HIGHWAY WORK PROPOSAL

Proposal Number: 1 2

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

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Milwaukee	1060-33-71		Zoo IC - Glenview Ave Bluemound Road (USH 18) to Wisconsin Avenue	STH 181
Milwaukee	1060-33-90		Zoo IC Traffic Mitigation, 84th St Adler Street to Bluemound Road	STH 181

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

Proposal Guaranty Required, $ 100,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: March 12, 2013 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time August 24, 2013	
Assigned Disadvantaged Business Enterprise Goal 0 %	This contract is exempt from federal oversight.

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

(Bidder Signature)

(Print or Type Bidder Name)

(Bidder Title)

For Department Use Only

Type of Work Removals, grading, dense graded base, concrete pavement, concrete curb and gutter, concrete sidewalk, concrete driveways, concrete barrier, asphaltic surface, HMA pavement, storm sewer, erosion control, permanent signing, traffic control, pavement marking, street lighting, restoration, streetscaping, milling and overlay, utility structure adjustments, and all incidentals.

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)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

(Signature of Attorney-in-Fact)

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

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

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

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

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

(Signature of Authorized Contractor Representative) (Date)

FEBRUARY 1999

LIST OF SUBCONTRACTORS

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

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

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

DECEMBER 2000

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Projects 1060-33-71, Zoo IC – Glenview Avenue, Bluemound Road (USH 18) to Wisconsin Avenue, STH 181; 1060-33-90, Zoo IC Traffic Mitigation, 84th Street, Adler Street to Bluemound Road, STH 181; all located in Milwaukee County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2013 Edition, as published by the department, and these special provisions.

If all or a portion of the plans and special provisions are developed in the SI metric system and the schedule of prices is developed in the US standard measure system, the department will pay for the work as bid in the US standard system.
100-005 (20120615)

2. Scope of Work.

The work under this contract shall consist of removals, grading, dense graded base, concrete pavement, concrete curb and gutter, concrete sidewalk, concrete driveways, concrete barrier, asphaltic surface, HMA pavement, storm sewer, erosion control, permanent signing, traffic control, pavement marking, street lighting, restoration, streetscaping, milling and overlay, utility structure adjustments 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.

The contract time for completion is based on an expedited work schedule and may require extraordinary forces and equipment; work on Saturdays, Sundays, and nationally recognized legal holidays; and work at night.

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

Winter weather work, excavation of frozen ground, high ground water, dewatering during winter months, and mitigation efforts for high water table elevations shall not be considered adverse weather delays to construction. Cost for dewatering is considered incidental to construction.

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

Maintain pedestrian access at all locations outside the immediate construction area.

During construction operations, ramp sawed joints at intersecting streets with asphaltic surface material between the existing pavement surface and the adjacent surface, as directed by the engineer, to permit the safe passing of vehicles. The cost of the materials, labor, and equipment necessary to install such ramps is to be paid under bid item, Asphaltic Surface Temporary.

Lay out all doweled transverse joints on this project, including intersections. The engineer will approve joint layout. Joint spacing must not exceed 15 feet, as shown on the standard detail drawing. Place joints at end-of-radii, center line and flange line extended, all zero face driveway openings for depressed driveways and, when feasible, at all manholes, catch basins or inlets, and water valve boxes. Include the cost of all jointing and dowel baskets in the unit bid price for concrete pavement.

Obtain any noise variance permits to complete work outside of standard hours. Any permits obtained must be provided to the engineer.

Maintain the integrity of the inlet protection throughout the project. Remove and dispose of any debris that may prevent the flow of water.

Interim Liquidated Damages
Supplement standard spec 108.11 as follows:

Opening to Traffic
All work for the project on Bluemound Road and on STH 181 south of Bluemound Road other than the landscape plantings shall be completed prior to 12:01 AM July 20, 2013. Complete construction operations on STH 181 south of Bluemound Road and Bluemound Road to open all travel lanes in this contract prior to 12:01 AM July 20, 2013. Do not reopen all travel lanes until completing the following work: all concrete and asphalt work, concrete curb and gutter, concrete sidewalk, street lighting, pavement marking, permanent signing, and roadway finishing.

If the contractor fails to complete the work necessary to reopen STH 181 to through traffic prior to 12:01 AM July 20, 2013, the department will assess the contractor $30,000 in interim liquidated damages for each calendar day that the roadway remains closed after 12:01 AM July 20, 2013. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

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

Final Liquidated Damages
Supplement standard spec 108.11 as follows:

All work in this contract shall be completed prior to 12:01 AM August 25, 2013, and STH 181 and all side roads will be open to through traffic on all lanes in both directions. Complete all construction operations including landscaping on STH 181 and all side roads in this contract prior to 12:01 AM August 25, 2013.

If the contractor fails to complete all the work in the contract on STH 181 and all side roads prior to 12:01 AM August 25, 2013, liquidated damages of $15,000 per calendar day will be assessed to the contractor for each calendar day that the work remains unfinished after 12:01 AM August 25, 2013. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

A Schedule of Operations
Traffic shifts shown in a given stage may occur at different times during that stage depending on the controlling elements for a given traffic movement. The department anticipates that the schedule for each stage shall be as follows:

Anticipated schedule:

Stage 1A:	May 15, 2013 to May 18, 2013
Stage 1B:	May 18, 2013 to June 8, 2013
Stage 1C:	June 8, 2013 to June 23, 2013
Stage 1D:	June 23, 2013 to July 17, 2013
Stage 1E:	July 17, 2013 to July 19, 2013
Stage 2A:	July 20, 2013 to August 6, 2013
Stage 2B:	August 6, 2013 to August 24, 2013

Project 1060-33-71 Staging

Stage 1A Construction:
W. Bluemound:

- Remove median in Stage 1A-0 prior to beginning all other work in Stage 1A. To be constructed as night work.
- Construct cross-over at median (Station 239BL+00).
- Remove nose of median and install temporary pavement (Station 243BL+00).

N. Glenview:

- Construct cross-over at median (Station 64F+00).
- Remove median and install temporary pavement (Station 81F+50).
- Install storm sewer from Station 62F+40 to Station 67F+20.

Stage 1A Traffic:
W. Bluemound:

- Left turn not allowed at medians.

N. Glenview:

- Left turn not allowed at medians.

Stage 1B Construction:
N. Glenview:

- Reconstruct the east half of Glenview from Station 67F+43 to the Bluemound intersection.
- Pour HES concrete first to accommodate northbound left turn.

W. Bluemound:

- Reconstruct the south half of Bluemound from Station 243BL+60 to Station 252BL+50.

Stage 1B Traffic:
N. Glenview:

- Northbound and southbound traffic reduced to single through lane.
- Northbound traffic to crossover and travel on west pavement.
- Northbound left turn not available until new HES concrete is in place.

W. Bluemound:

- Eastbound and westbound traffic reduced to single through lane.
- Eastbound traffic to crossover and travel on north pavement.

Stage 1C Construction:

N. Glenview:

- Reconstruct the west half of Glenview from Station 67F+43 to the Bluemound intersection.
- Pour HES concrete first to accommodate eastbound right turn.

W. Bluemound:

- Reconstruct the south half of Bluemound from Station 240BL+05 to Station 243BL+60.

Stage 1C Traffic:

N. Glenview:

- Northbound and southbound traffic reduced to single through lane.
- Southbound traffic to crossover and travel on east pavement.

W. Bluemound:

- Eastbound and westbound traffic reduced to single through lane.
- Eastbound traffic to crossover and travel on north pavement.
- Eastbound right turn not available until HES concrete is in place.

Stage 1D Construction:

W. Bluemound:

- Reconstruct the north half of W. Bluemound Road.

Stage 1D Traffic:

N. Glenview:

- Close road to traffic within work zone.
- Detour STH 181 traffic according to detour plan.
- Maintain local access.

W. Bluemound:

- Both eastbound and westbound traffic reduced to one through lane.
- Westbound traffic to crossover: all traffic on south pavement.

Stage 1E Construction:

N Glenview:

- -Reconstruct medians.

W. Bluemound:

- -Reconstruct medians.

Stage 1E Traffic:
N. Glenview:

- 2 lanes of through traffic around medians.
- No left turns allowed around medians.
- Detour STH 181 traffic according to detour plan.
- Maintain local access.

W. Bluemound:

- 2 lanes of through traffic around medians.
- No left turns allowed around medians.

Stage 2A Construction:
****(May be constructed concurrently with Stage 1D)****
N. Glenview:

- Reconstruct Glenview from W. Bluemound to Station 79FN+75.

Stage 2A Traffic:
N. Glenview:

- Close road to traffic within work zone.
- Detour STH 181 traffic according to detour plan.
- Maintain local access to Rockway Place and Brookside Place.

Stage 2B Construction:
N. Glenview:

- Reconstruct Glenview from Station 79FN+75 to Station 84FN+59.

W. Wisconsin:

- Reconstruct Wisconsin from Station 308WX+31 to 313WX+24.

Stage 2B Traffic:
N. Glenview:

- Close road to traffic within work zone.
- Continue STH 181 detour.
- Maintain local access to Rockway Place and Brookside Place.

W. Wisconsin:

- Close road to traffic within work zone.
- Detour Wisconsin Avenue traffic according to detour plan.

Project 1060-33-90 Staging
Stage 1B:
S. 84th Street between Adler Street and Bluemound Road:
Close the outermost lane and the parking lane between W. Adler Street and W. Bluemound Road for the minimum duration necessary to mill 3" of existing asphaltic pavement and 1" of existing concrete, replace driveway aprons, replace curb and gutter,

overlay 4" of asphaltic pavement, adjust utility structures, remove the HOV (preferential lane) lane, removal of signs, and apply all pavement markings.

Ramp terminals shall remain open during construction but may be reduced to a shared left-through-right lane. However, from 6:30 to 8:30 AM and from 4:30 to 6:30 PM a minimum lane configuration will be required at the ramps.

- Northern Ramp
  Westbound: A shared left-through lane and a right turn lane.
  Northbound: A left-turn lane and a through lane.
  Southbound: A shared through-right turn lane.

- Southern Ramp
  Eastbound: A shared left-through lane and a right turn lane.
  Northbound: A through lane and a right turn lane.
  Southbound: A left-turn lane and a through lane

Access to commercial businesses, local roads, and private properties will be maintained throughout construction.

Stage 1C:
S. 84th Street between Adler Street and Bluemound Road:
Close the innermost lane between Adler Street and Bluemound Road for the minimum duration necessary to mill 3" of existing asphaltic pavement and 1" of existing concrete, replace curb and gutter, overlay 4" of asphaltic pavement, adjust utility structures, and apply all pavement markings.

Ramp terminals shall remain open during construction but may be reduced to a shared left-through-right lane. However, from 6:30 to 8:30 am and from 4:30 to 6:30 pm a minimum lane configuration will be required at the ramps.

- Northern Ramp
  Westbound: A shared left-through lane and a right turn lane.
  Northbound: A left turn lane and a through lane.
  Southbound: A through lane and right turn lane.

- Southern Ramp
  Eastbound: A shared left-through-right turn lane.
  Northbound: A through lane and a right turn lane.
  Southbound: A left-turn lane and a through lane.

Access to intersecting streets and properties will be limited to complete work around the median.

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

Peak Hours

6:00 AM – 9:00 PM	Monday, Tuesday, Wednesday, Thursday, Friday
11:00 AM – 8:00 PM	Saturday
1:00 PM – 5:00 PM	Sunday

Off-Peak Hours

9:00 PM – 6:00 AM	Monday, Tuesday, Wednesday, Thursday
9:00 PM – 11:00 AM	Friday PM to Saturday AM
8:00 PM – 1:00 PM	Saturday PM to Sunday PM
5:00 PM – 6:00 AM	Sunday PM to Monday AM

Local Street Work Restrictions
Make at least one lane available to STH 181 south of W. Bluemound Road, W. Bluemound Road, and W. Wisconsin Avenue traffic at all times.

Rockway Place and Brookside Place cannot be closed to through traffic at the same time so access can be maintained for local streets.

N. Honey Creek Parkway and N. Robertson Avenue cannot be closed to through traffic at the same time so access can be maintained for local streets and businesses.

Comply with all local ordinances that apply to local street work operations, including those pertaining to working during night time hours. Furnish any ordinance variance issued by the municipality or required permits to the engineer in writing 3 days prior to performing such work.

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

All Work Restrictions
Comply with the noise level restrictions as defined in the article Public Convenience and Safety. Any ordinance variance issued by the municipality or required permits shall be furnished to the engineer, by the contractor, in writing 3 workings days before performing such work.

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

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

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

Submit any traffic control change requests to the engineer at least 48 hours prior to an actual traffic control change. A request does not constitute approval.

Project 1060-33-90

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

Do not close residential approaches or remove from service without sufficient notice given to the occupants of the premises to remove their vehicles prior to driveway removal or closing of the driveway approach access.

Commercial Driveways
For all commercial properties affected by construction activities, inform property owners in writing at least 4 days prior to closing driveway approaches that serve the property. The commercial driveway reconstruction work shall be built in stages as to ensure access is provided at all times. Schedule driveway approach removal and replacement so that the time lapse between removal and replacement is minimal.

Engine 25 Firehouse
Inform Engine 25 Firehouse (located at 300 S. 84th Street) in person at least 4 days prior to the start of construction the planned/look-ahead schedule of Stages 1B and 1C. Coordinate with the firehouse as needed to accommodate the firehouse demands especially when milling and during paving operations directly in front of the building and driveway.

4. Traffic.

The work under this contract shall be performed in a manner that will interfere as little as possible with active traffic on local streets. Vehicles, equipment, or materials shall not be parked or stored on City of Wauwatosa streets adjacent to active traffic except at the time of performance of the work. Materials or equipment may be stored within the right-of-way only at locations meeting the approval of the engineer.

At all times maintain access to businesses and residents on the existing local streets within the project work area. No driveway approach or parking stall shall be closed or removed from service without a five day notice given to the occupants of the premises to

remove their vehicles prior to driveway removal or closing of the driveway approach access.

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

The construction sequence, including associated traffic control, shall be substantially accomplished as detailed in the Traffic Control Plans and as described herein.

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

S. 84th Street between Adler Street to Bluemound Road
Closure of traffic lanes must be coordinated with Project #1060-33-71, Zoo Interchange, Glenview Avenue, Bluemound Road (USH 18) to Wisconsin Avenue, STH 181, Milwaukee County.

Employ flaggers, signs, barricades, and drums as may be necessary to safeguard and direct traffic at all locations where construction operations may interfere with or restrict the smooth flow of traffic.

5. Traffic Meetings and Traffic Control Scheduling.

Every Wednesday by 10:00 AM, submit a detailed proposed 2-week look-ahead traffic closure schedule to the engineer. Type the detailed proposed 2-week look-ahead closure schedule into an excel spreadsheet provided by the engineer. Enter information such as closure dates, duration, work causing the closure and detours to be used. Also enter information such as ongoing long-term closures, emergency contacts and general 2-month look-ahead closure information into the excel spreadsheet.

Meet with the engineer between 11:00 – 11:30 AM on Wednesdays at the Zoo Interchange project office at 2424 S. 102nd St. in West Allis to discuss and answer questions on the proposed schedule. Edit, delete and add closures to the detailed proposed 2-week look-ahead schedule, as directed by the engineer, so that proposed closures meet specification requirements. Other edits, deletions or additions unrelated to meeting specification requirements may also be agreed upon with the engineer during the 11:00 AM meeting.

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

Obtain approval from the engineer for any mid-week changes to the closure schedule. Revise the 2-week look-ahead as required and obtain engineer approval.

Advance Notification
Notify the engineer and WisDOT SE Region Work Zone Engineer, (262) 548-6730, if there are any changes in the schedule, early completions, or cancellations of scheduled work. Coordinate the locations of messages of portable changeable message sign with the engineer and WisDOT STOC. Notify WisDOT Signal Operations, (414) 750-2605, and WisDOT Electrical Field Unit, (414) 266-1170, regarding changes for alternate routes and detours.

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

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

6. Holiday and Special Event Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highways carrying IH-94 and ramps, STH 181, W. Bluemound Road or W. Wisconsin Avenue traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Friday, May 24, 2013 to 6:00 AM Tuesday, May 28, 2013 for Memorial Day;
- From noon Wednesday, July 3, 2013 to 6:00 AM Monday, July 8, 2013 for Independence Day;
- From noon Friday, August 30, 2013 to 6:00 AM Tuesday, September 3, 2013 for Labor Day.

7. Utilities.

This contract comes under the provisions of Administrative Rule TRANS 220.

Additional information regarding recently relocated utility facilities may be available on permits issued to the utility companies. These permits can be viewed at the Region Office during normal working hours. Contact WisDOT SE Freeways Utility Coordinator Maria Rojas at (414) 750-4362 for further information.

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

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

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

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

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

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

Known utilities in the projects are as follows:

AT&T Wisconsin has communication facilities within the project limits in the following locations:

- An underground communications line beginning beyond the southerly project limits and northerly in the southbound lanes of Glenview Avenue, crossing Bluemound Road at Station 243+68, and continuing northerly in the northbound lanes to Station 76FN+06, 15’ RT. From there it turns and runs northwesterly to a manhole at Station 76FN+65, 11’ LT where it turns and runs northerly in the southbound lanes of Glenview Avenue, crossing Wisconsin Avenue at Station 310WX+88, to beyond the northerly project limits. AT&T Wisconsin will adjust this line at Station 68F+16, 12’ LT, Station 72F+09, 9’ LT, Station 72F+47, 8’ LT, Station 73FN+31, 15’ RT, Station 76+57, 6’ LT, Station 78FN+00, 11’ LT, Station 73FN+11’ LT, Station 82FN+43, 11’ LT, and Station 84+19, 7’ LT prior to construction. The remaining portions of this line will remain in place without adjustment.

- An underground communications line beginning from the previously described line at Station 71F+11, 7’ LT and running southeasterly across the northbound lanes of Glenview to Station 70F+98, 51’ RT where it turns and runs southerly along the east right of way of Glenview Avenue to a pedestal at Station 69F+98, 57’ RT. AT&T Wisconsin will adjust this line from Station 71F+11, 7’ LT to Station 70F+98, 51’ RT and relocate the pedestal at Station 69F+98, 57’ RT prior to construction. The remaining portions of this line will remain in place without adjustment.
- An underground communications line beginning at a manhole at Station 86FN+48, 2’ LT and running easterly in St. Jude Court. This line will remain in place without adjustment.
- An underground communications line beginning beyond the westerly project limits and running easterly in the westbound lanes of Bluemound Road, crossing Glenview Avenue at Station 73FN+00, continuing easterly to beyond the easterly project limits. AT&T Wisconsin will adjust this line at Station 245BL+57, 16’ LT, Station 247BL+05, 16’ LT, from Station 247BL+50, 17’ LT to Station 251+25, 17’ LT, and at Station 251BL+87, 17’ LT prior to construction. The remaining portions of this line will remain in place without adjustment.
- An underground communications line beginning in the westbound lanes of Bluemound Road at Station 242BL+21, 16’ LT and running southwesterly to Station 241BL+60, 49’ RT where it turns and runs westerly along the south side of Bluemound Road to Station 240BL+35, 49’ RT. From there it turns and runs southerly to beyond the southerly project limits. AT&T Wisconsin will adjust this line from Station 241BL+60, 49’ RT to Station 240BL+35, 49’ RT prior to construction.
- An underground communications line beginning in the westbound lanes of Bluemound Road at Station 242BL+21, 16’ LT and running southwesterly to Station 241BL+60, 57’ RT where it turns and runs westerly along the south side of Bluemound Road to Station 240BL+35, 57’ RT. From there it turns and runs southerly to beyond the southerly project limits. This line will remain in place without adjustment.
- An underground communications line beginning at Station 251BL+00, 16’ LT and running southeasterly to beyond the southerly project limits. AT&T Wisconsin will adjust this line at Station 251BL+15, 35’ RT prior to construction. The remaining portions of this line will remain in place without adjustment.
- An underground communications line beginning beyond the westerly project limits and running easterly in the westbound lanes of Wisconsin Avenue, crossing Glenview Avenue at Station 82FN+94, continuing easterly to beyond the easterly project limits. AT&T Wisconsin will adjust this line at Station 82FN+88, 18’ LT prior to construction. The remaining portions of this line will remain in place without adjustment.
- An underground communications line beginning at a manhole at Station 311WX+04, 27’ LT and running southeasterly to Station 311+97, 14’ LT where it turns and runs easterly to beyond the easterly project limits. This line will remain in place without adjustment.

AT&T Wisconsin will also adjust manholes throughout the project limits during construction. Contact Mark Szymanski (414-535-7417 office/ 414-491-2853 cell) of AT&T Wisconsin 3 days prior to any paving operations to coordinate manhole adjustments.

Contact Mark Szymanski (414-535-7417 office/ 414-491-2853 cell) of AT&T Wisconsin 7 days in advance to coordinate locations and any excavation near their facilities.

Milwaukee, City of - Cable has underground communications cable facilities within the project limits in the following locations:

- An underground communications cable beginning beyond the southerly project limits and running northerly in the northbound lanes of Glenview Avenue to a manhole located at 72'F'+16, 23' RT. These facilities will remain in place without adjustment.

Contact Brian Pawlak (414-286-5970 office) of the City of Milwaukee - Cable 7 days in advance to coordinate removal, reconstruction, and reconnection of the street lighting system.

Milwaukee, City of - Conduit has underground communications conduit facilities within the project limits in the following locations:

- An underground communications conduit beginning beyond the southerly project limits and running northerly in the northbound lanes of Glenview Avenue to a manhole located at 72'F'+16, 23' RT. These facilities will remain in place without adjustment.

Adjust, abandon, remove, leave in place, and reconstruct conduit as shown in the plans.

Contact Karen Rogney (414-286-3243) of the City of Milwaukee – Conduit 7 days in advance to coordinate locations and construction activities.

Milwaukee, City of - Lighting has street lighting facilities within the project limits in the following locations:

- A street lighting system consisting of poles and buried electric lines beginning beyond the southerly project limits and running northerly in the median of Glenview Avenue to Bluemound Road then turning east and running along the south side of Bluemound Road to beyond the easterly project limits. The street lighting system is also located at the Glenview Avenue / Bluemound Road intersection in the medians of Bluemound Road.

Before the start of construction the City of Milwaukee - Lighting forces will install temporary overhead lighting facilities and remove permanent lighting required for construction. City forces will install permanent lighting facilities during construction. City forces will need a minimum of 15 working days to install the overhead.

Contact Dennis Miller (414-286-5942 office/ 414-708-4251 cell) or George Berdine (414-708-4245) or Thomas Hughs (414-286-3457 office/ 414-708-3175 cell) of the City of Milwaukee - Lighting 7 days in advance to coordinate installation of the temporary lighting as well as the removal, reconstruction, and reconnection of the street lighting system.

Milwaukee, City of - Sewers has underground storm and sanitary sewer facilities within the project limits in the following locations:

- An underground storm sewer beginning beyond the southerly project limits and running northerly in the median of Glenview Avenue to a manhole located at Station 68'F'+16, 5' RT. This storm sewer will be reconstructed as part of this project. Adjust, abandon, remove, leave in place, and reconstruct portions of the storm sewer facilities as shown in the plans.
- An underground storm sewer beginning at a manhole at Station 249'BL'+32, 48' RT and running easterly under the south sidewalk of Bluemound Road to beyond the easterly project limits. Adjust, abandon, remove, leave in place, and reconstruct portions of the storm sewer facilities as shown in the plans.
- An underground sanitary sewer beginning at a manhole at Station 71F+27, 14'RT and running northeasterly to a manhole at Station 244BL+36, 37'Rt, then running easterly to a manhole at Station 248BL+95, 46'RT, then running easterly to a manhole in South Honey Creek Parkway at Station 252BL+02, 47'RT, then running easterly under the south sidewalk of Bluemound Road to beyond the easterly project limits. This sewer will remain in place without adjustment.

Adjust sanitary manholes as shown in the plans in the following locations; Station 244BL+69, 36'RT, Station 252BL+02, 47'RT, and Station 71F+27, 14'RT.

Contact Joshua Rodomski (414-286-0506 office) of the City of Milwaukee - Sewers 7 days in advance to coordinate locations and any excavation near their facilities.

Milwaukee, City of - Signals has underground and overhead signal facilities at the intersection of Glenview Avenue and Bluemound Road. These existing signals will be removed and will be replaced with WisDOT – Signals. Abandon, remove, and leave in place portions of the signal facilities as shown in the plans.

Contact Dennis Miller (414-286-5942 office/ 414-708-4251 cell) of the City of Milwaukee - Signals 7 days in advance to coordinate abandonment and removal of the existing signal facilities.

Milwaukee, City of – Water has underground water facilities within the project limits in the following locations:

- An underground water main beginning from Station 65'F'+00 and running northerly in the east sidewalk of Glenview Avenue to Station 72'F'+80 where it ties into a water main in Bluemound Road. Adjust, abandon, remove, leave in place, and reconstruct portions of the water main, hydrants, and valve boxes as shown in the plans.

- An underground water main beginning beyond the westerly project limits and running easterly in the eastbound lanes of Bluemound Road to beyond the easterly limits. Adjust, abandon, remove, leave in place, and reconstruct portions of the water main and valve boxes as shown in the plans.
- An underground water main beginning on the west side of Honey Creek Parkway and running easterly in the south sidewalk of Bluemound Road to beyond the easterly project limits. This main will remain in place without adjustment.

Contact Dave Goldapp (414-286-6301) of City of Milwaukee - Water 7 days in advance to coordinate locations and any excavation near their facilities.

MMSD has underground sewer facilities in the project limits in the following locations:

- A 96-inch Metropolitan Interceptor Sewer beginning beyond the southerly project limits and running northerly in the northbound lanes of Glenview Avenue, then turning westerly in the eastbound lanes of Bluemound Road to beyond the westerly project limits. This sewer will remain in place without adjustment.
- A 24-inch Metropolitan Interceptor Sewer beginning beyond the project limits and running northerly along the west side of Honey Creek, crossing Bluemound Road at Station 252BL+20, and continuing northerly to beyond the4 project limits. This sewer will remain in place without adjustment.
- A 39-inch Metropolitan Interceptor Sewer beginning beyond the westerly project limits and running easterly in the westbound lanes of Wisconsin Avenue to beyond the easterly limits. This sewer will remain in place without adjustment.

MMSD forces will adjust two manholes and reconstruct one manhole during construction.

Contact Debra Jensen (414-225-2143) of MMSD 21 days in advance to coordinate the reconstruction and adjustment of these manholes. The sanitary sewer will remain in place without adjustment.

TCG has an underground communications line beginning beyond the southerly project limits and running northerly in the east sidewalk of Glenview Avenue, crossing Bluemound Road at Station 244BL+31, and continuing northerly to the northeast corner of Glenview Avenue and Bluemound Road at Station 244+47, 63’LT, where it turns and runs easterly under the northerly sidewalk of Bluemound Road to beyond the projects easterly limits.. TCG will relocate portions of this line prior to construction.

TCG Milwaukee will rebuild its facilities from Station 70F+4 52'RT to Station 246BL+17 62'LT. The new conduit package will be directional bored under the existing conduit and the section under Bluemound Road will be 84-inch deep. New fiber optic cable will be installed and the existing conduit abandoned. A TCG handhole at Station 244BL+34, 62’LT will be relocated at Station 70F+04, 52RT. The existing TCG conduit crossing Bluemound Road will be abandoned in place.

Contact Don Dietsch (262-646-5602 office/ 414-651-2862 cell) of Northwind Technical Services 7 days in advance to coordinate locations and any excavation near their facilities.

Time Warner Cable has overhead communication facilities within the project limits in the following locations:

- An overhead communications line on We Energies poles and running east-west through the project limits, crossing Glenview Avenue at Station 89FN+80. This line will remain in place without adjustment.
- An overhead communications line on We Energies poles and running east-west through the project limits, crossing Glenview Avenue at Station 84FN+70. This line will remain in place without adjustment.
- An overhead communications line on We Energies poles and running east-west through the project limits, crossing Glenview Avenue at Station 80FN+95. This line will remain in place without adjustment.
- An overhead communications line on We Energies poles beginning beyond the westerly project limits and running easterly to a pole at Station 74FN+97, 26' LT where it continues east, crossing Glenview Avenue at Station 75FN+00, to a pole at Station 75'FN'+16, 24' RT. From there it turns and runs northerly along the east right of way of Glenview Avenue to beyond the northerly project limits. Time Warner Cable will relocate this line to a new We Energies pole from Station 74FN+97, 26' LT to Station 75'FN'+16, 24' RT during construction after We Energies has finished their relocation.

Contact Lukas LaCrosse (414-908-4766 office/ 414-430-9321 cell) of Time Warner Cable 7 days in advance to coordinate locations and any excavation near their facilities.

Wauwatosa, City of – Lighting has street lighting facilities within the project limits in the following locations:

- A street lighting system consisting of poles and buried electric lines beginning beyond the westerly project limits on Bluemound Road and running easterly in the median and turning north and running along both the west and east side of Glenview Avenue to beyond the northerly project limits. Adjust, abandon, remove, leave in place, and reconstruct portions of the lighting facilities as shown in the plans.
- A street lighting system consisting of poles and buried electric lines beginning beyond the westerly project limits on Wisconsin Avenue and running easterly along both the north and south side of Wisconsin Avenue to beyond the easterly project limits. Adjust, abandon, remove, leave in place, and reconstruct portions of the lighting facilities as shown in the plans.

Contact Bill Wehrley (414-479-8927) of City of Wauwatosa - Lighting 7 days in advance to coordinate locations and any excavation near their facilities.

Wauwatosa, City of – Sewer has underground sanitary sewer facilities within the project limits in the following locations:

- An underground sanitary sewer beginning beyond the southerly project limits and running northerly in the southbound parking lane of Glenview Avenue to a manhole located at Station 72'F'+27, 28' LT. The City of Wauwatosa will reconstruction portions of this sewer prior to construction as follows: The City will remove an existing manhole at Station 72F+26, 28'LT and a new sanitary sewer will be constructed starting at Station 72F+45, 29'LT and running northerly to a new manhole at Station 72F+45, 29'LT. From this manhole a new sanitary sewer will be constructed westerly and ending at a manhole at Station 241BL+75, 31'RT.
- An underground sanitary sewer crossing Glenview Avenue at Station 74'FN'+95. This sewer will remain in place without adjustment.
- An underground sanitary sewer crossing Glenview Avenue at Station 84'FN'+64. This sewer will remain in place without adjustment.
- An underground sanitary sewer in Glenview Avenue beginning at a manhole located at Station 84'FN'+64, 9' LT and running northerly in the southbound lanes of Glenview Avenue beyond the northerly project limits. This sewer will remain in place without adjustment.
- An underground sanitary sewer beginning at a manhole located at Station 78'FN'+29, 24' RT and running easterly to beyond the easterly project limits. This sewer will remain in place without adjustment.
- An underground sanitary sewer beginning at a manhole located at Station 80'FN'+98, 25' LT and running westerly to beyond the westerly project limits. This sewer will remain in place without adjustment.
- An underground sanitary sewer beginning at a manhole located at Station 81'FN'+06, 24' RT and running easterly to beyond the easterly project limits. This sewer will remain in place without adjustment. City of Wauwatosa will adjust manholes during construction.

