soundness, and plasticity index of all aggregates requiring QC testing. Obtain this information from the region materials unit or from the engineer.
5. Descriptions of stockpiling and hauling methods.
6. Locations of the QC laboratory, retained sample storage, and where control charts and other documentation is posted.
7. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

## B.2 Personnel

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

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

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

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

## B.3 Laboratory

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

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

## B.4 Quality Control Documentation

### B.4.1 General

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

### B.4.2 Records

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

### B.4.3 Control Charts

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

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

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

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

## B.5 Contractor Testing

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

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

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

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

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

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

## B.6 Test Methods

### B.6.1 Gradation

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

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

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

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

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

### B.6.2 Fracture

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

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

### B.6.3 Liquid Limit and Plasticity

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

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

## B.7 Corrective Action

### B.7.1 General

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

### B.7.2 Placement Corrective Action

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

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

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

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

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

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

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

## B.8 Department Testing

### B.8.1 General

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

### B.8.2 Verification Testing

#### B.8.2.1 General

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

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

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

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

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

### B.8.3 Independent Assurance

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

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

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

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

**B.9 Dispute Resolution**

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

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

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

**C (Vacant)**

**D (Vacant)**

**E Payment**

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

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

301-010 (20100709)

## 17. Concrete Pavement Continuous Diamond Grinding, Item 420.1000.S.

### A Description

(1) This special provision describes continuous diamond grinding of concrete pavement.

### B (Vacant)

### C Construction

#### C.1 General

(1) Diamond grind the existing concrete pavement to provide a uniform surface that is reasonably plane, free of excessively large scarification marks, and has the grade and cross slope the plans show or the engineer specifies. Do not damage the remaining pavement. Do not grind deeper than 3/4 inch from the top of the original surface.

(2) Complete full-depth and partial-depth concrete repairs, slab stabilization, dowel bar retrofit, and other pavement repair operations before grinding. Begin and end grinding at lines perpendicular to the pavement centerline at the project limits. Do not overlap adjacent grinding passes by more than 1-inch. Do not leave un-ground surface area between passes.

(3) Grind joint or crack faults so there is no more than a 1/16-inch differential between the adjacent sides of the joints and cracks. Grind warped and curled slabs as required to provide an acceptable ride. Provide smooth transitions from the edge of the mainline to shoulders, adjacent lanes, and ramps leaving no more than a 3/16-inch ridge at transitions. Grind adjacent pavement and paved shoulders as necessary to feather in a smooth transition and maintain drainage. Do not grind approach slabs unless necessary to provide a smooth transition.

(4) Provide lateral drainage by maintaining a constant cross slope between grinding extremities in each lane including feathered areas of the shoulder. Ensure that the finished cross slope conforms to the plans and has no depressions or slope misalignment greater than 1/4-inch in 12 feet when measured perpendicular to the centerline with a 12-foot straightedge

(5) Do not diamond grind over valves, manholes, or other fixtures. Provide a smooth taper from the diamond ground surface to the top of the fixture.

(6) Feather the grinding into existing structures such as manholes and water shutoffs in a manner that eliminates abrupt ridges or drops and provides a uniform texture and acceptable ride. If project conditions exist that prohibit acceptable feathering operations. the engineer may require that the structure be raised or lowered. The added work of raising and lowering these structures that is not included as a predetermined bid item will be paid for at an agreed upon price. Structure adjustments that occur within the limits of a full-depth repair shall be reset to an elevation ¼-inch below the new pavement surface to facilitate the diamond grinding operation.

**C.2 Equipment**

(1) Use self-propelled grinding machines with electronic depth, grade, and slope controls designed for grinding and texturing pavement. Equip grinding machines with diamond blades and a vacuuming system capable of removing liquid and solid residue from the pavement surface. Shroud the machine to prevent discharging loosened material into adjacent work areas or live traffic lanes.

(2) Ensure that the machine, including the grinding head, weighs 35,000 pounds or more, will grind a strip at least 4 feet wide, and has an effective wheel base of 25 feet or more. Do not use equipment that causes raveling, aggregate fractures, joint deflection, or other damage to material remaining in place.

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

**C.3 Final Surface Finish**

(1) Produce a pavement surface that is true in grade and uniform in appearance. Provide a longitudinal line-type texture with corrugations parallel to the outside pavement edge.

(2) Select the number of diamond blades per foot that will provide the proper surface finish for the aggregate type. Determine the proper sequence of operations and number of passes required to meet the specifications.

(3) Ensure that ridges are 1/8-inch +/- 1/16-inch higher than the bottom of the grooves and uniformly spaced as follows:

| | **Limestone** | **Gravel** |
|---|---|---|
| **Width between grooves** | 0.090 to 0.110 inch | 0.080 to 0.095 inch |

(4) Ensure that a minimum of 95 percent of any 4-foot by 100-foot section of pavement surface is textured. Remove unbroken fins as the engineer directs.

(5) For gutter areas, furnish diamond blades mounted on a self-propelled machine designed for grading and texturing gutter sections within 4 inches of the face of curb as described in the article “Continuous Diamond Grinding Gutter.”

**C.4 Residue Disposal**

(1) Remove solid and liquid grinding residues from the roadway by vacuuming. Leave the roadway in a clean, damp condition immediately behind the grinding machine. Remove residue immediately in areas of cross traffic. Do not allow residue and water to flow or blow across lanes used by public traffic or to enter any storm sewer, stream, lake, reservoir, marsh, or wetland. Dispose of residue and water at an acceptable material disposal site located off the project limits as noted in the ECIP.

**C.5 Smoothness Requirements**

(1) Test the pavement surface after grinding at engineer-selected locations with a 10-foot straightedge or a lightweight inertial profiler equipped with a line laser. The engineer may direct the contractor to mark and grind down those areas showing high spots greater than 1/8 inch in 10 feet until the area or spot's elevation no longer shows surface deviations greater than 1/8 inch when retested.

(2) Depressed pavement areas due to subsidence or other localized causes, areas containing feathering due to in pavement structures, and areas within intersections with varying cross slopes will be exempted from the smoothness requirements. These areas will be reviewed and approved by the engineer.

(3) Regrind segments found not meeting the smoothness requirements, at the contractor's expense.

**D Measurement**

(1) The department will measure Concrete Pavement Continuous Diamond Grinding by the square yard, acceptably completed, measured as the final textured surface area regardless of the number of passes required to achieve acceptable results. The department will include minor areas of un-ground pavement within the ground area.

(2) If conditions require a feather pass into the shoulder, adjacent lanes, or ramps, the department will also measure an area 2 feet wide times the length of the feather pass or an additional 20 square yards whichever is greater.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 420.1000.S | Concrete Pavement Continuous Diamond Grinding | SY |

(1) Payment for Concrete Pavement Continuous Diamond Grinding is full compensation for grinding to improve pavement ride including measuring IRI before and after grinding; for feathering in adjacent pavement; for removing unbroken fins; and for hauling and off-site disposal of grinding residue.

(2) The department will adjust pay for smoothness of each 500-foot long segment nominally one wheel path wide using equation as follows:

## 18. QMP HMA Pavement Nuclear Density.

### A Description

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

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

(2) Provide and maintain a quality control program defined as all activities and documentation of the following:
1. Selection of test sites.
2. Testing.
3. Necessary adjustments in the process.
4. Process control inspection.

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

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

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

http://www.atwoodsystems.com/mrs

### B Materials

#### B.1 Personnel

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

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

#### B.2 Testing

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

## B.3 Equipment

### B.3.1 General

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

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

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

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

### B.3.2 Correlation of Nuclear Gauges

#### B.3.2.1 Correlation of QC and QV Nuclear Gauges

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

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

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

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

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

#### B.3.2.2 Correlation Monitoring

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

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

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

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

## B.4 Quality Control Testing and Documentation

### B.4.1 Lot and Sublot Requirements

#### B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

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

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

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

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

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

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

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

**Table 1**

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

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

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

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

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

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

**Table 2**

**B.4.2 Pavement Density Determination**

**B.4.2.1 Mainline Traffic Lanes and Appurtenances**

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

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

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

**B.4.2.2 Mainline Shoulders**

**B.4.2.2.1 Width Greater Than 5 Feet**

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

#### B.4.2.2.2 Width of 5 Feet or Less

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

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

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

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

### B.4.2.4 Documentation

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

## B.4.3 Corrective Action

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

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

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

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

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

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

## B.5 Department Testing

### B.5.1 Verification Testing

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

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

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

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

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

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

### B.5.2 Independent Assurance Testing

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

## B.6 Dispute Resolution

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

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

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

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

**B.7 Acceptance**

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

**C (Vacant)**

**D (Vacant)**

**E Payment**

**E.1 QMP Testing**

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

**E.2 Disincentive for HMA Pavement Density**

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

**E.3 Incentive for HMA Pavement Density**

(1) Delete standard spec 460.5.2.3.

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

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

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

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

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

460-020 (20100709)

## 19. Culvert Pipe Liners, 24-Inch, Item 520.9700.S.01; Cleaning Culvert Pipes for Liner Verification, Item 520.9750.S.

### A Description

This special provision describes providing and pressure grouting culvert pipe liners for circular culverts.

### B Materials

#### B.1 General

Provide flow calculations at the preconstruction conference. Use contractor-proposed liner properties, the Manning's coefficients listed on the department's approved products list, and base calculations on existing culvert sizes and liner sizes the plans show. Ensure that pipes when lined have a capacity within ±5% of the original full flow capacity of the pipe.

#### B.2 Flexible Pipe Liner

Use liners with a Manning's coefficient value published on the department's approved products list. Upon delivery provide manufacturer certificates of compliance certifying that the liners conform to the following:

| Pipe Type | ASTM Designation | ASTM D3350 Resin |
|---|---|---|
| High Density Polyethylene (HDPE) | | |
| Profile Wall Pipe | F894 | 345463C |
| Solid Wall Pipe | F714 | 345463C |
| Polyvinylchloride (PVC) | F949 | --- |

#### B.3 Grout

Provide grout consisting of:

- One part of type I or II portland cement
- Three parts sand conforming to standard spec 501.2.5.
- Water to achieve required fluidity.

Alternatively the contractor may use an engineer-approved commercial cellular concrete grout conforming to the following:

| | | |
|---|---|---|
| Cement | ASTM C150 | Type I or II |
| Density | ASTM C495 (no oven drying) | 50 pcf min |
| Compressive Strength | ASTM C495 | 300 psi @ 28 day min<br>100 psi in 24 hours |
| Shrinkage | ASTM | 1% by volume |
| Flow | ASTM C939 | 35 sec max |

## C Construction

### C.1 General

As soon as possible after contract execution, survey existing culvert pipes to determine which culverts need cleaning in order to verify the required liner diameter and length. Notify the engineer before cleaning to confirm payment under the Cleaning Culvert Pipes for Liner Verification bid item.

Coordinate with the engineer to field verify culvert size, shape, material, and condition before ordering the liners.

Obtain easements if necessary for installing long sections of pipe.

### C.2 Excavating and Cleaning

Before inserting the liner, clean and dry the pipe. Excavate and pump as required to remove debris and other materials that would interfere with the placement or support of the inserted liner. Dispose of and replace unserviceable endwalls as the engineer directs.

### C.3 Placing Liners

Unload liners using slings and boom-type trucks or equivalents. Do not use chains or wire rope to handle liners and do not dump liners from the trucks when unloading.

Connect joints conforming to the manufacturer's recommendations.

### C.4 Pressure Grouting

After the liner is in place, fill the area between the original pipe and the liner completely with grout to provide uniform space between the liner and the original pipe. Block, grout in lifts, or otherwise secure liners to prevent floatation associated while grouting.

Use a grout plant that is capable of accurately measuring, proportioning, mixing, and discharging by volume and at discharge pressures the liner manufacturer recommends. Do not exceed manufacturer-specified maximum pressures. The contractor may place grout in lifts to prevent exceeding maximum allowable pressures.

### C.4 Site Restoration

Replace pipe sections damaged or collapsed during installation or grouting operations. Restore the grade to its original or improved cross section. Dispose of waste material.

**D Measurement**
The department will measure the Culvert Pipe Liners bid items by the linear foot, acceptably completed , measured in place for each culvert location.

The department will measure Cleaning Culvert Pipes for Liner Verification as each culvert acceptably cleaned. The department will only measure culverts the engineer approves 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 |
|---|---|---|
| 520.9700.S.01 | Culvert Pipe Liners 24-Inch | LF |
| 520.9750.S | Cleaning Culvert Pipes for Liner Verification | Each |

Payment for the Culvert Pipe Liners bid items is full compensation for providing pipe liners; obtaining easements; for excavation and pumping; for cleaning the existing pipe before liner installation; for pressure grouting; for replacing contractor-damaged pipe and endwalls; and for restoring the grade and disposing of waste materials.

The department will pay the contractor $150 per cubic yard for grout required in excess of 110 percent the theoretical quantity required to fill the space between the inside diameter of the existing pipe and the outside diameter of the liner.

Payment for Cleaning Culvert Pipes for Liner Verification is full compensation for cleaning required to verify liner length and diameter; for excavation and pumping; and for disposing of waste material.

The department will pay separately for replacing unserviceable endwalls not rendered unserviceable by contractor operations under the appropriate contract endwall bid item, or absent the appropriate item as extra work.
520-015 (20130615)

## 20. Reseal Crushed Aggregate Slope Paving, Item 604.9015.S.

**A Description**
Seal the existing crushed aggregate slope paving in accordance to standard spec 604, as directed by the engineer, and as hereinafter provided.

**B Materials**
Furnish materials conforming to standard spec 604.2.

**C Construction**
Clean all debris from the surface of the slope paving before applying asphalt. Apply sufficient asphalt so that it penetrates to seal the top two inches of aggregate; where existing asphalt is closer to the surface of the aggregate, apply less asphalt.

**D Measurement**
The department will measure Reseal Crushed Aggregate Slope Paving in area by the square yard of slope paving, acceptably resealed.

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 604.9015.S | Reseal Crushed Aggregate Slope Paving | SY |

Payment is full compensation for cleaning the surface; furnishing and applying the asphalt.
604-015 (20100709)

## 21. Nighttime Work Lighting-Stationary.

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

**B (Vacant)**

**C Construction**
**C.1 General**
This provision shall apply when providing, maintaining, moving, and removing portable light towers and equipment-mounted lighting fixtures for nighttime stationary work operations, for the duration of nighttime work on the contract.

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

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

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

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

4. Electrical power source information.

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

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

7. Detail information on any other auxiliary equipment.

### C.2 Portable Lighting

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

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

### C.3 Light Level and Uniformity

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

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

### C.4 Glare Control

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

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

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

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

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

### C.5 Continuous Operation

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

**D (Vacant)**

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

## 22. Traffic Signals, General.

Work under this item shall consist of furnishing and installing materials for traffic signals at the following intersections, in accordance to the plans, the standard specifications and these special provisions.

- CTH F and Ridgeview Parkway
- CTH F and CTH M (Watertown Road)
- CTH F and Duplainville Road

The contractor shall furnish all materials, which include but are not limited to, the traffic signal cabinet and controller, and traffic signal control equipment as listed in the plans (such as, pedestal bases, transformer bases, traffic signal standards, poles, trombone arms, monotube poles and arms, traffic signal faces, backplates, traffic signal mounting hardware, video detection system, emergency vehicle preemption system, concrete foundations, etc.). Certain materials may be removed and reinstalled; if such items are included in this project, these items are identified as "SALVAGED" in the Miscellaneous Quantities tables in the plans or on the plan sheets.

Furnish the engineer with material lists and specifications of all traffic control equipment for approval prior to installation.

The contractor is responsible for requesting the electrical service installation or relocation from the power company and the County shall pay the installation costs. The contractor shall coordinate with the County to verify a contact person and address to be listed in the electrical service application.

The contractor shall stake the proposed locations of traffic signal items 10 days prior to starting work so that the locations of the proposed facilities can be approved by the county. Any field changes regarding the location of the signal poles, pull boxes, etc. shall be approved by County personnel or by county's on-site construction management representative.

The contractor shall request an inspection of the underground wiring upon completion of its installation and a full inspection of the completed signal installation prior to, or at the time of, signal start up testing. This request shall be made to the county at least three working days prior to the time of the requested inspection.

## 23. Temporary Traffic Signals for Intersections CTH F at Duplainville Road, Item 661.0200.01; CTH F at Ridgeview Parkway, Item 661.0200.02; CTH F at CTH M, Item 661.0200.03.

*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 county will pay for all energy costs for the operation of the temporary traffic signal.

(5) Furnish a video image detector system consisting of video image detector cameras, mounting brackets and hardware, power cable, video image processor card, and auxiliary equipment to make the video detector system fully operational.

*Append standard spec 661.3.1 with the following:*

(4) Install temporary video detection cameras at the locations shown on the plans at a minimum 30 foot mounting height. Install power cable and signal cabinet equipment. Aim the video cameras to provide detection at the locations shown on the plans and make the video detector system fully operational. The temporary video detection equipment is not allowed to be used for the permanent installations.

(5) In the event, at installation or turn on date, a noticeable obstruction is present in line with the video detection zone(s), advise the county engineer before setting the zone.

(6) The video camera shall be mounted on a wooden pole or luminaire arm. Relocate the video camera to a suitable location if there is impedance on the sensor operation, construction related or otherwise.

(7) The video detection system, as shown in the traffic signal construction plans, shall be complete, in place, tested, and in full operation during each stage and sub-stage of construction.

*Append standard spec 661.3.1.1 with the following:*

(2) Sawcut existing pavement and concrete curb and gutter as needed to install the wood poles and guy wire anchors. Sawcut 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 county 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 prior to surrendering the temporary traffic signals.

(4) Maintain all temporary vehicle detection zones as the plans show or as the county engineer directs. The temporary vehicle detection zones shall be set near the vicinity and within the approximate distance from the stop bar as shown on the plans. Check temporary vehicle detection zones every other week and at the opening of each stage of temporary traffic signal operation to ensure that they are working and are aimed properly. Periodic adjustment of the detection zones and/or moving of the temporary vehicle detection sensors may be required due to changes in traffic control, staging, or other construction operations.

Ensure that the temporary vehicular detection system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

*Append standard spec 661.3.2.6 with the following:*

(6) Remove the video detection system from the temporary traffic signal poles and cabinet.

*Append standard spec 661.5 with the following:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 661.0200.01 | Temporary Traffic Signals for Intersections<br>Intersection of CTH F at Duplainville Road | LS |
| 661.0200.02 | Temporary Traffic Signals for Intersections<br>Intersection of CTH F at Ridgeview Parkway | LS |
| 661.0200.03 | Temporary Traffic Signals for Intersections<br>Intersection of CTH F at CTH M | LS |

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 the replacement equipment.
- The cost of delivery and pick-up of the cabinet assemblies.
- 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 checking and/or adjusting the temporary detection zones every other week; for maintaining and changing the temporary detection zones to match the plans, traffic control, and construction staging; for relocating the temporary detection sensors due to construction activities, if required; for periodically cleaning all temporary vehicle detector equipment; for removing the temporary vehicle detector system; for cleaning up and properly disposing of waste; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

## 24. Traffic Control.

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

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

Provide the Waukesha County Sheriff's Department and the engineer with a current telephone number with which the contractor or the contractor's representative can be contacted 24 hours a day the event a safety hazard develops.