Adjust City of Wauwatosa sanitary sewer manholes as necessary during construction.

Contact Mike Maki (414-479-8991) of City of Wauwatosa - Sewer 7 days in advance to coordinate locations and any excavation near their facilities.

Wauwatosa, City of – Signals has underground and overhead signal facilities at the intersection of Glenview Avenue and Wisconsin Avenue. Adjust, abandon, remove, leave in place, and reconstruct the signal facilities as shown in the plans.

Contact Bill Wehrley (414-479-8927) of City of Wauwatosa - Signals 7 days in advance to coordinate locations and any excavation near their facilities.

Wauwatosa Water Utility has underground water facilities within the project limits in the following locations:

- A 24-inch water main beginning beyond the southerly limits and running northerly in the middle of Glenview Avenue to Station 69F+54, 3'LT, then turns and runs northwesterly to Station 69F+75, 24'LT, then turns and runs northerly in the southbound lanes of Glenview Avenue and crosses Bluemound Road at Station 243BL+51, then continues northerly down the middle of Glenview Avenue to Station 82FN+40, 0'LT, then turns and runs northwesterly to Station 82FN+64, 27'LT, then turns and runs westerly down the westbound lane of Wisconsin Avenue beyond the westerly project limits. This main will remain in place without adjustment.
- A 12-inch water main beginning beyond the southerly project limits and running northerly in Glenview Avenue along the west curb line, then crosses Bluemound Road at Station 243BL+35, then continues running northerly along the west curb line and crosses Wisconsin Avenue at Station310WX+81, then turns and runs northeasterly to east curb line of Glenview, then turns and runs northerly along the east curb line to beyond the northerly project limits. Wauwatosa Water Utility will reconstruct portions of this water main, hydrants, and valve boxes prior to roadway construction.
- A 12-inch water main beginning beyond the westerly project limits and running easterly along the median of Wisconsin Avenue and ties into the north/south 12-inch water main in Glenview Avenue.
- A 12-inch water main beginning beyond the westerly project limits and running easterly in the eastbound parking lane of Bluemound Road to where it ties into the north-south 12-inch water main in Glenview Avenue. This main will remain in place without adjustment.
- A water main in the northbound lane of Ravenswood Circle/Robertson Street crossing Bluemound Road at Station 240BL+22. This main will remain in place without adjustment.
- A 6-inch water main beginning beyond the westerly project limits, crossing Glenview Avenue at Station 74FN+90, and continuing easterly to beyond the easterly project limits. This main will remain in place without adjustment.
- A 6-inch water main beginning at Station 78FN+22, 16'LT and running easterly, crossing Glenview Avenue at Station 78FN+22, and continuing easterly beyond the easterly project limits. This main will remain in place without adjustment.
- A 6-inch water main beginning beyond the westerly project limits and running easterly, crossing Glenview Avenue at Station 80FN+90, and continuing easterly beyond the easterly project limits. This main will remain in place without adjustment.
- A 6-inch water main beginning at Station 80FN+94, 15'RT and running northerly, crossing Wisconsin Avenue at Station 311WX+12, and continuing northerly in the northbound lane of Glenview Avenue to beyond the northerly project limits. Wauwatosa Water Utility will reconstruct portions of this water main, hydrants, and valve boxes prior to roadway construction.
- A 6-inch water main beginning at Station 310WX+83, 2'LT and running easterly, crossing Glenview Avenue at Station 82FN+88, and continuing easterly under the westbound lane of Wisconsin Avenue to beyond the easterly project limits. Wauwatosa Water Utility will relocate a portion of this main prior to construction.

- A 6-inch water main beginning at Station 84FN+77, 14'RT and running westerly, crossing Glenview Avenue at Station 84FN+73, and continuing westerly beyond the westerly project limits. Wauwatosa Water Utility will relocate a portion of this main prior to construction.
- A 6-inch water main beginning at Station 308WX+02, 2'LT and running northerly along the east curb line of N. Robertson Street to beyond the northerly project limits. This main will remain in place without adjustment.

City of Wauwatosa will relocate and adjust water main facilities in the project area at the following locations prior to construction:

- The City of Wauwatosa install a 16-inch water main beginning beyond the southerly project limits and running northerly along the west curb line of Glenview Avenue, crossing Bluemound Road at Station 243BL+38, and continuing northerly in Glenview Avenue to Station 74FN+76, 13'LT, were it then turns and runs easterly, crossing Glenview Avenue and continues easterly to Station 74FN+76, 12'RT, then turns and runs northerly along the east curb line in Glenview Avenue and crosses Wisconsin Avenue at Station 311WX+12, and continues northerly and runs along the east curb line of Glenview Avenue beyond the northerly project limits.
- The City of Wauwatosa install a 8-inch water main beginning at Station 311WX+15, 10'LT and run easterly in the westbound lane of Wisconsin Avenue and tee into the existing 6-inch at Station 312WX+12, 6'LT.

Contact Jim Wojcehowicz (414-479-8965) of the Wauwatosa Water Utility 7 days in advance to coordinate locations and any excavation near their facilities.

We Energies – Electric has underground and overhead electric facilities within the project limits in the following locations:

- An overhead electric line beginning beyond the northerly project limits and running southerly along the east side of Glenview Avenue to a pole at Station 83FN+54, 21' RT. We Energies will relocate a pole at Station 83FN+54, 21' RT prior to construction. We Energies will also remove a pole at Station 83FN+46, 23' RT during construction once service can be disconnected to a traffic control box in the northeast corner of Glenview/Wisconsin Avenue. The remaining poles will remain in place without adjustment.
- An overhead electric line running east-west through the project limits, crossing Glenview Avenue at Station 84FN+70. This line will remain in place without adjustment.
- An overhead electric line running east-west through the project limits, crossing Glenview Avenue at Station 89FN+80. This line will remain in place without adjustment.

- An overhead electric line running east-west through the project limits, crossing Glenview Avenue at Station 80FN+95. This line will remain in place without adjustment.
- An overhead electric line beginning at a pole at Station 81FN+02, 21' RT and running southerly along the east side of Glenview Avenue to a pole at Station 73FN+72, 33' RT. We Energies will remove a pole at Station 75FN+16, 23' RT and at Station 73FN+72, 33' RT during construction once service can be disconnected to a traffic control box in the northeast corner of Glenview Avenue/Bluemound Road. The remaining poles will remain in place without adjustment.
- An overhead electric line running east-west through the project limits, crossing Glenview Avenue at Station 75FN+00. This line will remain in place without adjustment.
- An underground electric line beginning beyond the southerly project limits and running northerly in the northbound lanes of Glenview Avenue, crossing Bluemound Road at Station 243BL+79, and continuing northerly, crossing Wisconsin Avenue at Station 311WX+10, and continuing northerly to Station 85FN+24, 7' RT where it turns and runs northeasterly to a pole at Station 85FN+53, 22' RT. We Energies will adjust 4 manholes during construction. The underground electric line will remain in place without adjustment.

We Energies – Electric will relocate, construct and reconstruct underground and overhead electric facilities in the project area at the following locations during construction:

- A new overhead electric pole at Station 83+84, 21' RT.
- We Energies will adjusted 4 manholes during construction in the following locations;
    - Station 74FN+68, 5' RT
    - Station 77FN+92, 5' RT
    - Station 80FN+71, 5' RT
    - Station 84FN+01, 7' RT

Contact Curt Dawkins (414-540-5782) of We Energies - Electric 5 working days prior to the manhole adjustments to coordinate construction activities.

Contact Jason Chapin (414-944-5575 office/ 414-587-0655 cell) of We Energies 7 days in advance to coordinate locations and any excavation near their facilities.

We Energies – Gas has underground gas facilities within the project limits in the following locations:

- An underground gas main beginning beyond the southerly project limits and running northerly in the west sidewalk of Glenview Avenue to the south side of Bluemound Road at Station 243BL+08, 58’ RT where it turns and runs easterly to Station 243BL+34, 55’ RT. From there it turns and runs northerly in the southbound lane of Glenview to Station 75FN+02, 7’ LT where it turns and runs westerly to the west sidewalk of Glenview Avenue at Station 75FN+02. From there it turns and runs northerly, crossing Wisconsin Avenue at Station 310WX+70, continuing northerly to beyond the northerly project limits. We Energies – Gas will abandon portions of this main from Station 71F+75, 49’ LT to Station 75FN+42, 26’ LT and from Station 81+52, 25’ LT to Station 83FN+35, 27’ LT prior to construction. The remaining portions of this line will remain in place without adjustment.
- An underground gas main beginning along the west right of way of Glenview Avenue at Station 76FN+65, 26’ LT and running easterly, crossing Glenview at Station 76FN+65, and continuing easterly along the north side of Rockaway Place to beyond the easterly project limits. This line will remain in place without adjustment.
- An underground gas main beginning at Station 76’FN’+65, 19’ RT and running northerly in the northbound parking lane of Glenview Avenue where it ties into an east-west main in Wisconsin Avenue. This line will remain in place without adjustment.
- An underground gas main beginning along the east side of Glenview Avenue at Station 85’FN’+70 and running northerly in the east terrace of Glenview Avenue to beyond the northerly project limits. This line will remain in place without adjustment.
- An underground gas main beginning beyond the westerly project limits and running easterly in the south sidewalk of Bluemound Road, crossing Glenview Avenue at Station 72F+28, and continuing easterly to beyond the easterly project limits. We Energies – Gas will abandon this line from Station 245BL+09, 55’ RT to Station 251BL+86, 54’ RT prior to construction. The remaining portions of this line will remain in place without adjustment.
- An underground gas main running north-south along the west side of Robertson Avenue throughout the project limits, crossing Bluemound Road at Station 239BL+86. This line will remain in place without adjustment.
- An underground gas main beginning beyond the westerly project limits and running easterly in the westbound parking lane of Bluemound Road to Elm Spring Avenue where it turns and runs southerly, crossing Bluemound Road at Station 236BL+81, and continues to beyond the southerly project limits. This line will remain in place without adjustment.
- An underground gas main beginning beyond the westerly project limits and running easterly in the south terrace of Wisconsin Avenue to Station 309WX+55, 25’ RT. This main will remain in place without adjustment.
- An underground gas main beginning beyond the westerly project limits and running easterly along the centerline of Wisconsin Avenue, crossing Glenview Avenue at Station 82FN+79, and continuing to beyond the easterly project limits. This line will remain in place without adjustment.

- An underground gas main beginning beyond the westerly project limits and running easterly in the north terrace of Wisconsin Avenue and ties into the previously described gas main at Station 310WX+27' LT. We Energies – Gas will abandon this main from Station 308+45, 23' LT to Station 310WX+27' LT prior to construction. The remaining portions of this line will remain in place without adjustment.
- An underground gas main beginning beyond the westerly project limits and running easterly along the north right of way of Wisconsin Avenue, crossing Glenview Avenue at Station 83FN+19, and continuing easterly to beyond the easterly project limits.
- An underground gas main beginning at the previously described gas main at Station 82FN+48, 25' LT and running easterly in the south terrace of Wisconsin Avenue to beyond the easterly project limits. We Energies – Gas will abandon this main from Station 82FN+48, 25' LT to Station 311WX+55, 29' RT prior to construction. The remaining portions of this line will remain in place without adjustment.

We Energies – Gas will relocate and adjust underground gas facilities in the project area at the following locations prior to construction:

- A new underground gas main beginning at Station 71F+75, 48' LT and running northerly along the west right of way of Glenview Avenue to Station 72F+05, 54' LT where it turns and runs westerly along the south side of Bluemound Road to Station 242BL+26, 55' RT.
- A new underground gas main beginning at Station 242BL+35, 59' RT and running northerly, crossing Bluemound Road at Station 242BL+35, and continuing northerly to Station 242BL+35, 59' LT where it turns and runs easterly then northerly approximately 1' off the northerly right of way of Bluemound Road to Station 75FN+42, 26' LT.
- A new underground gas main beginning at Station 245BL+09, 55' RT and running easterly approximately 1' off the south right of way of Bluemound Road to Station 251BL+86, 54' RT.
- A new underground gas main beginning at Station 308WX+43, 24' LT and running northerly to Station 308WX+43, 39' LT where it turns and runs easterly then northerly approximately 1' off the north right of way of Wisconsin Avenue to Station 83FN+34, 27' LT.
- A new underground gas main beginning at Station 310WX+12, 39' LT and running southerly, crossing Wisconsin Avenue at Station 310WX+12, and continuing southerly to Station 310WX+12, 39' RT where it turns and runs easterly then southerly approximately 1' off the south right of way of Wisconsin Avenue to Station 81FN+51, 25' LT.
- A new underground gas main beginning at Station 81FN+51, 25' LT and running easterly, crossing Glenview Avenue at Station 81FN+51, and continuing easterly to Station 81FN+51, 29' RT where it turns and runs northerly along the east right of way of Glenview Avenue to Station 82FN+54, 29' RT. From there it turns and runs easterly along the south right of way of Wisconsin Avenue to Station 311WX+55, 29' RT.

We Energies – Gas will also adjust valves throughout the project limits during construction. Contact We Energies Gas Dispatch (1-800-261-5325) 3 days prior to any paving operations to coordinate valve adjustments.

Contact Brandon Erts (414-944-5767 office) of WE Energies - Gas 7 days in advance to coordinate locations and any excavation near their facilities.

WisDOT – Signals has no existing facilities within the project area. Construct new signal facilities as shown in the plans.

Contact WisDOT Traffic Signal Operations (414-750-2605) 7 days in advance to coordinate construction of the signal facilities.

WisDOT - STOC has no existing facilities in the project area. Construct new STOC facilities as shown in the plans.

Contact Kurt Wilm (414-940-5570) of WisDOT - STOC 7 days in advance to coordinate construction of the STOC facilities.

8. Other Contracts.

A Description

Coordinate your work in accordance to standard spec105.5.

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

It is expected that routine maintenance by the city and county personnel may be required at certain times concurrently with the work being done under this contract.

The following contracts are anticipated to be under construction within the time period of this contract, unless otherwise indicated:

Contract ID 1060-33-77, Greenfield Avenue Bridge reconstruction from S. 101st Street to S. 97th Street. The WisDOT contact is Jason Lynch at (414) 750-0538; jason.lynch@dot.wi.gov.

Contract ID 1060-33-70, Mayfair Road reconstruction from IH 94 to W. Watertown Plank Road. The WisDOT contact is Joshua LeVeque at (414) 220-5444; joshua.leveque@dot.wi.gov.

Contract ID 1060-33-73, Swan Boulevard construction from W. Watertown Plank Road to USH 45. The WisDOT contact is Jeff Bohen at (414) 750-2928; jeff.bohen@dot.wi.gov.

9. Hauling Restrictions.

Hauling will not be permitted on West Schlinger Avenue, West Adler Street, West Honey Creek Parkway, West Dana Street, West Hawthorne Avenue, West Wisconsin Avenue, North Honey Creek Parkway, West Hill Street, North Robertson Avenue, Rockaway Place, and Brookside Place.

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

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

10. Erosion Control.

Supplement standard spec107.20 with the following:

Provide the Erosion Control Implementation Plan (ECIP) 14 days prior to the pre-construction conference. Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-topsoiling to minimize the period of exposure to possible erosion.

Topsoil graded areas, as designated by the engineer, immediately after grading has been completed within those areas. Seed and mulch, or sod, and fertilize all topsoiled areas within 10 days after placement of topsoil.

Furnish and apply water to sodded areas. After staking and cleanup, moisten the sod thoroughly by sprinkling with water. Keep all sodded areas thoroughly moist by watering or sprinkling if rainfall is not sufficient to achieve sod rooting to the earth bed. Water for 30 days after placement, or as the engineer directs. Apply water in a manner to preclude washing or erosion.

Do not pump water from the construction site to a storm water conveyance without the water first passing through a sediment trap.

Construct temporary sediment traps at locations that do not interfere with construction operations.

Replace standard spec 107.20(3) with the following:

Prepare and submit an Erosion Control Implementation Plan (ECIP) for the project, including borrow sites and material disposal sites, in accordance to Chapter TRANS 401 requirements. The ECIP shall supplement information shown on the plans and shall not reproduce it. The erosion control implementation plan shall identify how the contractor intends to implement the project's erosion control plan. The erosion control plan shall

include details for the methods of debris containment devices required, particularly during the removal of the old bridges and construction of the new structures.

11. Public Convenience and Safety.

Revise standard spec 107.8(6) as follows:

Check for and comply with local ordinances governing the hours of operation of construction equipment. Do not operate motorized construction equipment from 7:00 PM until the following 6:00 AM, unless prior written approval is obtained from the engineer. 107-001 (20060512)

12. Available Documents.

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

- Design Study Report
- Exceptions to Standards Report
- Interstate Access Justification Report
- Pavement Type Selection Report
- Preliminary Plans
- Environmental Impact Statement
- As-Built Drawings

These documents are available from Joshua LeVeque at 141 NW Barstow Street, Waukesha, WI 53187. He may be reached at (414) 220-5444.

Reproduction costs will be applied to any copies requested.

13. 3D Model Data.

The department will provide for Project 1060-33-71 for informational purposes only (see following disclaimer) detailed 3D proposed and existing model data or portions of data which may include: roadways, temporary roadways, topography, grading, temporary grading, drainage, temporary drainage, structures, temporary structures, utilities, abandoned utilities, FTMS, signals, temporary signals, signs, temporary signs, lighting, temporary lighting, pavement markings, landscaping, wetlands, waterways, railways, geotech soil borings, parcels, fencing, and survey monumentation. The department will provide the above data or portions of the 3D model data electronically consisting of electronic 2D/3D files containing features, points, reference lines, breaklines, area extents lines, profiles, LandXML v1.2 files and/or TIN Civil 3D surfaces in Autocad 2012 dwg files with horizontal datum - NAD-83 (GRS-1980) (2007), vertical datum - NAVD-1988 (2007), and coordinate projection - Wisconsin County Coordinate System in U.S. survey ft. The department will provide the model data prior to project LET date within five business days of a contractor request submitted as follows: by email to joshua.leveque@dot.wi.gov.

The department is providing, by agreement with contractor and subcontractors, materials stored electronically. The parties recognize that data, plans, specifications, reports, documents, or other information recorded on or transmitted as electronic media (including but not necessarily limited to "CAD, CIM, BIM, GIS or other electronic documents") are subject to undetectable alteration, either intentional or unintentional, due to, among other causes, transmission, conversion, media degradation, software error, or human alteration. Accordingly, all such documents are provided to the parties for informational purposes only and not as an end product or as a record document. Any reliance thereon is deemed to be unreasonable and unenforceable. The signed and/or stamped hard copy of the Engineer's Instruments of Service plans, specifications and estimates or other contract documents are the only true contract documents of record.

14. Geotechnical Investigation Information.

Replace standard spec102.5(3) 2 with the following:

Available information relative to subsurface exploration, borings, soundings, water levels, elevations or profiles are available for review at the department's Regions office. Contact Joshua LeVeque, 141 NW Barstow Street, Waukesha, WI 53187, (414) 220-5444.

Additional geotechnical information is available from studies and analyses that have been performed by Forward 45 (F45) for the Wisconsin Department of Transportation (WisDOT) for other aspects of this project. Review the available information to determine if it is of use. The use or not of the geotechnical information does not relieve performing the work in accordance to the plans and specifications.

15. Public Information Meetings.

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

16. Contractor Notification.

Replace standard spec 104.2.2.2(2) with the following:

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

104.3.2 (Vacant)

104.3.3 Contractor Initial Written Notice
Replace standard spec 104.3.2 and 104.3.3 with the following:

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

1. A written description of the nature of the issue.
2. The time and date of discovering the problem or issue.
3. If appropriate, the location of the issue.

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

17. Contractor Document Submittals.

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

B Contractor Submittals
Provide 2 paper originals and one electronic copy of all documents requiring department review, acceptance, or approval. Attach a completed engineer-provided transmittal sheet to each paper original and email submittal. The department will reject submittals with incomplete transmittal sheets and require re-submittal.

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

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

All costs for contractor document submittals are incidental to the contract.

18. Information to Bidders, Use of Recovered Material.

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

19. Payment Tracking.

A Reporting Payments During Construction
Comply with reporting requirements specified in the department's civil rights and labor compliance management system manual.

Report payments to all first tier relationships including subcontractors, suppliers, and trucking 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 subcontractors, suppliers, and trucking firms. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.

Require all first tier relationships including subcontractors, suppliers, and trucking firms in receipt of a progress payment by contractor to acknowledge receipt of payment as specified in A(1) and (2).

All agreements made by a contractor shall include the provisions in A(1) and (3), and shall be binding on all first tier relationships including subcontractors, suppliers, and trucking firms on the project.

B (Vacant)

C (Vacant)

D (Vacant)

E Payment
Costs for conforming to this special provision are incidental to the contract.

20. Labor Compliance Reporting – Payroll Requirements.

Submit weekly certified payrolls verifying prevailing wage rates for all work performed under the contract as directed in the civil rights and labor compliance management system manual. Submit weekly certified payrolls within 7 calendar days of the week covered by the weekly certified payroll.

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. Dust Control Implementation Plan.

A Description
Develop, update, and implement a detailed Dust Control Implementation Plan (DCIP) for all land-disturbing construction activities and associated impacts both within the project site boundaries and outside the project site boundaries. This article also specifies contract bid items to be incorporated into the DCIP.

B (Vacant)

C Construction

C.1 General

Take responsibility for dust control on the project as specified in section 107.18 of the standard specifications. Minimize dust emissions resulting from land disturbing activities. Do not generate excessive air borne particulate matter (PM) or nuisance dust conditions. Take direct responsibility for controlling dust at all times throughout the duration of the contract, 24 hours per day, 7 days per week, including non-working hours, weekends, and holidays.

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

C.2 Dust Control Implementation Plan Contents

Develop a DCIP tailored to the specific needs of the project. Consider potential impacts to businesses and residences adjacent to the job site. Describe in detail all land disturbing, dust generating activities. Identify strategies to prevent, mitigate, and collect excess dust. Establish clear lines of communication with the engineer to ensure that all dust control issues can be dealt with promptly.

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

1. A single contact person with overall responsibility for the DCIP development as well as surveillance and remediation of job related dust. Include the following:
    - Name, firm, address, and working-hours phone number.
    - Non-working-hours phone number.
    - Email address.
2. Individual contact persons and their respective areas of responsibility. Include the following:
    - Name, firm, address, and working-hours phone number.
    - Non-working-hours phone number.
    - Email address.
3. A site map locating project features, the job site boundaries, all ingress and egress points, air intakes and other dust-sensitive areas, and all public and private paved surfaces within and immediately adjacent to the job site. Show where specific land disturbing, dust generating activities will occur and, to the extent possible, where the contractor plans to employ various dust control or prevention strategies.

4. A matrix showing, for each anticipated land disturbing, dust generating activity, the following:
    - Preventive measures that will be employed.
    - The applicable contact person.
    - The contractor's timetable and/or surveillance measures used to determine when remediation is required.
    - The specific dust control and remediation measures that will be employed. List the specific contract bid items that will be used for payment. Also indicate costs that are incidental to the contract.
    - Both maintenance and cleanup schedules and procedures.
    - How excess and waste materials will be disposed of.
5. A description of how off-site impacts will be monitored and dealt with.

C.3 Updating the Dust Control Implementation Plan

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

C.4 Dust Control Deficiencies

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

D Measurement

The department will measure the various bid items associated with dust control as specified in the applicable measurement subsections of either the standard specifications or other contract special provisions. The department will not measure work performed under a DCIP alteration unless the engineer specifically approves that alteration.

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

623.0200	Dust Control Surface Treatment
624.0100	Water
628.7560	Tracking Pads
SPV.0105.0002	Pavement Cleanup

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

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

23. Project Site Air Quality.

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

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

Potable Concrete Crusher Plants
Portable concrete crusher plants may need a NR 440 Concrete Crusher Plant Air Permit for air emissions. Please contact Mike Griffin, Wisconsin Department of Natural Resources, Air Compliance Engineer, (414) 263-8554, to request additional information and permit application materials. Complete permit applications may take 3 months to process.

24. Construction Over or Adjacent to Navigable Waters.

Supplement standard spec 107.19 with the following:

The Honey Creek is classified as a navigable waterway.
107-060 (20040415)

25. OCIP Information.

The Owner Controlled Insurance Program (OCIP)

The Zoo Interchange project will be constructed under the umbrella of an Owner Controlled Insurance Program (OCIP). Contractor/Consultant participation in this Corridor Project is mandatory and requires enrollment into the OCIP. The OCIP requires submitted bids to exclude the cost of the OCIP provided coverage. Additional information regarding OCIP can be found at http://roadwaystandards.dot.wi.gov/hcci/index.shtm.

If you have any questions regarding the OCIP, including questions on if your company needs to be enrolled into the OCIP, please contact Chris Luttrell at (608) 267-7722.

26. Owner Controlled Insurance Program.

Section 107.26, "Standard Insurance Requirements" of the standard specifications is deleted in its entirety and the following section 107.26 is substituted thereof:

107.26 Standard Insurance Requirements

107.26(1)(a) Owner Controlled Insurance Program

1. **Overview**. The State of Wisconsin, Department of Transportation ("the WisDOT") has arranged with Aon Risk Solutions, (the "OCIP administrator") for this Project to be insured under its Owner Controlled Insurance Program ("OCIP"). The OCIP is more fully described in the Zoo Interchange manual for the Owner Controlled Insurance Program (the "Insurance Manual") and the Safety and Health Plan Manual that are incorporated in this Special Provision and the Contract by this reference. Parties performing labor or services at the Project Site (as defined by the OCIP Policies) are eligible to enroll in the OCIP unless the party is an excluded party (as defined below). The OCIP will provide to enrolled parties(as defined below) workers' compensation and employer's liability insurance, commercial general liability insurance, Builders Risk and Excess Liability insurance as summarily described below in connection with the performance of the Work ("OCIP coverage's").

2. **Enrolled Parties and Their Insurance Obligations.** OCIP coverage applies only to Enrolled Parties. Enrolled Parties include the WisDOT and its employees, non-excluded Contractors and Subcontractors of all tiers who enroll in the OCIP, all employees of Enrolled Contractor's and Subcontractor's who perform Work at the Project Site, and such other persons or entities that the WisDOT, in its sole discretion, may designate (each such party who is insured under the OCIP is collectively referred to as an "Enrolled Party").

Enrolled Parties shall obtain and maintain, and shall require each of its Subcontractors to obtain and maintain, the insurance coverage specified in 107.26(1)(a) 8 below.

3. **Excluded Parties and Their Insurance Obligations.** OCIP coverage's do not apply to the following "Excluded Parties":

   a. Hazardous materials remediation, removal and/or transport companies;

   b. Vendors *, suppliers, fabricators, material dealers, truckers**, haulers, drivers and others who merely transport, pickup, deliver, or carry materials, personnel, parts or equipment or any other items or persons to or from the Project;

      * WisDOT is requiring all vendors who perform maintenance on an enrolled contractor's equipment to be enrolled in the OCIP. Please see "WisDOT OCIP Enrollment Guidance Relating to Service Vendors" to determine whether they will be enrolled per project id number or on a Miscellaneous blanket basis.

      ** Truckers that come on site must remain in the cab of the vehicle.

      Refer to the "Enrollment Matrix" which clearly outlines the requirements contingent upon the category that the entity falls under, such as: Contractor; Subcontractor; Consultant; Visitor; etc.

   c. Sanitary disposal facility providers, if the only function is to drop off the units and pick them up later, they are material suppliers and are excluded. If the company also services/cleans the units on site, that is no longer being a material supplier. (Refer to "Enrollment Matrix", Vendors Providing Maintenance On Site).

   d. Contractors and Subcontractors of any tier that do not perform any actual labor on the Project site;

   e. Any party or entity not specifically identified in this special provision or excluded by the WisDOT as permitted by law, even if otherwise eligible.

   f. If you are not employed by an Enrolled Party, but performing services of an Excluded Party, you are not covered by the OCIP.

   Excluded Parties and parties not enrolled in the OCIP shall obtain and maintain, and shall require each of its excluded Subcontractors to obtain and maintain, the insurance coverage specified in Section 107.26(1)(a) 8 below and in the Insurance Manual. Excluded Parties shall comply with all of the safety requirements pursuant to 107.26(1)(a) 16.

4. **OCIP Insurance Policies Establish OCIP coverage's**. The OCIP coverage's and exclusions summarized in this special provision and the other contract documents are set forth in full in their respective insurance policy forms. The summary descriptions of the OCIP coverage's in this special provision or the Insurance Manual are not intended to be complete or to alter or amend any provision of the actual OCIP coverage's. In the event any provision of this special provision, the Insurance Manual, or the contract documents, conflicts with the OCIP insurance policies, the provisions of the actual OCIP insurance policies shall govern.

5. **Summary of OCIP Coverage's**. OCIP coverage's will apply only to those operations of each Enrolled Party performed at the Project Site (as defined in the OCIP insurance Policies) in connection with the Work and only to Enrolled Parties that are eligible for the OCIP.

   The OCIP coverage's are primary insurance for all Enrolled Parties for occurrences during the policy period at the Project Site (as defined in the OCIP Policies). The OCIP will provide at least the following insurance to Enrolled Parties:

Summary of OCIP Coverages

This is a brief description of OCIP Insurance Coverage. Enrolled Parties should refer to the actual policies for details concerning coverage, exclusions and limitations.

a. Workers' Compensation Insurance - Statutory Limit including Jones Act and USL&H coverage, as applicable.

b. Employer's Liability Insurance

   $1,000,000 Bodily Injury by Accident, each accident

   $1,000,000 Bodily Injury by Disease, each employee

   $1,000,000 Bodily Injury by Disease, policy limits

c. Commercial General Liability (ISO Occurrence Form – Limits Shared By All Insureds)

   $2,000,000 Each Occurrence Limit (Annual Limit)

   $2,000,000 Personal/Advertising Injury Aggregate

   $4,000,000 General Aggregate Limit for all Enrolled Parties (Annual Limit)

   $4,000,000 Products and Completed Operations Aggregate for all Enrolled Parties (Single Limit Applies to Entire Products and Completed Operations Extension)

   10 yr. Products and Completed Operations Extension

d. The OCIP Commercial General Liability policy will not provide coverage for any claim that could be covered under a property policy or Builder's Risk policy.

e. Excess Liability insurance (over Employer's Liability and General Liability – Limits Shared by All Insureds)

   $100,000,000 Each Occurrence Limit

   $100,000,000 Aggregate (Annual Limit)

   $100,000,000 Products and Completed Operations Aggregate Limit (Single Limit Applies to Entire Products and Completed Operations Extension).

f. Builder's Risk Insurance Coverage:
This is a brief description of Builder's Risk Insurance Coverage. Contractor should refer to the actual policies for details concerning coverage, exclusions and limitations.

The Builder's Risk insurance covers insures property, including materials, supplies, machinery, fixtures and equipment which will become a permanent part of the Work (excluding road work at grade level) in the course of construction.

The Builder's Risk coverage insures WisDOT and Enrolled Parties.