Do not proceed with any operations until all traffic control devices for such work are in the proper location, including flaggers.

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

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

## 25. Traffic Signal Controller and Cabinet 8-Phase Fully Actuated CTH F and Duplainville, Item SPV.0060.01.

### A Description

This specification describes furnishing and installing a fully equipped and operational NEMA TS2 Type 2 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, as supplemented or modified in this specification.

Provide cabinets designed for TS2 Type 2 operation. Pre-wire cabinets for a minimum of sixteen phases as specified herein.

The traffic signal controller shall be an Eagle Signal Controls EPAC 3808M52.

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 county or other entity for furnishing and installing the traffic signal cabinet

Construction contractor – the firm under contract with the county 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.

County – Waukesha County

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. Identity 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:

a. Controller On/Off
b. Cabinet Light
c. Stop Time (Three Position)
d. Manual Detector Switches (Three Position)

| **Position** | **Switch Label** | **Function** |
|---|---|---|
| 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:

a. Signal/Off
b. Flash/Normal
c. Hand/ auto
d. Coiled hand control and cable

The above switches shall function as follows:

Off: Signals Dark
Signal: Signals On and operating as follows:

| | **Auto** | **Hand** |
|---|---|---|
| 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:

| **Position** | **Function** |
|---|---|
| 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 GFCl 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 a Siemens m50 series model EPAC3808M52, compatible with the NEMA TS2 Type 2 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 county, 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.
- County PC laptop and desktop computers with Windows XP and Windows 7 operating systems.
- Backwards compatibility with older traffic signal controllers and software produced by the controller manufacturer and installed in county traffic signals since 2000.
- 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:

(a) The status of each signal phase on.
(b) The interval status.
(c) Phase termination information.
(d) 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:

(a) Phases timing concurrently shall terminate simultaneously if both have a gap-out due to excessive time between actuations.
(b) Phases timing concurrently shall terminate simultaneously if both have a maximum timeout.
(c) Phases timing concurrently shall terminate simultaneously if one has a gap-out and the other has a maximum time-out.
(d) 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 county's traffic 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 county's traffic 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 county's traffic engineer two sets of as-built printed cabinet wiring diagrams per cabinet. If no changes were made from time of cabinet delivery, notify the county's traffic engineer in writing.

### J.2 MMU and Controller Programming
At the time of cabinet delivery, furnish to the county's traffic 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 county's traffic engineer two copies per cabinet. If no changes were made from time of cabinet delivery, notify the county's traffic engineer in writing.

**J.3 Manuals**

At the time of the cabinet delivery, furnish to the county's traffic 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:

a) Table of contents.
b) Operating procedure.
c) Step-by-step maintenance and trouble-shooting information for the entire assembly.
d) Schematic diagrams.
e) Pictorial diagrams of parts locations.
f) Itemized parts lists with parts numbers.
g) Theory of operation.
h) 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 county's traffic engineer a list of procurement items. The county's traffic 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 county's traffic 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 county's traffic engineer approves the procurement item list.

If the county 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 county 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 county, except if an additional equipment item is added at the county'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 county or the project construction contractor. The contractor is responsible for arranging the unloading of the cabinet.

When the county exercises its right to test a cabinet in the county's shop as described in the Acceptance Testing section of this specification, deliver the cabinet to the location specified by the county's traffic 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 county. 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 county 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 county, 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 county, 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 county. 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 county 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 county reserves the right to perform its own tests on the traffic signal cabinet at any time using the county'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 county 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 county.

**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 Supplier Warranty**

Provide a supplier warranty and guarantee statement which stipulates that the cabinet and all supplied equipment, including add-on accessory items, to be, individually and as a cabinet system, free from defects in materials and workmanship for a period of at least two years from the date of cabinet installation and acceptance in the field, or in the case of a cabinet that is not installed in the field, from the date of delivery of an accepted cabinet to the county. Delivery of a cabinet for testing does not constitute acceptance of the cabinet. Turn over to the county warranties and guarantees that are offered by the manufacturer as a customary trade practice. Name the county as the obligee on all manufacturers' warranties and guarantees. Shipping costs, both to the factory or an Authorized Repair Depot, and return, shall be paid by the supplier.

Provide, at no additional cost, firmware / software maintenance, problem resolution phone technical support, problem resolution technical support in the supplier's facility, firmware / software patches, and firmware / software upgrades for a minimum of three years. The lead for technical support and primary department contact for support shall be a qualified person employed by the contractor's local office who is personally familiar with the county's software and signal operations. Help desks and manufacturer's representatives may be utilized by the lead technical support person as resources, but are not acceptable for lead technical support.

Maintain an inventory of the firmware / software version on each controller provided. Notify the county's traffic engineer in writing when a firmware / software patch or upgrade is available. The county will direct the contractor when to install the patch or upgrade for each controller. Install the patch or upgrade and provide a usable copy of the patch or upgrade to the county. Alternatively, when requested by the county, provide the patch or upgrade to the county for installation by the county.

**O Measurement**
The department will measure Traffic Signal Controller and Cabinet 8-Phase Fully Actuated as each individual unit, 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.0060.01 | 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.

## 26. Poles Type 9, Item SPV.0060.02; Type 12, Item SPV.0060.03; Type 13, Item SPV.0060.12.

**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 ¼"-20 x ¾" (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 ¼" -20 x ¾" (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 bots 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) as each individual pole, acceptably completed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.02 | Poles Type 9 | Each |
| SPV.0060.03 | Poles Type 12 | Each |
| SPV.0060.12 | Poles Type 13 | Each |

Payment is full compensation for providing and installing poles including all hardware and fittings necessary to install the poles.

## 27. Concrete Bases Type 10, Contractor Supplied Anchor Bolts and Anchor Rod Template, Item SPV.0060.04; Concrete Bases Type 13, Contractor Supplied Anchor Bolts and Anchor Rod Template, Item SPV.0060.05.

### A Description

This special provision describes constructing concrete bases, including the use of contractor supplied anchor bolts and anchor rod templates.

### B Materials

#### B.1 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.

#### B.2 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.

#### B.3 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

#### C.1 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.

**C.2 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.

**C.3 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) Contractor Supplied Anchor Bolts and Anchor Rod Template as each individual unit, acceptably installed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.04 | Concrete Bases Type 10, Contractor Supplied Anchor Bolts and Anchor Rod Template | Each |
| SPV.0060.05 | Concrete Bases Type 13, Contractor Supplied Anchor Bolts and Anchor Rod Template | Each |

Payment for the Concrete Bases Type 10 or 13, 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 driving steel piling if required; for installing electrical conduit, electrical ground, templates; for placing and curing concrete; for backfilling; and for disposing of surplus material and restoring the site.

## 28. Monotube Arms 25-FT, Item SPV.0060.06; 35-FT, Item SPV.0060.07; 40-FT, Item SPV.0060.08; 15-FT, Item SPV.0060.11.

### 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 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.0060.06 | Monotube Arms 25-FT | Each |
| SPV.0060.07 | Monotube Arms 35-FT | Each |
| SPV.0060.08 | Monotube Arms 40-FT | Each |
| SPV.0060.11 | Monotube Arms 15-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.

## 29. Apron Endwalls for Culvert Pipe Polyethylene 24-Inch, Item SPV.0060.09.

**A Description**
This special provision describes furnishing and installing high density polyethylene (HDPE) apron endwalls for culvert pipe as shown on plans, as directed by the engineer and as hereinafter provided.

**B Materials**
Provide HDPE pipe with a smooth interior and annular exterior corrugations. Materials shall meet AASHTO M294, Type S or ASTM F2306.

**C Construction**
Perform work in accordance to standard spec 504 and per manufacturer's recommendations.

**D Measurement**
The department will measure Apron Endwalls for Culvert Pipe Polyethylene 24-Inch as each individual apron endwall, acceptably completed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.09 | Apron Endwalls for Culvert Pipe Polyethylene 24-Inch | Each |

Payment is full compensation for excavating to the appropriate location and depth, installing joint ties, properly installing the HDPE apron endwall, placing and compacting bedding stone and cover material.

## 30. Pavement Dowel Bar Retrofit, Item SPV.0060.10.

**A Description**

**A.1 General**

This special provision describes restoring load transfer in existing concrete pavement by installing epoxy coated dowel bars across transverse joints or cracks. Perform this work according to the plan details for retrofit dowel bar installation and as hereinafter provided.

**B Materials**

Use epoxy coated dowel bars that conform to the requirements prescribed in standard spec 505.2.6.1 and standard spec 505.2.6.2 except that the surface treatment, capable of preventing bond between the bar and the concrete, on the epoxy-coated bars shall be manufacturer applied.

Dowel bars shall have tight fitting end caps made of non-metallic material that allow for ¼-inch movement of the bar at each end. Prior to use, submit a sample end cap to the engineer for approval.

Use 3/8-inch thick foam core board that is constructed of closed cell foam and is faced with poster board or plastic material on each side.

Use concrete patch material tested as Rapid Set Concrete Patching Materials that conforms to ASTM C928 with the following deletion or addition: Delete sections 1.1.1, 1.1.2, and 1.3. Only use material that: (1) provides an opening to traffic compressive strength of 3000 psi in three hours per ASTM C39; (2) exhibits expansion of less than 0.10 percent per ASTM C531; section 1.3 of the ASTM C531 should be modified to say this test method is limited to materials with aggregate size of 3/8 inch or less; and (3) has a calculated durability factor of 90.0 percent minimum at the end of 300 freeze-thaw cycles per ASTM C666, Procedure A (water shall contain 5% sodium chloride by mass). Prior to use, provide a certification of compliance with the above requirements as prescribed by standard spec 106.3.3. Patching material shall be extended with a clean natural aggregate. Aggregate extender shall conform to the requirements prescribed in standard spec 501.2.5.4 except that the size requirements are as follows:

Minimum of 95% passing the 3/8 (9.5 mm) sieve
Maximum of 25% passing the No. 4 (4.75 mm) sieve

Use acceptable caulking filler for sealing the existing joints or cracks at the bottom and sides of the slot. Acceptable caulking filler includes any commercial caulk designed as a concrete sealant that is compatible with the patch material being used.

Use dowel bar chairs and expansion caps made of non-metallic non-organic material. Design chairs to fit snugly in the saw cut, and hold the bar in the lateral center of the slot. Expansion caps will provide for ¼-inch of movement at each end of the dowel bar. Prior to use, submit sample chairs and expansion caps to the engineer for approval.

Provide a concrete curing agent that is a resin of 100 percent poly-alpha-methylstyrene type curing compound meeting ASTM C309, Type 2, Class B specifications and conforming to all requirements listed in the following table:

| Properties | Minimum | Maximum |
|---|---|---|
| Total Solids, % by weight of compound | 42 | |
| Reflectance in 72 hours (ASTM E1347) | 65 | |
| Loss of Water, kg/m$^2$ in 24 hours (ASTM C156) | | 0.15 |
| Loss of water, kg/m$^2$ in 72 hours (ASTM C156) | | 0.40 |
| Settling Test, ml/100 ml in 72 hours [1] | | 2 |
| VOC Content, g/L | | 350 |
| Infrared Spectrum, Vehicle[2] | 100% alpha-methylstyrene | |

[1] Test method on file at the department's Materials Testing Lab.

[2] The infrared scan for the dried vehicle from the curing compound shall match the infrared scan on file at the department's Materials Testing Lab.

Shelf life of the product shall be six months from date of manufacture. The product may be re-tested by the department's Materials Testing Lab and re-approved, if the physical and chemical properties have not changed, for an additional six months. However, the maximum shelf life shall not exceed one year from manufacture date.

## C Construction

Install the dowel bars in the existing concrete pavement as shown in the plan details and according to the following specifications.

### C.1 Slots

Cut slots in the pavement using a gang saw capable of simultaneously cutting a minimum of three slots, or by using an alternate method approved by the engineer.

The saw cuts for all required slots at each transverse joint or crack shall be made such that the longitudinal centerline of each individual dowel bar is placed within the following tolerances:

- At the nominal mid-depth of the lower slab ±½ inch (13 mm).
- Parallel to the top of the pavement ±½ inch (13 mm) in 18 inches (450 mm).
- Parallel to other bars in the same joint or crack ±½ inch (13 mm) in 18 inches (450 mm).
- Parallel to the roadway centerline ±½ inch (13 mm) in 18 inches (450 mm).

Traffic may run on sawed slots for a maximum of two weeks.

**C.2 Removing Concrete**

Remove concrete from the slot area with a jackhammer no larger than the 30-pound (14 kg) class.

Before installing the dowel, sandblast all exposed surfaces and cracks in the slot, and clean all exposed surfaces and cracks of saw slurry and loose material. Dispose of all loose material off the highway right-of-way.

**C.3 Placing Foam Core Board**

Place foam core board to maintain the continuity of the existing transverse joint or crack as shown in the standard detail drawing.

Size the foam core board to fit the skew angle of the joint or crack, and extend to, or beyond, the top surface of the lower slab. Fit the foam core board tightly around the dowel bar and to the bottom and sides of the slot.

To provide a tight fit for the foam core board and to prevent any of the patch mix from entering the joint or crack, caulk existing transverse joints or cracks with a sealant at the bottom and sides of the slot as shown in the plan details.

Install the foam core board such that it remains in position and is tight to all edges during placement of the patching material. Tabs may be used to hold the foam core board in place. Existing joint sealant may be cut or removed to accommodate tabs. If the foam core board shifts during the placement of the patch mix, the work shall be rejected and repair the work at no expense to the department.

Alternatively, the foam core board may be installed such that it extends a minimum of one inch above the dowel bar and is a minimum of 2 inches below the surface of the pavement. Place the insert so that it covers the existing transverse joint or crack and is capable of remaining in a vertical position, tight to all edges during placement of patch materials. Re-establish the joint by sawing down to the level of the foam core board within three hours of placement of the patch material. If the contractor chooses this method, no damage to the dowel bars will be allowed due to the sawing operation being completed too deep. Contractor operations of placing patch material and sawing must ensure that all material is removed from the joint allowing for the expansion and contraction without generating point to point contact across the joint.

**C.4 Placing Dowel Bars**

Place dowel bars as a complete assembly with chairs and foam core board attached across the transverse joint or crack as shown in the plan details. Chairs shall hold the dowel bar securely in place during the placement of the patch mix. Prior to the placement of the patch mix, the engineer shall approve the placement of the dowels. If the dowel bar shifts

during the placement of the patch mix, the work shall be rejected and repair the work at no expense to the department.

**C.5 Placing Patch Mix**

Immediately prior to placing the patch mix, moisten existing concrete surfaces in the slot or prepare the existing concrete surfaces as recommended by the manufacturer, or both. Before patching material is placed, remove all excess water in the slot.

With a portable or mobile mixer, mix patching material according to the manufacturer's recommendations.

Place the patching material into the slot and vibrate the patching material to ensure that the dowel bar is completely encased. The diameter of the vibrator head shall not exceed 1¼-inches (32 mm).

When the ambient temperature is below 50 degrees Fahrenheit (10 degrees Celsius), placement of patching material will require prior approval by the engineer.

If the pavement is not going to be diamond ground, strike-off the surface of the filled area flush with the adjacent concrete. If the pavement is to be diamond ground after completion of the dowel bar retrofit operation, it is acceptable to leave the slot slightly overfilled.

Before placing any vehicle load on the retrofitted transverse joint or crack, cure patching material by the impervious coating method for a minimum of three hours. The coverage rate for the curing agent will be at a rate of 100 square feet per gallon. During this three-hour initial curing period, covering may be needed to prevent excess thermal stress in the patch material.

When the ambient temperature is below 50 degrees Fahrenheit (10 degrees C), the engineer may postpone opening to vehicular loads or require covering during the initial curing period, or both.

**C.6 Restoring Joints**

Restore joints with a saw cut that is at least ¼-inch wide and is deep enough to remove all patching material from the joint. Saw the joint within 24 hours after placement of patching material. After sawing, thoroughly clean the joint or crack to remove loose compressible materials.

If the pavement joints are sealed, remove the existing joint sealant and re-seal the joint with hot pour rubberized asphaltic material. Joint sealing materials and work will be completed and paid for under the applicable item in this contract.

**C.7 Damage During Construction**

At no cost to the department, repair any damage to the pavement due to the contractor's operations.

### C.8 Conflict Resolution Team

The Conflict Resolution Team will have the final authority to make decisions if a conflict occurs. The team will resolve disputes by a majority vote. The team will consist of two contractor representatives, two department (region and statewide bureaus) representatives, and a third party mutually agreed upon by both the department and the contractor. The cost of the third party will be equally shared between the department and the contractor.

### D Measurement

The department will measure Pavement Dowel Bars Retrofit by each individual dowel bar installed, acceptably completed.

### E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.10 | Pavement Dowel Bars Retrofit | Each |

Payment is full compensation for furnishing all materials, including epoxy coated dowel bars; sawing slots; removing concrete; installing dowel bars; furnishing and installing patching material; curing the patch material; sawing the joints; and for furnishing and applying water.

## 31. Luminaire Arms Steel 15-FT, Item SPV.0060.13.

### 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 (71 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 preventative maintenance 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-FT as each individual luminaire 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.0060.13 | 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.

## 32. Furnish and Install IP Wireless Radio 5.8 GHz, Item SPV.0060.14.

**A Description**

Work under this item shall consist of furnishing and installing an IP Wireless Radio 5.725 GHz to 5.875 GHz (Point-to-Point), as shown on the plans and as hereinafter provided. Installation shall include all ancillary components necessary to complete the work in accordance to manufacturer specifications.