Builders Risk:

	Limit
Each Occurrence Limit	$100,000,000

*Builder's Risk Obligation**:***

Contractor or Subcontractor shall pay to the WisDOT's designee within five (5) days written notice a maximum of up to **twenty-five thousand dollars ($25,000.00)** for each loss payable under the Builder's Risk Policy attributable to Contractor's Work, acts or omissions, or the Work, acts or omissions of any of Contractor's Subcontractors, or any other entity or party for whom Contractor may be responsible ("builder's risk obligation").

6. The WisDOT's Insurance Obligations.

a. The WisDOT will pay the costs of premiums for the OCIP coverage's and WisDOT will receive or pay, as the case may be, all adjustments to such costs, whether by way of dividends, retroactive adjustments, return premiums, other moneys due, audits or otherwise.

b. The WisDOT assumes no obligation to provide insurance other than that specified in this special provision and the OCIP insurance policies.

c. Except as provided by applicable law. the WisDOT's furnishing of OCIP coverage's will in no way relieve or limit, or be construed to relieve or limit, Contractor or any of its Subcontractors of any responsibility, liability, or obligation imposed by the contract documents, the OCIP insurance policies, or by law, including without limitation any indemnification obligations which Contractor or any of its Subcontractors has to the WisDOT there under. The WisDOT reserves the right at its option, to furnish other insurance coverage of various types and limits provided that such coverage is not less than that specified in the contract documents.

7. **Contractor's OCIP Obligations.** Contractor shall:

   a. Assign to WisDOT the right to receive all such adjustments, and shall require that each of its Subcontractors of every tier assigns to WisDOT the right to receive all such adjustments.

   b. Incorporate the terms of this special provision in all subcontract agreements.

   c. Enroll and maintain enrollment in the OCIP, and shall ensure that each non-Excluded subcontractor, enrolls and maintains enrollment in the OCIP. Enrollment shall take place within five (5) days of a receipt of a Notice to Proceed, and prior to commencement of work. d. Comply with all of the administrative, safety, insurance, and other requirements outlined in this special provision, the Insurance Manual, the OCIP insurance policies, the Safety and Health Plan Manual, or elsewhere in the contract documents.

   d. Provide each of its Subcontractors with a copy of the Insurance Manual and ensure Subcontractor compliance with the provisions of the OCIP insurance policies, the Insurance Manual, this special provision, and the contract documents. The failure of (a) the WisDOT to include the Insurance Manual in the bid documents or (b) Contractor to provide each of its eligible Subcontractors with a copy of same shall not relieve Contractor or any of its Subcontractors from any of the obligations contained therein.

   e. Acknowledge, and require all of its Subcontractors to acknowledge in writing, that the WisDOT and the OCIP administrator are not agents, partners or guarantors of the insurance companies providing coverage under the OCIP (each such insurer, an "OCIP insurer") and that the WisDOT is not responsible for any claims or disputes between or among Contractor, its Subcontractors, and any OCIP insurer(s). Any type of insurance coverage or limits of liability in addition to the OCIP coverage's that Contractor or any Subcontractor requires for its or their own protection, or that is required by applicable laws or regulations, shall be Contractor's or its Subcontractor's sole responsibility and expense and shall not be billed to the WisDOT.

   f. Cooperate fully with the OCIP administrator and the OCIP insurers, as applicable, in its or their administration of the OCIP.

g. Provide, within five (5) business days of the WisDOT's or the OCIP administrator's request, all documents or information as requested of Contractor or its Subcontractors. Such information may include but not be limited to, payroll records, certified copies of insurance coverage's, declaration pages of coverage's, certificates of insurance, underwriting data, prior loss history information, insurance audits, safety records or history, OSHA citations, or such other data or information as the WisDOT, the OCIP administrator, or OCIP insurers may request in the administration of the OCIP, or as required by the Insurance Manual.

h. Pay to the WisDOT's designee within five (5) days of written notification, a sum of up to **$10,000** of each claim, including court costs, attorneys fees and costs of defense for property damage to the extent losses are insured under the OCIP Commercial General Liability policy for those losses that are attributable to Contractor's Work, acts or omissions, or the Work, acts or omissions of any of its Subcontractors, or any other entity or party for whom Contractor may be responsible ("contractor General Liability obligation"). The contractor General Liability obligation will not be insured by the OCIP Coverage's.

8. Additional Insurance Required From Enrolled Parties and Excluded Parties. Contractor shall obtain and maintain, and shall require each of its Subcontractors of every tier to obtain and maintain, the insurance coverage specified in this Section in a form and from insurance companies reasonably acceptable to the WisDOT. The insurance limits may be provided through a combination of primary and excess policies, including the umbrella form of policy. The insurance required by this Section shall conform to the WisDOT's requirements outlined in the Insurance Manual and be written by companies authorized to do business in the state of Wisconsin with an **AM Best rating of A- or better**. Contractor shall provide certificates of insurance coverage to the WisDOT as required below and by the Insurance Manual.

As to Enrolled Parties, the Workers' Compensation, Employer's Liability, and Commercial General Liability insurance required by this section shall only be for operations away from the Project Site (as defined by OCIP Policies) . The cost of providing the required insurance coverage and limits is incidental to the contract. The department will make no additional or special payment for providing insurance.

TYPE OF INSURANCE MINIMUM LIMITS REQUIRED

1. Commercial General Liability insurance shall be endorsed to include Blanket Contractual Liability coverage.
   a. $2,000,000 Combined Single Limits per occurrence with an annual aggregate limit of not less than $4,000,000.

b. The OCIP Coverage's shall exclude blasting or explosion operations. If blasting or explosion operations are used in connection with the Work, Commercial General Liability insurance shall not contain an exclusion for blasting or explosion and shall be provided in limits established by the WisDOT at the time such blasting or explosion methods are elected. Such coverage shall apply to operations whether the operations occur on the Project site or away from the Project site.

c. Wisconsin Department of Transportation, their respective officers, agents and employees, and any additional entities as the WisDOT may request as additional insureds must be named as an Additional Insured which shall include: i) liability arising out of the Work performed by the named insured; ii) liability arising out of the supervision of the Work performed by or operations of the named insured; and iii) liability of the acts or omissions of the Additional Insureds relating to Work performed by the named insured for the Project, except for sole negligence of the Additional Insureds iv) will state that coverage is afforded on a primary and non-contributory basis.

d. Ongoing Construction Operation(s) in effect at all times while work is being performed by Contractor;

e. Subcontractors and Independent Contractors (if any);

f. Products and Completed Operations, including coverage applicable to additional insureds (as required by this agreement) with Completed Operations coverage to remain in force, whether by endorsement or renewal of coverage, including the Contractor, any party required to be indemnified by this Contract and any other party required by this Contract to be named as an additional insured, for at least two (2) years from the date of final completion of the Project and WisDOT's acceptance of the work; and

g. Explosion, collapse, and underground hazards.

h. Contractual Liability (insured contract) coverage sufficient to meet the requirements of this Contract (including defense costs and attorney's fees assumed under contract);

i. Personal and Advertising Injury Liability coverage (with the standard contractual and employee exclusions deleted);

j. Notice and Knowledge of Occurrence conditions limited to the knowledge of relevant corporate officers or risk managers with an Unintentional Errors and Omissions provision (providing that the insurer may not deny coverage unless it can show that it has been prejudiced by a failure of the insured to comply with a condition of the policy); and

k. CG 22 79 07 98 (or equivalent) is the only acceptable Professional Liability Exclusion.

l. Operations performed within 50' of railroad

2. Workers' Compensation and Employer's Liability insurance.
    a. Workers' Compensation Limits: Statutory Limits
    b. Employer's Liability limits:

        $1,000,000 Bodily Injury by Accident, each accident
        $1,000,000 Bodily Injury by Disease, each employee
        $1,000,000 Bodily Injury by Disease, policy limits

        Terms and conditions shall include:
        - USL&H – where applicable.
        - Jones Act – where applicable.
        - All states endorsement - where applicable.

3. Commercial Automobile Liability insurance as specified by Insurance Services Office (ISO), form CA 00 01, symbol 1 (any auto) with the following limits and endorsements:
    a. No Trucking or Hauling: $1,000,000 Each Accident
    b. Trucking or Hauling (Non Hazardous Materials): $2,000,000 Each Accident
    c. Trucking or Hauling Hazardous Materials: $5,000,000 Each Accident with an MCS 90 Endorsement and ISO Endorsement CA 99 48.
4. For any work over water, whether deemed navigable or otherwise, Contractors Pollution Liability insurance with $2,000,000 per occurrence and $2,000,000 aggregate policy limits.
5. Aviation and/or Watercraft Liability insurance, as appropriate, including hull and protection and indemnity for watercraft, or other insurance, in form and with limits of liability and from an insuring entity reasonably satisfactory to the WisDOT.

Contractor's failure to procure or maintain the insurance required by this Section and to assure all its Subcontractors of every tier maintain the required insurance during the entire term of the contract shall constitute a material breach of this contract under which the WisDOT may immediately suspend or terminate this contract or, at its discretion, procure or renew such insurance to protect the WisDOT's interests and pay any and all premiums in connection therewith, and withhold or recover all monies so paid from the Contractor.

Contractor shall provide the WisDOT with certificates of insurance as evidence that required coverage's for insurance detailed in this section are in force. The bidder shall provide certificates of insurance in their pre-qualification statement as specified in 102.1.

Contractor shall notify the WisDOT at least 60 calendar days before a cancellation or material change in coverage and only obtain coverage from insurance companies licensed to do business in the state that have an AM Best rating of A- or better. The cost of

providing the required insurance coverage and limits is incidental to the contract. The WisDOT will make no additional or special payment for providing insurance.

The above insurance requirements shall apply with equal force whether the Contractor or a Subcontractor, or anyone directly or indirectly employed by either, performs the work under the Project.

9. Additional Insureds:

All insurance required by this agreement (excluding only workers compensation insurance) shall name WisDOT, all parties required to be indemnified by this Contract and all other parties as reasonably requested by the WisDOT, as additional insureds. All policies (including primary, excess and/or umbrella) must provide that coverage shall be primary and non-contributory to any insurance maintained by the Contractor or the additional insured, all of which shall be stated on the Certificate of Insurance provided by the Contractor. The Additional Insured Endorsement shall be on Form CG 20 10 11/85, or CG 20 33 10/01 plus CG 20 37 10/01, or equivalent, and shall include ongoing and completed operations coverage, which shall not contain any restrictions**.**

IN THE EVENT THAT THE LAW OF THE STATE IN WHICH THE PROJECT IS LOCATED (OR APPLICABLE LAW) LIMITS THE ADDITIONAL INSURED COVERAGE THAT WISDOT MAY REQUIRE FROM THE CONTRACTOR, THEN THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN ADDITIONAL INSURED COVERAGE TO THE FULLEST EXTENT OF COVERAGE AND LIMITS ALLOWED BY APPLICABLE LAW AND THIS CONTRACT SHALL BE READ TO CONFORM TO SUCH LAW.

10. Contractor Representations and Warranties to the WisDOT. Contractor represents and warrants to the WisDOT or behalf of itself and its Subcontractors:

a. That all information it submits to the WisDOT or the OCIP administrator shall be accurate and complete.

b. That Contractor, on behalf of itself and its Subcontractors, has had the opportunity to read and analyze copies of the OCIP binders and specimen policies that are on file in the WisDOT's office. Any reference or summary in the contract, this special provision, the Insurance Manual, or elsewhere in any other contract document as to amount, nature, type or extent of OCIP coverage's and/or potential applicability to any potential claim or loss is for reference only. Contractor and its Subcontractors have not relied upon said reference but solely upon their own independent review and analysis of the OCIP coverage's in formulating any understanding and/or belief as to amount, nature, type or extent of any OCIP coverage's and/or its potential applicability to any potential claim or loss.

c. That the costs of OCIP coverage's were not included in Contractor's bid or proposal for the Work, the contract price, and will not be included in any change order, change modification, or any request for payment for the Work or extra work. The "costs of OCIP coverage's" is defined as the dollar amount of premiums, costs and fees the Contractor and its Subcontractors would have paid its insurance carrier to insure the operations and exposures which are being insured under the OCIP.

d. That Contractor acknowledges that the WisDOT will not pay or compensate Contractor or any Subcontractor, in any manner, for costs of OCIP coverage's or for "insurance costs" except as specifically required to be maintained by Contractor by the terms of this special provision.

11. Severability of Interests (Cross Liability):

All insurance required by this agreement (excluding only workers compensation insurance) shall include a provision or be endorsed to provide that, inasmuch as the policy is written to cover more than one insured, all terms, conditions, insuring agreements and endorsements, with the exception of limits of liability, shall operate in the same manner as if there were a separate policy covering each insured. No cross liability exclusions are permitted and there may not be any restrictions in any policies that limit coverage for a claim brought by an additional insured against a named insured. Also, there shall not be any provision in any insurance policy which excludes or conditions coverage on the existence of a contract or other agreement requiring insurance.

12. Breach of Insurance Requirements:

The Contractor's failure to obtain and maintain insurance coverages as required by this agreement shall constitute a material breach of the Contract. In such event WisDOT may at its option: (i) terminate the Contractor for default; or (ii) purchase such coverage and backcharge the premium and associated costs to the Contractor; or (iii) at their respective option, WisDOT and/or an additional insured can require the Contractor and/or its Subcontractors to pay for attorney's fees, expenses, damages and liability as a result of any claim or lawsuit to the extent coverage would have been provided to them under the Contractor's insurance but for the Contractor's breach WisDOT has the right to backcharge the Contractor for such sums. Furthermore, to the extent of their respective interest, the Insurers of those entities that were to be included as additional insureds are deemed to be third-party beneficiaries of the insurance procurement obligation.

13. Subcontractor:

Before permitting any Subcontractor to perform work under a subcontract, the Contractor shall require by written contract that the Subcontractor maintain insurance in like form and amounts to that required herein. The Contractor shall be responsible to ensure that each Subcontractor maintains insurance in like form and amounts and shall provide evidence of same if requested. Contractor shall provide

copies of its Subcontractor's certificates of insurance coverage to WisDOT or the OCIP Administrator upon request.

14. Notice of Cancellation:

All insurance coverages required by this agreement shall contain a provision that the coverage afforded thereunder cannot be cancelled, non-renewed, allowed to lapse, or have any restricted modifications added unless at least thirty (30) days prior written notice has been given to WisDOT. The Contractor is responsible to provide replacement coverage conforming with the requirements of this agreement in the event of any cancellation, non-renewal or modification of any insurance coverages required by this agreement.

15. Limits of Insurance:

The Contractor's insurance coverage and any additional insured coverage provided to WisDOT and any additional insured shall be for the full amount of any loss up to the policy(s) limits of liability and shall not be limited to the minimum insurance requirements of this Contract. The Contractor is responsible for notifying its insurance carriers in the event of a loss or potential loss involving coverage for the additional insureds. However, this does not prohibit any additional insureds from reporting a claim directly to the Contractor's insurance carriers.

16. Deductibles/Denial of Claims:

The Contractor shall be responsible, at no additional cost to WisDOT, for the payment of any deductibles or self-insured retention in connection with the insurance coverages required by this agreement, both for itself and all additional insureds. Any self-insured retention or deductible must be declared in writing at the time the Contractor submits its bid and must be specifically approved by WisDOT prior to execution of the Contract. The Contractor shall be responsible for any loss arising out of coverage denial by its insurance carrier. The Contractor may not procure policies that limit who may pay the SIR or deductible; rather, any SIR shall be payable by either the Contractor or the Subcontractor and the Contractor may not have a policy that prevents WisDOT from accessing or triggering coverage unless the SIR is paid by the Contractor. Contractor shall also ensure that similar conditions are incorporated into all subcontracts. In the event that WisDOT is required to pay any deductible and/or SIR to access any insurance policy, Subcontractor shall promptly reimburse the Contractor for such payment.

17. No Waiver of Insurance Requirements:

IT IS EXPRESSLY AGREED BETWEEN WISDOT AND THE CONTRACTOR THAT THE FAILURE OF WISDOT TO REQUIRE OR VERIFY COMPLETE AND TIMELY PERFORMANCE OF THE CONTRACTOR'S OBLIGATIONS UNDER THIS CONTRACT SHALL NOT BE A WAIVER BY WISDOT OF ANY RIGHT OF WISDOT TO REQUIRE THE CONTRACTOR TO COMPLY WITH THESE INSURANCE REQUIREMENTS AND/OR TO SEEK DAMAGES BECAUSE OF THE CONTRACTOR'S FAILURE TO COMPLY WITH THE INSURANCE REQUIREMENTS IN THIS CONTRACT.

18. **Audits.** Contractor agrees that the WisDOT, the OCIP administrator, and/or any OCIP insurer may audit Contractor's or any of its Subcontractor's Project payroll records, books and records, insurance coverage's, insurance cost information, or any other information that Contractor provides to the WisDOT, the OCIP administrator, or the OCIP insurers to confirm their accuracy and to assure that costs of OCIP coverage's are not included in any payment for the work.

19. **The WisDOT's Election to Modify or Discontinue OCIP.** The WisDOT may, for any reason, modify the OCIP coverage's, discontinue the OCIP, or request that Contractor or any of its Subcontractors withdraw from the OCIP upon thirty (30) days written notice. Upon such notice Contractor and/or one or more of its Subcontractors, as specified by the WisDOT in such notice, shall obtain and thereafter maintain at the WisDOT's expense, Contractor Maintained Coverages (or a portion thereof as specified by the WisDOT) of the OCIP coverage's. The form, content, limits of liability, cost, and the insurer issuing such replacement insurance shall be subject to the WisDOT's approval.

20. **Withhold of Payments.** The WisDOT may withhold from any payment owing to Contractor the costs of OCIP coverage's if included in a request for payment. In the event the WisDOT audit of Contractor's records and information as permitted in the Contract, this special provision, or other contract documents reveals a discrepancy in the insurance, payroll, safety, or any other information required by the contract documents to be provided by Contractor to the WisDOT, or to the OCIP administrator, or reveals the inclusion of costs of OCIP coverage's in any payment for the work, the WisDOT will have the right to full deduction from the Contract Price of all such costs of OCIP coverage's and all audit costs. Audit costs will include but not be limited to the fees of the OCIP administrator, and the fees of attorneys and accountants conducting the audit and review. If the Contractor or its Subcontractors fail to timely comply with the provisions of this special provision or the requirements of the Insurance Manual, the WisDOT may withhold any payments due Contractor and its Subcontractors until such time as they have performed the requirements of this special provision. Such withholding by the WisDOT will not be deemed to be a default hereunder.

21. **Waiver of Claim and Waiver of Subrogation:**

    Where permitted by law, Contractor hereby waives all rights of recovery under subrogation because of deductible clauses, inadequacy of limits of any insurance policy, limitations or exclusions of coverage, or any other reason against the WisDOT, the State of Wisconsin and any of its Agencies or Officer's, Agents or employees including without limitation, the OCIP administrator, its or their officers, agents, shareholders or employees of each, if any, and any other Contractor or Subcontractor performing work or rendering services on behalf of the WisDOT in connection with the planning, development and construction of the Project, and Contractor shall require that all Contractor maintained insurance coverage related to the work include clauses providing that each insurer shall waive all of its rights of recovery by subrogation for claims described above.

22. **Waiver of Subrogation.** Where permitted by law, Contractor shall also require that all Contractor maintained insurance coverage related to the work include clauses providing that each insurer shall waive all of its rights of recovery by subrogation against the WisDOT, the State of Wisconsin and any of its Agencies or Officer's, Agents or employees including without limitation, the OCIP administrator, its or their officers, agents, shareholders or employees of each, if any . Contractor shall require similar written express waivers and insurance clauses from each of its Subcontractors. A waiver of subrogation shall be effective as to any individual or entity even if such individual or entity (a) would otherwise have a duty of indemnification, contractual or otherwise, (b) did not pay the insurance premium directly or indirectly, and (c) whether or not such individual or entity has an insurable interest in the property damaged.

24. **Conflicts**. In the event of a conflict, the provisions of this special provision shall govern, then the provisions of the contract and its other related contact documents, then the provisions of the Insurance Manual.

25. **Safety.** Contractor shall be solely responsible for safety on the Project and safety relating to the Work. Contractor shall establish a safety program that, at a minimum, complies with all local, state and federal safety standards, and any safety standards established by the WisDOT for the Project, including the Project Safety and Health Plan Manual.

27. Notice to Contractor – Traffic Signal Equipment Lead Time.

Lead time for traffic signal equipment specified for this project has been ranging from 12-weeks to 18-weeks. Order equipment as soon as possible to assure the equipment is procured in a timely fashion and, therefore, installed, inspected, and ready for turn-on at the required date.

28. Clearing and Grubbing, Emerald Ash Borer.

This applies to projects in the emerald ash borer (EAB) quarantined zones to include Fond du Lac, Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties.

Supplement standard spec201.3 with the following:

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

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

(a) Green ash (F. pennsylvanica) is found throughout the state, but is most common in southern Wisconsin. It may form pure stands or grow in association with black ash, red maple, swamp white oak, and elm. It grows as an associate in upland hardwood stands, but is most common in and around stream banks, floodplains, and swamps.
(b) Black ash (F. nigra) is distributed over the entire state but is most frequently found in northern Wisconsin. It is most common in swamps, but is also found in other wet forest types.
(c) Blue ash (F. quadrangulata) is a threatened species that is currently found only at a few sites in Waukesha County. The species is at the edge of its range in Wisconsin, but is common in states farther south. The species is not of commercial importance. Blue ash twigs are 4-sided.
(d) White ash (F. americana) tends to occur primarily in upland forests, often with Acer saccharum.

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

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

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

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

ATCP 21.17 Emerald ash borer; import controls and quarantine.

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

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

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

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

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

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

Ash trees.

Ash limbs, branches, and roots.

Ash logs, slabs or untreated lumber with bark attached.

Cut firewood of all non-coniferous species.

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

Any other item or substance that may be designated as a regulated item if a DATCP pest control official determines that it presents a risk of spreading emerald ash borer and notifies the person in possession of the item or substance that it is subject to the restrictions of the regulations.

Regulatory Considerations
The quarantine means that ash wood products may not be transported out of the quarantined area.

Clearing and grubbing includes all ash trees that are to be removed from within the project footprint. If ash trees are identified within clearing and grubbing limits of the project, the following measures are required for the disposal:

Chipped Ash Trees
May be left on site if used as landscape mulch within the project limits. If used as mulch on site, chips may not be applied at a depth greater than standard mulch applications as this will impede germination of seeded areas.

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

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

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

Burning chips is optional if in compliance with standard spec 201.3.

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

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

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

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

Burning is optional if in compliance with standard spec 201.3.

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

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

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

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

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

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

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

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

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

29. CPM Progress Schedule.

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

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

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

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

With each Monthly CPM Progress Schedule Update also include:

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

30. Pay Plan Quantity.

A Bid Items Designated as Pay Plan Quantity

Replace standard spec 109.1.1.2 with the following:

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

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

The approximate quantity shown on the schedule of items for a designated item is for information only and only an estimate. The engineer makes no guarantee that the quantity, which can be determined by computations based on contract information, will equal the approximate quantity shown on the schedule of items. The engineer will not make a quantity adjustment for discrepancies.

31. Coordination with Businesses.

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

32. Business Parking Lots.

Business parking lots will be impacted by the project. Only occupy parking stalls while actively working in the parking lot. Notify business owners at least five calendar days prior to beginning work in the parking lot.

No materials are allowed to be stored within parking stalls without the consent of the business owner and approval of the engineer. Parking of personal vehicles in business parking lots is not allowed without the consent of both the business and property owner.

Restore parking within two calendar days of removing pavement at all parking stalls. Keep the parking lots open to traffic and parking.

33. Construction Trenches.

Upon completion of the normal work day and when work is not in progress, all trenches within the roadway or sidewalk resulting from construction activities which are not fully backfilled shall be plated with steel plates suitable for carrying a vehicle or pedestrian traffic, respectively, as directed by the engineer. The plating shall be in addition to the barricades and traffic control devices required for lane colure or traffic control, and shall be incidental to other items of work.

34. Milwaukee County Transit System.

The Milwaukee County Transit System (MCTS) maintains multiple bus routes throughout the project corridor along W. Bluemound Road, W. Wisconsin Avenue, and N. Glenview Avenue. Notify MCTS at least ten (10) days prior to beginning work. The MCTS contact is Mr. Dave Ziarek, (414) 343-1764.

Invite MCTS to all coordination meetings between the contractor, the department, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations.

MCTS will remove their existing bus stop signs and shelters. Notify MCTS at least ten days in advance. MCTS will install new bus stop signs and shelters prior to the opening of traffic on the new roadway pavement. Notify MCTS at least ten days prior to opening new pavement to vehicular traffic.

The contractor shall coordinate with MCTS to provide temporary bus stops at locations determined by MCTS and approved by the engineer. The contractor shall provide a safe boarding zone that is clear of debris and ADA compliant at each temporary bus stop as shown in the construction details. Cost of labor and equipment necessary to place and remove the temporary bus stops shall be included in the contract unit price for Temporary Crosswalk and Bus Stop Access. MCTS will install temporary bus stop signs if notified at least ten days in advance.

35. Temporary Sidewalks and Driveways.

Construct and maintain, in satisfactory condition, temporary sidewalks and driveways at locations specified by the engineer. Construct temporary sidewalks and driveways of base aggregate dense 1 1/4 –inch to dimensions determined by the engineer.

Base aggregate for construction of the temporary sidewalks and driveways will be paid for under the item Base Aggregate Dense 1 1/4 –Inch. Cost of labor and equipment necessary to place and remove the temporary sidewalks and driveways shall be included in the contract unit price for Base Aggregate Dense 1 1/4 –Inch.

36. Excavation Common.

Add the following to standard spec 205.2.2:

Remove wood and concrete obstructions under the Excavation Common bid item. Review geotechnical investigation information and soil borings. Removal and disposal of wood and concrete obstructions are incidental to the item, Excavation Common.

37. QMP Subgrade.

A Description

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

- All roadway and railway embankment in the contract.

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

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:
http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm

B Materials

B.1 Quality Control Plan

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

Do not change the quality control plan without the review of both the engineer and UPRR engineer. Update the plan with changes as they become effective. Provide a current copy of the plan to both the engineer and the UPRR engineer and post in the contractor's laboratory 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 process that will be used, and action time frames.
3. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
4. Location of the QC laboratory, retained sample storage, and control charts and other documentation.
5. A summary of the locations and calculated quantities to be tested under this provision.
6. An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

B.2 Personnel

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

B.3 Laboratory

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

Materials Laboratory
3502 Kinsman Boulevard
Madison, Wisconsin 53704-2583
Telephone: (608) 246-7938
http://www.dot.state.wi.us/business/engrserv/lab-qualification.htm

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B.4 Equipment

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

Furnish nuclear gauges from the department's approved product list at http://www.atwoodsystems.com/materials. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge. Nuclear density gauge calibration verification is required daily when earthwork construction operations require testing under this special provision article. This calibration verification shall be performed using the department's "Validator" apparatus which is located at the Zoo Interchange Construction Field Office: 2424 S. 102nd St., West Allis, Wisconsin 53227. The contractor must establish a standard gauge reading for the "Validator" using the ten test average method. The source emitter depth for calibration verification, in the direct transmission mode, will be determined by the engineer. This procedure will establish the "Validator" apparatus, as the contractor's project reference site.

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

B.5 Soil Source Study

Conduct and submit a soil source study before beginning of grading operations. Ensure that this study identifies each distinct soil type on the project within the top 15 feet of cut areas and all borrow material. Provide the in-bank natural moisture content for each soil. Develop moisture-density curves for each identified soil type by utilizing AASHTO T 99, or ASTM D1557 for railway embankments, with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65. Determine the maximum density and corresponding optimum moisture level for each soil type. Develop a site-specific family of Proctor curves for this contract from the completed soil source study and submit to both the engineer and the UPRR engineer for review and acceptance.

Perform characterization tests on each of the soil types selected for the soil source study. The tests for roadway (and railway) include AASHTO T 89 (ASTM D4318), AASHTO T 90 (ASTM D4318), AASHTO T 27 (ASTM C136), and AASHTO T 11 (ASTM C117). Classify each soil type selected according to the AASHTO soil classification system based on the characterization tests. Do not begin grading operations until both the engineer and the UPRR engineer accept the soil source study.

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

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

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

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

B.6 Quality Control Documentation

B.6.1 Control Charts

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

1. Embankment portions of the project, except within 200 feet of bridge abutments.
2. Embankment within 200 feet of bridge abutments.
3. Subgrade cut portions of the project.
4. Embankment in pipe culvert trenches.
5. Structure and granular backfill placed at bridge abutments.
6. Embankment carrying UPRR track sections.

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

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

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

B.6.2 Records

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

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

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

B.7 Contractor Testing

B.7.1 General

Have a grading technician certified under HTCP at level I present during all subgrade preparation, fill placement, compaction, and testing. Have a nuclear density technician certified under HTCP at level I perform the testing for field density and field moisture content. During subgrade construction, use sampling and testing methods identified in the CMM to perform the required tests at randomly selected locations at the indicated minimum frequency for each grading area.

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

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically.

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

B.7.2 Field Density and Field Moisture

Perform the field density and field moisture tests using the nuclear density meter method according to AASHTO T 310, or ASTM D1556 for railway embankments. Ensure that each field density test material is related to one of the specific soil types identified in the soil source study in determining the percent compaction. Use textural identification as the primary method of establishing this relationship. Utilize the representative samples retained from the soil source study when performing the textural identification. Use a coarse particle correction according to AASHTO T 224, or ASTM D4718 for railway embankments.

If field density and field moisture tests cannot be performed by the nuclear density method due to a high percentage of oversized particles as determined according to AASHTO T 99, or ASTM D1557 for railway embankments, observe the placement of the embankment and document the basis of acceptance. Document daily quantities of untested embankment and locations where untested embankment is placed, and keep a

cumulative quantity of untested embankment material for the duration of the project. Include the daily documentation and a summary of the cumulative quantity of untested embankment material with the project records.

B.7.3 One-Point Proctor

Obtain a representative sample of the fill material and test according to AASHTO T 272, or ASTM D1298 for railway embankments. Compare the sample to the curves developed in the soils source study to determine the maximum dry density and optimum moisture. Use the appendix for AASHTO T 272, or ASTM D1298 for railway embankments as a guide in this determination.

B.7.4 Testing Frequency

B.7.4.1 Subgrade Embankment

Perform the required tests at the following frequencies:

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

B.7.4.2 Subgrade Embankment Within 200 Feet of Bridge Abutments

Perform the required tests at the following frequencies:

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

B.7.4.3 Subgrade Cut

Perform the required tests at the following frequencies:

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

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

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

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

B.7.4.5 Structure and Granular Backfill at Bridge Abutments

Perform the required tests at the following minimum frequencies:

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

B.7.4.6 Embankment carrying UPRR track sections

Perform the required tests at the following minimum frequencies:

Test	Minimum Frequency
Field Density and Moisture (ASTM D1556)	One test per 2000 square feet per lift of embankment fill.
One-Point Proctor (ASTM D1298)	One per 3,000 cubic yards or when a change in fill material occurs.

B.7.5 Compaction Zones

B.7.5.1 Subgrade Embankment

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

B.7.5.2 Subgrade Embankment Within 200 Feet of Bridge Abutments

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

B.7.5.3 Subgrade Cut

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

B.7.5.4 Subgrade Embankment in Culvert Pipe Trenches

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

B.7.5.5 Structure and Granular Backfill at Bridge Abutments
All backfill material placed adjacent to bridge abutments is subject to the quality controls for upper zone material.