**B Materials**

IP Wireless Radios shall meet or exceed the following specifications:

- Physical
- Enclosure Pole Mount / Wall Mount
- Die Cast Aluminum
- Dimensions: 8.5” x 7” x 2”
- Weight: 3 lbs
- IP67 Weatherproof Rating
- Integrated Antenna
- UV Stabilized Plastic with Die Cast Aluminum
- Dimensions: 13” x 13” x 3”
- Weight: 5 lbs
- IP67 Weatherproof Rating
- Antenna
- Panel Antennas with up to 23 dBi gain
- N Female Connector
- Integrated Flat Panel Antennas available with up to 23 dBi gain
- Hardware
- Pole Mounting Hardware
- 150’ Cat5e or better Industrial Outdoor rated cable with weatherproof connector
- PoE Injector with lightning and surge protection
- 6’ Ethernet Crossover Cable
- Plug and Play Capability
- Electrical
- Power
- Power over Ethernet injector with lightning and surge protection included
- POE input voltage: 100 to 240 VAC
- POE output voltage: 1 A @ 18 VDC
- Power Consumption: 0.5A transmit 0.2A standby (9W max 8W typical 3W standby) @18VDC
- Environmental
- Operating Temperature: -40°C to +80°C
- Storage Temperature: -40°C to +80°C
- Humidity (non-condensing): 5% to 95%
- Wireless Interfaces
- Wireless Modulation
- OFDM and/or DSSS 5.8 GHz
- Radio Specifications
- 6 Mbps -94 dBm 24 Mbps -86 dBm
- 9 Mbps -93 dBm 36 Mbps -83 dBm
- 12 Mbps -91 dBm 48 Mbps -77 dBm
- 18 Mbps -90 dBm 54 Mbps -74 dBm
- Radio Transmit Power
- 26 dBm 400 mW

- Security (Encryption)
- EN-Stream Encryption
- AES-CCM Encryption
- 64 bit, 128 bit WEP Encryption
- WPA
- WPA2
- TKIP
- Mac / RADIUS Server authentication
- EAP-tls / EAP-passthrough
- Data Rates
- 6 Mbps, 9 Mbps, 12 Mbps, 18 Mbps, 24 Mbps, 36 Mbps, 48 Mbps, 54 Mbps
- Wireless Interface
- 802.11 a or EN-Stream Proprietary protocol for greater security
- Dynamic Frequency Selection
- 5 MHz, 10 MHz, 20 MHz and 40 MHz channels available
- Antenna alignment tool available via software
- Management
- IP discovery tool with remote management
- Remote SSH
- SNMP
- FTP
- Wired Interfaces
- Interface
- Industrial Weatherproof 10/100 Base-T Ethernet (RJ45)
- 150’ Cat5e or better Industrial Outdoor rated cable included
- The wired radio shall have a minimum of one 10/100BaseT Ethernet (802.2/802.3) port
- The wired radio shall support TCP/IP
- Networking Features
- Supports IGMP snooping (v1,v2,v3)
- STP (Spanning Tree Protocol)
- DHCP Server or Client
- NTP Network Time Protocol
- Firewall and NAT
- Routing
- QOS
- VPN
- VLAN
- SNMP
- Bandwidth test tool

**C Construction**

Install IP Wireless Radio in the field traffic signal cabinets.

- Installation
- Make the necessary electric and communication network connections to the IP Wireless Radio. Use continuous cable runs, splices are not permitted.
- Install the power supply and lightning arrestor accessories.
- Contractor to supply all banding and traffic control to install radio at location designated on the plans.
- Contractor is responsible for all other incidentals required to complete the installation of the IP Wireless Radio.
- Configuration.
- Configure operational parameters of the Wireless Radio as directed by the county.
- Test the configured Wireless Radio prior to installation.
- Verify that wireless and wired interfaces are operational prior to deployment.
- Perform any configuration changes needed for field installation.
- Test the installed Wireless Radio.
- Measure the received signal strength and verify that it is sufficient for proper system operation.
- Measure the signal-to-noise ratio and verify that it is sufficient for proper system operation.
- Test data throughput rate and verify that it is sufficient for proper system operation.
- Verify that the Wireless Bridge operates as expected in the intended application, if other system components are available for testing.
- Prepare a summary report of all configuration, test and installation issues and submit it to the county.

**D Measurement**

The department will measure Furnish and Install IP Wireless Radio 5.8 GHz 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.0060.14 | Furnish and Install IP Wireless Radio 5.8 GHz | Each |

Payment is full compensation for furnishing and installing radios, antennas, and cables, and for testing.

## 33. Furnish and Install IP Single Port Terminal Server, Item SPV.0060.15.

**A Description**

Work under this item shall consist of furnishing and installing an IP Single Port Terminal Server, as shown on the plans and as hereinafter provided.

**B Materials**

IP single port terminal server shall meet or exceed the following specifications:

- General
- Number of ports:1
- Shelf Mount
- Physical/Electrical
- Maximum Size: 1 U
- Maximum Weight: 2 lbs
- Input Voltage: 120 V AC
- The RS-232 port wiring is identical to a standard PC 9 pin DE-9P COM: port. It operates as a DTE device.
- The pin-out is below details signal directions and names.
- Serial Port Pin Assignments Pin Signal Name Type
  - 1) Carrier Detect (CD) In
  - 2) Receive (Rx) In
  - 3) Transmit (Tx) Out
  - 4) Data Terminal Ready Out
  - 5) Signal Ground (GND) Power
  - 6) Data Set Ready (DSR)
  - 7) Request to Send (RTS) Out
  - 8) Clear to Send (CTS) In
  - 9) Ring Indicator (RI) (Not used) In
- Environmental
- Operating Temperature: -30 C to 60 C)
- Storage Temperature: -40C to +74 C)
- Relative Humidity: Up to 90%, non-condensing
- Data Communication (Serial Interfaces)
- The Terminal Server shall support RS 232 serial standards
- The Terminal Server shall have DB9 Male connector
- The Terminal Server shall support a minimum speed of 1200 bits per second
- The Terminal Server shall support a maximum speed of 19200 bits per second
- Data Communication (Ethernet Interface)
- Ethernet Interface shall support 10/100BaseT
- Ethernet Interface shall use an RJ45 female connector
- Ethernet Interface shall support TCP/IP
- Ethernet Interface shall support UDP Protocol
- Ethernet Interface shall support one-to-one associations between Terminal Servers (serial tunnel)
- Ethernet Interface shall support one-to-many associations between Terminal Servers
- Terminal Servers shall support a user-assigned Internet Protocol (IP) address
- Terminal Server shall have a web (http/html) interface for configuration of all device settings

**C Construction**

Installation

- Meet with the county to discuss specific requirements of the Terminal Servers prior to installation.
- Configure IP address (and subnet) as directed by the county.
- Set serial port parameters as directed by the county to communicate E-COM.
- Make the necessary physical connections to the Terminal Server's serial ports to the traffic controller's internal modem.
- Make the necessary physical connections to the Terminal Server's Ethernet port to the Ethernet Switch in the Traffic cabinet.
- Verify that the Terminal Server operates as expected in the traffic signal system with the county's TACTICS software.

**D Measurement**

The department will measure Furnish and Install IP Single Port Terminal Server 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.0060.15 | Furnish and Install IP Single Port Terminal Server | Each |

Payment is full compensation for furnishing and installing terminal servers and cables, configuring and testing.

## 34. Furnish and Install Ethernet Switch, Item SPV.0060.16.

**A Description**

Work under this item shall consist of furnishing and installing an IP Ethernet switch, as shown on the plans and as hereinafter provided.

**B Materials**

IP Ethernet switch shall meet or exceed the following specifications:

- General
- Number of ports: (6 Copper) (2 Fiber) Fiber ST (Single Mode)
- Shelf Mount
- Physical/Electrical
- Height:18.8cm / 7.4"
- Width: 6.6cm / 2.6"
- Depth: 12.7cm / 5.0"
- Weight: 1.22kg / 2.7lbs
- Ingress Protection: IP40 (1mm objects)
- Enclosure: 20 AWG galvanized steel enclosure Maximum Weight: 2 lbs
- HI Voltage AC/DC: 88-300VDC, 85-264VAC, 0.1A

- Environmental
- Operating Temperature: -40 C to +85 C)
- Storage Temperature: -40C to +85 C)
- Relative Humidity: Up to 95%, non-condensing

- Data Communication (Ethernet Interface)
- Ethernet Ports: 6 - Base 10/100BaseTX ports Ethernet Interface
- Ethernet Interface shall use an RJ45 female connector
- TXTX= Data Rate: 10 or 100 Mbps
- 802.3u-100BaseTX, 100BaseFX
- Network Protocols Supported:
  - 1) TCP/IP.
  - 2) UDP/IP.
  - 3) VLAN tagging.
  - 4) IGMP V2
  - 5) Spanning Tree Protocol (STP)
- Remote configuration via Telnet, HTTP, TFTP, and SNMP
- Management Tools
- Web-based, Telnet, CLI management interfaces
- SNMP v1/v2/v3 (56-bit encryption)
- Remote Monitoring (RMON)
- Rich set of diagnostics with logging and alarms
- Compatible with RuggedExplorer Management software

**C Construction**

Installation

- Meet with the county to discuss specific requirements of the IP Ethernet Switches prior to installation.
- Configure/Program IP address (and subnet) as directed by the county.
- Make the necessary physical connections to the Ethernet Switch and to the Traffic cabinet.
- Verify that the IP Ethernet Switch operates as expected in the traffic signal system with the county's central software.

**D Measurement**

The department will measure Furnish and Install Ethernet Switch 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.0060.16 | Furnish and Install Ethernet Switch | Each |

Payment is full compensation for furnishing and installing Ethernet switches and cables, configuring and testing.

## 35. Furnish and Install RS-232 Internal Data Modem, Item SPV.0060.17.

**A Description**
Work under this item shall consist of furnishing and installing an RS-232 internal serial data modem and connection cable as shown on the Plans, and as hereinafter provided.

**B Materials**
RS-232 internal data modem shall meet or exceed the following specifications:

The internal modem is a communications assembly that attaches to the internal "D" Option Assembly of the EPAC or EPIC M10 or M34 Controller, replacing the 202t internal FSK modem in the controller.

The internal data modem contains a connecting cable to the controller and a DB connector to connect to external serial device. This allows simple connections to external serial RS-232 communications equipment.

The internal data modem DB connection shall be the EIA-232 connection matches the pin assignments of a standard IBM™ PC-AT personal computer.

| | |
|---|---|
| Internal Modem: shall be | ACP11868P001 |
| Connection Cable: shall be | ABW11357P001 |
| Internal controller | Siemens M10 and M34 Hardware |
| Operation | RS-232 1200 baud |
| Operation Temperature | -30 to +75C |
| Connector | DB 25 pin |

There shall be one connection cable supplied under this Item.

**C (Vacant)**

**D Measurement**
The department will measure Furnish and Install RS-232 Internal Data modem 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.0060.17 | Furnish and Install RS-232 Internal Data Modem | Each |

Payment is full compensation for furnishing and installing internal modems and cables, configuring and testing.

## 36. Furnish and Install IP Wireless Radio 5.8 GHz at CTH F at IH 94, Item SPV.0060.18.

### A Description

Work under this item shall consist of furnishing and installing an IP Wireless Radio 5.725 GHz to 5.875 GHz (Point-to-Point) at CTH F and IH 94, as shown on the plans and as hereinafter provided. Installation shall include all ancillary components necessary to complete the work in accordance to manufacture specifications.

### B Materials

IP Wireless Radios shall meet or exceed the following specifications:

- Physical
- Enclosure Pole Mount / Wall Mount
- Die Cast Aluminum
- Dimensions: 8.5” x 7” x 2”
- Weight: 3 lbs
- IP67 Weatherproof Rating
- Integrated Antenna
- UV Stabilized Plastic with Die Cast Aluminum
- Dimensions: 13” x 13” x 3”
- Weight: 5 lbs
- IP67 Weatherproof Rating
- Antenna
- Panel Antennas with up to 23 dBi gain
- N Female Connector
- Integrated Flat Panel Antennas available with up to 23 dBi gain
- Hardware
- Pole Mounting Hardware
- 150’ Cat5e or better Industrial Outdoor rated cable with weatherproof connector
- PoE Injector with lightning and surge protection
- 6’ Ethernet Crossover Cable
- Plug and Play Capability
- Electrical
- Power
- Power over Ethernet injector with lightning and surge protection included
- POE input voltage: 100 to 240 VAC
- POE output voltage: 1 A @ 18 VDC
- Power Consumption: 0.5A transmit 0.2A standby (9W max 8W typical 3W standby) @18VDC
- Environmental
- Operating Temperature: -40°C to +80°C
- Storage Temperature: -40°C to +80°C
- Humidity (non-condensing): 5% to 95%
- Wireless Interfaces

- Wireless Modulation
- OFDM and/or DSSS  5.8 GHz
- Radio Specifications
- 6 Mbps -94 dBm 24 Mbps -86 dBm
- 9 Mbps -93 dBm 36 Mbps -83 dBm
- 12 Mbps -91 dBm 48 Mbps -77 dBm
- 18 Mbps -90 dBm 54 Mbps -74 dBm
- Radio Transmit Power
- 26 dBm 400 mW
- Security (Encryption)
- EN-Stream Encryption
- AES-CCM Encryption
- 64 bit, 128 bit WEP Encryption
- WPA
- WPA2
- TKIP
- Mac / RADIUS Server authentication
- EAP-tls / EAP-passthrough
- Data Rates
- 6 Mbps, 9 Mbps, 12 Mbps, 18 Mbps, 24 Mbps, 36 Mbps, 48 Mbps, 54 Mbps
- Wireless Interface
- 802.11 a or EN-Stream Proprietary protocol for greater security
- Dynamic Frequency Selection
- 5 MHz, 10 MHz, 20 MHz and 40 MHz channels available
- Antenna alignment tool available via software
- Management
- IP discovery tool with remote management
- Remote SSH
- SNMP
- FTP
- Wired Interfaces
- Interface
- Industrial Weatherproof 10/100 Base-T Ethernet (RJ45)
- 150’ Cat5e or better Industrial Outdoor rated cable included
- The wired radio shall have a minimum of one 10/100BaseT Ethernet (802.2/802.3) port
- The wired radio shall support TCP/IP
- Networking Features
- Supports IGMP snooping (v1,v2,v3)
- STP (Spanning Tree Protocol)
- DHCP Server or Client
- NTP Network Time Protocol
- Firewall and NAT
- Routing

- QOS
- VPN
- VLAN
- SNMP
- Bandwidth test tool

**C Construction**

Install IP Wireless Radio in the field traffic signal cabinets.

- Installation
- Make the necessary electric and communication network connections to the IP Wireless Radio. Use continuous cable runs, splices are not permitted.
- Install the power supply and lightning arrestor accessories.
- Contractor to supply all banding and traffic control to install radio at location designated on the plans.
- Contractor is responsible for all other incidentals required to complete the installation of the IP Wireless Radio.
- Configuration
- Configure operational parameters of the Wireless Radio as directed by the county.
- Test the configured Wireless Radio prior to installation.
- Verify that wireless and wired interfaces are operational prior to deployment.
- Perform any configuration changes needed for field installation.
- Test the installed Wireless Radio.
- Measure the received signal strength and verify that it is sufficient for proper system operation.
- Measure the signal-to-noise ratio and verify that it is sufficient for proper system operation.
- Test data throughput rate and verify that it is sufficient for proper system operation.
- Verify that the Wireless Bridge operates as expected in the intended application, if other system components are available for testing.
- Prepare a summary report of all configuration, test and installation issues and submit it to the county.

**D Measurement**

The department will measure Furnish and Install IP Wireless Radio 5.8 GHz at CTH F at IH 94 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.0060.18 | Furnish and Install IP Wireless Radio 5.8 GHz at CTH F at IH 94 | Each |

Payment is full compensation for furnishing and installing radios, antennas, and cables, and for testing.

## 37. Furnish and Install IP Single Port Terminal Server at CTH F at IH 94, Item SPV.0060.19.

### A Description

Work under this item shall consist of furnishing and installing an IP Single Port Terminal Server at CTH F and IH 94, as shown on the plans and as hereinafter provided.

### B Materials

IP single port terminal server shall meet or exceed the following specifications:

- General
- Number of ports:1
- Shelf Mount
- Physical/Electrical
- Maximum Size: 1 U
- Maximum Weight: 2 lbs
- Input Voltage: 120 V AC
- The RS-232 port wiring is identical to a standard PC 9 pin DE-9P COM: port. It operates as a DTE device.
- The pin-out is below below details signal directions and names.
- Serial Port Pin Assignments Pin Signal Name Type
  - 1) Carrier Detect (CD) In
  - 2) Receive (Rx) In
  - 3) Transmit (Tx) Out
  - 4) Data Terminal Ready Out
  - 5) Signal Ground (GND) Power
  - 6) Data Set Ready (DSR)
  - 7) Request to Send (RTS) Out
  - 8) Clear to Send (CTS) In
  - 9) Ring Indicator (RI) (Not used) In
- Environmental
- Operating Temperature: -30 C to 60 C)
- Storage Temperature: -40C to +74 C)
- Relative Humidity: Up to 90%, non-condensing
- Data Communication (Serial Interfaces)
- The Terminal Server shall support RS 232 serial standards
- The Terminal Server shall have DB9 Male connector
- The Terminal Server shall support a minimum speed of 1200 bits per second
- The Terminal Server shall support a maximum speed of 19200 bits per second
- Data Communication (Ethernet Interface)
- Ethernet Interface shall support 10/100BaseT
- Ethernet Interface shall use an RJ45 female connector
- Ethernet Interface shall support TCP/IP
- Ethernet Interface shall support UDP Protocol

- Ethernet Interface shall support one-to-one associations between Terminal Servers (serial tunnel)
- Ethernet Interface shall support one-to-many associations between Terminal Servers
- Terminal Servers shall support a user-assigned Internet Protocol (IP) address
- Terminal Server shall have a web (http/html) interface for configuration of all device settings

**C Construction**

Installation

- Meet with the county to discuss specific requirements of the Terminal Servers prior to installation.
- Configure IP address (and subnet) as directed by the county.
- Set serial port parameters as directed by the county to communicate E-COM.
- Make the necessary physical connections to the Terminal Server's serial ports to the traffic controller's internal modem.
- Make the necessary physical connections to the Terminal Server's Ethernet port to the Ethernet Switch in the Traffic cabinet.
- Verify that the Terminal Server operates as expected in the traffic signal system with the county's TACTICS software.

**D Measurement**

The department will measure Furnish and Install IP Single Port Terminal Server at CTH F at IH 94 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.0060.19 | Furnish and Install IP Single Port Terminal Server at CTH F at IH 94 | Each |

Payment is full compensation for furnishing and installing terminal servers and cables, configuring and testing.

## 38. Furnish and Install Ethernet Switch at CTH F at IH 94, Item SPV.0060.20.

**A Description**

Work under this item shall consist of furnishing and installing an IP Ethernet switch at CTH F and IH 94, as shown on the plans and as hereinafter provided.

**B Materials**

IP Ethernet switch shall meet or exceed the following specifications:

- General
- Number of ports: (6 Copper) (2 Fiber) Fiber ST (Single Mode)
- Shelf Mount
- Physical/Electrical
- Height:18.8cm / 7.4”
- Width: 6.6cm / 2.6”
- Depth: 12.7cm / 5.0”
- Weight: 1.22kg / 2.7lbs
- Ingress Protection: IP40 (1mm objects)
- Enclosure: 20 AWG galvanized steel enclosure Maximum Weight: 2 lbs
- HI Voltage AC/DC: 88-300VDC, 85-264VAC, 0.1A

- Environmental
- Operating Temperature: -40 C to +85 C)
- Storage Temperature: -40C to +85 C)
- Relative Humidity: Up to 95%, non-condensing

- Data Communication (Ethernet Interface)
- Ethernet Ports: 6 - Base 10/100BaseTX ports Ethernet Interface
- Ethernet Interface shall  use an RJ45 female connector
- TXTX= Data Rate: 10 or 100 Mbps
- 802.3u-100BaseTX, 100BaseFX
- Network Protocols Supported:
  - 1) TCP/IP.
  - 2) UDP/IP.
  - 3) VLAN tagging.
  - 4) IGMP V2
  - 5) Spanning Tree Protocol (STP)
- Remote configuration via Telnet, HTTP, TFTP, and SNMP
- Management Tools
- Web-based, Telnet, CLI management interfaces
- SNMP v1/v2/v3 (56-bit encryption)
- Remote Monitoring (RMON)
- Rich set of diagnostics with logging and alarms
- Compatible with RuggedExplorer Management software

**C  Construction**

Installation

- Meet with the county to discuss specific requirements of the IP Ethernet Switches prior to installation.
- Configure/Program IP address (and subnet) as directed by the county.
- Make the necessary physical connections to the Ethernet Switch and to the Traffic cabinet.

- Verify that the IP Ethernet Switch operates as expected in the traffic signal system with the county's central software.

**D Measurement**
The department will measure Furnish and Install Ethernet Switch at CTH F at IH 94 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.0060.20 | Furnish and Install Ethernet Switch at CTH F at IH 94 | Each |

Payment is full compensation for furnishing and installing Ethernet switches and cables, configuring and testing.

## 39. Furnish and Install RS-232 Internal Data Modem at CTH F at IH 94, Item SPV.0060.21.

**A Description**
Work under this item shall consist of furnishing and installing an RS-232 internal serial data modem and connection cable at CTH F and IH 94 as shown on the Plans, and as hereinafter provided.

**B Materials**
RS-232 internal data modem shall meet or exceed the following specifications:

The internal modem is a communications assembly that attaches to the internal "D" Option Assembly of the EPAC or EPIC M10 or M34 Controller, replacing the 202t internal FSK modem in the controller.

The internal data modem contains a connecting cable to the controller and a DB connector to connect to external serial device. This allows simple connections to external serial RS-232 communications equipment.

The internal data modem DB connection shall be the EIA-232 connection matches the pin assignments of a standard IBM™ PC-AT personal computer.

| | |
|---|---|
| Internal Modem: shall be | ACP11868P001 |
| Connection Cable: shall be | ABW11357P001 |
| Internal controller | Siemens M10 and M34 Hardware |
| Operation | RS-232 1200 baud |
| Operation Temperature | -30 to +75C |
| Connector | DB 25 pin |

There shall be one connection cable supplied under this Item.

**C Construction**
Coordinate installation with WisDOT Electrical Field Unit. Contact the Electrical Unit at (414) 266-1170 a minimum of 5 working days before installation.

**D Measurement**
The department will measure Furnish and Install RS-232 Internal Data modem at CTH F at IH 94 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.0060.17 | Furnish and Install RS-232 Internal Data Modem at CTH F at IH 94 | Each |

Payment is full compensation for furnishing and installing internal modems and cables, configuring and testing.

## 40. Water Valve Location and Adjustment, Item SPV.0060.22.

**A Description**
Locate, excavate, adjust and repair an existing water main valve to an elevation as shown on the plans and in accordance with the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition, the City of Pewaukee Public Works standards and as hereinafter provided.

**B Materials**
The Contractor shall provide all necessary materials as approved by the City of Pewaukee.

**C Construction**
Installation of this item shall conform to the City of Pewaukee standards for water main, and as directed by the municipal Public Works Department. The approximate location of water valves are indicated on the plans.

Obtain approval from the engineer prior to beginning work for any method of adjustment of water valves other than that indicated on the plans.

**D Measurement**
The department will measure the Water Valve Location and Adjustment as each individual valve assembly, acceptably completed.

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.22 | Water Valve Location and Adjustment | Each |

Payment for the Water Valve Location and Adjustment is full compensation for providing all materials, labor, tools, equipment and incidentals necessary to complete the work.

## 41. Water Valve Repair, Item SPV.0060.23.

**A Description**
Repair an existing water main valve as shown on the plans and in accordance with the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition, the City of Pewaukee Public Works standards and as hereinafter provided.

**B Materials**
The contractor shall provide all necessary materials as approved by the City of Pewaukee.

**C Construction**
Repair of this item shall conform to the City of Pewaukee standards for water main, and as directed by the municipal Public Works Department. The approximate location of water valves are indicated on the plans.

Obtain approval from the engineer prior to beginning work for any method of repair of water valves other than that indicated on the plans.

**D Measurement**
The department will measure the Water Valve Repair as each individual valve acceptably repaired 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.0060.23 | Water Valve Repair | Each |

Payment for the Water Valve Repair is full compensation for providing all materials, labor, tools, equipment and incidentals necessary to complete the work.

## 42. Continuous Diamond Grinding Gutter, Item SPV.0090.01.

**A Description**
This special provision describes continuous diamond grinding portland cement concrete gutter sections for urban sections to provide desired surface characteristics such as ride, friction and drainage. The roadway texture incorporated into this specification is known as Continuous Diamond Grinding (CDG).

**B (Vacant)**

## C Construction

### C.1 Equipment

For gutter areas, furnish diamond blades mounted on a self-propelled machine designed for grinding and texturing gutter sections within 4 inches of the face of curb.

Gutter grinding equipment may have a positive means of vacuuming the grinding residue from the gutter surface, however other means of vacuuming will be allowed immediately following the gutter grinding operation leaving the surface in a clean, near-dry condition.

Grinding equipment that causes raveling, aggregate fractures or disturbance to the joints shall not be permitted.

Maintain the equipment to ensure it is in proper working order, with attention paid to the "roundness" of the match and depth control wheels. Replace any wheels found to be out of round immediately.

### C.2 General

Gutter grinding requires the mainline ground area to extend into the gutter section feathering within 4 inches of the curb face to provide proper drainage.

Complete full-depth and partial-depth concrete curb and gutter repairs prior to any grinding. Complete joint sealing subsequent to the diamond grinding operation.

Feather the grinding into existing structures such as inlets and catch basins in a manner that eliminates abrupt ridges or drops and provides a uniform texture and acceptable ride. If project conditions exist that prohibit acceptable feathering operations, the engineer may require that the structure be raised or lowered. The added work of raising and lowering these structures that is not included as a predetermined bid item will be paid for at an agreed upon price. Structure adjustments that occur within the limits of a full-depth repair shall be reset to an elevation 1/4-inch below the new pavement surface to facilitate the diamond grinding operation.

Achieve lateral drainage between adjacent lane and gutter.

### C.3 Final Surface Finish

It shall be the contractor's responsibility to select the number of blades per foot to be used to provide the proper surface finish for the aggregate type present on the project. The engineer may require removal of unbroken fins at the contractor's expense. The project conditions may dictate that the contractor has to make multiple passes with the equipment to meet the specifications. It is the contractor's responsibility to determine the proper sequence of operations to meet the specification. If multiple passes of the grinding equipment are required, the area will only be considered for payment once.

### C.4 Slurry Handling And Removal

Remove and dispose of all residues from the pavement surface in a manner and at a location that satisfies environmental regulations. Equip the diamond grinding machine

with a well maintained vacuum system that is capable of removing all standing slurry, leaving the roadway in a damp condition after the grinder passes. Residue will not be permitted to encroach into open lanes or enter into closed drainage systems.

Remove solid and liquid grinding residues from the roadway by vacuuming. Leave the roadway in a clean, damp condition immediately behind the grinding machine. Remove residue immediately in areas of cross traffic. Do not allow residue and water to flow or blow across lanes used by public traffic or to enter any storm sewer, stream, lake, reservoir, marsh, or wetland. Dispose of residue and water at an acceptable material disposal site located off the project limits.

**D Measurement**

The department will measure Continuous Diamond Grinding Gutter by the linear foot, acceptably completed, measured along the face of curb. Measurement consists of the final textured surface length regardless of the number of passes required to achieve the specified results. Minor areas of unground gutter within the designated areas to be ground will be included in the measurement up to 5 percent of the length.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0090.01 | Continuous Diamond Grinding Gutter | LF |

Payment for Continuous Diamond Grinding Gutter is full compensation for grinding gutter and feathering in adjacent pavement; for removing unbroken fins; hauling and disposal of grinding residue.

## 43. Video Vehicle Detection System, Intersection of CTH F at Duplainville Road, Item SPV.0105.01.

**A Description**

This specification describes furnishing and installing a system that detects vehicles on a roadway using only video images of vehicle traffic. This item includes all materials and labor necessary to install a completely functional vehicle detection system including but not limited to cameras, processors, video monitor, mounting hardware, power cable, and coaxial cable.

**B General Requirements**

**B.1 System Hardware**

The video detection system (VDS) shall consist of up to four video cameras, a video detection processor (VDP) capable of processing from one to four video sources, either wired or wireless, wireless video transmission receiver, receiver antenna and a pointing device.

The Video Vehicle Detection System shall consist of the Iteris Vantage Edge2 system.

**B.2 System Software**
The system shall include software that detects vehicles in multiple lanes using only the video image. Detection zones shall be defined using only an on board video menu and a pointing device to place the zones on a video image. Up to 24 detection zones per camera view shall be available. A separate computer shall not be required to program the detection zones.

**C Functional Capabilities**
**C.1 System Configuration**
The VDS will be deployed at locations where site conditions and roadway geometry vary. The VDS system may also be deployed at locations where existing cabinets or equipment exist. Existing site configurations will dictate the availability of cabinet space and VDS usage.

The proposed VDS shall be available in various configurations to allow maximum deployment flexibility. Each configuration shall have identical user interface for system setup and configuration. The communications protocol to each configuration shall be identical and shall be hardware platform independent. The proposed VDS shall have multiple configurations available for deployment.

**Table 1. VDS Configuration**

| Description | No. Video Inputs | No. Video Outputs | Mounting Configuration | Power Supply Requirements |
|---|---|---|---|---|
| Single-Channel Rack Mounted | 1 | 1 | Rack Mount (Type 170 or NEMA TS-1, TS-2 Racks) | 12/24 VDC Power From Rack |
| Dual-Channel Rack Mounted | 2 | 1 | Rack Mount (Type 170 or NEMA TS-1, TS-2 Racks) | 12/24 VDC Power From Rack |
| Quad-Channel Rack Mounted | 4 | 1 | Rack Mount (Type 170 or NEMA TS-1, TS-2 Racks) | 12/24 VDC Power From Rack |

a. An option to have wireless video transmission between the camera sensor and VDP shall also be available from the VDS manufacturer.
b. Wired camera systems shall be able to transmit NTSC or PAL video signals, with minimal degradation, up to 1000 feet under ideal conditions.
c. Wireless camera systems shall be able to transmit an NTSC video signal, with minimal signal degradation, up to 500 feet under normal conditions and up to 900 feet under ideal electromagnetic interference conditions. Adjacent sources of electromagnetic radiation, or the absence of a direct line of sight between transmitter and receiver antennas, may result in video signal degradation.

**C.2 System Interfaces**

The following interfaces shall be provided for each of the configurations identified in Table 1.

a. Video Input: Each video input shall accept RS170 (NTSC) or CCIR (PAL) signals from an external video source (camera sensor or VCR). The interface connector shall be BNC type and shall be located on the front of the video processing unit. The video input shall have the capability to select 75-ohm or high impedance (Hi-Z) termination.

b. Video Lock LED: A LED indicator shall be provided to indicate the presence of the video signal. The LED shall illuminate upon valid video synchronization and turn off when the presence of a valid video signal is removed.

c. Video Output: One video output shall be provided. The video output shall be RS170 or CCIR compliant and shall pass through the input video signal. For multi-channel video input configurations, a momentary push-button shall be provided on the front panel to toggle through each input video channel. In the absence of a valid video signal, the channel shall be skipped and the next valid video signal shall be switched. The video output shall have the capability to show text and graphical overlays to aid in system setup. The overlays shall display real-time actuation of detection zones upon vehicle detection or presence. Overlays shall be able to be turned off by the user. Control of the overlays and video switching shall also be provided through the serial communications port. The video output interface connector shall be BNC type.

d. Serial Communications: A serial communications port shall be provided on the front panel. The serial port shall compliant with EIA232 electrical interfaces and shall use a DB9 type connector. The serial communications interface shall allow the user to remotely configure the system and/or to extract calculated vehicle/roadway information. The interface protocol shall be documented or interface software shall be provided. The interface protocol shall support multi-drop or point-to-multipoint communications. Each VDS shall have the capability to be addressable.

e. Contact Closure Output: Open collector contact closure outputs shall be provided. Four (4) open collector outputs shall be provided for the single, dual or quad channel rack-mount configuration. Additionally, the VDPs shall allow the use of extension modules to provide up to 24 open collector contact closures per camera input. Each open collector output shall be capable of sinking 30 mA at 24 VDC. The open collector output will be used for vehicle detection indicators as well as discrete outputs for alarm conditions.

f. Detection LEDs: LEDs shall be provided on the front panel. The LEDs shall illuminate when a contact closure output occurs. Rack-mounted video processors shall have a minimum of four (4) LEDs. Rack-mounted extension modules shall have two or four LEDs to indicate detection.

g. Mouse Port: A USB mouse shall be provided on the front panel of the rack mount video processing unit. The mouse port shall not require special mouse software drivers. The mouse port shall be used as part of system setup and configuration. A mouse shall be provided with each video processor.

**C.3 General System Functions**

Detection zones shall be programmed via an on board menu displayed on a video monitor and a pointing device connected to the VDP. The menu shall facilitate placement of detection zones and setting of zone parameters or to view system parameters. A separate computer shall not be required for programming detection zones or to view system operation.

The VDP shall store up to three different detection zone patterns. The VDP can switch to any one of the three different detection patterns within 1 second of user request via menu selection with the pointing device.

The VDP shall detect vehicles in real time as they travel across each detection zone.

The VDP shall have an EIA232 port for communications with an external computer. The VDP EIA232 port shall be multi-drop capable.

The VDP shall accept new detection patterns from an external computer through the EIA232 port when the external computer uses the correct communications protocol for downloading detection patterns. A Microsoft Windows-based software designed for local or remote connection and providing video capture, real-time detection indication and detection zone modification capability shall be provided with the system.

The VDP system shall have the capability to automatically switch to any one of the stored configurations based on the time of day which shall be programmable by the user.

The VDP shall send its detection patterns to an external computer through the EIA232 port when requested when the external computer uses the correct communications protocol for uploading detection patterns.

The VDP shall default to a safe condition, such as a constant call on each active detection channel, in the event of unacceptable interference with the video signal.

The system shall be capable of automatically detecting a low-visibility condition such as fog and respond by placing all defined detection zones in a constant call mode. A user-selected output shall be active during the low-visibility condition that can be used to modify the controller operation if connected to the appropriate controller input modifier(s).

The system shall automatically revert to normal detection mode when the low-visibility condition no longer exists.

**C.4 Vehicle Detection**

Up to 24 detection zones per camera input shall be supported and each detection zone can be sized to suit the site and the desired vehicle detection region.

The VDP shall provide up to 24 open collector output channels per camera input using one or more extension modules.

A single detection zone shall be able to replace multiple inductive loops and the detection zones shall be OR'ed as the default or may be AND'ed together to indicate vehicle presence on a single phase of traffic movement.

Placement of detection zones shall be done by using only a pointing device, and a graphical interface built into the VDP and displayed on a video monitor, to draw the detection zones on the video image from each video camera. No separate computer shall be required to program the detection zones.

Up to 3 detection zone patterns shall be saved for each camera within the VDP memory. The VDP's memory shall be non-volatile to prevent data loss during power outages.

The selection of the detection zone pattern for current use shall be done through a menu. It shall be possible to activate a detection zone pattern from VDP memory and have that detection zone pattern displayed within 1 second of activation.

The VDP system shall have the capability to automatically switch to any one of the stored configurations based on the time of day which shall be programmable by the user.

When a vehicle is detected within a detection zone, the corners of the detection zone shall activate on the video overlay display to confirm the detection of the vehicle.

Detection shall be at least 98% accurate in good weather conditions, with slight degradation possible under adverse weather conditions (e.g. rain, snow, or fog) which reduce visibility. Detection accuracy is dependent upon site geometry, camera placement, camera quality and detection zone location, and these accuracy levels do not include allowances for occlusion or poor video due to camera location or quality.

The VDP shall provide dynamic zone reconfiguration (DZR). DZR enables normal operation of existing detection zones when one zone is being added or modified during the setup process. The VDP shall output a constant call on any detector channel corresponding to a zone being modified.

Detection zone setup shall not require site specific information such as latitude and longitude to be entered into the system.

The VDP shall process the video input from each camera at 30 frames per second. Multiple camera processors shall process all video inputs simultaneously.

The VDP shall output a constant call for each enabled detector output channel if a loss of video signal occurs. The VDP shall output a constant call during the background learning period.

Detection zone outputs shall be configurable to allow the selection of presence, pulse, extend, and delay outputs. Timing parameters of pulse, extend, and delay outputs shall be user definable between 0.1 to 25.0 seconds.

Up to six detection zones per camera view shall have the capability to count the number of vehicles detected. The count value shall be internally stored for later retrieval through the EIA232 port. The zone shall also have the capability to calculate and store average speed and lane occupancy at bin intervals of 10 seconds, 20 seconds, 1 minute, 5 minutes, 15 minutes, 30 minutes and 60 minutes.

## D Hardware

### D.1 General

The VDP and extension module (EM) shall be specifically designed to mount in a standard detector rack, using the edge connector to obtain power and provide contact closure outputs. No adapters shall be required to mount the VDP or EM in a standard detector rack. Detector rack rewiring shall not be required.

The EM shall be available to avoid the need of rewiring the detector rack, by enabling the user to plug an extension module into the appropriate slot in the detector rack. The extension module shall be connected to the VDP by a 8 wire cable with modular connectors, and shall output contact closures in accordance to user selectable channel assignments. The EM is available in 2, 4, or 24 channel configurations.

### D.2 Input Power

The VDP and EM shall be powered by 12/24 volts DC. VDP power consumption shall not exceed 7 watts. The EM power consumption shall not exceed 2.5 watts.

### D.3 Detection Outputs

The VDP and EM shall include detector output pin out compatibility with industry standard detector racks. The 24-channel EM shall provide output through a 37-pin “D” connector on the front panel.

### D.4 Video Inputs

VDPs shall include one, two or four BNC video input connections suitable for composite video inputs. The video input shall include a switch selectable 75-ohm or high impedance termination to allow camera video to be routed to other devices, as well as input to the VDP for vehicle detection.

**D.5 Video Outputs**
The front of the VDP shall include one BNC video output providing real time video output that can be routed to other devices.

**D.5 Mechanical and Environmental**
The VDP shall operate satisfactorily in a temperature range from -34 °C to +74 °C and a humidity range from 0%RH to 95%RH, non-condensing as set forth in NEMA specifications.

The front panel of the VDP shall have detector test switches to allow the user to place calls on each channel. The test switch shall be able to place either a constant call or a momentary call depending on the position of the switch.

The front face of the VDP shall contain indications, such as LED displays, to enable the user to view real time detections for each channel of detection when the system is operational.

The VDP shall include an EIA232 port for serial communications with a remote computer. This port shall be a 9-pin "D" subminiature connector on the front of the VDP.

The VDP shall utilize non-volatile memory technology to enable the loading of modified or enhanced software through the EIA232 port and without modifying the VDP hardware.

**D.6 Video Detection Camera**
Video detection cameras used for traffic detection shall be furnished by the video detection processor (VDP) supplier and shall be qualified by the supplier to ensure proper system operation.