B.7.5.6 Subgrade Embankment within 20 Feet of Structures
All embankment material placed within 20 feet of structures is subject to the quality controls for upper zone material.

B.7.5.7 Embankment Carrying UPRR Track Sections
All embankment carrying UPRR track sections is subject to the quality controls for upper zone material.

B.7.6 Control Limits
B.7.6.1 Field Density
The lower control limit for field density measurements in the upper zone is a minimum of 95.0% of the maximum dry density as determined by AASHTO T 99, or ASTM D1557 for railway embankments, or T 272, or ASTM D1298 for railway embankments, for the 4-point running average and a minimum of 92.0% of the maximum dry density for any individual test.

The lower control limit for field density measurements in the lower zone is a minimum of 93.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 90.0% of the maximum dry density for any individual test. The lower zone lower control limit for field density measurements is a minimum of 93.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 92.0% of the maximum dry density for any individual test.

B.7.6.2 Field Moisture Content
The upper control limit for the field moisture content in the upper and lower zones is 105.0% of the optimum moisture as determined by AASHTO T 99, or ASTM D1557 for railway embankments, or T 272, or ASTM D1298 for railway embankments, for the 4-point running average.

The lower control limit for the field moisture content in the upper and lower zones is 85.0% of the determined optimum moisture for the 4-point running average. There is no lower control limit for the field moisture of material having less than 5% passing the No. 200 sieve.

B.7.7 Corrective Action
Notify the engineer if an individual field density test falls below the individual test control limit. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer, to improve the density of the subgrade material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

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

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

B.8 Department Testing

B.8.1 General

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

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

B.8.2 Verification Testing

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

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

The department will perform verification testing as follows:

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

2. The department will test the first split sample obtained by the contractor for the one-point Proctor. The engineer may select any contractor-retained sample for verification testing.
3. The department will conduct at least one verification test for field density and field moisture per 30,000 cubic yards.

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

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, the engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's sampling and testing procedures and equipment. Both parties will document all investigative work.

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

B.8.3 Independent Assurance Testing

Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department's independent assurance program, which may include one or more of the following:

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.

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

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

B.9 Dispute Resolution

The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel, including the UPRR engineer if applicable. The department and contractor may review the data, examine data reduction

and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

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

B.10 Acceptance

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

C (Vacant)

D (Vacant)

E Payment

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

38. QMP Base Aggregate.

A Description

A.1 General

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

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

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

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

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

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

A.2 Contractor Testing for Small Quantities

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

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

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

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

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

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

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

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

B Materials

B.1 Quality Control Plan

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

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

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

B.2 Personnel

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

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

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

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

B.3 Laboratory

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

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

B.4 Quality Control Documentation

B.4.1 General

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

B.4.2 Records

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

B.4.3 Control Charts

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

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

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

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

B.5 Contractor Testing

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

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

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

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

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

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

B.6 Test Methods

B.6.1 Gradation

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

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

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

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

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

B.6.2 Fracture

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

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

B.6.3 Liquid Limit and Plasticity

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

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

B.7 Corrective Action

B.7.1 General

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

B.7.2 Placement Corrective Action

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

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

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

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

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

B.8 Department Testing

B.8.1 General

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

B.8.2 Verification Testing

B.8.2.1 General

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

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

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

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

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

B.8.3 Independent Assurance

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

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

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

B.9 Dispute Resolution

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

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

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

C (Vacant)

D (Vacant)

E Payment

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

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

301-010 (20100709)

39. Asphaltic Surface Temporary.

Replace standard spec 465.2 (1) with the following:

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

40. Maintaining Drainage.

Maintain drainage at and through worksite during construction in accordance to standard spec 107.22, 204, and 520.

Use existing storm sewer, culvert pipes or existing drainage channels to maintain existing surface and pipe drainage. Pumps may be required to drain the surface and/or pipe/structure discharges during construction. Costs for pumping is considered incidental to storm sewer construction.

41. Concrete Maturity Testing.

A Description

This special provision requires using concrete maturity testing to determine strength for project control of concrete pavement, falsework removal, and structural concrete under the designated subsections of the standard specifications as follows:

Duration of the curing period	415.3.12
Duration of the cold weather protection period	415.3.13
Opening to service	415.3.15
Removing falsework	502.3.4.2
Duration of the required curing period	502.3.8
Duration of the cold weather protection period	502.3.9
Opening to service	502.3.10.1

The requirement for determining strength by the concrete maturity testing method supersedes all provisions for strength determination by other methods or provisions based on equivalent days within those designated subsections. The concrete maturity testing requirement also applies to all other provisions referencing strength determination under these designated subsections.

B Materials

Provide a maturity testing system that uses data-encrypted sensor devices permanently embedded in the field-placed concrete. Data-encrypted sensors have a chip that records both temperature and time information that can be downloaded to a reading device not permanently attached to those sensors.

Provide the department with a maturity reading device for each maturity testing system utilized on the project. Devices provided for the department use will become department property under the contract.

C Construction

Develop a strength/maturity relationship for each concrete mix design used under the contract. Base that relationship on strength results of cylinders from pavement, appurtenant construction, ancillary concrete, or structural masonry units incorporated into the work and using those same mixes. Submit the maturity test results to the engineer for approval before proceeding with the next pour using that mix. Develop a new strength/maturity relationship every time the mix changes, when average daily temperature changes by 30º F (17º C) or more, or if engineer verification cylinder strength varies more than 10 percent from the required opening strength when tested at the calibrated opening maturity.

Conform to the department's procedure for developing the strength/maturity relationship, field calibration of the resulting curve, and for all maturity testing. Use a mix-specific datum temperature per Annex A1 of ASTM C1074. Develop data points for the strength/maturity relationship up to 120 percent of the highest required opening strength for each mix design.

For mainline concrete pavement placements, place two probes at the beginning of the day's placement and two probes at the end of the day's placement. Place at least one sensor for each 100 cubic yards (76 m^3) of concrete placed under non-pavement bid items. Place additional probes as the engineer directs at no additional cost to the department. The resulting concrete maturity test data, after engineer verification, will apply to concrete on the same project conforming to the following:

1. The same mix design as the test location.
2. Cured under conditions similar to or move favorable than that of the test location.
3. Placed on or before the time the test location was placed.

Each work week provide a set of 3 verification cylinders to the engineer for each strength/maturity field calibration curve currently in use on the project. The engineer will designate the sampling location for the verification cylinders. Provide 2 cylinders for compressive strength testing and one with a data-encrypted sensor embedded in its center for maturity evaluation. Cast and cure these cylinders on-site as the engineer directs and conforming to the requirements of ASTM 31 for field curing. Deliver them to the engineer promptly after attaining 50 percent of their opening maturity so the engineer can perform verification testing as closely as possible to the opening maturity level.

D (Vacant)

E Payment
No additional payment will be made by the department for maturity testing

42. Storm Sewer Backfill.

Replace standard spec 607.3.5(1) with the following:

(1) Backfill all trenches and excavations, not occupied by slurry backfill, immediately after completing sewer construction as shown in the storm sewer backfill construction details of the plans. Native material shall be selected material from excavation that is free from large lumps, clods, or rock. All other backfill material referenced in the storm sewer backfill construction details shall conform to the standard specification section 209.

Replace standard spec 607.5.1(1) with the following:

(1) Payment for the Storm Sewer Pipe bid items is full compensation for providing all materials, including all special Y's, mitered sections, elbows and connections required; for excavating and wasting excess material, except rock excavation; for providing and removing sheeting and shoring; for forming foundation; for laying pipe; for sealing joints and making connections to new or existing features; for providing granular backfill material, native material, including bedding material; for backfilling; for cleaning out; and absent the pertinent contract bid items, for restoring the work site.

43. Manhole and Inlet, and Catch Basin Adjusting Rings.

Complete adjustment of manhole, catch basin, and inlet structures in accordance to standard spec 611 and herein provided:

Adjustments of 4-inches or more in height shall be constructed using concrete grade rings. Grade rings less than 2-inches in thickness are not allowed.

44. Storm Sewer.

General
Contractor is responsible to review the Plans, Specifications, and existing site conditions prior to bidding to ascertain the extent of the work requiring ground support systems.

Contractor is to ensure the awareness of the risk involved in constructing sewers in close proximity to existing utilities, structures, and live traffic lanes.

Contractor is responsible for the design, furnishing of materials, installation, monitoring and removal of ground support systems

Storm Sewer Pipe
The costs for bedding material are included in the contract unit price for each sewer size and no further payment will be made.

Provide rubber gasketed joints and backfill slurry as shown on the plans for all storm sewer pipes.

Rubber Gasket Joint
Place rubber gasket over the spigot end or tongue of the entering pipe. Clean the gasket and the ends of the pipe from sand and gravel. Immediately before making the joint, lubricate the outside of the gasket and the inside of the bell or groove of the last pipe with an approved vegetable lubricant. Place the spigot or tongue of the pipe being laid with the gasket in place into the bell or groove end of the previously laid pipe. Set pipe carefully to line and grade, and push or jack home. The engineer can order the use of a jack or "come-along" if deemed necessary to ensure that the joints are completely tight.

The costs for rubber gasket joints are included in the contract unit price for each sewer size and no further payment will be made.

Storm Sewer Structures
Use a Grade "A" concrete collar for final adjustment of manhole cover.

Use construction methods that conform to the requirements set forth in standard spec 611.3.3.

The costs for Grade "A" concrete adjustments is included in the contract unit price for each drainage structure and no further payment will be made

Conform to storm sewer concrete collar detail for all storm sewer pipes to structure connections.

Provide a butyl rubber gasket or butyl rubber rope for joints of precast reinforced concrete manhole sections. Butyl Rubber gasket joint used for manholes conforms to 8.41.6 of the Standard Specification for Sewer and Water Construction in Wisconsin, 6th Edition. The costs for butyl rubber joint are included in the contract unit price for each manhole and no further payment will be made

Utilities
Supporting utilities in storm sewer trench is considered incidental to storm sewer pipe.

45. Traffic Signals, General.

All work shall be in accordance to the plans and the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, 2013 Edition, and these special provisions.

City of Milwaukee/State Owned Traffic Signals
Project 1060-33-71
The existing traffic signal at the intersection of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue) is owned and operated by the City of Milwaukee. The proposed traffic signal will be owned and operated by the department. The City of Milwaukee will maintain the existing traffic signal until the contractor furnished and installed temporary traffic signal is activated. Assume all traffic signal responsibilities after the temporary traffic signal is operational. The state will assume ownership of the permanent traffic signal upon acceptance of the work.

Work under this item shall consist of furnishing and installing all materials, except for the traffic signal cabinet, for the department owned traffic signal at the intersection of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue). The contractor will be responsible for installing the traffic signal cabinet, but the cabinet itself will be supplied by a third party vendor as detailed in the *Install Vendor Supplied Traffic Signal Cabinet* article.

Project 1060-33-90
The existing traffic signal at the intersection of STH 181 (S. 84th Street) and W. Dana Court is owned and operated by the City of Milwaukee. The proposed traffic signal will be owned and operated by the department. The City of Milwaukee will maintain the existing traffic signal until the permanent traffic signal is activated. The state will assume ownership of the permanent traffic signal upon acceptance of the work.

Work under this item shall consist of furnishing and installing all materials, except for the traffic signal cabinet, for the department owned traffic signal at the intersection of STH 181 (S. 84th Street) and W. Dana Court. The contractor will be responsible for installing the traffic signal cabinet, but the cabinet itself will be supplied by a third party vendor as detailed in the *Install Vendor Supplied Traffic Signal Cabinet* article.

City of Wauwatosa Owned Traffic Signals
Project 1060-33-71
Work under this item shall consist of furnishing and installing all materials, except for the traffic signal cabinet, for the City of Wauwatosa owned traffic signal at the intersection of W. Wisconsin Avenue and N. Glenview Avenue in the City of Wauwatosa, WI. The contractor will be responsible for installing the traffic signal cabinet, but the cabinet itself will be supplied by a third party vendor as detailed in the *Install Vendor Supplied Municipal Traffic Signal Cabinet* article. The installation includes the construction of underground and above ground equipment. Obtain the necessary electrical permits from the City of Wauwatosa Building Department prior to beginning the work. Pay any fines, penalties, damage done to property, etc., billed by the City of Wauwatosa. Request the electrical service relocation from the power company. Stake the proposed locations of traffic signal items and notify the City of Wauwatosa Public Works Department at (414) 471-8422 at least ten days prior to starting work so that the locations of the proposed facilities can be approved by the City of Wauwatosa. Any field changes regarding the location of the signal poles, pull boxes, etc. shall be approved by the City of Wauwatosa.

46. Signs Type I and II.

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

Modify standard spec 637.2.4 with the following:

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

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

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

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

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

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

Append standard spec 637.3.2.1(3) with the following:

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

Append standard spec 637.3.3.2(2) with the following:

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

Append standard spec 637.3.3.3(3) with the following:

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

47. Field Facilities.

Replace standard spec 642 with the following:

The department has procured its own Field Facilities located at 2424 S. 102nd Street; West Allis, WI 53227.

48. Roadway Lighting Systems.

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

Append standard spec 651.3.1 with the following:

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

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

Append standard spec 651.5 with the following:

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

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

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

Append standard spec 652.3.1 with the following:

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

Append standard spec 652.3.1.2 with the following:

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

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

Append standard spec 652.3.1.4 with the following:

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

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

Wet location splices may be allowed under the following circumstances:
Where shown in the plans.
Where the best available location to connect new work to existing work below grade.

Make wet location splices ("wet splice") with an approved epoxy kit, 3M ScotchCast or equal. The Cost of wet location splices is incidental to the cost of the wiring.

Append standard spec 655.3.7(4) with the following:

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

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

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

Append standard spec 657.2.1(2) with the following:

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

Modify standard spec 657.3.1(3) with the following:

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

49. General Requirements for Electrical Work.

Append standard spec 651.3.3 (3) with the following:

Notify the department's Electrical Field Unit at (414) 266-1170 and the City of Wauwatosa Public Works Department at (414) 471-8422 to coordinate the inspection. The department's Region Electrical personnel will perform the inspection for the state owned and maintained traffic signals and the City of Wauwatosa will perform the inspection for the municipal owned traffic signal.

50. Electrical Service Meter Breaker Pedestal.

Append standard spec 656.2.3 with the following:

City of Milwaukee/State Owned Traffic Signals
The department will be responsible for the electric service installation request for any department maintained facility. Notify the maintaining authority if the signal is not state maintained that it is their responsibility to arrange for the electrical service installation.

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

City of Wauwatosa Owned Traffic Signal
Arrange the electrical service installation in the name of City of Wauwatosa.

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

Append standard spec 656.3.4 with the following:

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

Append standard spec 656.5(3) with the following:

Payment for grading the service trench, replacing topsoil, fertilizer, seed, and mulch will be incidental to this work unless the bid items are in the contract and then they will be paid for at the contract price.

51. Pedestrian Signal Face 16-Inch.

Append standard spec 658.2.3.2(1) with the following:

Furnish 16 inch LED ready pedestrian signal housing, drilled for top/bottom pipe mount with the ability to rotate 270 degrees on poly mounting bracket.

Append standard spec 658.3.4 with the following:

Connect all ungrounded conductors with wire nuts in the appropriate sections of the signal heads. Connect the neutral conductors to the terminal strip. Be certain to twist wires prior to installing the wire nuts. All wire nuts must be installed facing up to prevent the entrance of water.

52. Pedestrian Push Buttons.

Append standard spec 658.2.5 with the following:

Furnish vandal resistant, pressure activated, pedestrian push buttons, with die cast body type, in unfinished aluminum or yellow. Button constructed shall be constructed of stainless steel, with a Piezo driven solid state switch, momentary LED display and beeper that sounds simultaneously with button push.

Furnish low profile, unfinished cast aluminum, vandal resistant, and flush mounting pole mount.

Place a Size 1, Type H reflective (R10-3EL, R, D) sign sticker (per state sign plate), message series – B, directly above each push button. Include a directional arrow or arrows on the sign as the plans show.

53. Traffic Signal Faces.

Append standard spec 658.3.2 with the following:

Connect all ungrounded conductors with wire nuts in the appropriate sections of the signal heads. Connect the neutral conductors to the terminal strip. Be certain to twist wires prior to installing the wire nuts. All wire nuts must be installed facing up to prevent the entrance of water.

54. Temporary Traffic Signals for Intersections.

This special provision applies only to Project 1060-33-71.

Append standard spec 661.2.1 with the following:

(1) Furnish all temporary traffic signal equipment as shown on the plan. The signal controller shall be capable of operating with the video camera detection system and Emergency Vehicle Preemption (EVP) system. All wood poles shall be plumb and level. Provide primary and secondary temporary traffic signal contact names and phone numbers who will be responsible for implementing temporary traffic signal timing changes. The department may request traffic signal timing changes to an approved incident timing plan during the project. Implement any approved incident timing plan immediately upon notification of the change and immediately upon notification of switching the timing plan back to normal operation. Record the times of operation of the incident timing and subsequent return to normal operation and provide this information to the department.

(3) The department has initiated the installation of the temporary electrical service with the electrical utility at the intersections of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue) to expedite the process. Contact Denice Lucente at (262) 548-6717 or Justin Effinger at (262) 548-5676 to coordinate the temporary electrical service. The

department will pay for all installation and energy costs associated with the operation of the temporary traffic signal. Contact the electrical utility and arrange timely installation of the temporary service.

(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 and according to the manufacturer's recommendations at a minimum 30-foot mounting height. Install power cable and signal cabinet equipment. Aim the video cameras to provide detection at the location shown on the plans and make the video detector system fully operational.

(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 engineer before setting the zone.

(6) The video camera shall be mounted on a wooden pole. 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) Place the pole in the ground to no less than 1/5 of the pole's length as the plans show. 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 every other week inspections with the engineer to check the height of the span wire above the roadways to ensure that the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway. Make all height adjustments within 1-hour of an inspection indicating that adjustments are required. Notify the engineer in writing upon completion of all necessary adjustments. Maintain a

written log to properly document the date of each every other week inspection, the heights above the roadway, the roadway clearance after adjustments have been made and acceptance by the engineer. Provide all documentation related to the every other week span wire height checks as well as all records related to maintenance performed on the temporary traffic signal installations to the engineer..

(4) Maintain all temporary vehicle detection zones as the plans show or as the engineer directs. The temporary vehicle detection zones shall be set near the vicinity and 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 ns with the following:

(2) Payment for the Temporary Traffic Signals for Intersections bid item is full compensation for providing, operating, maintaining, and repairing the complete temporary installation; and for removal. Payment also includes the following:

1. Furnishing and installing the replacement equipment.
2. The cost of delivery and pick-up of the cabinet assemblies.
3. Removal of service and site restoration.

Payment is full compensation for drilling holes; furnishing and installing all materials, including bricks, and coarse aggregate; for excavation, bedding, and backfilling, including any sand or other required materials; furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; for making inspections; for 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.

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

Standard spec 106.2 – Supply Source and Quality
Supplement standard spec 106.2 with the following:

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

Department-furnished Items
2070 Controller Ramp Meter Processor Assembly
Dome Camera
30-Foot Camera Pole
Microwave Vehicle Detectors
Microwave Vehicle Detectors Loop Emulation Card
Ethernet Video Encoder
Ethernet Switch
ITS Field Cabinet

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

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

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

Standard spec 106.3 – Approval of Materials
Supplement standard spec 106.3 with the following:

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

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

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

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

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

56. Intelligent Transportation Systems – General Requirements.

A Description

A.1 General

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

Unusual aspects of this project include:

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

A.2 Surge Protection

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

B Materials

B.1 General

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

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

B.2 Outdoor Equipment

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

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

B.3 Custom Equipment

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

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

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

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

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

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

B.3 Environmental Conditions

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

1. **Vibration and Shock:** Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. **Duty Cycle:** Continuous
3. **Electromagnetic Radiation:** The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. **Electrical Power:**
    a. **Operating power:** The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.
    b. **High frequency interference:** The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.
    c. **Line voltage transients:** The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.

5. **Temperature and Humidity:**
    a. **Field equipment:** Equipment in the field shall meet the temperature and humidity requirements of NEMA Standard TS-2. Liquid crystal displays shall be undamaged by temperatures as high as 165 degrees F, and shall produce a usable display at temperatures up to 120 degrees F.
    b. **Equipment in Controlled Environments** shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

B.4 Patch Cables and Wiring

All cables and wiring between devices installed in a single cabinet, or in separate cabinets sharing a single concrete base, will be considered incidental to the installation of the devices and no separate payment will be made for them. It is anticipated that this will include fiber optic patch cables between termination panels and Ethernet switches, 10 / 100 MBPS Ethernet cables, RS-232 cables between individual devices and terminal servers, and power cables between individual devices and power sources within the cabinets.

B.5 Surge Protection

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

- The protectors shall suppress a peak surge current of up to 10k amps.
- The protectors shall have a response time less than one nanosecond.
- The protector shall clamp the voltage between the two wires at a voltage that is no more than twice the peak signal voltage, and clamp the voltage between each wire and ground at 50 volts.
- The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.
- The protector shall also contain a resettable fuse (PTC) to protect against excessive current.
- There shall be no more than two pairs per protector.
- It shall be possible to replace the protector without using tools.

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

C Construction

C.1 Thread Protection

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

C.2 Cable Installation

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

C.3 Wiring

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

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

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

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

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

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

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

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

C.4 System Operations

If the contractor’s operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not

restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

C.5 Surge Protection
Arrange the equipment and cabinet wiring to minimize the distance between each conductor's point of entry and its protector. Locate the protector as far as possible from electronic equipment. Ensure that all wiring between the surge protectors and the point of entry is free from sharp bends.

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

E Payment
No separate payment will be made for the work described in this article. All work described in this article shall be included under the ITS items in the contract.
670-010 (20100709)

57. Intelligent Transportation Systems – Conduit.

Supplement standard spec 671.2 with the following:

671.2.4 Locate Wire
Furnish and install a No. 14 AWG stranded copper wire for future locate purposes through each conduit run. Connect the locate wire by using a wire nut at each pull box, manhole, or other access point. Alternatively, use a single wire through the access points. All material furnished under this item shall meet the requirements of standard spec 655.
671-005 (20100630)

58. Intelligent Transportation Systems – Signal Assemblies.

Modify standard spec section 676 with the following:

676.2.4 Signal Heads

(1) Furnish the housing, visor, lenses, LED modules, and other components consisting of an LED signal head assembly meeting the requirements of ITE VTCSH-LED 2005

(5) Illuminate each lens independently of any other lens with separate LED illumination modules.

(6) Not Applicable

(7) Not Applicable

(8) Not Applicable

59. QMP Concrete Pavement Special Requirements.

This is a specialized QMP Concrete Pavement specification modified for IH-94 North-South corridor projects.

Supplement sections 701, 710, 715 of the standard specifications with the following:

A Description

A.1 General

Conform to standard spec 320, 415, 416, and 501 as modified in this special provision. Apply this special provision only to the following bid items:

320.0100 - 0199 Concrete Base (inch)
320.0300 - 0399 Concrete Base HES (inch)
415.0060 - 0199 Concrete Pavement (inch)
415.1080 - 1199 Concrete Pavement HES (inch)
415.0410 Concrete Pavement Approach Slab
415.1410 Concrete Pavement Approach Slab HES
415.0310 Concrete Alley
415.1310 Concrete Alley HES
415.0210 Concrete Pavement Gaps

A.2 Contractor Testing for Small Quantities

The requirements under this special provision apply equally to a small quantity for a particular mix design and placement method, except as follows:

1. A full quality control plan need not be submitted but provide an organizational chart to the engineer including names, telephone numbers and current certifications of all persons involved in the quality control program.
2. The engineer may accept aggregate gradation based upon satisfactory records of previous testing.
3. No concrete control charts are required. Submit test results to the engineer each day as they become available. Assure that all properties are within the limits specified in the standard specifications for each sublot tested.
4. The department will not adjust the pay for sublots with conforming compressive strength.

B Materials

B.1 Quality Control Plan

Supplement standard spec 701.2.2 and 715.1.1.4 with the following:

Ensure that the plan provides the following elements:

1. The locations of the QC laboratories for mix design, aggregate testing, cylinder curing, concrete testing, and compressive strength testing.
2. The frequency of contractor quality control testing, if planning to perform more frequently than section B.5 specifies.
3. The format for control charts and sampling, testing, and pay adjustment data documentation, if different from the forms provided in the CMM 8.35.

B.2 Laboratory Certification
Supplement standard spec 701.2.4 with the following:

Obtain information on the Wisconsin laboratory qualification program from:

Materials Management Section
935 S. 60th Street
West Allis, Wisconsin 53214
Telephone: (414) 266-1156

B.3 Class I Concrete Mixes

B.3.1 General

For concrete base, use a grade B, B-FA, B-S, B-IS, or B-IP concrete mix conforming to standard spec 501.

Use clean, hard, durable crushed limestone with 100% fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

Use virgin aggregates only.

B.3.2 Contractor Concrete Mix Design

Delete standard spec 501.2.5.3.4, 501.2.5.4.4, 501.3.1.1.2, 501.3.2.1, 501.3.2.2, and 501.3.2.3. Delete the maximum limit for percent passing the No. 200 (75 μm) sieve from standard spec 501.2.5.3.1 and 501.2.5.4.2.

B.3.2.1 Pavements

Replace standard spec 715.2.3.1(2) and 715.2.3.1(3) with the following:

Provide minimum cement content of 565 pounds per cubic yard (335 kg/m^3). Portland cement may be partially replaced with fly ash at a replacement ratio of not less than one pound (kg) of fly ash per one pound (kg) of cement up to a maximum fly ash content of 30% of total cementitious material. Alternatively, slag may be used as a partial replacement for cement at a replacement ratio of not less than one pound (kg) of slag per one pound (kg) of cement up to a maximum slag content of 30% of the total cementitious material. Alternatively, A combination of fly ash and slag may be used up to a maximum combined fly ash and slag content of 30 percent. Ensure that fly ash conforms to standard spec 501.2.6 and slag conforms to standard spec 501.2.7.

The amount of deleterious substances shall not exceed the following percentages:

DELETERIOUS SUBSTANCE	PERCENT BY WEIGHT
Shale	1.0
Coal	1.0
Clay lumps	0.3
Soft fragments	3.0
Any combination of above	3.0
Thin or elongated pieces based on a 3:1 ratio	15.0
Materials passing the No. 200 (75 µm) sieve	1.5
Chert[1]	3.0

[1] Material classified lithologically as chert and having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of chert by dividing the weight of chert in the sample retained on a 3/8-inch (9.5 mm) sieve by the weight of the total sample.

B.3.2.2 Combined Aggregate Gradation

Replace standard spec 715.2.2(1) items 2 and 3 with the following:

2. The percent passing the 1 inch (25 mm) sieve is less than or equal to 95.
3. The percent passing the No. 4 (4.75 mm) sieve is less than or equal to 47.

B.4 Quality Control Program

B.4.1 Control Charts

Maintain control charts when required by the test reporting procedures. Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random, non-random, and engineer requested testing but only include the contractor's randomly selected QC test results in the 4-point running average. Other process control or informational tests on the control charts may be plotted, but do not include them in 4-point running averages.

Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable warning and control limits, the contractor's individual test results, the running average of the last 4 data points, and the engineer's verification and independent assurance test data points. Use the control charts as part of a process control system for identifying potential problems and assignable causes. Format control charts according to CMM 8.30.

Submit control charts to the engineer in a neat and orderly manner within 10 days after completing concrete production.

B.4.2 Documentation
Replace standard spec 701.2.6(3) with the following:

Submit original paper copy testing records to the engineer in a neat and orderly manner within 10 days after completing concrete production.

B.5 Contractor Testing
B.5.1 General
Supplement standard spec 701.3 with the following:

Ensure that all test results are available for the engineer's review at any time during normal working hours.

B.5.2 Aggregate Testing
B.5.2.1 General
Supplement standard spec 710.5.6.1 with the following:

Ensure that only results of randomly selected QC tests are included in the 4-point running average.

Use control limits for sieve sizes as identified in the project concrete mix report or, if the concrete mix report is not published at the time of testing, in the contractor's quality control plan. Gradation warning limits are inside the upper and lower control limit values by one percentage point for all sieves except as follows:

1. The upper warning limits for percent passing the No. 100 (150 μm) and No. 200 (75 μm) sieves are inside the control limit by 0.5 percent.
2. For sieves allowing 100 percent passing, there is no upper warning limit. For sieves with 0 percent passing, there is no lower warning limit.

Replace s standard spec 710.5.6.2(2) with the following:

Wash each sample of fine aggregate and the first 4 samples of each of the coarse aggregates. If the percent passing the No. 200 (75 μm) sieve for the combined gradation is less than the warning limit, wash at least every 10th sample of each of the coarse aggregates. If the percent passing the No. 200 (75 μm) sieve for the combined gradation is greater than or equal to the warning limit, wash each sample of the coarse aggregate until 4 consecutive tests are less than the warning limit.

B.5.2.2 Documentation
Maintain control charts at the laboratory for each aggregate stockpile. Maintain a chart for each control sieve for each material. Record contractor test results the same day tests are conducted.

B.5.2.3 Corrective Action

When the 4-point running average value approaches a warning limit, consider corrective action. Ensure that any corrective action is documented and becomes part of the project records.

Document whenever a 4-point running average exceeds the warning limits. When a second consecutive running average value exceeds the warning limits, take corrective action. Continue corrective action until 2 consecutive average points are within the warning limits.

Notify the engineer whenever an individual test value exceeds a control limit. Material is nonconforming when an individual test exceeds the control limit. The quantity of nonconforming material includes the material of the first test exceeding the control limit, continuing to but not including, the material from the first subsequent test that is within the control limits. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B.5.3 Aggregate Percent Passing the No. 200 Sieve

B.5.3.1 Sampling and Testing

Measure and record the percent passing the No. 200 (75 μm) sieve of both the fine and course aggregates when producing concrete pavement. Conduct tests according to AASHTO T 11 as modified by the department. Test at least one sample as early as it is practical each day and as mix or material conditions change. This testing frequency may be reduced, if the engineer approves, but maintain at least one test per 5 days of concrete production.

Document testing as specified in B.6.1, B.7.2.1, and B.7.2.2, by developing a combined gradation control chart for the percent passing the No. 200 (75 μm) sieve. Use the control limits defined in the concrete pavement mix report. Ensure that only results of QC tests are included in the 4-point running average.

B.5.3.2 Corrective Action

When an individual test approaches a warning limit, consider corrective action. Document corrective actions and include that documentation in the project records.

Notify the engineer if an individual test exceeds the warning limits. If a second consecutive individual test exceeds the warning limits, the engineer will assist in determining the course of corrective action. If the corrective action improves the property in question such that additional individual tests are within the warning limits, production may continue. If the correction does not improve the property, and new individual tests stay in the warning band, repeat the steps outlined here in B.7.3.2(2) starting with notifying the engineer.

Notify the engineer whenever an individual test value exceeds a control limit. Material is nonconforming when an individual test exceeds the control limit. The quantity of nonconforming material includes the material of the first test exceeding the control limit, continuing to but not including, the material from the first subsequent test that is within the control limits. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B.5.4 Lot and Sublot Definition
Supplement s standard spec 715.3.1.2.1 with the following:

Ensure that no single lot contains concrete of more than one mix design, or more than one placement method, except for mainline pavement gaps.

B.5.4.1 Lots by Lane-Feet
Supplement standard spec 715.3.1.2.2 with the following:

Lots and sublots may include concrete from more than one day of paving.

A sublot is 350 linear feet for 3-lane paving width or 2-lane plus shoulder.

Sublots at either end of a paving pass may be greater than 1000 lane-feet in size to accommodate the actual project length and staging requirements. For ease of layout, begin the first sublot at the first even station of the project. Place the resulting partial quantity into the first full sublot.

Document the locations and quantities of integral shoulders, and identify the travel lane sublot tests used for acceptance. For a shoulder pavement placed in a separate paving pass, designate separate lots and sublots.

Ancillary concrete placed integrally with a pavement may be accepted using the tests from the pavement sublot. Document the locations and quantities of integral concrete, and identify the pavement sublot tests used for acceptance.

B.5.4.2 Non-Mainline Surfaces
Non-mainline surfaces shall be defined as all concrete surfaces under this special provision, which are not mainline travel lanes or mainline shoulders.

Lots and sublots may include concrete from more than one day of paving.

A lot consists of a minimum of 4 sublots and a maximum of 8 sublots.

All sublots within a lot shall have the same approximate size.

A sublot is a maximum of 250 cubic yards of concrete.

B.5.5 Strength Evaluation

B.5.5.1 General

Supplement standard spec 715.3.2.1(1) with the following:

Include tests of concrete base and high early strength concrete for all other QC testing, except no 28-day cylinders are required for concrete base or for high early strength concrete.

B.5.5.2 Removal and Replacement

B.5.5.2.1 Pavement

Replace standard spec 715.3.2.2.1 with the following:

If a sublot strength is less than 3000 psi (17.2 MPa), the department may direct that sublot to be cored to determine its structural adequacy and whether to direct removal. Cut and test cores according to AASHTO T 24 as and where the engineer directs. Have an HTCP certified PCC technician I perform or observe the coring. Bear all coring and testing costs, fill all core holes with an approved grout, and provide traffic control during coring at no cost to the department.

The sublot pavement is conforming if the compressive strengths of all cores from the sublot are 3000 psi (17.2 MPa) or greater or the engineer does not require coring.

The sublot pavement is nonconforming if the compressive strengths of any core from the sublot is less than 3000 psi (17.2 MPa). The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B.5.6 Air Content

Supplement standard spec 710.5.3 with the following:

The lower warning limit for air content is 0.5 percent above the lower control limit. There is no upper warning limit.

B.5.6.1 Documentation

Maintain a control chart at a fixed location on the project site. Ensure that all test results are recorded and become part of the project records. Chart all results on the same day tests are conducted. Only plot results of samples selected randomly in the 4-point running average.

B.5.6.2 Corrective Action

If an individual air test is between the lower warning limit and lower control limit, double the air content test frequency to 2 tests per compressive strength sublot. Perform one of these tests from the same concrete sample used for the QC strength cylinders. Select the second sample randomly from the half of the sublot not used for the QC strength cylinders. Determine both random test locations within a sublot before paving that sublot.

Continue testing at increased frequency until an individual test point is above the lower warning limit and below the upper control limit.

When the 4-point running average value trend is towards the lower warning limit or the upper control limit, consider corrective action.

Notify the engineer if a 4-point running average is less than the lower warning limit. If a second consecutive running average is below the warning limit, the engineer will assist in determining the course of corrective action. If the corrective action improves the property in question such that the new running average, after four additional individual tests, is between the lower warning limit and upper control limit, production may continue. If the new running average is below the lower warning limit, repeat the steps outlined here in B.7.5.2(3) starting with notifying the engineer.

If an individual air test is outside the control limits, notify the engineer, and perform additional air tests as often as it is practical on subsequent loads until the air content is inside the control limits. The material is nonconforming when an individual test exceeds the control limit. Material from the load with the first test exceeding the control limit, continuing to but not including the load with the first subsequent test within the control limits, is nonconforming. The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B.6 Department Testing

B.6.1 Verification Testing

Supplement standard spec 701.4.2 with the following:

The department will perform verification testing as follows:

	Testing Frequency Guide[1]	Sampling Material and Location	Test Method	Alternate Test Methods
Air content	1 per lot	Plastic concrete, ahead or behind[2] the paver	AASHTO T 152 as modified	Hardened air content testing[2] after construction
28-day compressive strength	1 per 5 lots	Cylinders	AASHTO T 22, T 23 and T 141 as modified	Random cores[2] after construction

[1] The engineer may increase the frequency at start-up or as necessary to validate the quality of the materials. The engineer may reduce the frequency based on a history of satisfactory contractor or material performance.

[2] Evaluation of test results shall account for systematic differences in testing methods or sampling locations.

The department will conduct verification testing for pavement thickness as specified in standard spec 415.3.16.

Plot verification tests on the contractor's quality control charts as specified in B.4.1. Do not include verification tests in the 4-point running average.

B.6.2 Independent Assurance Testing
Supplement standard spec 701.4.3 with the following:

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

B.7 Dispute Resolution
The engineer and contractor shall make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

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

B.8 Acceptance
The department will accept concrete pavement based on the contractor QC tests unless it is shown through the verification or the dispute resolution process that the contractor's tests are in error.

C (Vacant)

D (Vacant)

E Payment
E.1 General
Replace standard spec 715.5.1(4) with the following:

The department will adjust pay for each lot using percent within limits (PWL) of the 28-day sublot average strengths for that lot. The department will measure PWL relative to the lower specification limit of 4500 psi.

E.2 Pavements
Replace standard spec 715.5.2(1) through 715.5.2(3) with the following:

The department will adjust pay for each lot using equation "QMP 3.02" as follows:

Percent Within Limits (PWL)	**Pay Adjustment***[1]* (dollars per square yard)
≥ 85 to 100	0
≥ 50 to < 85	(1.5/55 x PWL) – (127.5/55)
< 50	-1.5

[1] For lots with less than 4 sublots, the department will assess a disincentive based on the individual sublot average strengths. The department will reduce pay for sublots with an average strength below 4500 psi by $1.50 per square yard.

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

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

B (Vacant)

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

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

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

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

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

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

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

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

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

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

61. Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S.

A Description
A.1 General
This special provision describes excavating, loading, hauling, and disposing of petroleum contaminated soil at a DNR licensed facility. The closest DNR licensed landfill facilities are:

Waste Management Orchard Ridge Landfill
N96W13503 County Line Road
Menomonee Falls, WI 53051
(262) 532-6200

Veolia Emerald Park Landfill
W124S10629 South 124th Street
Muskego, WI 53150
(414) 529-1360

Perform this work in accordance to standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

A.2 Notice to the Contractor – Contaminated Soil and Groundwater Location The department and others completed testing for soil and groundwater contamination for locations within this project where excavation is required. Testing indicated that petroleum-contaminated soil and groundwater is present at the following locations as shown on the plans:

- N. Glenview Ave. Station 73+50 to 75+50, from project limits left to project limits right from approximately 11 to at least 14 feet bgs. Approximately 230 cubic yards (approximately 400 tons at an estimated 1.7 tons per cubic yard) will be excavated here for storm sewer installation.

Directly load soil excavated by the project at the above locations into trucks that will transport the soil to a WDNR-licensed bioremediation facility.

Groundwater at the intersection of N. Glenview Avenue and W. Bluemound Road contains elevated metals concentrations, and could contain petroleum compounds. See Section C below for management of water from dewatering activities.

A.3 Notice to the Contractor – Contaminated Soil Beyond the Construction Limits

A review of available information for the construction corridor indicates that contaminated soil is present beyond the construction limits at the locations listed below:

- W. Bluemound Road Station 242+80 to 243+40, beyond the project limits left; and,
- W. Bluemound Road Station 244+10 to 246+00 beyond the project limits right.

Contaminated soil at the above locations is 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 elsewhere on the project, terminate excavation activities in the area and notify the engineer.

No active groundwater monitoring wells were observed within the construction limits. If active groundwater monitoring wells are encountered during construction, notify engineer and protect them to maintain their integrity.

The excavation management plan for this project has been designed to minimize the offsite disposal of contaminated material. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding previous investigation and remediation activities at these sites contact:

Name:	Michael Cape, P.G.
Address:	141 NW Barstow Street, Waukesha, WI 53187-0798
Phone:	(262) 548-5930
Fax:	(262) 548-6891
E-mail:	michael.cape@dot.state.wi.us

A.3 Coordination
Coordinate work under this contract with the environment consultant:

Consultant:	TRC Environmental Corporation
Address:	150 N. Patrick Blvd. Ste. 180, Brookfield, WI 53045
Contact:	Mr. Ken Yass, P.E., CHMM
Phone:	262-901-2145
Fax:	262-879-1220
E-mail:	kyass@trcsolutions.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be hauled to the landfill facility;
3. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil from the landfill facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Identify the DNR licensed landfill facility that will be used for disposal of contaminated soils, and provide this information to the environmental consultant no later than 15 calendar days prior to commencement of excavation activities in the contaminated area or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals from the landfill facility for disposal of contaminated soils.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated area. Notify the environmental consultant at least three calendar days prior to commencement of excavation activities the contaminated area. Perform excavation work in the contaminated area on a continuous basis until excavation work is completed. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

A.4 Health and Safety Requirements
Supplement standard spec 107.1 with the following:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for

Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for the contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer prior to the start of work.

B (Vacant)

C Construction
Supplement standard spec 205.3 with the following:

Control operations in the contaminated area to minimize the quantity of contaminated soil excavated.

The environmental consultant will periodically monitor soil excavated from the contaminated area. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

Directly load and haul soils designated by the environmental consultant for offsite disposal to the DNR approved landfill facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of petroleum-contaminated soils or residues. Prior to transport, sufficiently dewater soils designated for off-site disposal so as not to contain free liquids.

Verify that the vehicles used to transport material are licensed for such activity in accordance to applicable state and federal regulations. Obtain the necessary disposal facility approvals and DNR approvals for disposal. Do not transport regulated solid waste off-site without obtaining the approval of the environmental consultant and engineer and notifying the disposal facility.
If dewatering is required in area of known contamination, water generated from dewatering activities may contain petroleum VOCs and metals. Such water may, with approval of the Milwaukee Metropolitan Sewerage District (MMSD), be discharged to the sanitary sewer as follows:

1. Meet all applicable requirements of the MMSD including the control of suspended solids. Perform all necessary monitoring to document compliance with MMSD's requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with MMSD's requirements.

2. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs associated with excavation dewatering in the contaminated area are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from this construction project.

D Measurement

The department will measure Excavation, Hauling, and Disposal of Petroleum Contaminated Soil in tons of contaminated soil accepted by the landfill facility as documented by weight tickets generated by the landfill facility.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	Ton

Payment is full compensation for excavating, segregating, loading, hauling, and disposal of contaminated soil; obtaining solid waste collection and transportation service operating licenses; assisting in the collection of soil samples for field evaluation; and dewatering of soils prior to transport, if necessary. No additional payment will be made for tipping fees associated with the disposal of contaminated soil.

205-003 (20080902)

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

A Description

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

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

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

B (Vacant)

C Construction

C.1 Quality Control Plan

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

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

C.2 Personnel

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

C.3 Equipment

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

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

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

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

C.4 Testing

C.4.1 Run and Reduction Parameters

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

C.4.2 Contractor Testing

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

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

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

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

(4) Treat partial segments as independent segments.

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

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

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

C.4.3 Verification Testing

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

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

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

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

C.4.4 Documenting Profile Runs

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

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

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

(3) Within 5 business days after completing profiling of the pavement covered under this special provision, unless the engineer and contractor mutually agree to a different timeline, submit the electronic ProVAL project file containing the .ERD files for each

profiler acceptance run. Submit profile data using the department's Materials Reporting System (MRS) software available on the department's web site:

http://www.atwoodsystems.com/mrs

C.5 Corrective Actions

C.5.1 General

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

C.5.2 Corrective Actions for Localized Roughness

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

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

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

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

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

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

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

C.5.3 Corrective Actions for Excessive IRI

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

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

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

C.6 Dispute Resolution

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

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

D Measurement

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

E Payment

E.1 Payment for Profiling

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

E.2 Pay Adjustment

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

ITEM NUMBER	DESCRIPTION	UNIT
440.4410.S	Incentive IRI Ride	DOL

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

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

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

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

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

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

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

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

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

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

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

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

440-010 (20100709)

63. Cover Plates Temporary, Item 611.8120.S.

A Description

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

B Materials

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

C (Vacant)

D Measurement

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

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

ITEM NUMBER	DESCRIPTION	UNIT
611.8120.S	Cover Plates Temporary	Each

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

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

64. Pipe Grates, Item 611.9800.S.

A Description
This special provision describes furnishing and installing pipe grates on the ends of pipes as shown in the plans, and as hereinafter provided.

B Materials
Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish steel pipe conforming to the requirements of standard spec 506.2.3.6.

Furnish pipe grates galvanized according to ASTM A123.

Furnish angles and brackets galvanized according to ASTM A123.

Furnish required hardware galvanized according to ASTM A153.

C Construction
Repair pipes, rods, angles and brackets on which the galvanized coating has been damaged in accordance to the requirements of AASHTO M36M.

D Measurement
The department will measure Pipe Grates in units of work, where one unit is one grate completed and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
611.9800.S	Pipe Grates	Each

Payment is full compensation for furnishing and installing all materials; and for drilling and connecting grates to pipes.
611-010 (20030820)

65. Landscape Planting Surveillance and Care Cycles.

If the care specialist fails to perform any of the required care cycles as specified in standard spec 632.3.19.1, the department will assess daily damages in the amount of $500 to cover the cost of performing the work with other forces. The department will assess these damages for each day the requirements of the care cycle remain incomplete, except when the engineer extends the required time period.
632-005 (20070510)

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

A Description

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

B Materials

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

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

C Construction

C.1 General

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

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

C.2 Groove Depth

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

C.3 Groove Width – Longitudinal Markings

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

C.4 Groove Position

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

C.5 Groove Cleaning

C.5.1 Concrete

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

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

C.5.2 New Asphalt

Groove pavement five or more days after paving.

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

C.5.3 Existing Asphalt

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

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

C.6 Tape Application

Apply the tape when both the air and surface temperature are 40 degrees F and rising.

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

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

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

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

For the remainder counties:

- Apply either adhesive.

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

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

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

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

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

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

67. Pavement Marking Grooved Wet Reflective Tape 4-Inch, Item 646.0881.S; 8-Inch, Item 646.0883.S.

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

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

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

C Construction

C.1 General

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

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

C.2 Groove Depth

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

C.3 Groove Width – Longitudinal Markings

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

C.4 Groove Position

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

C.5 Groove Cleaning

C.5.1 Concrete

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

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

C.5.2 New Asphalt

Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove.

C.5.3 Existing Asphalt

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

Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove.

C.6 Tape Application

Apply the wet reflective pavement marking tape when both the air and surface temperature are 40 degrees F and rising.

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

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

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

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

For the remainder counties:

- Apply either adhesive.

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

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

D Measurement

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0881.S	Pavement Marking Grooved Wet Reflective Tape 4-Inch	LF
646.0883.S	Pavement Marking Grooved Wet Reflective Tape 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for removing temporary pavement marking, if necessary.
646-018 (20120615)

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

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

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

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

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

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

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

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

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

A Description

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

B Materials

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

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

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

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

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

C Construction

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

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

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

D Measurement

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

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

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

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

70. Install Ethernet Switch, Item 675.0400.S.

A Description
This special provision describes installing an Ethernet switch, and providing all necessary associated wiring.

B Materials
The department will furnish the Ethernet switch. Provide all necessary cables between the Ethernet switch and terminal server or other device.

C Construction
Install the Ethernet switch in a new or existing field cabinet. Connect it to devices as shown on the plans, or as directed by the engineer.

D Measurement
The department will measure Install Switch by the unit, installed in accordance to the contract, tested and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
675.0400.S	Install Ethernet Switch	Each

Payment is full compensation for installation of the Ethernet switch; furnishing all necessary incidental hardware; and making all necessary connections.
675-040 (20100630)

71. Install Video Encoder, Item 677.0300.S.

A Description
This special provision describes installing a state-furnished video encoder in a pole mounted cabinet or field cabinet as shown on the plans and as hereinafter provided.

B Materials
Provide Category 5 or better Ethernet cable to connect the Ethernet video encoder to the Ethernet switch. The department will furnish the video encoder or it will be an existing and salvaged encoder.

C Construction
Make the necessary electrical and communication network connections to the video encoder. Mount the video encoder in the pole mounted cabinet or field cabinet. Program the video encoder according to the manufacturer's instructions.

D Measurement
The department will measure Install Video Encoder by each individual assembly, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
677.0300.S	Install Video Encoder	Each

Payment is full compensation for installing the video encoder in a pole mounted cabinet or field cabinet; for making all connections; and for furnishing all programming.
677-030 (20100630)

72. Shredded Bark Mulch, Item SPV0035.7001.

A Description
This special provision describes installing shredded bark mulch in median planting areas as indicated in the plans.

B Materials
Shredded hardwood bark with no pieces being larger than 2" X 5" X 1".

C Construction
Shredded bark mulch shall be placed to a minimum uniform depth of 2 inches over the entire planting bed. All large pieces of bark greater than 2" X 5" X 1" shall be removed from the planting bed areas.

D Measurement
The department will measure Shredded Bark Mulch by the cubic yard, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV. 0035.7001	Shredded Bark Mulch	CY

Payment is full compensation for furnishing all materials, labor, tools, equipment; for excavation and incidentals as required for the installation of Shredded Bark Mulch.

73. Concrete Slope Paving at Storm Sewer Outfall, Item SPV.0035.8003.

A Description
This special provision describes paving waterway embankment slopes at storm sewer outfall with concrete slope paving to control and prevent erosion of the slopes and waterways

B Materials
Conform to standard spec 604.2.

Furnish Grade A 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.

C Construction
Conform to construction detail shown on the plan and standard spec 604.3.

D Measurement
The department will measure Concrete Slope Paving at Storm Sewer Outfall by the cubic yard, acceptably completed. The measured area equals the sum of the concrete paved areas, measured in the plane of the surface. The department will not measure headers or cut-off walls.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.8003	Concrete Slope Paving at Storm Sewer Outfall	CY

Payment is full compensation for furnishing all excavating and backfilling required for preparing the paving foundation; for saw cutting and removing existing concrete slope paving; for disposing of surplus materials; for tie bars and drilling tie bars to existing concrete slope paving; for providing all materials for concrete for mixing, placing, finishing, curing, and protecting concrete.

74. Temporary Crosswalk and Bus Stop Access, Item SPV.0045.0001.

A Description
This special provision describes furnishing, installing, and removing temporary surface material, gravel or base aggregate dense, barricades type III, and safety fence to maintain accessible crosswalks crossing the construction work zone and bus stops within the work zone in accordance to the plans and the standard specifications.

B Materials

Furnish a hard temporary surface material consisting of asphaltic surface temporary in accordance to standard spec 465, any grade of concrete, skid resistant steel plating, or alternative material as approved by the engineer. Gravel or base course material is not acceptable for the landing zone. Gravel or base course is acceptable for the temporary sidewalk connection.

Furnish barricades type III conforming to the pertinent provisions of standard spec 643.2.4.

Furnish safety fence in accordance to the following:

- Furnish notched conventional metal "T" or "U" shaped fence posts.
- Furnish fence fabric meeting the following requirements.
- Color: International orange (UV stabilized)
- Roll Height: 4 feet
- Mesh Opening: 1 inch min to 3 inch max
- Resin/Construction: High density polyethylene mesh
- Service Temperature: -60° F to 200° (ASTM D648)
- Tensile Yield: Avg. 2000 lb per 4 ft. width (ASTM D638)
- Ultimate Tensile Strength: Avg. 3000 lb per 4 ft. width (ASTM D638)
- Elongation at Break (%): Greater than 100% (ASTM D638)
- Chemical Resistance: Inert to most chemicals and acids

C Construction

Install, maintain, move, and remove temporary surface material at Temporary Crosswalk and Bus Stop Access locations as directed by the engineer. Level and compact the surface prior to placing temporary surface material. The temporary crosswalk shall have a minimum clear width of 4 feet; be located outside the immediate work area, as approved by the engineer; and shall meet the requirements of the current Americans with Disabilities Act Accessibility Guidelines (ADAAG). Install safety fence along both sides of the temporary crosswalk as directed by the engineer. Reconstruct or relay Temporary Crosswalk and Bus Stop Access and reset safety fence when disturbed by construction operations or utility trenches.

Install safety fence as follows:

- Drive posts into the ground 12 to 18 inches. Space posts at 7 feet.
- Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.
- Overlap two rolls at a post and secure with wire ties.

D Measurement

The department will measure Temporary Crosswalk and Bus Stop Access by the day, acceptably completed. The measured quantity will equal the number of calendar days a temporary crosswalk through the work zone or bus stop within the work zone is open to pedestrian traffic. A crosswalk is defined as an accessible crossing of a single leg of an intersection. A crossing of a street with an island within the route will be considered a

single crosswalk. Each day that the crosswalk or bus stop is out of service for more than 2 hours will result in one day being deducted from the quantity measured for payment. Undisturbed crosswalks and bus stops on existing pavement or completed crosswalks on new pavement or completed bus stops will not be measured for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0045.0001	Temporary Crosswalk and Bus Stop Access	Day

Payment is full compensation for furnishing, loading, hauling; for preparing the foundation; for furnishing, placing, maintaining, and removing temporary surface material; for reconstructing or relaying the temporary surface material; for furnishing, installing, and maintaining barricades type III; for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; and for removing and disposing of fence and posts at project completion.

75. Exposing Existing Utility, Item SPV.0060.0001.

A Description

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

B Materials

B.1 Granular Backfill

Furnish granular backfill that conforms to standard spec 209.

B.2 Slurry Backfill

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

C Construction

C.1 General

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

C.2 Excavation

Remove all paved and unpaved surfaces at locations where the existing utility is being exposed. Saw or remove concrete and asphaltic pavements to the nearest joint. Remove

all pavement surfaces in such a way that all existing edges consist of a true line having a perpendicular edge with no unraveling. Maintain drainage at all times in accordance to standard spec 205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work in accordance to all applicable laws, ordinances, rules, regulations, and OSHA standards.

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

Take all lateral and depth measurements in US feet and tenths thereof. Identify horizontal locations of each exposed utility with a coordinate northing and easting referenced to the Wisconsin County Coordinate System (WCCS), Milwaukee County, NAD 83 (2007). Provide vertical elevations for each exposed utility and reference to NAVD 88 (2007).

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

C.3 Backfilling

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

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

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

C.4 Documentation

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

D Measurement

The department will measure Exposing Existing Utility as a unit for each individual location. A location may have multiple utilities located within the same exposure area. An exposure area will include all utilities within 6 lateral feet of each other and payment will only be made for one unit regardless of the number of utilities exposed. If the distance from the existing ground elevation, located above the existing utility, to a point 18-inches below the exposed utility is between 0 and 6-feet, the department will measure each location as a single unit of work. If the distance from the existing ground elevation, located above the existing utility, to a point 18-inches below the exposed utility is greater than 6-feet and less than twelve feet, the department will pay for the item as two units of work. Exposures in depth greater than 12-feet are not covered under this item.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0001	Exposing Existing Utility	Each

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

76. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 1, Item SPV.0060.0002; Arrows Type 2, Item SPV.0060.0003; Arrows Type 3, Item SPV.0060.0004; Words, Item SPV.0060.0005.

A Description

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

B Materials

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

C Construction

C.1 General

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

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

C.2 Groove Depth

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

C.3 Groove Width – Linear Markings

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

C.4 Groove Position

Position the groove edge in accordance to the plan details.

C.4.1 Linear Marking

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

C.4.2 Special Marking

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

C.5 Groove Cleaning

C.5.1 Concrete

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

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

C.5.2 New Asphalt

Groove pavement 10 or more days after paving. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt

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

C.5.4 Asphalt

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

C.6 Preformed Thermoplastic Application

Preheat the surface if necessary based on manufacturer's recommendation.

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

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

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

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

The sealant must be wet.

D Measurement

The department will measure Pavement Marking Grooved Preformed Thermoplastic by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0002	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 1	Each
SPV.0060.0003	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2	Each
SPV.0060.0004	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 3	Each
SPV.0060.0005	Pavement Marking Grooved Preformed Thermoplastic Words	Each

Payment is full compensation for cleaning and preparing the pavement surface, and for furnishing and installing the material.

77. Lighting Box Out, Item SPV.0060.1003.

A Description

This special provision describes furnishing and installing concrete sidewalk box outs in accordance to current City of Milwaukee methods.

This section describes the furnishing and installing concrete sidewalk box outs and integration and/or coordination of associated lighting conduit and/or junction boxes for City of Milwaukee street light poles.

Locations of the box outs, junction boxes, and conduits where they are required are identified in the plans. However, installation will require integration with existing field conditions. Appropriate adjustment on box outs, junction boxes, and conduit locations may be made if the field conditions are such that the boxes, junctions, and/or pipes

cannot be installed at the specified locations. Any relocation of greater than five feet must be approved by the engineer.

B Materials
Reusable wooden materials shall be at least 2" thick, smaller is acceptable but shall be capable to hold or support the concrete for over flowing to an opening of the box. The material to be used to form a pocket in concrete by a box-like form shall be coordinated and received approval from the general contractor.

Provide granular fill in the box out area approximately to the level of the poured concrete.

C Construction
Install rectangular 2.5 feet by 2.5 feet concrete sidewalk box outs or size as noted on the plans according to current City of Milwaukee standards. Route conduits to the proposed pole locations as shown.

D Measurement
The department will measure Lighting Box Out as each individual box out, 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.0060.1003	Lighting Box Out	Each

Payment is full compensation for furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work.

78. Polymer Concrete Pull Box City of Milwaukee, Item SPV.0060.1005.

A Description
This special provision describes furnishing and installing polymer concrete pull boxes, also referred to as "vaults", in accordance to current City of Milwaukee methods.

B Materials
Polymer Concrete shall be manufactured from one of the general types and grades defined in polymers in concrete structural applications state of the art report, ACI 548.6R-96 for structural uses. Thermoplastics will not be acceptable. Pull boxes to be sized as 13-inch x 24-inch x 18-inch deep.

Enclosure walls shall be made from pattern cut structural fiberglass cloths to assure uniform, pre-measurable fiberglass content on all areas. Chopper gun fiberglass construction is not acceptable.

Binding polymers used in the manufacture of the polymer concrete and the fiber reinforced polyester shall be of the same formulation or from formulations with

demonstrated chemical compatibility to assure complete chemical bonding of all components. Fiber reinforced polyester wall sections must be cast integrally into and chemically bonded within the upper polymer concrete casting.

Compressive Modulus of Elasticity (fiberglass reinforced polymer): 5.6×10^6 PSI tested in accordance to procedures outlined in ASTM D-695.

Comprehensive Strength (fiberglass reinforced polymer): 24,300 PSI tested in accordance to ASTM D-695.

Flexural Strength (fiberglass reinforced polymer): 18,700 PSI tested in accordance to ASTM D-790.

Tensile Strength (fiberglass reinforced polymer): 12,100 PSI tested in accordance to procedures outlined in ASTM D-638.

Tensile Modulus of Elasticity (fiberglass reinforced polymer): 8.6×10^5 PSI tested in accordance to procedures outlined in ASTM D-638.

Splitting Tensile Strength (polymer concrete): Tested in accordance to procedures outlined in ASTM C-496.

Accelerated Service: Tested in accordance to procedure E outlined in ASTM D-756.

Water Absorption: Tested in accordance to ASTM D-570 outlined in sections 6.1 and 6.5.

Impact Resistance (fiberglass reinforced polymer concrete): 72 foot pounds in accordance to ASTM D-2444 administered with a “C-tup”.

Skid Resistance: 0.60 coefficient of friction in accordance to ASTM C-1028.

Flammability Test: Tested in accordance to ASTM D-635.

Ultraviolet Exposure: Tested in accordance to ASTM test method G-53.

Chemical Resistance

1. Sodium Chloride 5%
2. Sodium Carbonate 0.1 N
3. Hydrochloric Acid 0.2 N
4. Acetic Acid 5%
5. Sulfuric Acid 0.1N
6. Sodium Sulfate 0.1 N
7. Sodium Hydroxide 0.1N
8. Kerosene Oil per ASTM D-543
9. Transformer Oil per ASTM D-543

The street lighting vaults and covers shall be gray in color and shall be flared wall as indicated on the Drawings. Covers shall be provided with 2 stainless steel bolts. Each cover shall have the words "STREET LIGHTING" cast into its surface along the longest dimension. The words shall be permanently recessed into the surface.

C Construction
Install rectangular flared wall vaults according to current City of Milwaukee standards.

Provisions for inserting conduit into any side or the bottom of the vault shall be included.

D Measurement
The department will measure Polymer Concrete Pull Box City of Milwaukee as each individual pull box, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1005	Polymer Concrete Pull Box City of Milwaukee	Each

Payment is full compensation for furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work.

79. Lamp Disposal High Intensity Discharge, Item SPV.0060.1010.

A Description
This special provision describes the packaging and delivering of high intensity discharge (mercury vapor, metal halide, and high-pressure sodium) lamps removed under this contract to the department for disposal as hazardous materials.

B Materials
Lamps turned in to the department will be considered the property of the department for proper future disposal, and the contractor will have no further obligation for their disposal.

C Construction
Pack intact lamps in the packaging of the new lamps used to replace them, or packaging affording the equivalent protection. Place in full, stackable cartons with the name of the contractor written on each carton. Segregate the lamps by type and wattage. Label each carton by the type and wattage contained (do not mix) and the quantity.

Pack broken lamps into thick plastic bags and place inside sturdy cardboard boxes or the equivalent. Mark the outer packaging with the term "broken lamps". Deliver all broken lamps to the department.

The department will not accept lamps improperly packaged or packed in metal containers. The department will reject any lamps not removed as part of this contract as shown on the plans.

Pile cartons no more than two high if palletized and secure them to prevent shifting or falling of the loads.

Deliver the lamps to the department at the South 60th Street office in West Allis. Consolidate all deliveries into a truckload or more, except when all the lamps removed under a contract measure less than a truckload, deliver as one load at one time. Contact Mike Prebish at (414) 266-1170, Monday through Thursday from 8:00 AM to 4:00 PM to set up an appointment for delivery.

D Measurement

The department will measure Lamp Disposal High Intensity Discharge as each individual unit delivered to the department properly packaged and acceptably completed. The department will not measure broken lamps that exceed a total of ten percent of all lamps to be delivered.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1010	Lamp Disposal High Intensity Discharge.	Each

Payment is full compensation for handling, packaging, labeling and delivering the lamps.

Payment will be in addition to payment for the work under which the lamps are removed from service.