The camera shall produce a useable video image of the bodies of vehicles under all roadway lighting conditions, regardless of time of day. The minimum range of scene luminance over which the camera shall produce a useable video image shall be the minimum range from nighttime to daytime, but not less than the range 1.0 lux to 10,000 lux.

The imager luminance signal to noise ratio (S/N) shall be more than 50 dB.

The camera shall be digital signal processor (DSP) based and shall use a CCD sensing element and shall output color video with resolution of not less than 470 TV lines. The CCD imager shall have a minimum effective area of 768(h) x 494(v) pixels.

The camera shall include an electronic shutter control based upon average scene luminance and shall be equipped with an auto-iris lens that operates in tandem with the electronic shutter.

The camera shall utilize automatic white balance.

The camera shall include a variable focal length lens with variable focus that can be adjusted, without opening up the camera housing, to suit the site geometry by means of a portable interface device designed for that purpose and manufactured by the detection system supplier.

The horizontal field of view shall be adjustable from 5.4 to 50.7 degrees. This camera configuration may be used for the majority of detection approaches in order to minimize the setup time and spares required by the user. The lens shall be a 10x zoom lens with a focal length of 3.8mm to 38.0 mm.

The lens shall also have an auto-focus feature with a manual override to facilitate ease of setup.

The camera shall incorporate the use of preset positioning that store zoom and focus positioning information. The camera shall have the capability to recall the previously stored preset upon application of power.

The camera electronics shall include automatic gain control (AGC) to produce a satisfactory image at night.

The camera shall be housed in a weather-tight sealed enclosure. The enclosure shall be made of 6061 anodized aluminum. The housing shall be field rotatable to allow proper alignment between the camera and the traveled road surface.

The camera enclosure shall be equipped with a sunshield. The sunshield shall include a provision for water diversion to prevent water from flowing in the camera's field of view. The camera enclosure with sunshield shall be less than 6" diameter, less than 18" long, and shall weigh less than 6 pounds when the camera and lens are mounted inside the enclosure.

The enclosure shall be design so that the pan, tilt and rotation of the camera assembly can be accomplished independently without affecting the other settings.

The camera enclosure shall include a proportionally controlled heater, where the output power of the heater varies with temperature, to assure proper operation of the lens functions at low temperatures and prevent moisture condensation on the optical faceplate of the enclosure.

The glass face on the front of the enclosure shall have an anti-reflective coating to minimize light and image reflections.

The glass face shall also employ a special coating to minimize the buildup of environmental debris such as dirt and water.

When mounted outdoors in the enclosure, the camera shall operate satisfactorily in a temperature range from -34 °C to +60 °C and a humidity range from 0% RH to 100% RH. Measurement of satisfactory video shall be based upon VDP system operation.

The camera shall be powered by 120-240 VAC 50/60 Hz. Power consumption shall be 45 watts or less under all conditions. An optional DC power configuration shall be available for 12 VDC operation.

Recommended camera placement height shall be 33 feet (or 10 meters) above the roadway, and over the traveled way on which vehicles are to be detected. For optimum detection the camera should be centered above the traveled roadway. The camera shall view approaching vehicles at a distance not to exceed 350 feet for reliable detection (height to distance ratio of 10:100). Camera placement and field of view (FOV) shall be unobstructed and as noted in the installation documentation provided by the supplier.

The camera enclosure shall be equipped with separate, weather-tight connections for power and video cables at the rear of the enclosure. These connections may also allow diagnostic testing and viewing of video at the camera while the camera is installed on a mast arm or pole using a lens adjustment module (LAM) supplied by the VDP supplier. Video and power shall not reside within the same connector.

The video signal shall be fully isolated from the camera enclosure and power cabling.

**D.7 Video Monitor**

The monitor shall be a flat screen color video monitor with a minimum 9" diagonal picture display. It shall support EIA standards RS-170 composite video signal (1.0 v p-p, 75 OHM).

It shall have a resolution of 900 lines at center. Video bandwidth shall be >11 MHz. Loop through connectors shall be provided, and both input and output connectors shall be BNCs.

The monitor power source shall be 120 VAC +/- 10%, 60 Hz. Power consumption shall not be greater than 18 W. Ambient operating temperature shall be +50 to +122 degrees Fahrenheit.

Located on the front panel, the controls shall be on/off, contrast, bright, vertical hold, and horizontal hold. Rear panel shall have controls for vertical size, vertical linearity and scan switch.

Dimensions shall not exceed 9" (W), 10" (H), and 7" (D). Weight shall not exceed 10 pounds.

**D.8 Coaxial Cable**

The coaxial cable to be used between the camera and the VDP in the traffic cabinet shall be Belden 8281. This cable shall be suitable for installation in conduit or overhead with appropriate span wire. BNC plug connectors should be used at both the camera and cabinet ends. The coaxial cable, BNC connector, and crimping tool shall be approved by the supplier of the video detection system, and the manufacturer's instructions must be followed to ensure proper connection.

**D.9 Power Cable**
The power cabling shall be 16 AWG three conductor cable with a minimum outside diameter of 0.325 inch and a maximum diameter of 0.490 inch. The cabling shall comply with the National Electric Code, as well as local electrical codes. Cameras may acquire power from the luminaire if necessary.

**E Installation**
The video detection camera shall be installed by factory-certified installers as recommended by the supplier and documented in installation materials provided by the supplier. Proof of factory certification shall be provided.

**F Supplier Warranty**
The supplier shall provide a three-year warranty on the video detection system.

During the warranty period, technical support shall be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support shall be available from factory-certified personnel or factory-certified installers.

During the warranty period, updates to VDP software shall be available from the supplier without charge.

**G Maintenance and Support**
The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the video detection system. These parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale for said parts.

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.

Installation or training support shall be provided by a factory-authorized representative and shall be a minimum IMSA-Level II Traffic Signal Technician certified.

All product documentation shall be written in the English language.

**H Measurement**
The department will measure Video Vehicle Detection System as a single lump sum unit of work, acceptably completed per intersection.

**I Payment**
The department will pay for measured quantities at the contract lump sum price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.01 | Video Vehicle Detection System, Intersection of CTH F at Duplainville Road | LS |

Payment is full compensation for furnishing and installing control units, cameras, cabling, mounting brackets, testing and setting up the system.

## 44. Emergency Vehicle Preemption System, Item SPV.0105.02.

### 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 be an optical infrared system and include a discriminator, detectors, and detector cable. Equipment shall be GTT Opticom, Tomar Strobecom II, or approved equal and shall be compatible with other EVP equipment installed along the CTH F corridor. This equipment shall be furnished and installed by the contractor.

Detectors shall be mounted on the mast arms and signal poles as shown on the plans.

The traffic signal mast 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 county traffic 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 county, 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 Measurement

The department will measure Emergency Vehicle Preemption System as a lump sum unit of work, acceptably completed in place per intersection.

**D Payment**
The department will pay for measured quantities at the contract lump sum price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.02 | Emergency Vehicle Preemption System | LS |

Payment is full compensation for furnishing and installing all equipment, cabling, necessary additional items, testing and setting up the system.

## 45. Remove Traffic Signals and Street Lighting, Item SPV.0105.03.

**A Description**
This special provision describes removing existing traffic signals and street lighting at the listed project intersections 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 signal items can be removed. Temporary signals must be operational prior to beginning removals.

Notify the county Department of Public Works at least five working days prior to the removal of the traffic signal items. Complete the removal work as soon as possible following shut down of this equipment.

The county 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 identified standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the identified transformer bases from each pole. Remove the identified signal heads, 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. Properly dispose of the underground signal cable, internal wires and street lighting cable. Deliver the remaining materials to the county Department of Public Works. Contact the county at least five working days prior to delivery to make arrangements.

**D Measurement**
The department will measure Remove Traffic Signals and Street Lighting as a single lump sum unit of work for each intersection, acceptably completed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.03 | Remove Traffic Signals and Street Lighting | 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.

## 46. Modify Traffic Signals, Intersection of CTH F at Ridgeview Parkway, Item SPV.0105.04; Intersection of CTH F at CTH M (Watertown Road), Item SPV.0105.05.

**A Description**

This special provision describes the removing and salvaging of certain existing traffic signal equipment, and the installation, re-installation, or modification of other equipment not otherwise enumerated at the signalized project intersections. Specific removal and modification items are listed in the plans.

**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.

Removed signal faces and mounting brackets and hardware shall be returned to Waukesha County.

Modify traffic signal cabinet equipment and wiring and controller programming as necessary to accommodate the revised traffic signal face configuration.

**D Measurement**

The department will measure Modify Traffic Signals as a single lump sum unit of work for each intersection, acceptably completed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.04 | Modify Traffic Signals, Intersection of CTH F at Ridgeview Parkway | LS |
| SPV.0105.05 | Modify Traffic Signals, Intersection of CTH F at CTH M (Watertown Road) | LS |

Payment is full compensation for removing and disassembling traffic signals and street lighting, scrapping of some materials, disposing of scrap material, delivering the indicated materials to the county, and for installing or modifying other equipment necessary to complete a fully function traffic signal installation complying with the intent of the plans.

## 47. Proof Rolling, Item SPV.0170.01.

### A Description

This special provision describes the testing of the stability of the rubblized concrete pavement by rolling with a tri-axle dump truck, the restoration of any soft or yielding areas evidenced by the test rolling, and retesting as determined by the engineer.

### B Materials

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

Conduct proof rolling after rubblizing existing concrete pavement but prior to placing HMA overlay. Proof roll at normal walking speed under the direction of the engineer or engineer's representative.

Roll the rubblized concrete pavement at a width equal to the finished base course width. Make multiple passes throughout the length of the rubblized pavement test area. Center each pass on a proposed lane.

Repair and consolidate any soft or yielding areas or depressions evidenced under the action of the proof rolling to withstand retesting. Excavate and replace any unstable material from the roadbed with selected materials. Correct any yielding subgrade areas discovered during the proof rolling operations prior to blue top staking and finish grading operations. Perform corrective work in accordance to the standard specifications.

### D Measurement

The department will measure Proof Rolling by the station along the roadway centerline or reference line, acceptably completed. The department will measure two or more separate roadways by the station along each separate roadway as designated on the 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.0170.01 | Proof Rolling | STA |

Payment is full compensation for performing the Proof Rolling; for any preparation of the subgrade, including the furnishing and incorporation of water, if required; for retesting as determined by the engineer and for restoration of the subgrade.

**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 __2__ *(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 __2___ *(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.wisconsin.gov/business/engrserv/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

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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 | | DBE Contractor Contact Person | |
|---|---|---|---|
| Phone: | | Phone | |
| Fax: | | Fax | |
| Email: | | Email | |

**Please circle the jobs and items you will be quoting below**

| Proposal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| County | | | | | | | |

**WORK DESCRIPTION:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Clear and Grub | X | | X | X | | X | X |
| Dump Truck Hauling | X | | X | X | | X | X |
| Curb & Gutter/Sidewalk, Etc. | X | | X | X | | X | X |
| Erosion Control Items | X | | X | X | | X | X |
| Signs and Posts/Markers | X | | X | X | | X | X |
| Traffic Control | | X | X | X | | X | X |
| Electrical Work/Traffic Signals | | X | X | X | | X | |
| Pavement Marking | | X | X | X | X | X | X |
| Sawing Pavement | | X | X | X | X | X | X |
| QMP, Base | X | X | | X | X | X | X |
| Pipe Underdrain | X | | | X | | | |
| Beam Guard | | | | X | X | X | X |
| Concrete Staining | | | | | | | X |
| Trees/Shrubs | X | | | | | | X |

Again please make every effort to have your quotes into our office by time deadline prior to the letting date.

**We prefer quotes be sent via SBN but prime's preferred 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**

- Prime contractor open houses inviting DBE firms to see the bid "war room" or providing technical assistance
- Participate in speed networking and mosaic exercises as arranged by DBE office
- Host information sessions not directly associated with a bid letting;
- Participate in a formal mentor protégé or joint venture with a DBE firm
- Participate in WisDOT advisory committees i.e. TRANSAC, or Mega Project committee meetings
- Facilitate a small group DBE 'training session' Clarifying how your firm prepares for bid letting, evaluates subcontractors, preferred qualifications and communication methods
- Encourage subcontractors to solicit and highlight DBE participation in their quotes to you
- 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**

- DBE firms should contact primes as soon as possible with questions regarding their quotes or bid; seven days prior is optimal.
- Continually check for contract addendums on the HCCI website through the Thursday prior to letting to stay abreast of changes.
- Review the status of contracts on the HCCI website reviewing the 'apparent low bidder' list, and bid tabs at a minimum.
- 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.
- Participate in DBE office assessment programs
- Participate on advisory and mega-project committees
- Sign up to receive the DBE Contracting Update
- Consider membership in relevant industry or contractor organizations
- 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 PROVISION 6

## ASP 6 - Modifications to the standard specifications

*Make the following revisions to the 2014 edition of the standard specifications:*

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**101.3 Definitions**

*Replace the definition of semi-final estimate with the following effective with the December 2013 letting:*

**Semi-final estimate** An estimate indicating the engineer has measured and reported all contract quantities and materials requirements.

---

**105.11.1 Partial Acceptance**

*Replace paragraph two with the following effective with the December 2013 letting:*

(2) Partial acceptance will relieve the contractor of maintenance responsibility for the designated portion of the work. By relieving the contractor of maintenance, the department does not relieve the contractor of responsibility for defective work or damages caused by the contractor's operations. Do not construe partial acceptance to be conditional final acceptance or final acceptance of any part of the project, or a waiver of any legal rights specified under 107.16.

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**105.11.2 Final Acceptance**

*Retitle and replace the entire text with the following effective with the December 2013 letting:*

**105.11.2 Project Acceptance**

**105.11.2.1 Inspection**

**105.11.2.1.1 General**

(1) Notify the engineer when the project is substantially complete as defined in 105.11.2.1.3. As soon as it is practical, the engineer will inspect the work and categorize it as one of the following:

1. Unacceptable or not complete.
2. Substantially complete.
3. Complete.

**105.11.2.1.2 Unacceptable or Not Complete**

(1) The engineer will identify, in writing, work that is unacceptable or not complete. Immediately correct or complete that work. The engineer will assess contract time until the work is corrected or completed.

(2) Proceed as specified in 105.11.2.1.1 until the engineer determines that the work is complete.

**105.11.2.1.3 Substantially Complete**

(1) The project is substantially complete and the engineer will no longer assess contract time if the contractor has completed all contract bid items and change order work, except for the punch-list. As applicable, the following must have occurred:

1. All lanes of traffic are open on a finished surface.
2. All signage and traffic control devices are in place and operating.
3. All drainage, erosion control, excavation, and embankments are completed.
4. All safety appurtenances are completed.

(2) The engineer will provide a written punch-list enumerating work the contractor must perform and documents the contractor must submit before the the engineer will categorize the work as complete.

1. Punch-list work includes uncompleted cleanup work required under 104.9 and minor corrective work. Immediately correct or complete the punch-list work. The engineer may restart contract time if the contractor does not complete the punch-list work within 5 business days after receiving the written punch-list. The engineer and contractor may mutually agree to extend this 5-day requirement.
2. Punch-list documents include whatever contract required documentation is missing. The engineer may restart contract time if the contractor does not submit the punch-list documents within 15 business days after receiving the written punch-list. The engineer and contractor may mutually agree to extend this 15-day requirement.

(3) Proceed as specified in 105.11.2.1.1 until the work is complete.

**105.11.2.1.4 Complete**

(1) The project is complete when the contractor has completed all contract bid items, change order work, and punch-list work including the submission of all missing documentation.

**105.11.2.2 Conditional Final Acceptance**

(1) When the engineer determines that the project is complete, the engineer will give the contractor written notice of conditional final acceptance relieving the contractor of maintenance responsibility for the completed work.

**105.11.2.3 Final Acceptance**

(1) The engineer will grant final acceptance of the project after determining that all contract is work complete; all contract, materials, and payroll records are reviewed and approved; and the semi-final estimate quantities are final under 109.7.

(2) Failure to discover defective work or materials before final acceptance does not prevent the department from rejecting that work or those materials later. The department may revoke final acceptance if the department discovers defective work or materials after it has accepted the work.

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**105.13.3 Submission of Claim**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Submit the claim to the project engineer as promptly as possible following the submission of the Notice of Claim, but not later than final acceptance of the project as specified in 105.11.2.3. If the contractor does not submit the claim before final acceptance of the project, the department will deny the claim.

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**107.17.3 Railroad Insurance Requirements**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) If required by the special provisions, provide or arrange for a subcontractor to provide railroad protective liability insurance in addition to the types and limits of insurance required in 107.26. Keep railroad protective liability insurance coverage in force until completing all work, under or incidental to the contract, on the railroad right of way or premises of the railroad and until the engineer determines that the work is complete as specified in 105.11.2.1.4.

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**107.26 Standard Insurance Requirements**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Maintain the following types and limits of commercial insurance in force until the engineer determines that the work is complete as specified in 105.11.2.1.4.

**TABLE 107-1 REQUIRED INSURANCE AND MINIMUM COVERAGES**

| TYPE OF INSURANCE | MINIMUM LIMITS REQUIRED[1] |
|---|---|
| 1. Commercial general liability insurance endorsed to include blanket contractual liability coverage.[2] | $2 million combined single limits per occurrence with an annual aggregate limit of not less than $4 million. |
| 2. Workers' compensation. | Statutory limits |
| 3. Employers' liability insurance. | Bodily injury by accident:<br>$100,000 each accident<br>Bodily injury by disease:<br>$500,000 each accident<br>$100,000 each employee |
| 4. Commercial automobile liability insurance covering all contractor-owned, non-owned, and hired vehicles used in carrying out the contract.[2] | $1 million-combined single limits per occurrence. |

[1] The contractor may satisfy these requirements with primary insurance coverage or with excess/umbrella policies.

[2] The Wisconsin Department of Transportation, its officers, agents, and employees shall be named as an additional insured under the general liability and automobile liability insurance.

**108.14 Terminating the Contractor's Responsibility**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) The contractor's responsibilities are terminated, except as set forth in the contract bond and specified in 107.16, when the department grants final acceptance as specified in 105.11.2.3.

---

**109.2 Scope of Payment**

*Replace paragraph two with the following effective with the December 2013 letting:*

(2) The department will pay for the quantity of work acceptably completed and measured for payment as the measurement subsection for each bid item specifies. Within the contract provide means to furnish and install the work complete and in-place. Payment is full compensation for everything required to perform the work under the applicable bid items including, but not limited to, the work elements listed in the payment subsection. Payment also includes all of the following not specifically excluded in that payment subsection:

1. Furnishing and installing all materials as well as furnishing the labor, tools, supplies, equipment, and incidentals necessary to perform the work.
2. All losses or damages, except as specified in 107.14, arising from one or more of the following:
    - The nature of the work.
    - The action of the elements.
    - Unforeseen difficulties encountered during prosecution of the work.
3. All insurance costs, expenses, and risks connected with the prosecution of the work.
4. All expenses incurred because of an engineer-ordered suspension, except as specified in 104.2.2.3.
5. All infringements of patents, trademarks, or copyrights.
6. All other expenses incurred to complete and protect the work under the contract.