80. Salvaging Luminaires - Wauwatosa, Item SPV.0060.1023.

A Description

The work under this item consists of removing existing lighting units as shown on the plans. The luminaire shall be turned over and delivered to the City of Wauwatosa. Coordinate turning over the luminaires with Mr. Joe Kroll, (414) 479-8934. Units shall be uninstalled, handled, packaged and delivered in a manner that does not damage the luminaire.

B (Vacant)

C Construction

Lamps shall be turned in to the department under a separate item, Lamp Disposal High Intensity Discharge and luminaires shall be returned to the City of Wauwatosa. Dispose of all additional materials off site.

D Measurement
The department will measure Salvaging Luminaires - Wauwatosa 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.0060.1023	Salvaging Luminaires - Wauwatosa	Each

Payment is full compensation for removal of existing lighting units; packaging and delivery of luminare to City of Wauwatosa; and for disposal of material.

Removal of pole, luminaire arms, transformer bases (if present) and concrete base (if not direct embedment) and removal of the used lamp from the luminaire will be paid under separate bid items.

81. Removing Concrete Light Pole and Arm, Item SPV.0060.1032.

A Description
The work under this item consists of removing concrete light poles and arms as shown on the plans. The luminaires shall be removed and turned over to the City of Wauwatosa. The salvaging of the luminaires will be paid under a separate bid item Salvaging Luminaires - Wauwatosa.

B (Vacant)

C Construction
Dispose of all materials offsite. Backfill the resulting hole from the pole extraction with a suitable material for the location. Do not disable the lighting unit until the temporary lighting system over the area is operational.

D Measurement
The department will measure Removing Concrete Light Pole and Arm as each individual removed pole and associated arms, 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.0060.1032	Removing Concrete Light Pole and Arm	Each

Payment is full compensation for removing concrete light poles and arms; backfilling holes; removing luminaires and turning them over to the City of Wauwatosa; and for disposal of material.

82. Luminaire LED, Item SPV.0060.1060.

A Description

This special provision describes furnishing and installing LED luminaires at the locations shown in the plan.

B Materials

B.1 Material Qualifications

Furnish a complete list of documentation in accordance to standard spec 651.2 and the following requirements. Be prepared to provide the following materials and/or data to the engineer and the City of Wauwatosa Public Works [Joe Kroll, 11100 W. Walnut Road, Wauwatosa, WI, (414) 471-8422, jkroll@wauwatosa.net] for review and approval:

One example luminaire matching what is proposed for use on the project. Example luminaire shall be available for evaluation for up to two weeks time. Furnish the following list of specific documentation detailing the characteristics of the LED luminaire:

- Fixture IES files (.ies format) for illumination modeling
- Cut sheets, warranty information and parts list for all equipment.
- Luminaire heat dissipation techniques.
- Energy usage information.
- Color spectrum with HID lamp comparison.
- Optical design features.
- Two references from municipalities currently using the same luminaires.

Do not order materials until the engineer approves the list.

B.2 Luminaire

Furnish LED luminaires with a slim, low profile design that minimizes wind loading. Luminaires shall be constructed of rugged cast and extruded aluminum with integral, weather-tight LED driver components with high performance aluminum heat-sinks. Each luminaire shall use a terminal block for power input suitable for #2 to #14 AWG wire. Luminaire shall be IESNA Type III Medium distribution without backlight control. The luminaire shall designed to mount on a 2” IP (2.375” O.D.) horizontal tenon and shall be adjustable +/- 5 degrees to allow for leveling. Luminaire shall include a leveling bubble visible from the underside of the unit.

B.2.1 Electronic Components

Luminaire shall accommodate varied lighting output from high brightness, 4300K (+/- 500K per full unit), minimum 70 CRI, long life LED sources. Drivers shall operate across 120-277V, 50/60 Hertz as standard. LED drivers shall have a power factor greater than 90% and THD less than 20% of full load. All luminaires shall come equipped with an integral 9kV surge suppression protection standard and a quick disconnect harness suitable for mate and break under load provided on power feed to driver for ease of maintenance.

B.2.2 Optical / Illumination Performance
Luminaire shall conform to the following:

- Luminaire tested and certified by an independent test laboratory to meet the photometric performance criteria established by IESNA LM-79.
- Luminaire shall be IESNA Type III Medium distribution.
- Luminaire shall deliver approximately 10,000 lumens and be rated to consume no more than 175 watts (+/- 15%) while operating for a minimum of 70,000 hours (+/- 10%).
- Nominal drive current to be set at 530 Ma. Drive currents to be field adjustable.

B.2.3 Finish
The luminaire fixture finish shall feature an epoxy primer with an ultra-durable silver powder topcoat, providing resistance to corrosion, ultraviolet degradation and abrasion. Alternative equivalent finishes shall be approved by the engineer.

B.2.4 Ratings / Certifications
Luminaires shall be rated and/or certified as follows:

- U.L. listed for wet locations
- RoHS compliant for lead and mercury standards
- IP-65 minimum weather fastness rating
- IDA dark sky full cutoff compliant

Acceptable LED luminaires are:

- BetaLED Model: STR-LWY-2M-43-07-D-UL-530-43K
- Phillips Model: RVM-160W96LED4K-LE3
- American Electric Model: ATB1-60LED-E53-MVOLT-R2
- Alternate equivalent approved by the engineer

C Construction
Install LED Luminaire in accordance to the pertinent provisions of standard spec 659 and as the manufacturer directs.

D Measurement
The department will measure Luminaire LED as each individual LED luminaire, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1060	Luminaire LED	Each

Payment is full compensation for furnishing all materials; installing a complete luminaire; and for furnishing all documentation.

83. Temporary Wood Lighting Pole, Item SPV.0060.1070.

A Description

The work under these items include furnishing and installing wood pole, arm(s) and luminaire(s), junction box, grounding system, and lightning protection system, as shown on the plans, in accordance to standard spec 651 and 659, and as hereinafter provided. Remove and dispose of the temporary wood pole lighting units as a part of this item.

B Materials

Furnish wood poles, Class 4 or larger with a 40-foot minimum overall length. The poles shall be western red cedar in accordance to ANSI standards 05.1. Pressure treatment shall be 5% pentachlorophenol with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative. All poles shall be shaved the entire length.

Arms shall be galvanized steel, minimum 45-inch (pole to end of arm) suitable for mounting a standard DOT 250W HPS utility type luminaire (Bid Item 659.0125) on a wooden pole. Unit shall be rated for a 90 Lb fixture with an EPA of up to 2.3 sq. feet for an 80 MPH wind. Unit's arm shall be a nominal 2-inch diameter. Luminaires will be paid for as a separate bid item and are not included as part of this bid item.

C Construction

This work shall be done in accordance to the pertinent provisions of standard spec 611.3.1.1 and as shown on the plans. Install #4 AWG equipment grounding wire exothermically bonded to a 5/8 inch by 8 foot copper clad grounding electrode. Install cable guard, NEMA 3R junction box near mounting arm and a NEMA 4X junction box at 3 feet above grade for fuses and splice on wood pole units. Install air terminal with #2 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode for lightning protection. Install #2 AWG bare copper exothermically bonding between grounding electrodes. Install conduit and wiring between junction boxes, wire racks, and required hardware as necessary and as shown on lighting plans and detail drawings.

Install luminaire arm for temporary wood pole lighting units as shown on the plans and details and as per applicable portion of standard spec 657.3. Mount the arms square and true. Anchor units securely to the pole.

Remove temporary wood pole lighting units at the appropriate stage as shown on temporary lighting plans or as directed by the engineer. Temporary lighting units cannot be otherwise taken out of service until the replacement permanent lighting system is operational. Removed temporary wood pole lighting units will become property of contractor. The bid price shall reflect the salvage value of the temporary wood pole lighting unit. The department will allow, at the contractor's discretion, to reuse removed temporary wood pole lighting units at new location, if possible.

D Measurement
The department will measure Temporary Wood Lighting Pole as a unit for each individual item, 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.0060.1070	Temporary Wood Lighting Pole	Each

Payment is full compensation for furnishing and installing items as mentioned above; for furnishing all excavation and backfill; and for removal and disposal.

84. Temporary Wood Poles 40 FT, Item SPV.0060.1080.

A Description
This section describes the furnishing and installing along with subsequent removal of temporary 40-foot wood poles at the locations the plans show.

B Materials
Furnish wood poles that are Class 4 or larger with a 40-foot minimum overall length. The poles shall be western red cedar in accordance to ANSI standards 05.1. All poles shall be shaved the entire length. The poles are to be in accordance to the pertinent provisions of standard spec 661.2.1.1 unless noted otherwise, and as shown on the plans.

Poles shall be slab gained from the top of the pole to a point 48 inches below the top of the pole. The first and second gains shall be drilled with a 1 1/16-inch diameter drill. First gain 8-inches from the top of the pole and second gain 24 inches below the first gain. Poles shall be incised throughout that portion of the pole surface terminating 1-foot above and 2-foot below the standard ground line per AWPA specification C8-73. Poles shall be butt treated by the thermal process per the AWPA specification C7-73. The treatment shall be a water borne preservative Chromated Copper Arsenate “CCA” Type “c” per AWPA specification P5-83. Only oxide formulated chemicals shall be used. All references to AWPA specifications shall use the latest edition

Pea gravel used for pole installations shall be gravel consisting of particles from natural gravel deposits, and shall be composed of clean, hard, tough, durable pebbles, free from adherent coatings, soft, flat, or elongated particulates, and organic or other deleterious matter. The follow limits by weight shall not be exceeded:

Chert	4%
Coal	0.5%
Clay lumps or friable particles	0.5%
Soft fragments	1%
Any combination of above	4%
Flat, elongated or laminated pieces (flat and elongated particles are those having a length more than 5 times the average thickness)	10%
Material finer than No. 200 sieve	1%

Pea gravel shall meet the following requirements for abrasion loss when tested for resistance to abrasion in the Deval machine, ASTM D289 and shall meet the requirements of ASTM C33 except as modified herein:

Gravel 100% uncrushed	12%
Gravel 100% crushed	22%
Gravel blended crushed and uncrushed	Proportionate to blend

Pea gravel shall meet the following grading requirements:

Passing 3/8-inch sieve	95% to 100%
Passing No. 4 sieve	25% to 50%
Passing No. 8 sieve	0% to 5%

C Construction

Furnish and install wood poles and other incidental items as required and as shown on the plans, in accordance to standard spec 651, and as hereinafter provided. Remove and dispose of temporary wood poles, 40 FT as a part of this item.

Install the pole in accordance to the pertinent provisions of standard spec 661.3.1.1, and as shown on the plans. Block and rake poles that will have uneven loadings prior to guying. As necessary, install #4 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode, cable guard, NEMA 3R junction box 3ft above grade level for splice, and incidentals as necessary.

D Measurement

The department will measure Temporary Wood Poles 40 FT as each individual temporary wood pole 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.0060.1080	Temporary Wood Poles 40 FT	Each

Payment is full compensation for furnishing and installing a wood pole; all excavation and backfill; ground rod, grounding wire, cable guard and junction box; and for removal and disposal of all temporary wood poles 40 FT.

85. Salvage Distribution Centers, Item SPV.0060.1090.

A Description
The work under this item consists of removing distribution center from existing base at locations shown in the plans, and delivering the distribution center to the City of Wauwatosa Electrical Yard. Concrete control cabinet base removal will be measured and paid for under a separate bid item.

B (Vacant)

C Construction
Contact Joe Kroll, (414) 479-8934, of City of Wauwatosa 7 days in advance to coordinate delivery. Deliver the salvaged distribution center to the City of Wauwatosa Electrical Yard at 11100 W. Walnut Road, Wauwatosa, Wisconsin.

D Measurement
The department will measure Salvage Distribution Centers by each individual salvaged distribution center, 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.0060.1090	Salvage Distribution Centers	Each

Payment is full compensation for removing, hauling, and unloading distribution center; and for coordination with the utility.

86. Distribution Center Lighting, Item SPV.0060.1110.

A Description
This special provision describes furnishing and installing a street lighting distribution center located as shown. The distribution center is to match the City of Wauwatosa standard distribution cabinets.

Work under this item consists of furnishing and installing 240/480 volt, 100 amp electrical service enclosure for power distribution. The distribution centers shall include but not limited to a NEMA 3R aluminum cabinet, panelboard, circuit breakers, lighting contactor with photoelectric control, wiring, all equipment and materials as shown in the plans.

The meter pedestal and concrete base will be paid under a separate bid items.

B Materials
The cabinet with all of its electrical components, wiring and parts shall be listed and labeled by Underwriters Laboratories (UL) or other Nationally Recognized Testing Laboratory as a complete assembled unit.

All materials furnished by the contractor for highway lighting installation under this contract are subject to approval by the engineer.

B.1 Enclosure
The enclosure shall be manufactured by Bison Pro Fab, (800) 825-3805, APX Enclosures (717) 328-9399 or approved equal.

Control enclosure shall be NEMA-3R made from 12-gauge Type 304 stainless steel with #3 finish. Seams shall be continuously welded and ground smooth. All hardware shall be type 304 stainless steel.

Enclosure shall be free standing with an overall height of 54-inches, a width of 48-inches and a depth of 24-inches. Enclosure shall have a 2-inch wide inside flange at the front, back and sides for anchoring to base. Side and back walls shall be stiffened with two vertical stainless steel equipment mounting rails per wall. The door frame shall be double flanged.

The cabinet top shall be sloped to drain and shall have a drip shield over door. Provide screened vent slots (1/8" x 1") under the cabinet overhang located in the top face above door opening.

Outer door shall be NEMA 3R, 12-gauge, with cellular neoprene gasket and a three position door stop rod. Door shall be hinged with a continuous 14-gauge stainless steel hinge secured with ¼-20 stainless steel carriage bolts.

Provide 3-point latching system with 3/4" diameter stainless steel padlocking handle. Also provide a Corbin No.2 deadbolt lock with two keys.

Enclosure shall have a 0.125-inch thick 5052-H32 aluminum mounting panel at back (interior) of enclosure.

Provide plastic print pocket attached to inside of door.

B.2 Main Disconnect
200A, 2-pole, 600VAC, Square-D #JGL26200. Provide a NEMA 4X stainless steel enclosure Model J250DS-SPLO. Unit shall lockable in the ON and OFF position. Mount unit on exterior of enclosure.

B.3 Contactor
200A, 2-pole, Mechanically Held, 120V Coil, Square-D #8903-SVO10-V02. Mount directly to back panel. Construct separate latching / unlatching circuit using 8-pin DPDT relay and socket (120V coil, 10A contacts) Square-D or equal.

B.4 Control Transformer
240VAC Primary, 120VAC Secondary, 1PH, 3KVA, Square-D #3S1F. Furnish Square-D #9080FB1211R fuse block assembly with 15A fuse to protect line side of transformer.

B.5 Secondary Load Center
Provide circuit breaker enclosure for secondary circuits, Square-D #QO24L70S with one 20A breaker (#QO120) for maintenance circuit, one 15A breaker (#QO115) for photocell circuit, and one #PK0GTA2 Ground Bar.

B.6 Photocell
The photocell shall be of the button type and installed in the sidewall of the control cabinet facing north. Apply silicon caulk to maintain the integrity of the enclosure. The photocell shall be rated for 120V, 1800W with 30-60 second delay between "on-off" operations and be warranted for 5-years. Intermatic #K4021C or approved equal.

B.7 Hand-Off-Auto Switch
Square-D #9001-KS43B switch body, #9001-KA1 contact block and #9001-KN760WP nameplate mounted in Hoffman #E-1PB one hole box.

B.8 Other Devices
Furnish one 120V GFI duplex service receptacle in surface mounted box, and one 120V incandescent light fixture. Light fixture shall be wall mount type with gasketed vapor tight globe, wire guard, lamp, and on / off switch in surface mounted box.

Duplex GFCI Receptacle:	Hubbell #GFR52521A
4" SQ Deep Box:	Appleton #4SDEK with #8362 Cover
Vapor Tight Fixture:	Epco #15000 with 15063 Wire Guard
4" Oct. Box:	Appleton #40D-1/2
Bulb:	GE 60W
Light Switch:	Hubbell #HBL1201
4" SQ Deep Box:	Appleton #4SDEK with #8361 Cover

Provide an insulated groundable neutral assembly, and service ground kit.

B.9 Neutral Bar – 240V Circuits
1/4"x 4"x 18" Copper Bus Bar with Mounting Hardware, Square-D #SN225KA or equal. Provide copper mechanical lugs for all conductors to bus bar, Burndy #KA25 or equal.

B.10 Panelboard
Panelboard shall include 240/480 volt, 225A Square 'D' panel, 100A main circuit breaker, six 40A branch circuit breakers and ground bar as follows:

Panelboard: (1) – Square-D 400A, 600V, I-Line, #HKA-225-S4
(Note: model based on need to maintain consistency with other distribution centers. Model is OEM)

Ground Bar: (1) – Square-D #PK0GTA2

Main Breaker: (1) – Square-D 2-Pole, 200A, 600V, I-Line, #JGA26200AB

Circuit Breakers: (2) Square D I-Line 30A #FA-14030A
(2) Square D I-Line 30A #FA-14030B

Provide fillers (Square-D #HNM1BL or #HNM4BL) as required.

All Materials and Methods of Construction shall be in accordance with the applicable provisions of standard spec 656.

C Construction
The Contractor shall be responsible for coordinating the timely installation of the service lateral by the utility. Provide ground rods as shown with a minimum of four at 5/8" Dia. by 10' long separated by not less than 10'-0" and ground conductor meeting Table 259-94 of the N.E.C. Connections between the ground conductor and ground rod shall be via an exothermic type connection process.

All wire in a conduit shall be pulled through at the same time. If required to pull wire through an occupied conduit, the existing wire shall first be removed and examined. If defective, the old wire shall be replaced for separate payment. If not defective, the old wire shall be pulled through with the new. Removal, inspection, and repulling of old wire is an incidental to the pulling of new wire. The cables shall be trained in straight horizontal and vertical directions and be parallel next to and adjacent to other cables whenever possible, using cable clamps attached with #10 screw to mounting panel, Panduit CCH series or approved equal. Adhesive type clamps are not allowed. All equipment shall be mounted to panel in enclosure unless otherwise indicated. Cabinet interior shall be cleaned of all construction debris prior to final acceptance.

Electrical permits and all applications will be required.

D Measurement
The department will measure Distribution Center Lighting 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.0060.1110	Distribution Center Lighting	Each

Payment is full compensation for furnishing and installing all materials including electrical enclosure and all contents, construction and required line and load side connections; for furnishing all incidentals.

87. Electrical Service Meter Breaker Pedestal Temporary Lighting, Item SPV.0060.1152.

A Description

This work shall consist of furnishing and installing an electrical service for the temporary lighting as shown on the plans and as follows.

A 100 amp, 120/240 volt, single phase, underground electrical service lateral will be furnished and installed by the local utility. The service lateral shall terminate at a meter socket located in a meter pedestal as detailed.

The contractor shall arrange for the electrical power source in the name of WisDOT. The engineer shall be notified when the system is ready for connection to the power mains. The contractor shall pay for the Utility service installation. WisDOT will pay for energy costs.

B Materials

The contractor shall furnish and install an approved meter pedestal, conduit fittings, and connection (s) and all necessary conductors and equipment required by the State Electrical Code and the utility for a service connection

Utility grade materials as shown on the plans are required. The meter pedestal and support materials shall be in accordance to the latest edition of the WE Energies Electric Service and Metering Manual.

When required by the local utility, a manual bypass meter socket may be required.

C Construction

The contractor shall install the electrical service in accordance to local utility requirements. The contractor shall furnish the utility with a wiring affidavit, certifying that the service has been installed in accordance to the State of Wisconsin electrical code.

The contractor shall be responsible for coordinating the timely installation of the service lateral by the utility.

All wire in a conduit shall be pulled through at the same time. If required to pull wire through an occupied conduit, the existing wire shall first be removed and examined. If defective, the old wire shall be replaced for separate payment. If not defective, the old wire shall be pulled through with the new. Removal, inspection, and re-pulling of old wire is an incidental to the pulling of new wire.

Splices shall be made at the distribution centers, in junction boxes and at pole bases only, unless otherwise approved by the engineer, otherwise shown on the plans, or forming part of work indicated to be temporary. Wire runs shall be continuous between the locations approved for splices.

Damp location splices may be made with Scotchlock or equivalent wire nuts for three #6 AWG wires or smaller or two #4 AWG wires or smaller. Split bolt or crimp splices will be accepted for the above application and are required for larger combinations of wires. Split bolt or crimp splices made in damp locations shall be made for each conductor and shall be appropriately sized. Split-bolt or crimp splices shall be made without irregularities or voids around the fitting and shall be built up with 3M "2200" vinyl mastic pad or approved equal, covered with an approved vinyl insulating tape, and finished with an outer layer of electrical varnish. Damp locations include pole bases, well-drained junction boxes, vented cabinets, approved condulets, and luminaire housings.

Wet location splices shall be made with an approved epoxy insulation kit. Wet locations include direct earth burial, pull boxes, and junction boxes where there is not good drainage.

D Measurement

The department will measure Electrical Service Meter Breaker Pedestal Temporary Lighting each individual service, 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.0060.1152	Electrical Service Meter Breaker Pedestal Temporary Lighting	Each

Payment is full compensation for providing the excavation, backfill, conduit, fittings, metering pedestal and meter socket, anchoring, concrete, inspection and incidentals necessary to complete the work.

88. Removing Electrical Service Meter Breaker Pedestal Lighting, Item SPV.0060.1153.

A Description

This special provision describes removing an existing electrical service meter breaker pedestal, disconnecting all connected power wires, and disposing of the equipment appropriately.

B Materials

Materials include existing electrical service meter breaker pedestal.

C Construction

Coordinate for removal of the existing electrical service meter breaker pedestal with WE Energies.

Disconnect all connected power wires, remove the pedestal, and dispose of all materials properly away from the project area.

D Measurement

The department will measure Removing Electrical Service Meter Breaker Pedestal Lighting by each individual removed unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1153	Removing Electrical Service Meter Breaker Pedestal Lighting	Each

Payment is full compensation for coordination with WE Energies; for disconnection of wires; for removal and disposal of the pedestal; and for furnishing all labor, tools, equipment, transportation, and incidentals necessary to complete the work.

89. Install Fiber Optic Media Converter, Item SPV.0060.2001.

A Description

This special provision describes installing a multi-mode to single-mode fiber optic media converter, and providing all necessary associated wiring.

B Materials

The department will furnish the fiber optic media converter. Provide all necessary cables between media converter and associated device.

C Construction

Install the media converter in a new or existing field cabinet. Connect it to devices as shown on the plans, or as directed by the engineer.

D Measurement
The department will measure Install Fiber Optic Media Converter by each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2001	Install Fiber Optic Media Converter	Each

Payment is full compensation for installing a fiber optic media converter; furnishing all necessary incidental hardware; making all necessary connections, and for testing.

90. Ground Rod, Item SPV.0060.2002.

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

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

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

D Measurement
The department will measure Ground Rod by each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2002	Ground Rod	Each

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

91. Installing Conduit Into Existing Manhole, Item SPV.0060.2003.

A Description

This special provision describes locating existing conduit system manholes and installing new conduit into those manholes at the locations shown on the plans. The contractor shall verify existing conduit manhole locations with the City of Milwaukee, and shall maintain any existing conductors, fibers, and conduit paths without interruption or damage. Repair and restoration of all disturbed areas resulting from the work shall be in accordance with the pertinent provisions of the standard specifications, and as hereinafter provided.

B Materials

Conduit, as provided and paid for under other items in this contract. All materials shall conform to the pertinent provisions of the standard specifications unless otherwise noted.

C Construction

Carefully expose the outside of the existing structure without disturbing any existing conduits or cabling.

Drill the appropriate sized hole for the entering conduit at a location within the structure that will not disturb the existing cabling and will not hinder the installation of new cabling within the installed conduit, or remove existing abandoned conduit from the structure to allow for the installation of the new conduits as indicated on the plans.

Fill any void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure.

Carefully tamp backfill into place.

All disturbed areas shall be repaired and restored in kind.

D Measurement

The department will measure Installing Conduit Into Existing Item by each individual unit, acceptably completed. Up to six conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of six, or conduits entering at significantly different entry points into the existing manhole will constitute multiple units.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2003	Installing Conduit Into Existing Manhole	Each

Payment is full compensation for drilling holes; removing abandoned conduit; 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 disposal of surplus materials; amd for making inspections.

92. 4’ Diameter Manhole Type TES, Item SPV.0060.2004.

A Description
The work under this item consists of a 4’-0” round manhole for the City of Milwaukee Underground Conduit Section at locations shown in the plans, in accordance with sections 301, 611 and 501 of the standard specifications, and as hereinafter provided.

B Materials
Concrete and steel reinforcement shall conform to ASTM specification: C478 (latest edition), except that the single cage circumferential reinforcement in all vertical walls shall consist of lines of #6 steel wire spaced 3” horizontally and lines of #10 steel wire spaced 8” vertically located in the center of the wall.

Two lifting inserts for 1-1/2” diameter lifting eyes shall be cast in the wall of the base and all other riser sections except the top cap section.

Up to four 7/8” diameter galvanized steel 1-11/16” pulling-in eyes shall be cast in the wall of the base section directly across from each duct entrance.

Four 5/8” diameter plastic threaded cable rack bolt inserts shall be cast in the wall of the riser section.

A continuous circumferential Butyl Rubber gasket shall be supplied, to be laid on the wall joint of the base and riser section when manhole is being assembled at job site.

The number of pulling-in eyes and/or cable rack bolt inserts may vary.
Additionally, the size, location, shape and number of duct entrances and/or knock-out area may vary. Unit price of manhole shall not vary for number of openings, pulling-in eyes and/or rack bolt inserts.

The City will supply a frame and lid for the manhole. Contractor shall contact Mr. Ricardo Lopez, Inventory Clerk at (414) 286-6123 prior to obtaining the frame and lid from the DPW Headquarters at 3850 N. 35th St. Contractor must have the “Casting Requisition Form” which shall be supplied by the City at the Preconstruction Meeting.

For any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

C Construction
4’ Diameter Manholes Type TES shall be installed in accordance with subsection 611.3.

D Measurement
The department will measure 4’ Diameter Manhole Type TES by each individual manhole acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2004	4' Diameter Manhole Type TES	Each

Payment is full compensation for all excavation work and disposal of material; for, furnishing and installing all materials, including bricks, and coarse aggregate, bedding and backfilling, concrete forms, concrete placement, appurtenances, and backfilling.

93. Poles Type 9, Item SPV.0060.3001; Poles Type 10, Item SPV.0060.3002.

This special provision applies only to Project 1060-33-71.

A Description

Work under this item consists of furnishing and installing monotube poles at the intersection of W. Wisconsin Avenue and N. Glenview Avenue.

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.

Provide anchor bolts meeting AASHTO standards applicable to the pole type and loading (see SDDs Type 9 Pole 15'-30' Monotube Arm, Type 10 Pole 15'-30' Monotube Arm, and General Notes and Hardware Details for Type 9, 10, 12, 13 Poles with Monotube Arms for specific pole types).

Provide anchor bolt templates as shown on the standard detail drawings for the concrete base to ensure correct alignment of anchor bolts in foundation (see SDD Concrete Base Type 10 and Concrete Base Type 10 and Type 13 Extension for specific base types).

C Construction

Clean each pole before installation.

Install poles as specified in the plan details. 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 is vertical.

Install identification plaques as the plans show.

D Measurement

The department will measure Poles (Type) as each individual pole, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3001	Poles Type 9	Each
SPV.0060.3002	Poles Type 10	Each

Payment is full compensation for providing and installing poles including all hardware and fittings necessary to install the poles; and for installing identification plaques, if required.

94. Monotube Arms 30-FT, Item SPV.0060.3003.

This special provision applies only to Project 1060-33-71.

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:

1. Consist of zinc coated steel round or oval members.

2. 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.

3. Have stiffeners or gussets if required between the arm tube and the arm mounting device to provide adequate strength to resist side loads.

4. 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 Construction
Construction of the monotube arm shall be in accordance to standard spec 657.

D Measurement
The department will measure each Monotube Arms (Length) as each individual arm, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3003	Monotube Arm 30-FT	Each

Payment is full compensation for providing and installing all materials, including all hardware, fittings, mounting devices, shims, and attachments necessary to completely install the arms.

95. Luminaire Arms Steel 6-FT, Item SPV.0060.3004.

This special provision applies only to Project 1060-33-71.

A Description
Work under this item consists of furnishing and installing steel luminaire arms.

B Materials
Design support structures conforming to the minimum wall thickness the plan details show and to AASHTO design and fabrication standards for structural supports for highway signs, luminaires, and traffic signals. Use a design life of 50 years. Design to withstand a 3 second gust wind speed of 90 mph (145 km/h). Do not use the methods of appendix C of those AASHTO standards.

Use category III criteria if mounted on top of a Type 10 pole and category II criteria if mounted on top of a Type 13 pole.

For structures requiring a fatigue analysis, use 45 mph (72 km/h) for truck-induced gusts.

Base the designs on the completed maximum loading configuration the standard detail drawing shows. Along with the materials list, submit a certificate of compliance certifying that the arms as furnished conform to the above structural performance requirements. Ensure that the certificate of compliance is on the manufacturer's

letterhead, signed by an authorized company officer, and notarized. Send a copy of the certificate and a copy of the luminaire arm shop drawings to the department electrical engineer.

Furnish luminaire arms conforming to the following:

1. Consist of zinc coated steel round or oval members.

2. 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.

3. Have stiffeners or gussets if required between the arm tube and the arm mounting device to provide adequate strength to resist side loads.

4. 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 Construction

Construction of the luminaire arm shall be in accordance to standard spec 657.

D Measurement

The department will measure Luminaire Arm Steel (Length) as each individual arm, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3004	Luminaire Arms Steel 6-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.

96. EVP Detector Type I, Item SPV.0060.3005.

This special provision applies only to Project 1060-33-71.

A Description
This work shall consist of furnishing and installing EVP Detector Type I as shown on the plans and as hereinafter provided.

B Materials
The infrared EVP Detector Type I shall be lightweight, weatherproof device capable of sensing and transforming pulsed infrared energy into electrical signals for use by the signal discrimination equipment. The infrared EVP Detector Type I shall be designed for mounting at or near an intersection on mast arms, pedestals or pipes. Each infrared EVP Detector Type I shall be supplied with mounting hardware to accommodate installation on mast arms, poles, or traffic signal standards as shown in the plans. The EVP Detector Type I shall accept infrared signals from one direction and shall provide a single electrical output signal. The EVP Detector Type I shall have a built-in terminal block to simplify wiring connections. The infrared EVP Detector Type I shall receive power from the discriminator and shall have internal voltage regulation to operate from 18 to 37 volts DC. The infrared EVP Detector Type I shall respond to clear lens code secured emitter with 0.84 (+/- 10%) Joules of energy output per flash at a distance of 2,500 feet under clear atmospheric conditions. If the emitter is configured with a visible light filter, the EVP Detector Type I shall respond at a distance of 1,800 feet under clear atmospheric conditions. The noted distances shall be comparable day and night. The infrared detector shall produce an electrical signal to the discriminator via a detector cable up to 1,000 feet in length.

The EVP Detector Type I shall be a GTT Opticom Model #711, or approved equal.

C Construction
Furnish and install EVP Detector Type I for traffic signals. Set the initial aim angle at a distance of 1,800 feet from the stop bar or as specified by the engineer in the field. Final adjustment shall be under the direction of the engineer.

D Measurement
The department will measure EVP Detector Type I as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3005	EVP Detector, Type I	Each

Payment is full compensation for furnishing and installing the EVP Detector Type I on signal poles or mast arms as shown on the plans, including extensions to poles if required; and for aiming the detector.

97. EVP Discriminator Type IV, Item SPV.0060.3006.

This special provision applies only to Project 1060-33-71.

A Description
This work shall consist of furnishing and installing an EVP Discriminator Type IV in the control cabinet as shown on the plans and as hereinafter provided.

B Materials
The EVP Discriminator Type IV shall be a plug-in, four channel, multiple priority device intended to be installed directly, into a rack located within the controller cabinet. The EVP Discriminator Type IV card edge connector shall include primary infrared detector inputs and power outputs. Two additional detector inputs per channel shall be provided on a front panel connector. An auxiliary function harness (#757) shall be included. The EVP Discriminator Type IV shall be powered from 115 volt (95 volts AC to 135 volts AC), 60 Hz mains and shall contain an internal, regulated power supply that supports up to four infrared detectors. The EVP Discriminator Type IV shall include several control timers that shall limit or modify the duration of a priority control condition and programmable security via jumper selection. The control timers shall be as follows:

- MAX CALL TIME: Shall set the maximum time a channel is allowed to be active. It can be set to 120, 240, or 65,535 seconds. Its factory default must be the maximum time.
- CALL HOLD TIME: Shall set the time a call is held on a channel after the priority signal is no longer being received. It can be set to either 6 or 12 seconds via jumper selects. Its factory default mist be six seconds.
- SECURITY ENCODED DATA: Shall require that an infrared signal contain an embedded vehicle ID code to be recognized as a valid request. The default jumper selection shall disable this requirement.

The EVP Discriminator Type IV default range values shall be re-settable by the operator using switches located on its front. The EVP Discriminator Type IV shall be capable of three levels of discrimination of security encoded infrared signals, as follows:

- Verification of the presence of the base infrared of either 14.03509 Hz +/- 0.01773 Hz for Command priority, or 9.63855 Hz +/- 0.00836 Hz for Advantage priority.
- Determination of when the vehicle is within the prescribed range.
- The EVP Discriminator Type IV card edge connector shall include primary infrared detector inputs and power outputs. The EVP Discriminator Type IV shall include one optoisolated NPN output per channel that provides the following electrical signal to the appropriate pin on the card edge connector:
- Hz +/- 0.1 Hz 50% on/duty square wave in response to an Advantage priority call.
- A steady ON in response to a Command priority call.

The EVP Discriminator Type IV shall accommodate two methods for setting intensity thresholds (emitter range) for high and low priority signals:

- Using an encoded emitter with range-setting capability.
- Using an encoded emitter while manipulating the front panel switches.

The EVP Discriminator Type IV shall have a solid state POWER ON LED indicator that flashes to indicate unit diagnostic mode and illuminates steadily to indicate proper operation. The EVP Discriminator Type IV shall have internal diagnostics to test for proper operation. If a fault is detected, the discriminator shall use the front panel LED indicators to display fault information. The EVP Discriminator Type IV shall have a Command (high) and Advantage (low) solid state LED indicator for each channel to display active calls. The EVP Discriminator Type IV shall have a test switch for each channel to test proper operation of Command or Advantage priority. The EVP Discriminator Type IV shall properly identify a Command priority call with the presence of 10 Advantage priority code secured emitter signals being received simultaneously on the same channel. The EVP Discriminator Type IV shall have write-on pads to allow identification of the phase and channel. The EVP Discriminator Type IV shall have the capability of functionally testing connected detector circuits and indicating via front panel LEDs non-functional detector circuits. An auxiliary interface panel shall be available to facilitate interconnections between the discriminator and traffic cabinet wiring.

Additional wiring harnesses may be required for auxiliary detector heads as shown on the plans.

The EVP Discriminator Type IV shall be a GTT Opticom Model #454, or approved equal.

C Construction

Furnish and install EVP Discriminator Type IV for traffic signals.

D Measurement

The department will measure EVP Discriminator Type IV as each individual unit, acceptably completed.

E Payment

EVP Discriminator Type IV will be paid for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3006	EVP Discriminator Type IV	Each

Payment is full compensation for furnishing and installing the EVP Discriminator Type IV in the control cabinets and any additional wiring harnesses required for auxiliary heads.

98. EVP Confirmation Light Assembly Type I, Item SPV.0060.3008.

This special provision applies only to Project 1060-33-71.

A Description
This work shall consist of furnishing and installing Confirmation Light Assemblies, Type I as shown on the plans and as hereinafter provided.

B Materials
Confirmation Light Assembly, Type I, shall consist of weatherproof, aluminum lamp holder with a single LED lamp as shown on the plans. In addition, mounting materials shall be provided as shown on the plans.

The Confirmation Light Assembly Type I shall be a GTT Opticom Model #575, or approved equal.

C Construction
Furnish and install Confirmation Light Assembly Type I for traffic signals.

D Measurement.
The department will measure EVP Confirmation Light Assembly Type I as each individual unit, acceptably completed.

E Payment
Confirmation Light Assembly Type I will be paid for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3008	EVP Confirmation Light Assembly Type I	Each

Payment is full compensation for furnishing and installing the Confirmation Light Assembly Type I.

99. Concrete Bases Type 10 Contractor Supplied Anchor Bolts and Anchor Rod Template, Item SPV.0060.3009.

This special provision applies only to Project 1060-33-71.

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

B Materials
B1. Concrete Bases
Furnish grad A, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to standard spec 501.2 as modified in standard spec 716. Provide QMP for class III ancillary concrete as specified in standard spec 716.

Furnish bar steel reinforcement conforming to standard spec 505.2.

Use schedule 40 PVC electrical conduit conforming to the electrical conduit specified in standard spec 652.

B2. Anchor Bolts
Provide anchor bolts conforming to AASHTO M 314, grade 55 and Supplementary Specification S1, or ASTM F1554 Grade 55. Threads on bolts shall be formed by rolling.

Hot-dip galvanize the entire length of the anchor rods according to AASHTO M111. Hot-dip the nuts and washers according to AASHTO M232. Use zinc coated nuts manufactured with sufficient allowance to allow nuts to run freely on the threads.

B3. Anchor Rod Template
Furnish a steel top and bottom template conforming to ASTM A709, grade 36 as part of each anchor assembly. Provide a top template of sufficient gauge to hold the anchor rods securely in position at the top, and resist racking or twisting during the pour. Use a ½-inch thick bottom anchor plate-template and secure it to each anchor rod. Templates shall not be welded to the anchor rods.

C Construction
C1. Concrete Bases
Construct concrete bases, including necessary hardware, as specified in standard spec 501 and plan details, and provide the surface finish specified in standard spec 502.3.7.2. Inspect the forming and applicable reinforcement for concrete bases before pouring the concrete. Cure exposed portions of concrete bases as specified for concrete pavement in standard spec 415.3.12 except the contractor may use curing compound conforming to standard spec 501.2.9. Wait at least 7 days before installing poles.

C2. Anchor Bolts
Lubricate anchor bolt threads and nuts with bees wax or other high-wax lubricant. Set leveling nuts to the required elevation before installing the structure. Adjust top nuts and leveling nuts to align and plumb the structure. Ensure that all nuts are snug-tight with no gaps. Tighten each top nut 1/3 turn past snug for bolts 1 1/2 inch or smaller in diameter and 1/6 turn for larger diameter bolts conforming to the tightening sequence specified on department form DT 2321. If required, install jamb nuts wrench tight.

Complete department form DT 2321 for each structure. Indicate the parties responsible for the installation and submit the form to the engineer for inclusion in the permanent project record.

C3. Anchor Rod Templates
Secure the anchor rod template to all anchor rods at one time in its correct position as the plan details show. Ensure relative movement and misalignment does not occur. If any twisting, racking, or other movement of the anchor rods out of plumb, projection, or pattern, or any damage to the threads exists the engineer will reject the entire base.

Maintain the clear distance between the soil and the reinforcing steel cage using the means the plan detail shows. Do not weld the anchor rods to each other, the reinforcing steel cage, and the templates or to any other component of the foundation.

If an anchor rod template is located above the concrete surface, it may be removed 24 hours after placing the concrete.

D Measurement
The department will measure Concrete Bases (Type) Contractor Supplied Anchor Bolts and Anchor Rod Template by each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3009	Concrete Bases Type 10 Contractor Supplied Anchor Bolts and Anchor Rod Template	Each

Payment 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.

100. Removing Traffic Signal Vault, Item SPV.0060.3010.

This special provision applies only to Project 1060-33-71.

A Description
Work under this specification consists of removing the existing City of Milwaukee traffic signal vaults at the intersection of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue). Work under this specification shall be done in accordance to standard spec 653 and these special provisions.

B Mateials
Materials shall be in accordance to standard spec 204.

C Construction
Construction shall be in accordance to standard spec 653.3.

The City of Milwaukee will be performing street light work at the intersection of USH 18 (W. Bluemound Road) & STH 181 (N. Glenview Avenue) under a Local Force Account (LFA). The traffic signal vaults may contain street lighting infrastructure. Contact City of Milwaukee Street Lighting, Dennis Miller, Street Lighting Manager, (414) 286-5942 office or (414) 708-4251 mobile, 1540 W. Canal Street, Milwaukee, WI 53233, prior to removing

any traffic signal vaults to ensure that all street lighting cables are de-energized and all required street lighting LFA work is complete prior to vault removal.

Contact City of Milwaukee Signals Shop, Al Nichols, Interim Manager/Dispatch; (414) 286-3687; 1540 W. Canal Street, Milwaukee, WI 53233, and City of Milwaukee Signals Engineering, Joseph Bondowski, Engineering Technician; (414) 286-5162; 841 N. Broadway, Milwaukee, WI 53202, prior to removing any traffic signal vaults to ensure that it is safe to do so.

D Measurement
The department will measure Removing Traffic Signal Vault 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.0060.3010	Removing Traffic Signal Vault	Each

Payment is full compensation for breaking down and removing; for salvaging, if required; for hauling and disposing of materials; and for backfilling.

101. Bollards, Item SPV.0060.3021.

This special provision applies only to 1060-33-90.

A Description
This special provision describes furnishing and installing bollards as shown on the plans and as hereinafter provided.

B Materials
Furnish galvanized steel pipe, standard weight, meeting ASTM A36. The pipe shall be 6-inch outside diameter by minimum 8-foot length.

Furnish grade A, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to standard spec 501.2.

C Construction
Construct bollards as shown in the plan detail and as specified in section 501. Install the bollards plumb. Fill the pipe flush to the top with concrete. Provide the surface finish specified in standard spec 502.3.7.2.

Grind down to an approximate rolled edge any sharp points or edges at the top of the pipe. Repair all scratches, nicks, and bare spots on the pipe with galvanizing paint.

D Measurement
The department will measure Bollards 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.0060.3021	Bollards	Each

Payment is full compensation for providing and installing all materials; for excavating, backfilling, and disposal of surplus materials.

102. Adjusting Sanitary Manholes, Item SPV.0060.5011.

A Description

This work includes adjusting sanitary manholes to an elevation as determined by the engineer as well as installing frame and cover, internal frame/chimney seal, in accordance to the Standard Specifications for Sewer and Water Construction in Wisconsin, latest Edition.

Add or remove masonry adjusting rings as needed. This item applies to structures to be lowered less than 6 inches or raised less than 12 inches.

B Materials

B.1 Adjusting Rings

Adjustment rings shall be concrete with steel reinforcement in conformance with ASTM C-478. Precast concrete rings shall have an inside diameter to match the manhole opening, be not less than 2 inches nor more than 6 inches high, and have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. Do not use any cracked or broken rings. The top of precast manhole cones shall be set a maximum of 18 inches lower than established grade in unimproved areas, with the top of the manhole cover being ringed up flush with the existing ground. The minimum number of adjusting rings shall be one 2-inch ring. The maximum height of adjusting rings shall be 8 inches in paved areas. All joints between the adjusting rings shall be filled with grout or mortar, including between the cone and the adjusting ring and the adjusting ring and the frame. Rings shall be grooved to receive a step.

B.2 Manhole

Precast manholes and cones shall conform to ASTM Specifications, C478, latest revision.

B.4 Manhole Seal

Furnish new Cretex, NPC Flexrib, or approved equal internal frame/chimney Seal, as shown in the plans. The seal shall meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the Standard Specifications for Sewer and Water.

C Construction

C.1 General

The location of existing sanitary manholes to be adjusted is indicated on the plans. Adjust these items as shown in the plans. Reconstruct manholes as necessary so that the frames and cover when placed will be at the established required grade; remove the existing frame and cover. Install seals in accordance to the manufacturer's recommended installation procedures. Furnish and use Backfill Slurry in the manhole excavation area to existing surface or to appropriate depth for pavement restoration. Salvage the existing frame and cover.

C.2 Surface Preparation

Remove manhole cover and power wire brush the lower 3 inches of the manhole frame to remove any loose rust or scale and repair any imperfections by either grinding smooth or filling with mortar. A smooth, clean sealing surface is required. Realign the casting if it is offset more than approximately 2 inches from the chimney. Remove all loose and protruding mortar and brick from the upper 7-Inch chimney and clean surface by power wire brushing. Provide a 4-Inch wide sealing surface starting 2 inches down from the bottom of the frame.

All sealing surfaces must be circular, reasonably smooth, clean and free of any loose material or excessive voids. If such a surface does not exist for the bottom of the sleeve to seal against, use one-component, quick-set, high strength, non-shrink, polymer modified patching mortar which has been formulated for vertical or overhead use. If the bottom of the sleeve is to seal against the top of an eccentric (straight side) cone and an inadequately high vertical surface does not exist, contact the manufacturer to obtain details to build the required vertical surface.

Use caulk to fill minor irregularities in the bottom sealing surface. The caulk shall be a butyl rubber caulk conforming to AASHTO M-198, Type B. Apply a single bead of the caulk to the center portion of the lower sealing surface of the sleeve.

Any flaws in the manhole frame, such as minor cracks, pits or protrusions, shall be repaired by either filling with mortar or grinding smooth.

D Measurement

The department will measure Adjusting Sanitary Manhole as each individual adjustment, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5011	Adjusting Sanitary Manholes	Each

Payment is full compensation for furnishing and installing all materials including adjusting rings, masonry, and internal frame/chimney seals; for excavating, backfilling, and compacting; for disposing of surplus materials; and for cleaning out and restoring the structure.

103. Adjusting Water Manholes, Item SPV.0060.5014.

A Description

This work includes adjusting water manholes to an elevation as determined by the engineer as well as installing frame and cover, in accordance to the Standard Specifications for Sewer and Water Construction in Wisconsin, latest Edition.

Add or remove masonry adjusting rings as needed. This item applies to structures to be lowered less than 6 inches or raised less than 12 inches.

B Materials

B.1 Adjusting Rings

Adjustment rings shall be concrete with steel reinforcement in conformance with ASTM C-478. Precast concrete rings shall have an inside diameter to match the manhole opening, be not less than 2 inches nor more than 6 inches high, and have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. Do not use any cracked or broken rings. The top of precast manhole cones shall be set a maximum of 18 inches lower than established grade in unimproved areas, with the top of the manhole cover being ringed up flush with the existing ground. The minimum number of adjusting rings shall be one 2-inch ring. The maximum height of adjusting rings shall be 8 inches in paved areas. All joints between the adjusting rings shall be filled with grout or mortar, including between the cone and the adjusting ring and the adjusting ring and the frame.

B.2 Manhole

Precast manholes and cones shall conform to ASTM Specifications, C478, latest revision.

C Construction

C.1 General

The location of existing water manholes to be adjusted is indicated on the plans. Adjust these items as shown in the plans. Reconstruct manholes as necessary so that the frames and cover when placed will be at the established required grade; remove the existing frame and cover. Install seals in accordance to the manufacturer's recommended installation procedures. Furnish and use Backfill Slurry in the manhole excavation area to existing surface or to appropriate depth for pavement restoration. Salvage the existing frame and cover.

C.2 Surface Preparation

Remove manhole cover and power wire brush the lower 3 inches of the manhole frame to remove any loose rust or scale and repair any imperfections by either grinding smooth or filling with mortar. A smooth, clean sealing surface is required.

Realign the casting if it is offset more than approximately 2 inches from the chimney. Remove all loose and protruding mortar and brick from the upper 7-Inch chimney and clean surface by power wire brushing. Provide a 4-Inch wide sealing surface starting 2 inches down from the bottom of the frame.

All sealing surfaces must be circular, reasonably smooth, clean and free of any loose material or excessive voids. If such a surface does not exist for the bottom of the sleeve to seal against, use one-component, quick-set, high strength, non-shrink, polymer modified patching mortar which has been formulated for vertical or overhead use. If the bottom of the sleeve is to seal against the top of an eccentric (straight side) cone and an inadequately high vertical surface does not exist, contact the manufacturer to obtain details to build the required vertical surface.

Use caulk to fill minor irregularities in the bottom sealing surface. The caulk shall be a butyl rubber caulk conforming to AASHTO M-198, Type B. Apply a single bead of the caulk to the center portion of the lower sealing surface of the sleeve.

Any flaws in the manhole frame, such as minor cracks, pits or protrusions, shall be repaired by either filling with mortar or grinding smooth.

D Measurement

The department will measure Adjusting Water Manhole as each individual adjustment, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5014	Adjusting Water Manholes	Each

Payment is full compensation for furnishing and installing all materials including adjusting rings and masonry; for excavating, backfilling, and compacting; for disposing of surplus materials; and for cleaning out and restoring the structure.

104. Adjusting Water Valves – Wauwatosa, Item SPV.0060.5019.

A Description

Work under this item includes the adjustment of existing water service boxes and water gate valve boxes to match the proposed finish grade.

B (Vacant)

C Construction

C.1 Water Valve Boxes

The contractor will adjust water service boxes and water gate valve boxes vertically as required by contractor operations. The contractor will set the finish service of valve box in a plumb, vertical position flush with the pavement or terrace, whichever applies.

The contractor will protect the top section of the box. If the section is accidentally broken, a new top section must be used.

After the pavement is installed, if Wauwatosa Water Utility determines the valve is inoperable due to displacement or faulty adjusting of lack of protection, the contractor will be required to perform all work necessary to correct the condition and make the valve operational at his own expense and with five days of notification by the city.

D Measurement

The department will measure Adjusting Water Valves - Wauwatosa as each individual unit acceptable completed, regardless of the number of adjustments made to the service of valve box.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5019	Adjusting Water Valves - Wauwatosa	Each

Payment is full compensation for furnishing and installing all materials for the number and amount of adjustments made to the valve box and for all labor, tools, equipment, and incidentals necessary to complete contract work.

105. Hydrant Removal SPV.0060.5020; Hydrant Installation SPV.0060.5021; Ductile Iron Hydrant Branch 6-Inch, Item SPV.0090.5020.

A Description

This special provision describes removing existing hydrants, installing new hydrants and 6” diameter hydrant branch alterations.

Perform work under these items in accordance to the details as shown on the plans and the requirements of the City of Milwaukee Water Main Installation Specifications, dated January 2, 1987 (City Water Main Specifications). Additionally, perform all work in accordance to the “Milwaukee Water Works Standard Plan Notes for Water Main Construction”, June 14, 2011. Notes 4, 6, 15, 16, 17 and 21 shall not apply to this project. In case of conflicts between the City Water Main Specifications and the standard specifications or these special provisions, the requirements of the standard specifications and the special provisions shall govern. Contact Mr. Bill Gehweiler, at (414) 286-2927 to purchase copies of the required documents.

B Materials

B.1 General

The city will furnish hydrants for installation on this project. Contact Mr. Ricardo Lopez, Inventory Clerk, at (414) 286-6123 for material supplies. Provide all other water main materials conforming to the latest version of the City of Milwaukee's Material Specifications. Material specifications can be found at the following website, http://city.milwaukee.gov/water/business/standardspecs.htm. All materials will require inspection by the City of Milwaukee. Notify Mr. Mark Scheller, (414) 286-2427 or Mr. Steve Brengosz, (414) 708-2808, for materials inspection and the City of Milwaukee's Construction Section, (414) 286-2497, for construction inspection, four working days prior to starting construction.

The contractor shall return all abandoned hydrants to the DPW Field Headquarters – Infrastructure, Operations, Water Works at 3850 N. 35th Street. Contact Mr. Ben Glatzel at (414)708-2839 for additional information.

Milwaukee Water Works will test all pipe, in accordance to the City of Milwaukee Material Testing Specifications.

B.2 Valve Box Adapters

Install all valve boxes on gate valves with the use of valve box base adapters as detailed in the Standard Plan Notes Regarding Water Main Construction. Install the adapter in addition to the hardwood blocking.

C Construction

Unless shown otherwise, backfill all water main excavations with granular backfill as specified in Section 14 of the City of Milwaukee Standard Plan Notes Regarding Water Main Construction.

Consolidate all backfill by mechanical compaction per specification 2.6.14(B) of the Standard Specifications for Sewer and Water Construction in Wisconsin. Per specification, the initial compacted lift shall be two (2) feet, and the specification shall be modified to read, "each subsequent compacted lift of material shall be 1 foot". Costs are to be included in the unit price bid for the water main. Settling the trench by flooding the backfill will not be allowed.

D Measurement

The department will measure Removing Hydrant as each individual hydrant, acceptably removed.

The department will measure Hydrant Installation as each individual hydrant, acceptably installed.

The department will measure Ductile Iron Hydrant Branch 6-Inch by the linear foot of water main, and hydrant branch of the type and diameter specified, 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.0060.5020	Hydrant Removal	Each
SPV.0060.5021	Hydrant Installing	Each
SPV.0090.5020	Ductile Iron Hydrant Branch 6-Inch	LF

Payment is full compensation for providing all materials (except hydrants provided by the City) including all valves, fittings, and accessories required; for all excavating, for sheeting and shoring; for forming foundation; for laying pipe; for concrete base, buttresses, and anchors; for bulkheading and abandoning existing water mains; for sealing joints and making connections to new or existing facilities; for providing granular backfill material, including bedding material; for backfilling; for removing sheeting and shoring; for cleaning out the site of the work and incidentals necessary to complete the work

106. Adjusting Water Valves - Milwaukee, Item SPV.0060.5022.

A Description

This special provision describes adjusting, protecting, and maintaining accessibility, for the duration of the paving project, to all city water service boxes and water gate valve boxes located within the project limits.

B Materials

All material for the adjustment of these facilities must meet City of Milwaukee specifications and will be provided by the City of Milwaukee by contacting Gil Taylor, Milwaukee Water Works, at (414) 708-9005 (or Dave Goldapp, Milwaukee Water Works at (414)286-6301). If there is contractor damage, the materials must still be provided by the City of Milwaukee, however, in this case, the contractor will be charged for all materials. Materials furnished by the City of Milwaukee and not used on the project shall be delivered back to DPW Field Headquarters- Infrastructure, Operations, Water Works at 3850 N. 35th St. Materials being returned must be accompanied with a "surplus material" form completed by the Public Works Inspector assigned to the project.

C Construction

All water service boxes, water gate valve boxes within the project limits shall be adjusted to proposed elevations by the contractor using materials meeting city specifications.

The city will locate, mark, inspect and repair all water service boxes and water gate valve boxes within the limits of the project prior to commencement of work on the project.

Throughout the duration of the project, the contractor must ensure that all water service boxes and water gate valve boxes are adequately located and identified by blue paint, and that at all times, all water appurtenances remain accessible for operation by city forces. Exercise caution working adjacent to water facilities to avoid damage and ensure accessibility.

Upon completion of the contract, the city will inspect all water facilities to ensure the water valves are clean, properly aligned, and accessible. The contractor shall be responsible to make identified repairs and adjustments, and if any repairs or adjustments are made by the city, the cost will be charged to the contractor.

D Measurement
The department will measure Adjusting Water Valves - Milwaukee 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.0060.5022	Adjusting Water Valves - Milwaukee	Each

Payment is full compensation for all excavation, backfilling, disposal of surplus materials, water box, and restoration of the work site; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

107. Coral Bells Palace Purple Cont 6 Inch, Item SPV.0060.7001; Grass Karl Foerster Reed Cont 6-Inch, Item SPV.0060.7003; Sedum Autumn Joy Cont 6 Inch, Item SPV.0060.7005.

A Description
This special provision describes furnishing and planting perennial plants of the species, varieties and sizes specified, in accordance to standard spec 632, and as hereinafter provided.

B Materials
Provide plants of the specific species, variety, size, color and other characteristics as shown on the plans and Planting Data chart unless prior written approval of the engineer is provided in advance for any substitution.

C Construction
Plant perennials in topsoil planting beds as indicated on the plans. Incorporate time release fertilizer thoroughly into the top 3" inches of planting soil at the manufacturers recommended rate.

Use a fertilizer conforming to the following minimum requirements:

Nitrogen……14%
Phosphoric Acid……14%
Potash……14%

Thoroughly water-in plants to eliminate all air pockets.

Plant all perennials between May 1st and September 1st unless directed otherwise by the engineer.

Contractor shall remove and dispose of all excess material from site.

D Measurement
The department will measure perennials (Type) by each individual perennial, acceptably accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.7001	Coral Bells Palace Purple Cont 6 Inch	Each
SPV.0060.7003	Grass Karl Foerster Reed Cont 6-Inch	Each
SPV.0060.7005	Sedum Autumn Joy Cont 6-Inch	Each

Payment is full compensation in accordance to standard spec 632.5.

108. Inlet Covers Type 57, Item SPV.0060.8004; Inlet Covers Type R Special, Item SPV.0060.8006.

A Description
The work under these items shall be in accordance to the requirements of standard spec 611 and the details as shown on the plans.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Inlet Cover (Types) by each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.8004	Inlet Covers Type 57	Each
SPV.0060.8006	Inlet Covers Type R Special	Each

Payment shall conform to standard spec 611.5 of the standard specification.

109. Reconnect Storm Sewer Laterals, Item SPV.0060.8007.

A Description

This special provision describes reconnecting existing storm sewer laterals to new Storm Sewer Structures or new pipe.

B (Vacant)

C Construction

Identify all private laterals in existing Storm Sewer Structures prior to that Storm Sewer Structure's removal. Remove existing lateral pipes to the next good joint and replace in-kind. Verify that positive drainage is achieved when connecting to the new inlet or curb outlet Storm Sewer Structure. The contractor will be allowed to salvage any structurally sound pipe that was removed with prior approval by the engineer. Connect the existing pipes to the new pipes with the appropriate coupling, concrete collar or by means approved by the engineer. Concrete masonry for concrete collar shall be in accordance to standard spec 501. Any additional pipe or materials required to reconnect the storm sewer laterals shall be considered incidental to this bid item.

D Measurement

The department will measure Reconnect Storm Sewer Laterals by each individual lateral connected, 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.0060.8007	Reconnect Storm Sewer Laterals	Each

Payment is full compensation for performing all work; and for furnishing and installing all materials, couplings, concrete collars, and pipe.

110. Pavement Marking Grooved Preformed Thermoplastic Stop Line 18-Inch, Item SPV.0090.0001; Crosswalk 6-Inch, Item SPV.0090.0002.

A Description

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

B Materials

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

C Construction

C.1 General

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

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

C.2 Groove Depth

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

C.3 Groove Width – Linear Markings

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

C.4 Groove Position

Position the groove edge in accordance to the plan details.

C.4.1 Linear Marking

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

C.4.2 Special Marking

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

C.5 Groove Cleaning

C.5.1 Concrete

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

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

C.5.2 New Asphalt
Groove pavement 10 or more days after paving. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

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

C.5.4 Asphalt
Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

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

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

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

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

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

The sealant must be wet.

D Measurement
The department will measure Pavement Marking Grooved Preformed Thermoplastic (Type) (Size) by the linear foot of tape placed, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0001	Pavement Marking Grooved Preformed Thermoplastic Stop Line 18-Inch	LF
SPV.0090.0002	Pavement Marking Grooved Preformed Thermoplastic Crosswalk 6-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface, and for furnishing and installing the material.

111. Removing Pavement Markings Water Blasting, Item SPV.0090.0003.

A Description
Remove pavement markings using ultra-high pressure water. Remove pavement markings from locations shown on the plans or as the engineer directs.

B (Vacant)

C Construction
Provide a truck or vehicle mounted ultra high pressure pump and water tank capable of delivering a minimum of 30,000 psi and up to 40,000 psi to waterjet nozzles. The water blaster shall include a vacuum recovery system to provide a clean, almost dry surface, without the use of a secondary cleanup process.

Remove pavement markings through means of water blasting. Do not damage the pavement during removal process.

The equipment shall contain a storage system that allows for the storage of the wastewater while retaining the debris.

D Measurement
The department will measure Removing Pavement Markings Water Blasting by the linear foot of 4-inch wide line, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0003	Removing Pavement Markings Water Blasting	LF

Payment for Removing Pavement Markings Water Blasting is full compensation for removal, repairing associated damage, and disposal of residue.

112. Temporary Overhead Cable Quadruplex 6 AWG, Item SPV.0090.1020; Temporary Overhead Cable Quadruplex 4 AWG, Item SPV.0090.1021.

A Description

This special provision describes furnishing, installing, and connecting overhead cable complete with all splicing, identifications, terminations and associated hardware and guy wires at wood poles. This section also describes the removal of the overhead cable after the temporary lighting is approved for removal.

B Materials

Overhead cable shall be aluminum conductors according to ASTM B 230 and shall be Class B stranded according to ASTM B 231, and shall conform to the values listed in the table below:

Phase Conductor				**Messenger Wire**	
Size AWG	**Stranding**	**Avg. Insulation Thickness**		**Min. Size AWG**	**Stranding**
		mm	mils		
6	7	1.1	45	6	6/1
4	7	1.1	45	4	6/1
2	7	1.5	45	2	6/1

The aerial cable shall be an assembly of insulated aluminum conductors and a steel messenger wire according to ANSI/ICEA S-76-474. The cable assembly may have the messenger wire intertwined with the insulated cables or lashed to the insulated cables by a factory wrap. The cable shall be assembled according to ANSI/ICEA S-76-474.

All cable shall be rated 600-V. The cable shall be rated 105º C dry and 90º C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals, and UV rated. The UL listing mark, cable voltage, insulation type and ratings, as well as the cable size, shall all be clearly printed on the cable in a color contrasting with the insulation color. When specified, each cable installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.

All electric cables installed shall be color coded. Neutral wires shall be color-coded white. Single phase three wire runs of cable shall be color-coded one black, one red, and one white. Insulated ground wires, where applicable, shall be green. Color striping of cables will not be acceptable in lieu of the specified color coding means.

Make the luminaire connections to the aerial cable with listed parallel tap insulation piercing connectors. The connector shall be rated for 600-V, and be listed under UL Standard 486B.

C Construction

Overhead cable as shown on temporary lighting plans will not be needed for final lighting. Remove temporary overhead cable. Removal of temporary overhead cable will be incidental to this pay item and it will become property of the contractor. The bid price shall reflect the salvage value of the temporary overhead cable.