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**109.6.1 General**

*Replace paragraphs three and four with the following effective with the December 2013 letting:*

(3) The department's payment of an estimate before conditional final acceptance of the work does not constitute the department's acceptance of the work, and does not relieve the contractor of responsibility for:

1. Protecting, repairing, correcting, or renewing the work.
2. Replacing all defects in the construction or in the materials used in the construction of the work under the contract, or responsibility for damage attributable to these defects.

(4) The contractor is responsible for all defects or damage that the engineer may discover on or before the engineer's conditional final acceptance of the work. The engineer is the sole judge of these defects or damage, and the contractor is liable to the department for not correcting all defects or damage.

---

**109.7 Acceptance and Final Payment**

*Replace paragraphs one and two with the following effective with the December 2013 letting:*

(1) After the engineer grants conditional final acceptance of the work as specified in 105.11.2.2 and reviews required document submittals and materials test reports, the engineer will issue the semi-final estimate.

(2) Within 30 calendar days after receiving the semi-final estimate, submit to the engineer a written statement of agreement or disagreement with the semi-final estimate. For an acceptable statement of disagreement, submit an item-by-item list with reasons for each disagreement. If the contractor does not submit this written statement within those 30 days, the engineer will process the final estimate for payment. The engineer and the contractor can mutually agree to extend this 30-day submission requirement.

### 450.3.3 Maintaining the Work

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Protect and repair the prepared foundation, tack coat, base, paved traffic lanes, shoulders, and seal coat. Correct all rich or bleeding areas, breaks, raveled spots, or other nonconforming areas in the paved surface.

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### 455.3.2.5 Maintaining Tack Coat

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Protect and repair the existing surface and the tack coat. Correct areas with excess or deficient tack material and any breaks, raveled spots, or other areas where bond might be affected.

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### 460.2.2.3 Aggregate Gradation Master Range

*Replace paragraph one with the following effective with the January 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-3 mixes.

[2] 15.5 for E-3 mixes.

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### 460.2.7 HMA Mixture Design

*Replace paragraph one with the following effective with the January 2014 letting:*

(1) For each HMA mixture type used under the contract, develop and submit an asphaltic mixture design according to the department's test method number 1559 as described in CMM 8-66 and conforming to the requirements of table 460-1 and table 460-2. The values listed are design limits; production values may exceed those limits. The department will review mixture designs and report the results of that review to the designer according to the department's test method number 1559.

**TABLE 460-2 MIXTURE REQUIREMENTS**

| Mixture type | E - 0.3 | E - 1 | E - 3 | E - 10 | E - 30 | E - 30x | SMA |
|---|---|---|---|---|---|---|---|
| ESALs x $10^6$ (20 yr design life) | < 0.3 | 0.3 - < 1 | 1 - < 3 | 3 - < 10 | 10 - < 30 | >= 30 | ___ |
| LA Wear (AASHTO T96) | | | | | | | |
| 100 revolutions(max % loss) | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| 500 revolutions(max % loss) | 50 | 50 | 45 | 45 | 45 | 45 | 40 |
| Soundness (AASHTO T104) (sodium sulfate, max % loss) | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Freeze/Thaw (AASHTO T103) (specified counties, max % loss) | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Fractured Faces (ASTM 5821) (one face/2 face, % by count) | 60 / __ | 65 / __ | 75 / 60 | 85 / 80 | 98 / 90 | 100/100 | 100/90 |
| Flat & Elongated (ASTM D4791) (max %, by weight) | 5 (5:1 ratio) | 5 (5:1 ratio) | 5 (5:1 ratio) | 5 (5:1 ratio) | 5 (5:1 ratio) | 5 (5:1 ratio) | 20 (3:1ratio) |
| Fine Aggregate Angularity (AASHTO T304, method A, min) | 40 | 40 | 43 | 45 | 45 | 45 | 45 |
| Sand Equivalency (AASHTO T176, min) | 40 | 40 | 40 | 45 | 45 | 50 | 50 |
| Gyratory Compaction | | | | | | | |
| Gyrations for $N_{ini}$ | 6 | 7 | 7 | 8 | 8 | 9 | 8 |
| Gyrations for $N_{des}$ | 40 | 60 | 75 | 100 | 100 | 125 | 65 |
| Gyrations for $N_{max}$ | 60 | 75 | 115 | 160 | 160 | 205 | 160 |
| Air Voids, $\%V_a$ ($\%G_{mm}$ $N_{des}$) | 4.0 (96.0) | 4.0 (96.0) | 4.0 (96.0) | 4.0 (96.0) | 4.0 (96.0) | 4.0 (96.0) | 4.0 (96.0) |
| % $G_{mm}$ $N_{ini}$ | <= 91.5[1] | <= 90.5[1] | <= 89.0[1] | <= 89.0 | <= 89.0 | <= 89.0 | ___ |
| % $G_{mm}$ $N_{max}$ | <= 98.0 | <= 98.0 | <= 98.0 | <= 98.0 | <= 98.0 | <= 98.0 | ___ |
| Dust to Binder Ratio[2] (% passing 0.075/$P_{be}$) | 0.6 - 1.2 | 0.6 - 1.2 | 0.6 - 1.2 | 0.6 - 1.2 | 0.6 - 1.2 | 0.6 - 1.2 | 1.2 - 2.0 |
| Voids filled with Binder (VFB or VFA, %) | 68 - 80[4] [5] | 65 - 78[4] | 65 - 75[3] [4] | 65 - 75[3] [4] | 65 - 75[3] [4] | 65 - 75[3] [4] | 70 - 80 |
| Tensile Strength Ratio (TSR) (ASTM 4867) | | | | | | | |
| no antistripping additive | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| with antistripping additive | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| Draindown at Production Temperature (%) | ___ | ___ | ___ | ___ | ___ | ___ | 0.30 |

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

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

[3] For 9.5mm and 12.5 mm nominal maximum size mixtures, the specified VFB range is 70 - 76%.

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

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

**460.2.8.2.1.5 Control Limits**

*Replace paragraph one with the following effective with the January 2014 letting:*

(1) Conform to the following control limits for the JMF and warning limits based on a running average of the last 4 data points:

| ITEM | JMF LIMITS | WARNING LIMITS |
|---|---|---|
| Percent passing given sieve: | | |
| 37.5-mm | +/- 6.0 | +/- 4.5 |
| 25.0-mm | +/- 6.0 | +/- 4.5 |
| 19.0-mm | +/- 5.5 | +/- 4.0 |
| 12.5-mm | +/- 5.5 | +/- 4.0 |
| 9.5-mm | +/- 5.5 | +/- 4.0 |
| 2.36-mm | +/- 5.0 | +/- 4.0 |
| 75-µm | +/- 2.0 | +/- 1.5 |
| Asphaltic content in percent | - 0.3 | - 0.2 |
| Air voids in percent | +/- 1.3 | +/- 1.0 |
| VMA in percent[1] | - 0.5 | - 0.2 |

[1] VMA limits based on minimum requirement for mix design nominal maximum aggregate size in Table 460-1.

(2) Warning bands are defined as the area between the JMF limits and the warning limits.

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**460.2.8.2.1.6 Job Mix Formula Adjustment**

*Replace the entire text with the following effective with the January 2014 letting:*

(1) The contractor may request adjustment of the JMF according to the department's test method number 1559. Have an HTCP HMA technician certified at a level appropriate for process control and troubleshooting or mix design submit a written JMF adjustment request. Ensure that the resulting JMF is within specified master gradation bands. The department will have an HMA technician certified at level III review the proposed adjustment and, if acceptable, issue a revised JMF.

(2) The department will not allow adjustments that do the following:

- Exceed specified JMF tolerance limits.
- Reduce the JMF asphalt content unless the production VMA running average meets or exceeds the minimum VMA design requirement defined in table 460-1for the mixture produced.

(3) Have an HMA technician certified at level II make related process adjustments. If mixture redesign is necessary, submit a new JMF, subject to the same specification requirements as the original JMF.

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**520.3.8 Protection After Laying**

*Delete the entire subsection.*

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**614.2.1 General**

*Replace paragraphs five and six with the following effective with the December 2013 letting:*

(5) Furnish zinc coated wire rope and fitting conforming to the plans and galvanized according to ASTM A741.

(6) Before installation store galvanized components above ground level and away from surface run off. The department may reject material if the zinc coating is physically damaged or oxidized.

(7) Provide manufacturer's drawings, and installation and maintenance instructions when providing proprietary systems.

**614.2.3 Steel Rail and Fittings**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Furnish galvanized steel rail conforming to AASHTO M180 class A, type II beam using the single-spot test coating requirements. Furnish plates, anchor plates, post mounting brackets, and other structural steel components conforming to 506.2.2.1 and hot-dip galvanized according to ASTM A123.

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**614.2.7 Crash Cushions**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Furnish permanent and temporary crash cushions from the department's approved products list. Use cushions as wide or wider than the plan back-width. Furnish transitions conforming to the crash cushion manufacturer's design and specifications. Submit manufacturer crash cushion and transition design details to engineer before installing.

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**616.3.1 General**

*Replace paragraph six with the following effective with the December 2013 letting:*

(6) Remove and dispose of all excess excavation and surplus materials from the fence site.

---

**618.3.3 Restoration**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Upon termination of hauling operations and before conditional final acceptance, restore all haul roads, including drainage facilities and other components, to the equivalent of pre-hauling conditions.

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**627.3.1 General**

*Replace paragraph four with the following effective with the December 2013 letting:*

(4) Maintain the mulched areas and repair all areas damaged by wind, erosion, traffic, fire or other causes.

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**637.3.2.1 General**

*Delete paragraph three effective with the December 2013 letting.*

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**670.3.4.2 Post-Construction Work**

*Replace paragraph one with the following effective with the December 2013 letting:*

(1) Submit 5 copies of ITS documentation including but not limited to the following:

- Operator's manual: for contractor furnished equipment, submit a manual containing detailed operating instructions for each different type or model of equipment and or operation performed.
- Maintenance procedures manuals: for contractor furnished equipment, submit a manual containing detailed preventive and corrective maintenance procedures for each type or model of equipment furnished.
- Cabinet fiber optic wiring diagram: submit a cabinet wiring diagram, identified by location for each cabinet. Include both electrical wiring and fiber optic conductor and cable connections. Place one copy of the fiber optic wiring diagram in a weatherproof holder in the cabinet. Deliver the other copies to the engineer.
- As-built drawings: submit final as-built drawings that detail the final placement of all conduit, cabling, equipment, and geometric modifications within the contract. Provide all documentation in an electronic format adhering to the region’s ITS computer aided drafting standards and according to the department’s as-built requirements. The department will review the as-built drawings for content and electronic format. Modify both the content and format of as-built drawings until meeting all requirements.
- Equipment inventory list: submit an inventory list including serial number, make, model, date installed, and location installed of all equipment installed under the contract.

## Errata

*Make the following corrections to the 2014 edition of the standard specifications:*

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**415.3.14 Protecting Concrete**

*Correct errata by referencing the opening to service specification.*

(1) Erect and maintain suitable barricades and, if necessary, provide personnel to keep traffic off the newly constructed pavement until it is opened for service as specified in 415.3.15. Conform to 104.6 for methods of handling and facilitating traffic.

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**501.2.9 Concrete Curing Materials**

*Correct errata by changing AASHTO M171 to ASTM C171.*

(2) Furnish sheeting conforming to ASTM C171 for white opaque polyethylene film, except that the contractor may use clear or black polyethylene for cold weather protection.

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**607.2 Materials**

*Correct errata by changing AASHTO M198 to ASTM C990.*

(1) Use materials conforming to the requirements for the class of material named and specified below.

| | |
|---|---|
| Composite pipe, couplings, fittings and joint materials | ASTM D2680 |
| Annular rubber and plastic gaskets for flexible, watertight joints | ASTM C990 |
| External rubber gaskets, mastic, and protective film | ASTM C877 |
| Mortar | 519.2.3 |

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**637.2.1.3 Sheet Aluminum**

*Correct errata by changing ASTM B449 to B921 and eliminating the specification for coating thickness.*

(4) Degrease, etch, and coat the sign blank on both sides with a chromate treatment conforming to ASTM B921, class 2.

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**637.3.3.4 Performance**

*Correct errata to reference to 105.11.2.3 as revised to implement changes to the finals process.*

(1) Under 105.11.2.3 the department may revoke acceptance and direct the contractor to repair or replace previously accepted sign installations if the department subsequently discovers evidence of defective materials or improper installation. Deficiencies that warrant department action include but are not limited to the following:

- Sign posts more than five degrees out of plumb.
- Signs twisted by more than 5 degrees from plan orientation.
- Signs with delaminated or warped plywood.
- Signs with bubbling, fading, delaminating, or buckling sheeting.

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**646.3.3.4 Proving Period**

*Correct errata to reference to 105.11.2.3 as revised to implement changes to the finals process.*

(4) Replace all marking within sections with a percent failing more than 10% and repair or replace all markings that, in the engineer's assessment, show evidence of improper construction. If post-acceptance inspections uncover evidence of defective materials or improper construction, the department may revoke acceptance under 105.11.2.3.

# ADDITIONAL SPECIAL PROVISION 7

A. Reporting 1st Tier and DBE Payments During Construction

1. Comply with reporting requirements specified in the department's Civil Rights Compliance, Contractor's User Manual, Sublets and Payments.
2. Report payments to all DBE firms within 10 calendar days of receipt of a progress payment by the department or a contractor for work performed, materials furnished, or materials stockpiled by a DBE firm. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.
3. Report payments to all first tier subcontractor relationships within 10 calendar days of receipt of a progress payment by the department for work performed. Report the payment as specified in A(1) for all work satisfactorily performed.
4. All tiers shall report payments as necessary to comply with the DBE payment requirement as specified in A(2).
5. Require all first tier relationships, DBE firms and all other tier relationships necessary to comply with the DBE payment requirement in receipt of a progress payment by contractor to acknowledge receipt of payment as specified in A(1), (2), (3) and (4).
6. All agreements made by a contractor shall include the provisions in A(1), (2), (3), (4) and (5), and shall be binding on all first tier subcontractor relationships and all contractors and subcontractors utilizing DBE firms on the project.

B. Costs for conforming to this special provision are incidental to the contract.

# ADDITIONAL SPECIAL PROVISION 9
# Electronic Certified Payroll Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to submit certified payrolls electronically. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm

(2) Ensure that all tiers of subcontractors, as well as all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Tess Mulrooney at 608-267-4489 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator send several sample electronic files to Tess two months before a payroll needs to be submitted. Not every contractor's payroll system is capable of producing export files. For details, see pages 17-22 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/crc-basic-info.pdf

**REQUIRED CONTRACT PROVISIONS**
**FEDERAL-AID CONSTRUCTION CONTRACTS**



## I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

## II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

**6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

**10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

**III. NONSEGREGATED FACILITIES**

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

**IV. DAVIS-BACON AND RELATED ACT PROVISIONS**

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

**1. Minimum wages**

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

**2. Withholding**

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

**3. Payrolls and basic records**

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

**4. Apprentices and trainees**

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

**10. Certification of eligibility.**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

## V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages**. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

## VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

**IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

**X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

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

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

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

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

* * * * *

**2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

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

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

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

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

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

**SEPTEMBER 2002**

## NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Employment Practices" and "Equal Opportunity Clause" set forth in the Required Contract Provisions, FHWA 1273.

2. The goals and timetables for minority and female participation expressed in percentage terms for the contractor's aggregate work force in each trade, on all construction work in the covered area, are as follows:

**Goals for Minority Participation for Each Trade:**

| County | % | County | % | County | % |
|---|---|---|---|---|---|
| Adams | 1.7 | Iowa | 1.7 | Polk | 2.2 |
| Ashland | 1.2 | Iron | 1.2 | Portage | 0.6 |
| Barron | 0.6 | Jackson | 0.6 | Price | 0.6 |
| Bayfield | 1.2 | Jefferson | 7.0 | Racine | 8.4 |
| Brown | 1.3 | Juneau | 0.6 | Richland | 1.7 |
| Buffalo | 0.6 | Kenosha | 3.0 | Rock | 3.1 |
| Burnett | 2.2 | Kewaunee | 1.0 | Rusk | 0.6 |
| Calumet | 0.9 | La Crosse | 0.9 | St. Croix | 2.9 |
| Chippewa | 0.5 | Lafayette | 0.5 | Sauk | 1.7 |
| Clark | 0.6 | Langlade | 0.6 | Sawyer | 0.6 |
| Columbia | 1.7 | Lincoln | 0.6 | Shawano | 1.0 |
| Crawford | 0.5 | Manitowoc | 1.0 | Sheboygan | 7.0 |
| Dane | 2.2 | Marathon | 0.6 | Taylor | 0.6 |
| Dodge | 7.0 | Marinette | 1.0 | Trempealeau | 0.6 |
| Door | 1.0 | Marquette | 1.7 | Vernon | 0.6 |
| Douglas | 1.0 | Menominee | 1.0 | Vilas | 0.6 |
| Dunn | 0.6 | Milwaukee | 8.0 | Walworth | 7.0 |
| Eau Claire | 0.5 | Monroe | 0.6 | Washburn | 0.6 |
| Florence | 1.0 | Oconto | 1.0 | Washington | 8.0 |
| Fond du Lac | 1.0 | Oneida | 0.6 | Waukesha | 8.0 |
| Forest | 1.0 | Outagamie | 0.9 | Waupaca | 1.0 |
| Grant | 0.5 | Ozaukee | 8.0 | Waushara | 1.0 |
| Green | 1.7 | Pepin | 0.6 | Winnebago | 0.9 |
| Green Lake | 1.0 | Pierce | 2.2 | Wood | 0.6 |

**Goals for female participation for each trade: 6.9%**

These goals are applicable to all the contractor's construction work, (whether or not it is federal or federally assisted), performed in the covered area. If the contractor performs construction work in the geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The contractor's compliance with the Executive Order and the Regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the Regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

   As referred to in this section, the Director means:

   Director
   Office of Federal Contract Compliance Programs
   Ruess Federal Plaza
   310 W. Wisconsin Ave., Suite 1115
   Milwaukee, WI 53202

   The "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

4. As used in this notice, and in the contract resulting from solicitation, the "covered area" is the county(ies) in Wisconsin to which this proposal applies.

**APRIL 2013**

## ADDITIONAL FEDERAL-AID PROVISIONS

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

**1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidding collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

**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

**Effective with September 2004 Letting**

# WISCONSIN DEPARTMENT OF TRANSPORTATION
# DIVISION OF HIGHWAYS AND TRANSPORTATION FACILITIES

## SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS



## I. WAGE RATES, HOURS OF LABOR AND PAYMENT OF WAGES

The schedule of "Minimum Wage Rates" attached hereto and made a part hereof furnishes the prevailing wage rates that have been determined pursuant to Section 103.50 of the Wisconsin Statutes. These wage rates are the minimum required to be paid to the various laborers, workers, mechanics and truck drivers employed by contractors and subcontractors on the construction work embraced by the contract and subject to prevailing hours and wages under Section 103.50, Stats. If necessary to employ laborers, workers, mechanics or truck drivers whose classification is not listed on the schedule, they shall be paid at rates conformable to those listed for similar classifications. Apprentices shall be paid at rates not less than those prescribed in their state indenture contacts.

While the wage rates shown are the minimum rates required by the contract to be paid during its life, this in not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

Pursuant to Section 103.50 of the Wisconsin Statutes, the prevailing hours of labor have been determined to be up to 10 hours per day and 40 hours per calendar week Monday through Friday. If any laborer, worker, mechanic or truck driver is permitted or required to work more than the prevailing number of hours per day or per calendar week on this contract, they shall be paid for all hours in excess of the prevailing hours at a rate of at least one and one-half (1 1/2) times their hourly rate of pay. All work on Saturday, Sunday and the following holidays is to be paid at time and a half: (1) January 1, (2) the last Monday in May, (3) July 4, (4) the first Monday in September, (5) the fourth Thursday in November, (6) December 25, (7) the day before if January 1, July 4 or December 25 falls on a Saturday and (8) the day following if January 1, July 4 or December 25 falls on a Sunday.

All laborers, workers, mechanics and truck drivers shall be paid unconditionally not less often than once a week. Persons who own and operate their own trucks must receive the prevailing truck driver rate for the applicable type of truck (i.e. 2 axle, 3 or more axle, articulated, eculid or dumptor) he or she operates, plus an agreed upon amount for the use of his or her truck. Every owner-operator MUST be paid separately for their driving and for the use of their truck.

For those projects subject to the requirements of the Davis-Bacon Act, the Secretary of Labor will also have determined "Minimum Wage Rates" for work to be performed under the contract. These rates are, for all or most of the labor, worker, mechanic or truck driver classifications, identical to those established under Section 103.50 of the Wisconsin Statutes. In the event the rates are not identical, the higher of the two rates will govern.

## II. PAYROLL REQUIREMENTS

All contractors and subcontractors must submit weekly Certified Payrolls and Compliance Statement verifying that all laborers, workers, mechanics and truck drivers working on the project have been paid the prevailing wage rates for all work performed under the contract required by Section 103.50 of the Wisconsin Statutes.

## III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the Department, the contractor shall post the following in at least one conspicuous place at the site of work:

a. "NOTICE TO EMPLOYEES," which provides information required to be posted by the provisions of Section 103.50 of the Wisconsin Statutes.

b. A copy of the State of Wisconsin Minimum Wages Rates. (Four pages.)

c. A copy of the contractor's Equal Employment Opportunity Policy.

d. On any project involving federal aid, in addition to the furnished postings, the contractor shall post a copy of the "Davis-Bacon Act, Minimum Wage Rates". (Three pages.)

## IV. WAGE RATE REDISTRIBUTION

The amount specified as the hourly basic rate of pay and the amount(s) specified as the fringe benefit contribution(s), for all classes of laborers, workers, mechanics or truck drivers may be redistributed, when necessary, to conform to those specified in any applicable collective bargaining agreement, provided that both parties to such agreement

request and receive the approval for any such redistribution from both the Department of Transportation and the Department of Workforce Development prior to the implementation of such redistribution.

## V. ADDITIONAL CLASSIFICATIONS

Any unlisted laborer or mechanic classification that is needed to perform work on this project, and is not included within the scope of any of the classifications listed in the application prevailing wage rate determination, may be added after award only if all of the following criteria have been met:

1. The affected employer(s) must make a written request to WisDOT Central Office to utilize the unlisted classification on this project.

2. The request must indicate the scope of the work to be performed by the unlisted classification and must indicate the proposed wage/fringe benefit package that the unlisted classification is to receive.

3. The work to be performed by the unlisted classification must not be performed by a classification that is included in the applicable prevailing wage rate determination.

4. The unlisted classification must be commonly employed in the area where the project is located.

5. The proposed wage/fringe benefit package must bear a reasonable relationship to those set forth in the applicable prevailing wage rate determination.

6. The request should be made prior to the actual performance of the work by the unlisted classification.

7. DWD must approve the use of the unlisted classification and the proposed wage/fringe benefit package. USDOL also must approve the use of the unlisted classification and the proposed wage/fringe benefit package on federal aid projects.

8. WisDOT and DWD may amend the proposed wage/fringe benefit package, as deemed necessary, and may set forth specific employment ratios and scope of work requirements in the approval document.

The approved wage/fringe benefit package shall be paid to all laborers, workers, mechanics or truck drivers performing work within the scope of that performed by the unlisted classification, from the first day on which such work is performed. In the event that work is performed by the unlisted classification prior to approval, the wage/fringe benefit package to be paid for such work must be in conformance with the wage/fringe

benefit package approved for such work. Under this arrangement a retroactive adjustment in wages and/or fringe benefits may be required to be made to the affected laborers, workers, mechanics or truck drivers by the affected employer(s).

**ANNUAL PREVAILING WAGE RATE DETERMINATION**
**FOR ALL STATE HIGHWAY PROJECTS**
**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 September 1, 2013

**CLASSIFICATION:** Contractors are required to call the Department of Workforce Development if there are any questions reqarding the proper trade or classification to be used for any worker on a public works project.

**OVERTIME:** Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

**FUTURE INCREASE:** If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

**PREMIUM PAY:** If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

**SUBJOURNEY:** Wage rates may be available for some of the classifications indicated below. Any employer that desires to use any subjourney classification on a project MUST request the applicable wage rate from the Department of Workforce Development PRIOR to the date such classification is used on such project. Form ERD-10880 is available for this purpose and can be obtained by writing to the Department of Workforce Development, Equal Rights Division, P.O. Box 8928, Madison, WI 53708.

| TRADE OR OCCUPATION | HOURLY BASIC RATE OF PAY | HOURLY FRINGE BENEFITS | TOTAL |
|---|---|---|---|
| | $ | $ | $ |
| Bricklayer, Blocklayer or Stonemason | 35.58 | 19.20 | 54.78 |
| Carpenter | 32.93 | 19.81 | 52.74 |
| Future Increase(s): Add $.75/hr on 6/3/2013. Add $1.25/hr on 6/2/2014. 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. | | | |
| Cement Finisher | 30.69 | 17.53 | 48.22 |
| Future Increase(s): Add $1.87 on 6/1/13; Add $1.87 on 6/1/14; Add $1.87 on 6/1/15; Add $1.75 on 6/1/16. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise. | | | |
| Electrician | 31.54 | 21.14 | 52.68 |
| Fence Erector | 28.00 | 4.50 | 32.50 |
| Ironworker | 31.31 | 21.99 | 53.30 |
| Line Constructor (Electrical) | 31.29 | 15.34 | 46.63 |
| Painter | 29.22 | 16.69 | 45.91 |
| Pavement Marking Operator | 29.22 | 16.69 | 45.91 |
| Piledriver | 30.66 | 15.31 | 45.97 |
| Roofer or Waterproofer | 29.40 | 15.05 | 44.45 |
| Teledata Technician or Installer | 23.10 | 10.11 | 33.21 |
| Tuckpointer, Caulker or Cleaner | 34.35 | 12.36 | 46.71 |
| Underwater Diver (Except on Great Lakes) | 37.45 | 19.45 | 56.90 |
| Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY | 29.64 | 16.95 | 46.59 |
| Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY | 33.35 | 14.23 | 47.58 |
| Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY | 25.94 | 13.57 | 39.51 |

| TRADE OR OCCUPATION | HOURLY BASIC RATE OF PAY | HOURLY FRINGE BENEFITS | TOTAL |
|---|---|---|---|
| | $ | $ | $ |
| Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY | 24.08 | 12.96 | 37.04 |
| Groundman - ELECTRICAL LINE CONSTRUCTION ONLY | 21.75 | 11.90 | 33.65 |
| **TRUCK DRIVERS** | | | |
| Single Axle or Two Axle | 33.22 | 18.90 | 52.12 |
| Three or More Axle | 23.31 | 17.13 | 40.44 |
| Future Increase(s): Add $1.85/hr on 6/1/2013. Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. | | | |
| Articulated, Euclid, Dumptor, Off Road Material Hauler | 27.77 | 19.90 | 47.67 |
| Future Increase(s): Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor- wages- eeo/ index. shtm. | | | |
| Pavement Marking Vehicle | 23.84 | 14.92 | 38.76 |
| Shadow or Pilot Vehicle | 33.22 | 18.90 | 52.12 |
| Truck Mechanic | 22.50 | 16.19 | 38.69 |
| **LABORERS** | | | |
| General Laborer | 25.39 | 18.40 | 43.79 |
| Future Increase(s): Add $1.70/hr on 6/1/2013; Add $1.60/hr on 6/1/2014. Premium Pay: Add $.15/hr for air tool operator, joint sawer and filler (pavement), vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add $.35/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add $.50/hr for line and grade specialist; Add $.65/hr for blaster and powderman; Add $2.01/hr for topman; Add $2.46/hr for bottomman; Add $3.23/hr for pipelayer. / DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period). | | | |
| Asbestos Abatement Worker | 18.00 | 0.00 | 18.00 |
| Landscaper | 25.39 | 18.40 | 43.79 |
| Future Increase(s): Add $1.70/hr on 6/1/13; 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 | 21.88 | 18.40 | 40.28 |
| Future Increase(s): Add $1.70/hr on 6/1/2013; Add $1.60/hr on 6/1/2014. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise. | | | |
| Fiber Optic Laborer (Outside, Other Than Concrete Encased) | 17.24 | 15.03 | 32.27 |
| Railroad Track Laborer | 14.50 | 4.81 | 19.31 |

| TRADE OR OCCUPATION | HOURLY BASIC RATE OF PAY $ | HOURLY FRINGE BENEFITS $ | TOTAL $ |
|---|---|---|---|
| **HEAVY EQUIPMENT OPERATORS** | | | |
| Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Traveling Crane (Bridge Type).<br>Future Increase(s): Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14.<br>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://roadwaystandards.dot.wi.gov/hcci/labor- wages- eeo/ index. shtm. | 35.22 | 19.90 | 55.12 |
| 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.<br>Future Increase(s): Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14.<br>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://roadwaystandards.dot.wi.gov/hcci/labor- wages- eeo/ index. shtm. | 34.72 | 19.90 | 54.62 |
| 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 & A- Frames.<br>Future Increase(s): Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. | 34.22 | 19.90 | 54.12 |

| TRADE OR OCCUPATION | HOURLY BASIC RATE OF PAY | HOURLY FRINGE BENEFITS | TOTAL |
|---|---|---|---|
| | $ | $ | $ |
| 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://roadwaystandards.dot.wi.gov/hcci/labor- wages- eeo/ index. shtm. | | | |
| Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or WIthout Attachments); Telehandler; Tining or Curing Machine. | 33.96 | 19.90 | 53.86 |
| Future Increase(s): Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. | | | |
| Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor- wages- eeo/ index. shtm. | | | |
| 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. | 33.67 | 19.90 | 53.57 |
| Future Increase(s): Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. | | | |
| Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor- wages- eeo/ index. shtm. | | | |
| Fiber Optic Cable Equipment. | 20.00 | 9.90 | 29.90 |

SUPERSEDES DECISION WI20120010
U. S. DEPARTMENT OF LABOR
(DAVIS-BACON ACT, MINIMUM WAGE RATES)

STATE: Wisconsin
GENERAL DECISION NUMBER: WI130010
DATE: December 20, 2013
DESCRIPTION OF WORK: Highways and Airport Runway and Taxiway Construction

| LABORERS CLASSIFICATION: | 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 | $26.06 | 18.15 |
| Group 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer | 26.21 | 18.15 |
| Group 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off man | 26.41 | 18.15 |
| Group 4: Line and Grade Specialist | 26.56 | 18.15 |
| Group 5: Blaster and Powderman | 26.71 | 18.15 |
| Group 6: Flagperson traffic control person | 22.55 | 18.15 |

CLASSES OF LABORER AND MECHANICS

| | | |
|---|---|---|
| Bricklayer | 35.58 | 16.07 |
| Carpenter | 30.52 | 14.41 |
| Piledriverman | 27.25 | 19.46 |
| Ironworker | 30.52 | 23.47 |
| Cement Mason/Concrete Finisher | 30.69 | 17.53 |
| Electrician | | See Page 3 |
| Line Construction | | |
| Lineman | 38.25 | 18.00 |
| Heavy Equipment Operator | 34.43 | 16.71 |
| Equipment Operator | 30.60 | 15.41 |
| Heavy Groundman Driver | 26.78 | 14.11 |
| Light Groundman Driver | 24.86 | 13.45 |
| Groundsman | 21.04 | 12.16 |
| Millwrights | 26.32 | 13.98 |
| Painter, Brush | 29.52 | 18.79 |
| Painter, Spray and Sandblaster | 30.27 | 18.79 |
| Painter, Bridge | 29.87 | 18.79 |
| Well Drilling: | | |
| Well Driller | 16.52 | 3.70 |

| | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| Truck Drivers: | | |
| 1 & 2 Axles | 23.82 | 18.32 |
| Three or More Axles; Euclids, Dumptor & Articulated, Truck Mechanic | 23.97 | 18.32 |

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 4, 2013; Modification #1 dated February 1, 2013; Modification #2 dated June 7, 2013; Modification #3 dated July 19, 2013; Modification #4 dated August 23, 2013; Modification #5 dated September 13, 2013; Modification #6 dated September 27, 2013; Modification #7 dated December 20, 2013.

SUPERSEDES DECISION WI20120010
U. S. DEPARTMENT OF LABOR
(DAVIS-BACON ACT, MINIMUM WAGE RATES)

STATE: Wisconsin
GENERAL DECISION NUMBER: WI130010
DATE: December 20, 2013
DESCRIPTION OF WORK: Highways and Airport Runway and Taxiway Construction

| POWER EQUIPMENT OPERATORS CLASSIFICATION: | Basic Hourly Rates | Fringe Benefits |
|---|---|---|
| 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 | $36.72 | $20.10 |
| 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. | $36.22 | $20.10 |
| 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 (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. | $35.72 | $20.10 |
| 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. | $35.46 | $20.10 |
| Group 5: Air compressor; power pack; vibratory hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; concrete pro-portioning 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. | $35.17 | $20.10 |
| Group 6: Off – road material hauler with or without ejector | $29.27 | $20.10 |

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: WI130010
DATE: December 20, 2013
DESCRIPTION OF WORK: Highways and Airport Runway and Taxiway Construction

| LABORERS CLASSIFICATION: | Rates | Benefits |
|---|---|---|
| Electricians | | |
| Area 1 | $28.40 | 16.676 |
| Area 2: | | |
| Electricians | 29.13 | 17.92 |
| Area 3: | | |
| Electrical contracts under $130,000 | 26.24 | 16.85 |
| Electrical contracts over $130,000 | 29.41 | 16.97 |
| Area 4: | 28.10 | 17.24 |
| Area 5 | 28.61 | 16.60 |
| Area 6 | 35.25 | 19.30 |
| Area 8 | | |
| Electricians | 30.60 | 24.95% + 10.33 |
| Area 9: | | |
| Electricians | 32.94 | 18.71 |
| Area 10 | 28.97 | 19.55 |
| Area 11 | 31.91 | 23.60 |
| Area 12 | 32.87 | 19.23 |
| Area 13 | 32.82 | 22.51 |
| Teledata System Installer | | |
| Area 14 | | |
| Installer/Technician | 21.89 | 11.83 |
| Sound & Communications | | |
| Area 15 | | |
| Installer | 16.47 | 14.84 |
| Technician | 24.75 | 16.04 |

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 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, TREMPEALEAU, VERNON and WASHBURN COUNTIES

Area 3 - FLORENCE (townships of Aurora, Commonwealth, Fern, Florence and Homestead), MARINETTE (Niagara township)

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 5 - ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Area North of the town of Wausaukee), 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 6 - KENOSHA COUNTY

Area 8 - DODGE, (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington township), ROCK and WALWORTH COUNTIES

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 10 - CALUMET (Township of New Holstein), DODGE (East of Hwy. 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

Area 11 - DOUGLAS COUNTY

Area 12 - RACINE (except Burlington township) COUNTY

Area 13 - MILWAUKEE, OZAUKEE, WASHINGTON and WAUKESHA COUNTIES

Area 14 - Statewide.

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.

**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 omision 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.

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| | SECTION 0001 ROADWAY ITEMS | | | | | |
| 0010 | 203.0100 REMOVING SMALL PIPE CULVERTS | 4.000 EACH | | . | | . |
| 0020 | 204.0100 REMOVING PAVEMENT | 5,280.000 SY | | . | | . |
| 0030 | 204.0110 REMOVING ASPHALTIC SURFACE | 130.000 SY | | . | | . |
| 0040 | 204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS | 245.000 SY | | . | | . |
| 0050 | 204.0125 REMOVING ASPHALTIC SURFACE MILLING | 5,460.000 TON | | . | | . |
| 0060 | 204.0150 REMOVING CURB & GUTTER | 2,818.000 LF | | . | | . |
| 0070 | 204.0165 REMOVING GUARDRAIL | 5,532.000 LF | | . | | . |
| 0080 | 204.0195 REMOVING CONCRETE BASES | 19.000 EACH | | . | | . |
| 0090 | 204.0220 REMOVING INLETS | 6.000 EACH | | . | | . |
| 0100 | 204.0245 REMOVING STORM SEWER (SIZE) 01. 12-INCH | 20.000 LF | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0110 | 204.9060.S REMOVING (ITEM DESCRIPTION) 01. ENDWALLS | 3.000 EACH | | . | | . |
| 0120 | 205.0100 EXCAVATION COMMON | 9,291.000 CY | | . | | . |
| 0130 | 208.0100 BORROW | 1,231.000 CY | | . | | . |
| 0140 | 213.0100 FINISHING ROADWAY (PROJECT) 01. 2370-00-73 | 1.000 EACH | | . | | . |
| 0150 | 305.0110 BASE AGGREGATE DENSE 3/4-INCH | 2,580.000 TON | | . | | . |
| 0160 | 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH | 830.000 TON | | . | | . |
| 0170 | 311.0110 BREAKER RUN | 2,291.000 TON | | . | | . |
| 0180 | 330.0100 MILL AND RELAY | 14,175.000 SY | | . | | . |
| 0190 | 335.0100 RUBBLIZING | 6,370.000 SY | | . | | . |
| 0200 | 390.0303 BASE PATCHING CONCRETE | 12,620.000 SY | | . | | . |
| 0210 | 415.0090 CONCRETE PAVEMENT 9-INCH | 1,980.000 SY | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0220 | 415.0095 CONCRETE PAVEMENT 9 1/2-INCH | 2,860.000 SY | | . | | . |
| 0230 | 415.0410 CONCRETE PAVEMENT APPROACH SLAB | 940.000 SY | | . | | . |
| 0240 | 416.0610 DRILLED TIE BARS | 3,113.000 EACH | | . | | . |
| 0250 | 416.0620 DRILLED DOWEL BARS | 7,568.000 EACH | | . | | . |
| 0260 | 420.1000.S CONCRETE PAVEMENT CONTINUOUS DIAMOND GRINDING | 65,370.000 SY | | . | | . |
| 0270 | 455.0115 ASPHALTIC MATERIAL PG64-22 | 430.000 TON | | . | | . |
| 0280 | 455.0120 ASPHALTIC MATERIAL PG64-28 | 350.000 TON | | . | | . |
| 0290 | 455.0605 TACK COAT | 1,925.000 GAL | | . | | . |
| 0300 | 460.1100 HMA PAVEMENT TYPE E-0.3 | 5,060.000 TON | | . | | . |
| 0310 | 460.1110 HMA PAVEMENT TYPE E-10 | 9,765.000 TON | | . | | . |
| 0320 | 460.2000 INCENTIVE DENSITY HMA PAVEMENT | 9,550.000 DOL | 1.00000 | | 9550.00 | |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0330 | 520.8000 CONCRETE COLLARS FOR PIPE | 7.000 EACH | | . | | . |
| 0340 | 520.9700.S CULVERT PIPE LINERS (SIZE) 01. 24-INCH | 405.000 LF | | . | | . |
| 0350 | 520.9750.S CLEANING CULVERT PIPES FOR LINER VERIFICATION | 2.000 EACH | | . | | . |
| 0360 | 522.0118 CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH | 225.000 LF | | . | | . |
| 0370 | 522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH | 175.000 LF | | . | | . |
| 0380 | 522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH | 7.000 EACH | | . | | . |
| 0390 | 522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH | 2.000 EACH | | . | | . |
| 0400 | 530.0124 CULVERT PIPE CORRUGATED POLYETHYLENE 24-INCH | 90.000 LF | | . | | . |
| 0410 | 601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A | 2,808.000 LF | | . | | . |
| 0420 | 601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D | 10.000 LF | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0430 | 602.0410 CONCRETE SIDEWALK 5-INCH | 800.000 SF | | . | | . |
| 0440 | 604.9015.S RESEAL CRUSHED AGGREGATE SLOPE PAVING | 1,200.000 SY | | . | | . |
| 0450 | 606.0200 RIPRAP MEDIUM | 9.000 CY | | . | | . |
| 0460 | 608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH | 12.000 LF | | . | | . |
| 0470 | 611.0624 INLET COVERS TYPE H | 6.000 EACH | | . | | . |
| 0480 | 611.0652 INLET COVERS TYPE T | 1.000 EACH | | . | | . |
| 0490 | 611.3230 INLETS 2X3-FT | 6.000 EACH | | . | | . |
| 0500 | 611.8110 ADJUSTING MANHOLE COVERS | 2.000 EACH | | . | | . |
| 0510 | 611.8115 ADJUSTING INLET COVERS | 2.000 EACH | | . | | . |
| 0520 | 612.0106 PIPE UNDERDRAIN 6-INCH | 80.000 LF | | . | | . |
| 0530 | 612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH | 4.000 EACH | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0540 | 614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING | 13.000 EACH | | . | | . |
| 0550 | 614.0395 GUARDRAIL MOW STRIP CONCRETE | 307.000 SY | | . | | . |
| 0560 | 614.2300 MGS GUARDRAIL 3 | 4,931.000 LF | | . | | . |
| 0570 | 614.2330 MGS GUARDRAIL 3 K | 864.000 LF | | . | | . |
| 0580 | 614.2500 MGS THRIE BEAM TRANSITION | 550.000 LF | | . | | . |
| 0590 | 614.2610 MGS GUARDRAIL TERMINAL EAT | 7.000 EACH | | . | | . |
| 0600 | 614.2620 MGS GUARDRAIL TERMINAL TYPE 2 | 4.000 EACH | | . | | . |
| 0610 | 619.1000 MOBILIZATION | 1.000 EACH | | . | | . |
| 0620 | 620.0100 CONCRETE CORRUGATED MEDIAN | 3,105.000 SF | | . | | . |
| 0630 | 620.0200 CONCRETE MEDIAN BLUNT NOSE | 573.000 SF | | . | | . |
| 0640 | 621.0100 LANDMARK REFERENCE MONUMENTS | 2.000 EACH | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0650 | 625.0100 TOPSOIL | 24,860.000 SY | | . | | . |
| 0660 | 627.0200 MULCHING | 24,860.000 SY | | . | | . |
| 0670 | 628.1504 SILT FENCE | 12,414.000 LF | | . | | . |
| 0680 | 628.1520 SILT FENCE MAINTENANCE | 12,414.000 LF | | . | | . |
| 0690 | 628.1905 MOBILIZATIONS EROSION CONTROL | 16.000 EACH | | . | | . |
| 0700 | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL | 25.000 EACH | | . | | . |
| 0710 | 628.2004 EROSION MAT CLASS I TYPE B | 11,110.000 SY | | . | | . |
| 0720 | 628.7010 INLET PROTECTION TYPE B | 103.000 EACH | | . | | . |
| 0730 | 628.7020 INLET PROTECTION TYPE D | 17.000 EACH | | . | | . |
| 0740 | 628.7504 TEMPORARY DITCH CHECKS | 303.000 LF | | . | | . |
| 0750 | 628.7555 CULVERT PIPE CHECKS | 2.000 EACH | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0760 | 628.7570 ROCK BAGS | 6.000 EACH | | . | | . |
| 0770 | 629.0210 FERTILIZER TYPE B | 17.000 CWT | | . | | . |
| 0780 | 630.0130 SEEDING MIXTURE NO. 30 | 447.000 LB | | . | | . |
| 0790 | 634.0616 POSTS WOOD 4X6-INCH X 16-FT | 4.000 EACH | | . | | . |
| 0800 | 637.2210 SIGNS TYPE II REFLECTIVE H | 24.830 SF | | . | | . |
| 0810 | 638.2601 REMOVING SIGNS TYPE I | 3.000 EACH | | . | | . |
| 0820 | 638.3000 REMOVING SMALL SIGN SUPPORTS | 3.000 EACH | | . | | . |
| 0830 | 642.5001 FIELD OFFICE TYPE B | 1.000 EACH | | . | | . |
| 0840 | 643.0100 TRAFFIC CONTROL (PROJECT) 01. 2370-00-73 | 1.000 EACH | | . | | . |
| 0850 | 643.0300 TRAFFIC CONTROL DRUMS | 59,869.000 DAY | | . | | . |
| 0860 | 643.0420 TRAFFIC CONTROL BARRICADES TYPE III | 3,767.000 DAY | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0870 | 643.0705 TRAFFIC CONTROL<br>WARNING LIGHTS TYPE A | 6,981.000<br>DAY | | . | | . |
| 0880 | 643.0715 TRAFFIC CONTROL<br>WARNING LIGHTS TYPE C | 3,268.000<br>DAY | | . | | . |
| 0890 | 643.0800 TRAFFIC CONTROL<br>ARROW BOARDS | 354.000<br>DAY | | . | | . |
| 0900 | 643.0900 TRAFFIC CONTROL<br>SIGNS | 7,312.000<br>DAY | | . | | . |
| 0910 | 643.1000 TRAFFIC CONTROL<br>SIGNS FIXED MESSAGE | 252.000<br>SF | | . | | . |
| 0920 | 643.2000 TRAFFIC CONTROL<br>DETOUR (PROJECT) 01.<br>2370-00-73 | 1.000<br>EACH | | . | | . |
| 0930 | 643.3000 TRAFFIC CONTROL<br>DETOUR SIGNS | 11,805.000<br>DAY | | . | | . |
| 0940 | 645.0120 GEOTEXTILE<br>FABRIC TYPE HR | 13.000<br>SY | | . | | . |
| 0950 | 646.0106 PAVEMENT<br>MARKING EPOXY 4-INCH | 57,992.000<br>LF | | . | | . |
| 0960 | 646.0126 PAVEMENT<br>MARKING EPOXY 8-INCH | 5,999.000<br>LF | | . | | . |
| 0970 | 647.0166 PAVEMENT<br>MARKING ARROWS EPOXY<br>TYPE 2 | 16.000<br>EACH | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 0980 | 647.0176 PAVEMENT MARKING ARROWS EPOXY TYPE 3 | 2.000 EACH | | . | | . |
| 0990 | 647.0356 PAVEMENT MARKING WORDS EPOXY | 12.000 EACH | | . | | . |
| 1000 | 647.0456 PAVEMENT MARKING CURB EPOXY | 1,549.000 LF | | . | | . |
| 1010 | 647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH | 742.000 LF | | . | | . |
| 1020 | 647.0606 PAVEMENT MARKING ISLAND NOSE EPOXY | 15.000 EACH | | . | | . |
| 1030 | 647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH | 354.000 LF | | . | | . |
| 1040 | 650.4000 CONSTRUCTION STAKING STORM SEWER | 9.000 EACH | | . | | . |
| 1050 | 650.6000 CONSTRUCTION STAKING PIPE CULVERTS | 4.000 EACH | | . | | . |
| 1060 | 650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT | 1,625.000 LF | | . | | . |
| 1070 | 650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE | 6,970.000 LF | | . | | . |

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CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1080 | 650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 01. 2370-00-73 | LUMP | LUMP | | | . |
| 1090 | 650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 2370-00-73 | LUMP | LUMP | | | . |
| 1100 | 650.9920 CONSTRUCTION STAKING SLOPE STAKES | 3,200.000 LF | | . | | . |
| 1110 | 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH | 105.000 LF | | . | | . |
| 1120 | 652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH | 275.000 LF | | . | | . |
| 1130 | 652.0615 CONDUIT SPECIAL 3-INCH | 1,200.000 LF | | . | | . |
| 1140 | 652.0800 CONDUIT LOOP DETECTOR | 982.000 LF | | . | | . |
| 1150 | 652.0900 LOOP DETECTOR SLOTS | 791.000 LF | | . | | . |
| 1160 | 653.0140 PULL BOXES STEEL 24X42-INCH | 11.000 EACH | | . | | . |
| 1170 | 653.0905 REMOVING PULL BOXES | 18.000 EACH | | . | | . |

CONTRACT: 20140211011 PROJECT(S): 2370-00-73 FEDERAL ID(S): WISC 2014023

CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1180 | 654.0101 CONCRETE BASES TYPE 1 | 4.000 EACH | | . | | . |
| 1190 | 654.0102 CONCRETE BASES TYPE 2 | 6.000 EACH | | . | | . |
| 1200 | 654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL | 1.000 EACH | | . | | . |
| 1210 | 655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG | 1,730.000 LF | | . | | . |
| 1220 | 655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG | 180.000 LF | | . | | . |
| 1230 | 655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG | 3,150.000 LF | | . | | . |
| 1240 | 655.0305 CABLE TYPE UF 2-12 AWG GROUNDED | 1,590.000 LF | | . | | . |
| 1250 | 655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG | 3,225.000 LF | | . | | . |
| 1260 | 655.0610 ELECTRICAL WIRE LIGHTING 12 AWG | 1,440.000 LF | | . | | . |
| 1270 | 655.0800 LOOP DETECTOR WIRE | 3,093.000 LF | | . | | . |

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CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1280 | 656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 01. CTH F AT DUPLAINVILLE | LUMP | LUMP | | | . |
| 1290 | 657.0100 PEDESTAL BASES | 4.000 EACH | | . | | . |
| 1300 | 657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE | 6.000 EACH | | . | | . |
| 1310 | 657.0315 POLES TYPE 4 | 6.000 EACH | | . | | . |
| 1320 | 657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT | 4.000 EACH | | . | | . |
| 1330 | 657.0614 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 8-FT | 10.000 EACH | | . | | . |
| 1340 | 658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL | 30.000 EACH | | . | | . |
| 1350 | 658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL | 14.000 EACH | | . | | . |
| 1360 | 658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH | 30.000 EACH | | . | | . |
| 1370 | 658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH | 14.000 EACH | | . | | . |
| 1380 | 658.0600 LED MODULES 12-INCH RED BALL | 32.000 EACH | | . | | . |

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CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1390 | 658.0605 LED MODULES 12-INCH YELLOW BALL | 32.000 EACH | | . | | . |
| 1400 | 658.0610 LED MODULES 12-INCH GREEN BALL | 32.000 EACH | | . | | . |
| 1410 | 658.0615 LED MODULES 12-INCH RED ARROW | 12.000 EACH | | . | | . |
| 1420 | 658.0620 LED MODULES 12-INCH YELLOW ARROW | 24.000 EACH | | . | | . |
| 1430 | 658.0625 LED MODULES 12-INCH GREEN ARROW | 14.000 EACH | | . | | . |
| 1440 | 658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 01. CTH F AT RIDGEVIEW | LUMP | LUMP | | | . |
| 1450 | 658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 02. CTH F AT CTH M | LUMP | LUMP | | | . |
| 1460 | 658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 03. CTH F AT DUPLAINVILLE | LUMP | LUMP | | | . |
| 1470 | 659.0125 LUMINAIRES UTILITY HPS 250 WATTS | 12.000 EACH | | . | | . |
| 1480 | 661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 01. CTH F AT DUPLAINVILLE | LUMP | LUMP | | | . |

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CONTRACTOR :_____

| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1490 | 661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 02. CTH F AT RIDGEVIEW | LUMP | LUMP | | | . |
| 1500 | 661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 03. CTH F AT CTH M | LUMP | LUMP | | | . |
| 1510 | 661.0300 GENERATORS | 3.000 DAY | . | | | . |
| 1520 | 690.0150 SAWING ASPHALT | 805.000 LF | . | | | . |
| 1530 | 690.0250 SAWING CONCRETE | 30,605.000 LF | . | | | . |
| 1540 | 715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT | 1,424.000 DOL | 1.00000 | | 1424.00 | |
| 1550 | ASP.1T0A ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR | 1,000.000 HRS | 5.00000 | | 5000.00 | |
| 1560 | ASP.1T0G ON-THE-JOB TRAINING GRADUATE AT $5.00/HR | 900.000 HRS | 5.00000 | | 4500.00 | |
| 1570 | SPV.0060 SPECIAL 01. TRAF SIG CONTLR & CABINET 8 PHASE FULLY ACTUATED CTH F & DUPLAINVILLE | 1.000 EACH | . | | | . |
| 1580 | SPV.0060 SPECIAL 02. POLES TYPE 9 | 2.000 EACH | . | | | . |

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| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1590 | SPV.0060 SPECIAL 03. POLES TYPE 12 | 7.000 EACH | | . | | . |
| 1600 | SPV.0060 SPECIAL 04. CONC BASES TYPE 10 CONTR SUPPLIED ANCHOR BOLTS & ANCHOR ROD TEMPLATE | 2.000 EACH | | . | | . |
| 1610 | SPV.0060 SPECIAL 05. CONC BASES TYPE 13 CONTR SUPPLIED ANCHOR BOLTS & ANCHOR ROD TEMPLATE | 9.000 EACH | | . | | . |
| 1620 | SPV.0060 SPECIAL 06. MONOTUBE ARMS 25-FT | 1.000 EACH | | . | | . |
| 1630 | SPV.0060 SPECIAL 07. MONOTUBE ARMS 35-FT | 3.000 EACH | | . | | . |
| 1640 | SPV.0060 SPECIAL 08. MONOTUBE ARMS 40-FT | 6.000 EACH | | . | | . |
| 1650 | SPV.0060 SPECIAL 09. APRON ENDWALLS FOR CULVERT PIPE POLYETHYLENE 24-INCH | 2.000 EACH | | . | | . |
| 1660 | SPV.0060 SPECIAL 10. PAVEMENT DOWEL BARS RETROFIT | 14,124.000 EACH | | . | | . |
| 1670 | SPV.0060 SPECIAL 11. MONOTUBE ARMS 15-FT | 1.000 EACH | | . | | . |
| 1680 | SPV.0060 SPECIAL 12. POLES TYPE 13 | 2.000 EACH | | . | | . |

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| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1690 | SPV.0060 SPECIAL 13. LUMINAIRE ARMS STEEL 15-FT | 2.000 EACH | | . | | . |
| 1700 | SPV.0060 SPECIAL 14. FURNISH AND INSTALL IP WIRELESS RADIO 5.8 GHZ | 5.000 EACH | | . | | . |
| 1710 | SPV.0060 SPECIAL 15. FURNISH AND INSTALL IP SINGLE PORT TERMINAL SERVER | 3.000 EACH | | . | | . |
| 1720 | SPV.0060 SPECIAL 16. FURNISH AND INSTALL ETHERNET SWITCH | 3.000 EACH | | . | | . |
| 1730 | SPV.0060 SPECIAL 17. FURNISH AND INSTALL RS-232 INTERNAL DATA MODEM | 2.000 EACH | | . | | . |
| 1740 | SPV.0060 SPECIAL 18. FURNISH AND INSTALL IP WIRELESS RADIO 5.8 GHZ AT CTH F AT IH 94 | 1.000 EACH | | . | | . |
| 1750 | SPV.0060 SPECIAL 19. FURNISH AND INSTALL SINGLE PORT TERMINAL SERVER AT CTH F AT IH 94 | 1.000 EACH | | . | | . |
| 1760 | SPV.0060 SPECIAL 20. FURNISH AND INSTALL ETHERNET SWITCH AT CTH F AT IH 94 | 1.000 EACH | | . | | . |
| 1770 | SPV.0060 SPECIAL 21. FURNISH AND INSTALL RS-232 INTERNAL DATA MODEM AT CTH F AT IH 94 | 1.000 EACH | | . | | . |

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| LINE NO | ITEM DESCRIPTION | APPROX. QUANTITY AND UNITS | UNIT PRICE DOLLARS | UNIT PRICE CTS | BID AMOUNT DOLLARS | BID AMOUNT CTS |
|---|---|---|---|---|---|---|
| 1780 | SPV.0060 SPECIAL 22. WATER VALVE LOCATION AND ADJUSTMENT | 1.000 EACH | | . | | . |
| 1790 | SPV.0060 SPECIAL 23. WATER VALVE REPAIR | 1.000 EACH | | . | | . |
| 1800 | SPV.0090 SPECIAL 01. CONTINOUS DIAMOND GRINDING GUTTER | 24,330.000 LF | | . | | . |
| 1810 | SPV.0105 SPECIAL 01. VIDEO VEHICLE DETECTION SYSTEM | LUMP | LUMP | | | . |
| 1820 | SPV.0105 SPECIAL 02. EMERGENCY VEHICLE PREEMPTION SYSTEM | LUMP | LUMP | | | . |
| 1830 | SPV.0105 SPECIAL 03. REMOVE TRAFFIC SIGNALS AND STREET LIGHTING | LUMP | LUMP | | | . |
| 1840 | SPV.0105 SPECIAL 04. MODIFY TRAFFIC SIGNALS CTH F AT RIDGEVIEW | LUMP | LUMP | | | . |
| 1850 | SPV.0105 SPECIAL 05. MODIFY TRAFFIC SIGNALS CTH F & CTH M | LUMP | LUMP | | | . |
| 1860 | SPV.0170 SPECIAL 01. PROOF ROLLING | 20.000 STA | | . | | . |
| | SECTION 0001 TOTAL | | | | | . |
| | TOTAL BID | | | | | . |

# PLEASE ATTACH SCHEDULE OF ITEMS HERE