Upon written request of the contractor, the engineer may permit to reuse removed temporary overhead cable of ampacity equivalent to the specified cable and of a type and condition approved by the engineer, if possible.

Install guy wires as necessary per WisDOT standard details for Spanwire Temporary Traffic Signal.

Conform to standard spec 655.3.5(9) for ground resistance testing.

D Measurement

The department will measure Temporary Overhead Cable Quadruplex 6 AWG, Temporary Overhead Cable Quadruplex 4 AWG in length by the linear foot in place, acceptably completed, and will be taken as the length of the messenger wire. Measurement will be made in a straight line between changes in direction and to the centers of light standards and control cabinets. Sag of the aerial cable or vertical cable will not be measured for payment. The rewiring to facilitate relocation of the cable due to staging or other construction requirements will not be measured for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.1020	Temporary Overhead Cable Quadruplex 6 AWG	LF
SPV.0090.1021	Temporary Overhead Cable Quadruplex 4 AWG	LF

Payment is full compensation for providing electrical wire; for making all connections; for providing all connectors, including wire nuts, fuses, fuse holders, splices, tape, and insulators; for providing messenger wire, and guy wires; and for removing temporary overhead cable.

113. 4-Duct Conduit Cement Encased, 4-Inch Conduit DB-60, Item SPV.0090.2001, 1-Duct Conduit Cement Encased, 4-Inch Conduit DB-60, Item SPV.0090.2002.

A Description

This work consists of furnishing and installing cement encased multiple duct conduit packages below grade in accordance with the applicable sections of the standard specifications, as shown on the plans and as hereinafter described.

B Materials

Conduit. The contractor shall furnish DB-60 polyvinyl chloride (PVC) conduit.

PVC conduit and fittings shall conform to the requirements of Standard Specifications for Smooth-Wall Poly (Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation, ASTM Designation: F512 (latest edition).

Concrete. The type of concrete to be used to encase the ducts will be:

Class of Concrete	Type of Cement	Min. Cement Content Sacks per Cubic Yard	Sizes of Coarse Aggregate
G	Standard Portland Cement Type 1A or 1SA	4.0	Sharp Torpedo Sand only

Slurry Backfill. Aggregate slurry backfill consists of No. 1 concrete aggregate Class 'C' concrete mix with the cement deleted.

Fly Ash (Class C)	75 lbs.
Concrete Sand (Damp)	1830 lbs.
No. 1 Concrete Aggregate	1830 lbs.

The material shall be mixed with water to inundate the aggregate sufficiently to provide an approximate 3 inch slump. The mix shall be deposited in the trench directly from a concrete transit mix truck.

Pull Rope. Pull rope specifications will be:

- Flat construction (7/16" to 5/8" wide)
- 100% woven aramid fiber (may include tracer wire)
- 1500 lbs. Minimum pull strength prelubricated
- sequential footage markings for location

For any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

C Construction

Excavation. The excavation shall have the minimum or maximum dimensions shown on the plans and as follows:

No. of Ducts Wide	Minimum	Maximum
2	14 1/8”	16 5/8”
3	19 3/4”	22 1/4”
4	25 3/8”	27 7/8”

These minimum and maximum trench widths apply to standard 4 inch PVC electrical duct only. When required, the excavation may be widened for the handling and placing of materials.

Open-cut trenches shall be sheathed and braced as required by code and as necessary to maintain safety. The cost of furnishing, placing and removing of sheathing and bracing shall be included in the unit bid for the work.

The dimensions of the excavation will be governed by the number, configuration and the grade (cover) to which the conduit is to be installed as shown on the plan. The walls of the excavation shall be clean and true.

Previous to excavating trenches, the contractor shall expose the existing manhole and conduit lines. The object of this is to permit adjustments in line and grade to avoid special construction methods. The exposed manhole and conduit shall be protected from damage.

The conduit shall be laid at a depth so that sufficient protection from damage is provided. Allowable covers shall be as follows:

The standard cover for mainline conduit is 39 inches and the minimum cover acceptable shall be 28 inches.

The standard cover shall be maintained wherever possible and any deviation less than the minimum may be allowed only with specific approval of the engineer.

The trench shall be graded so that it will have a minimum pitch of three inches per 100 feet. When an obstruction is encountered in the trench and it is necessary to excavate a deeper trench than would otherwise be required, in order to obtain drainage, refer the matter to the Inspector to determine whether the extra excavation should be made.

In grading a trench for mainline conduit, there are three general practices for direction of pitch:

(a) When grading a trench in a street with a level grade, the high point of the trench bottom should ordinarily be centered between manholes and pitched downward equally toward each manhole.

(b) Where the street slopes in one direction, locate the high point of the trench bottom approximately 30 feet from the end wall of the higher manhole and grade toward both manholes.

(c) Where a steep grade is encountered, grade the trench at the minimum pitch from the end wall of the higher manhole to a point 20 feet plus or minus toward the lower manhole. From this point, follow the street grade at the standard cover to a point 20 feet plus or minimum away from the end wall of the lower manhole. From this point, the remainder of the section shall be laid at the normal pitch.

After the rough excavation is completed, the bottom of the trench shall be prepared to receive the conduit. The duct bed shall be brought to the final grade and graded uniformly from the high point to the low or drainage points. Stone chips or limestone screenings shall be used for grading the trench.

Placing of Duct. Placing of the duct is to proceed as soon as the duct bed has been completed. All ducts shall be inspected before placing to see that the bores are clean and free from mud, sand, etc. Only ducts with a smooth bore, free from burrs, rough projections etc. shall be used. Where burrs or other rough areas likely to damage cable are found in the duct, they shall be smoothed off by rasping or scraping.

The duct shall be placed (as shown on the detail) with the ends staggered so no two couplings are adjacent. This may be accomplished by the use of the short lengths in stock or cutting back full length sections to the desired lengths. If cut pieces are used, the cut end shall be placed at the manhole.

Full length pieces shall be used for the balance of the conduit line.

Formations of two ducts or more in height are to be carried forward in full formation, that is, as each tier of twenty foot lengths is laid on base spacers, the next higher tier of ducts shall then be placed on the intermediate spacers. These spacers shall be two feet from each duct end and one in the middle. The intermediate spacers and ducts shall be placed for the remaining tiers. Each length shall be glued into the adjoining coupling. A twist and push on the duct being placed will suffice for a water tight joint. Caution must be exercised in the driving operation, so that neither the coupling nor duct will be split or damaged in any way. After the full formation has been completed, wood trench and duct bracing shall be placed on the ducts to prevent shifting or floating while the concrete envelope is being placed and during driving operation.

This procedure shall be followed with succeeding lengths, providing spacers (as shown on the detail) at the proper intervals, until sufficient trench footage of completed formation has been placed and is ready to receive concrete encasement.

The terminating point for mainline conduit will be the inside manhole wall, inside abutment wall, or inside wall of bridge house. A standard end bell fitting shall be installed on all duct access points into manholes.

A #10 copper tracer wire shall be installed along and above the centerline of the duct for encasement in the concrete. The wire shall be 2 feet longer than the run of conduit and extend beyond the end of the grout encasement.

Concreting. After sufficient conduit has been laid and the trench and duct have been inspected, concreting is to begin. The minimum concrete encasement of the ducts shall be three inches on the top, two inches on the sides, and three inches on the bottom (as shown on the detail).

After placing, the concrete shall be puddled with a splicing bar or similar tool so that complete duct encasement is accomplished. Wood braces used to keep the conduit from floating shall be removed before the concrete sets completely and the resultant encasement voids filled with concrete.

Concrete encasement shall be allowed sufficient time to set before backfilling is commenced.

Slurry Backfill. The backfilling of the conduit shall commence immediately after the duct has been inspected, approved and has had sufficient time to set to withstand the load.

An aggregate slurry as specified shall be used to backfill all concrete encased conduit. The trench shall be slurry backfilled to the proposed or existing subgrade. The mix shall be deposited in the trench directly from a concrete transit mix truck.

D Measurement

The department will measure (Duct) Conduit Cement Encased 4-Inch Conduit DB-60, by the linear foot, acceptably completed. The linear feet of encased duct will be measured along the centerline of duct between ends of conduit.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.2001	4-Duct Conduit Cement Encased 4-Inch Conduit DB-60	LF
SPV.0090.2002	1-Duct Conduit Cement Encased 4-Inch Conduit DB-60	LF

Payment is full compensation for furnishing the conduit, conduit bodies, conduit fittings, conduit spacers, end caps, pull ropes and trace wires; for excavating, bedding, encasement and backfilling including any concrete, stone, aggregate slurry, bracing, or other related materials; for disposing of surplus materials; and for making inspections, and for installing the conduit.

114. Type UF Cable 2 Conductor No. 14, Item SPV.0090.3001.

This special provision applies only to Project 1060-33-71.

A Description
This work shall consist of furnishing and installing cable for confirmation lights and making all connections as shown on the plans and as hereinafter provided.

B Materials
Conform to standard spec 655 and as follows:

Supplement standard spec 655.3.4 with the following:

When lighting is installed in conjunction with traffic signals, conductors from the traffic signal control cabinet to the confirmation light(s) shall be Type UF, two conductor without ground, solid copper conductor cable, size No. 14.

C Construction
Furnish and install Type UF Cable, 2 Conductor, No. 14 for traffic signals.

D Measurement
The department will measure Type UF Cable, 2 Conductor, No. 14 by the linear foot of cable, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.3001	Type UF Cable 2 Conductor No. 14	LF

Payment is full compensation for furnishing and installing cable; for making all connections; for furnishing and installing all connectors, including wire nuts, splice kits, tape, insulating varnish or sealant and ground lug fasteners, and for testing.

115. Ductile Iron Water Main 8-Inch, Item SPV.0090.5021.

A Description
This special provision describes the installation of 8-inch diameter water main alterations as shown on the plans.

A.1 General

Perform work under these items in accordance to the details as shown on the plans and the requirements of the City of Milwaukee Water Main Installation Specifications, dated January 2, 1987 (City Water Main Specifications). Additionally, perform all work in accordance to the "Milwaukee Water Works Standard Plan Notes for Water Main Construction", June 14, 2011. Notes 4, 6, 16 through 18, and 21 shall not apply to this project. In case of conflicts between the City Water Main Specifications and the standard specifications or these special provisions, the requirements of the standard specifications and the special provisions shall govern. Contact Ms. Angela Baldwin , at (414) 286-2813 to purchase copies of the required documents.

A.2 Submittals

Address all required submittals to Milwaukee Water Works as follows:

Superintendent
Milwaukee Water Works
Zeidler Municipal Building
841 North Broadway, Room 409
Milwaukee, WI 53202

A.3 Sequence of Construction

Due to the nature of this work, including traffic staging and coordination with other work, the contractor is advised there may be multiple mobilizations to complete the water main work. No additional payment will be made by the department for said mobilizations.

Determine sequence and schedule for water main construction, subject to the requirements herein.

Prepare and submit for review by the Superintendent of Milwaukee Water Works a detailed construction schedule stating the anticipated dates and duration of all interruptions in water service necessary to complete the work under the contract, including the abandonment of existing water mains.

B Materials

B.1 General

The contractor shall furnish all fittings required for installation on this project. Contractor shall provide all ductile iron water main conforming to the latest version of the City of Milwaukee's Material Specifications. Material specifications can be found at the following website, http://city.milwaukee.gov/water/business/standardspecs.htm. All materials will require inspection by the City of Milwaukee. Notify Mr. Mark Scheller, (414) 286-2427 or Mr. Steve Brengosz, (414) 708-2808, for materials inspection and the City of Milwaukee's Construction Section, (414) 286-2497, for construction inspection, four working days prior to starting construction.

Milwaukee Water Works will test all pipe, in accordance to the City of Milwaukee Material Testing Specifications.

B.2 Valve Box Adapters
Install all valve boxes on gate valves with the use of valve box base adapters as detailed in the Standard Plan Notes Regarding Water Main Construction. Install the adapter in addition to the hardwood blocking.

C Construction
The Milwaukee Water Works will shut off the water main to be altered and provide temporary hose connections to affected services as required.

The contractor will be responsible for all surveying required to layout and construct the water main relocations.

The 8" water main installation from station 72F+25 to 72F+50 includes one 8" valve removal (72F+33, 40'RT) and one 8" gate valve (72F+48, 40'RT) installation. All costs for completing the work required for the valve removal and installation is to be included in the price for furnishing and installing 8" water main under this SPV.

D Measurement
The department will measure Ductile Iron Water Main 8-Inch by the linear foot of water main of the type and diameter specified acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5022	Ductile Iron Water Main 8-Inch	LF

Payment is full compensation for providing all labor, equipment, materials (except for fittings provided by the city), valves and accessories required; for all surveying; excavating, for sheeting and shoring; for forming foundation; for laying pipe; for removing valves; for installing all valves and fittings; for concrete base, buttresses, and anchors; for bulkheading and abandoning existing water mains; for sealing joints and making connections to new or existing facilities; for providing granular backfill material, including bedding material; for backfilling; for removing sheeting and shoring; for cleaning out the site of the work and incidentals necessary to complete the work.

116. Roadway Service Box Installation, Item SPV.0060.5024; Curb Stop Installation, Item SPV.5023.

A Description
This special provision describes installing a roadway service box and relocating a curb stop as shown on the plans.

A.1 General

Perform work under these items in accordance to the details as shown on the plans and the requirements of the City of Milwaukee Water Main Installation Specifications, dated January 2, 1987 (City Water Main Specifications). Additionally, perform all work in accordance to the "Milwaukee Water Works Standard Plan Notes for Water Main Construction", June 14, 2011. Notes 4, 6, 16 through 18, and 21 shall not apply to this project. In case of conflicts between the City Water Main Specifications and the standard specifications or these special provisions, the requirements of the standard specifications and the special provisions shall govern. Contact Ms. Angela Baldwin, at (414) 286-2813 to purchase copies of the required documents.

B Materials

B.1 General

The city will furnish curb stops and curb boxes for installation on this project. The contractor shall furnish all fittings, adapters, piping and service insulators required for installation on this project to the latest version of the City of Milwaukee's Material Specifications. Material specifications can be found at the following website, http://city.milwaukee.gov/water/business/standardspecs.htm. All materials will require inspection by the City of Milwaukee. Notify Mr. Mark Scheller, (414) 286-2427 or Mr. Steve Brengosz, (414) 708-2808, for materials inspection and the City of Milwaukee's Construction Section, (414) 286-2497, for construction inspection, four working days prior to starting construction.

C Construction

Where required and noted "R.S.B." on the plan(s), the Contractor shall install a roadway service box by replacing the top section of the existing standard curb stop box with a top section of a standard valve box and cover furnished by the City.

Where required and noted "R.C.S." on the plan(s), the Contractor shall install a new curb stop with the required adapters and fittings in the existing water service piping. The new curb stop shall be set approximately 3 inches from the property line or 18 inches from the building face in the open street or as noted on the plan. The Contractor shall replace the service piping between the existing curb stop and the proposed curb stop with new copper water service piping of the same size, but not less than 1". The Contractor shall remove the old service box and install a new service box with the new curb stop.

The Milwaukee Water Works will shut off the water main to be altered and provide temporary hose connections to affected services as required.

The contractor will be responsible for all surveying required to layout and locate the water services.

D Measurement

The department will measure Roadway Service Box Installation and Relocated Curb Stop Installation 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.0060.5024	Roadway Service Box Installation	Each
SPV.0060.5023	Curb Stop Installation	Each

Payment is full compensation for providing all labor, tools, equipment, materials (except those provided by the city) and accessories required; for all surveying; for all excavating, for sheeting and shoring; for forming foundation; for sealing joints and making connections to new or existing facilities; for providing granular backfill material, including bedding material; for backfilling; for removing sheeting and shoring; for cleaning out the site of the work and incidentals necessary to complete the work in accordance with this contract.

117. Survey Project 1060-33-71, Item SPV.0105.0001; Survey Project 1060-33-90, Item SPV.0105.0004.

A Description

This special provision describes modifying the requirements for construction staking in accordance to standard spec 105.6 and 650 and as modified in this special provision.

Replace standard spec 105.6.2 with the following:

The department will not perform any construction staking for this contract. Perform all survey required to lay out and construct the work under this contract, subject to engineer's approval.

The survey includes establishing horizontal and vertical position for all aspects of construction including but not limited to storm sewer, subgrade, base, curb, gutter, curb and gutter, pavement, electrical installations, supplemental control, slope stakes, ITS, FTMS, parking lots, utilities, landscaping elements, installation of community sensitive design elements, traffic control items, etc.

The department may choose to perform quality assurance surveys during the project. These quality assurance surveys do not relieve the responsibility for performing all survey work required to lay out and construct the work under this contract.

Delete standard spec 650.1.

B (Vacant)

C Construction

Conform to standard spec 650.3 and as modified in this special provision.

Replace standard spec 650.3.3.1 with the following:

Under the Survey Project bid item, global positioning system (GPS) machine guidance for conventional subgrade staking on all or part of the work may be substituted. The engineer may require reverting to conventional subgrade staking methods for all or part of the work at any point during construction if, in the engineer's opinion, the GPS machine guidance is producing unacceptable results.

Replace standard spec 650.3.3.3.4.1 with the following:

The department will provide the contractor staking packet as described in the Construction and Materials Manual (CMM) 7.10. At any time after the contract is awarded, the available survey and design information may be requested. The department will provide that information within 5 business days of receiving the request. The department incurs no additional liability beyond that specified in standard spec 105.6 or standard spec 650 by having provided this additional information.

Add the following to standard spec 650.3.3.3.6.2:

Record all subgrade elevation checks and submit a hard copy to the engineer at the completion of the project.

D Measurement

Replace standard spec 650.4 with the following:

The department will measure Survey Project 1060-33-71 and Survey Project 1060-33-90 as a separate single lump sum unit of work for each survey project, acceptably completed.

E Payment

Replace standard spec 650.5 with the following:

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.0001	Survey Project 1060-33-71	LS
SPV.0105.0004	Survey Project 1060-33-90	LS

Payment is full compensation for performing all survey work required to lay out and construct all work under this contract. No additional payments will be made for restaking due to construction disturbance and knock-outs.

118. Pavement Cleanup Project 1060-33-71, Item SPV.0105.0002; Pavement Cleanup Project 1060-33-90, Item SPV.0105.0003.

A Description

This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site.

B Materials

B.1 Pavement Cleanup

Furnish a vacuum-type street sweeper equipped with a power broom, water spray system, and a vacuum collection system.

Vacuum equipment shall have a self-contained particulate collector capable of preventing discharge from the collection bin into the atmosphere.

Use a vacuum-type sweeper as the primary sweeper, except as specified herein or approved by the engineer.

C Construction

C.1 Pavement Cleanup

Keep all pavements, curb lanes, and gutters that are both closed and open to public traffic within the job-site boundaries free of dust and debris generated from any activity under the contract. Keep all pavements, curb lanes and gutters adjacent to the project free of dust and debris that are affected by land disturbing, dust generating activities, as defined in the contractor's dust control implementation plan.

Provide surveillance to identify if material is being tracked from the jobsite. Clean up spillage and material tracked from the project within an hour of occurrence or as directed by the engineer. Perform cleanup operations in a safe manner.

Provide routine sweeping of all pavements, curb lanes, and gutters on local street active haul routes a minimum of once a day as defined in the Dust Control Implementation Plan (DCIP) or as directed by the engineer. This includes S. 84th Street, W. Adler Street, W. Kearney Street, W. O'Connor Street, IH-94 Eastbound Off Ramp, IH-94 Westbound On Ramp, W. Honey Creek Parkway, W. Dana Street, W. Hawthorne Avenue, W. Hill Street, W. Bluemound Road and W. Wisconsin Avenue for routine sweeping.

In addition to routine sweeping, conduct sweepings as the engineer directs or approves, to deal with dust problems that might arise during off-work hours or emergencies. Provide the engineer with a contact person available at all times to respond to requests for emergency sweeping. Respond to emergency sweeping requests within 4 hours.

If the vacuum-type sweeper breaks down, a mechanical broom sweeper may be substituted for no more than 24 hours total elapsed time. Repair the vacuum-type sweeper within that 24 hours or substitute a vacuum-type sweeper.

Skid steers with mechanical power brooms may only be utilized on sidewalks and driveways whose pavements will not support the weight of a street sweeper, unless otherwise approved by the engineer.

D Measurement
The department will measure Pavement Cleanup Project 1060-33-71 and Project 1060-33-90 as a single lump sum unit of work for each pavement cleanup project, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.0002	Pavement Cleanup Project 1060-33-71	LS
SPV.0105.0003	Pavement Cleanup Project 1060-33-90	LS

Payment schedule for this item shall be in accordance to the percentage of contract value earned.

Payment is full compensation for surveillance, mobilization, sweeping, disposing of materials and any other labor, tools or equipment necessary to complete the work.

119. Concrete Pavement Joint Layout, Item SPV.0105.0006.

A Description
This special provision describes providing a concrete pavement joint layout design for intersections and marking the location of all joints in the field.

B (Vacant)

C Construction
Plan and locate all points necessary to establish the horizontal position of the transverse and longitudinal joints in the concrete pavement to prevent uncontrolled cracking. Submit a joint layout design to the engineer before paving each intersection. Mark the location of all concrete pavement joints in the field. Follow the plan details for joints in concrete pavements making adjustments as required to fit field conditions.

D Measurement
The department will measure Concrete Pavement Joint Layout as a single lump sum unit of work for all joint layout designs and marking, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.0006	Concrete Pavement Joint Layout	LS

Payment is full compensation for providing the intersection joint layout designs and marking all joints in the field.

The department will adjust pay for crack repairs as specified in standard spec 415.5.3.

120. Maintenance of Lighting Systems, Item SPV.0105.1005.

A Description

This special provision describes maintaining existing and proposed lighting systems beginning on the date that the contractor's activities (electrical or otherwise) at the job site begin. The contractor shall be responsible for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by, the work until final acceptance or as otherwise determined by the engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. Make the request for the maintenance preconstruction inspection no less than seven calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained.

B (Vacant)

C Construction

C.1 Existing Lighting Systems

Existing lighting systems shall be defined as any lighting system or part of a lighting system in service prior to this contract. The contract drawings indicate the general extent of any existing lighting, but whether indicated or not, it remains the contractor's responsibility to ascertain the extent of effort required for compliance with these specifications; failure to do so will not be justification for extra payment or reduced responsibilities. Extent of maintenance of existing lighting system shall be as follow:

Partial Maintenance: Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the contractor shall only maintain the affected circuits. Isolate the affected circuits by means of in-line waterproof fuse holders as specified elsewhere and as approved by the engineer.

Full Maintenance: If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the contractor shall maintain the entire controller and all associated circuits.

C.2 Proposed Lighting Systems

Proposed lighting systems shall be defined as any temporary or final lighting systems or part of a lighting system which is to be constructed under this contract.

The contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, contractor operations, or other means. Include the potential cost of replacing or repairing any malfunctioning or damaged equipment in the bid price of this item; it will not be paid for separately.

C.3 Maintenance Operations

The contractor's responsibility shall include the maintenance of lighting units (including sign lighting), cable runs, and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the engineer. Uncorrected deficiencies may be designated by the engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the contractor will be allowed to perform corrective action on specific lighting system equipment.

Incident or Problem	Service Response Time	Service Restoration Time	Permanent Repair Time
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	na	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	na
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	na
Outage of 75% of lights on one tower	1 hour	4 hours	na
Outage of light nearest RR crossing approach, Islands and gores	1 hour	4 hours	na
Outage (single or multiple) found on night outage survey	na	na	7 Calendar days

C.4 Lighting

1. **Serve Response Time:** The amount of time from the initial notification to the contractor until a patrolman physically arrives at the location.
2. **Service Restoration Time**: The amount of time from the initial notification to the contractor until the time the system is fully operational again. (In cases of motorist-caused damage, the undamaged portions of the system are operational.)
3. **Permanent Repair Time**: The amount of time from initial notification to the contractor until the time permanent repairs are made if the contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of $500 per day per occurrence. In addition, the department reserves the right to assign any work not completed within this timeframe to the State Electrical Engineering and Electronics Unit. All costs associated to repair this uncompleted work shall be the responsibility of the contractor. Failure to pay these costs to the State Electrical Engineering and Electronics Unit within one month after the incident will result in additional liquidated damages of $500 per month per occurrence. Unpaid bills will be deducted from the cost of the contract. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Engineering and Electronics Unit being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

Repair damage caused by the contractor's operations at no additional cost to the contract.

C.5 Operation of Lighting

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Do not keep lighting systems in operation during long daytime periods. Demonstrate to the satisfaction of the engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

D Measurement

The department will measure Maintenance of Lighting Systems as a single lump sum unit of work, per contract, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.1005	Maintenance of Lighting Systems	LS

Payment is full compensation for Maintenance of Lighting Systems; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

121. Remove Traffic Signals USH 18 and STH 181, Item SPV.0105.3001; W. Wisconsin Avenue and STH 181, Item SPV.0105.3002; STH 181 and W. Dana Court, Item SPV.0105.3021.

A Description

This special provision describes removing existing traffic signals at the City of Milwaukee/state owned intersection of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue) and STH 181 (S.84th Street) and W. Dana Court and the City of Wauwatosa owned intersection of W. Wisconsin Avenue and STH 181 (N. Glenview Avenue) in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans.

B (Vacant)

C Construction

Arrange for the de-energizing of the traffic signals with the local electrical utility after receiving approval from the engineer that the existing traffic signals can be removed.

The City of Milwaukee and City of Wauwatosa assume 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. Replace any equipment not identified as damaged or not working, prior to removal at no cost to the department/City of Milwaukee or City of Wauwatosa.

City of Milwaukee (future State) Owned Traffic Signals
The City of Milwaukee shall remove all above ground equipment at the intersection of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue) and STH 181 (S.84th Street) and W. Dana Court. Notify the City of Milwaukee Signals Shop [Al Nichols, Interim Manager/Dispatch; (414) 286-3687; 1540 W. Canal Street, Milwaukee, WI 53233] and City of Milwaukee Signals Engineering [Joseph Bondowski, Engineering Technician; (414) 286-5162; 841 N. Broadway, Milwaukee, WI 53202] at least five working days prior to the activation of the temporary traffic signal. Once the temporary traffic signal is activated, the City of Milwaukee shall remove all of their above ground equipment. The City of Milwaukee shall notify the engineer when all of the above ground equipment is removed. Remove and dispose of all remaining underground signal cable off of the state right-of-way. Underground lighting cable may share the same conduit – contact the City of Milwaukee with any lighting cable concerns.

City of Wauwatosa Owned Traffic Signals
Notify the City of Wauwatosa Public Works Department at (414) 471-8422 at least five working days prior to the removal of the traffic signal at the intersection of W. Wisconsin Avenue and STH 181 (N. Glenview Avenue). Complete the removal work as soon as possible following shut down of this equipment.

Remove all standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the transformer bases from each pole. Remove the signal heads, mast arms, luminaires, wiring / cabling and traffic signal mounting devices from each signal standard, arm or pole. Ensure that access handhole doors and all associated hardware remain intact. Remove the traffic signal cabinet from the concrete footing. Dispose of the underground signal cable, internal wires, and street lighting cable. Deliver the remaining materials to the City of Wauwatosa Electrical Yard at 11100 W. Walnut Road, Wauwatosa, WI. Contact the City of Wauwatosa Public Works Department at (414) 471-8422 at least five working days prior to delivery to make arrangements.

D Measurement
The department will measure Remove Traffic Signals (Location) as a single lump sum unit of work for each intersection, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3001	Remove Traffic Signals USH 18 and STH 181	LS
SPV.0105.3002	Remove Traffic Signals W. Wisconsin Avenue and STH 181	LS
SPV.0105.3021	Remove Traffic Signals STH 181 and W. Dana Court	LS

Payment is full compensation for removing and disassembling traffic signals; for scrapping of some materials; for disposing of scrap material; and for delivering the requested materials to the City of Wauwatosa Electrical Yard.

122. Remove Loop Detector Wire and Lead-in Cable USH 18 and STH 181, Item SPV.0105.3003; STH 181 and W. Dana Court, Item SPV.0105.3022.

A Description

This special provision describes removing loop detector wire and lead-in cable at the City of Milwaukee owned intersection of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue) and STH 181 (S.84th Street) and W. Dana Court. Removal shall be in accordance to standard spec 204, as shown in the plans, and as hereinafter provided.

B (Vacant)

C Construction

Notify the City of Milwaukee Signals Shop [Al Nichols, Interim Manager/Dispatch; (414) 286-3687; 1540 W. Canal Street, Milwaukee, WI 53233] and City of Milwaukee Signals Engineering [Joseph Bondowski, Engineering Technician; (414) 286-5162; 841 N. Broadway, Milwaukee, WI 53202] at least five working days prior to the removal of the loop detector wire and lead-in cable. City of Milwaukee forces shall disconnect the lead-in cable from the cabinet equipment.

Remove and dispose of detector lead-in cable and loop wire for abandoned loops. Detector lead-in cable and loop wire shall become property of the contractor and shall be disposed off of the right-of-way.

D Measurement

The department will measure Remove Loop Detector Wire and Lead-in Cable as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3003	Remove Loop Detector Wire and Lead-in Cable USH 18 and STH 181	LS
SPV.0105.3022	Remove Loop Detector Wire and Lead-in Cable STH 181 and W. Dana Court	LS

Payment is full compensation for removing loop detector wire and lead-in cable; for scrapping of some materials; and for disposing of scrap material.

123. Transporting Signal and Lighting Materials USH 18 and STH 181, Item SPV.0105.3004; STH 181 and W. Dana Court, Item SPV.0105.3023.

A Description

This special provision describes the transporting of department furnished materials for traffic signals and intersection lighting.

B Materials
Transport materials furnished by the department including: monotube arms and luminaire arms (to be installed on monotube assemblies).

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

C (Vacant)

D Measurement
The department will measure Transporting Signal and Lighting Materials as a single lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3004	Transporting Signal and Lighting Materials USH 18 and STH 181	LS
SPV.0105.3023	Transporting Signal and Lighting Materials STH 181 and W. Dana Court	LS

Payment is full compensation for transporting the monotube poles, monotube arms and luminaire arms (to be installed on monotubes). Installation of these materials is included under a separate pay item.

124. Install Vendor Supplied Traffic Signal Cabinet USH 18 and STH 181, Item SPV.0105.3005; STH 181 and W. Dana Court, Item SPV.0105.3024.

A Description
This special provision describes the installing of the vendor furnished Traffic Signal Cabinet for traffic signals.

B Materials
Arrange for the delivery of the vendor furnished Traffic Signal Cabinet to the department's Electrical Shop located at 935 South 60th Street, West Allis. The department will provide notification at the preconstruction meeting of the Traffic Signal Cabinet vendor and provide the vendor's contact information.

Provide the project plans and specifications to the department's Traffic Signal Cabinet vendor a minimum of 70 calendar days prior to scheduled field installation. Coordinate directly with the department's Traffic Signal Cabinet vendor to schedule the cabinet delivery date and time to the department's Electrical Shop. Notify the department's Electrical Field Unit at (414) 266-1170 at least five working days prior to cabinet delivery.

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

Coordinate directly with the department's Traffic Signal Cabinet vendor to schedule the cabinet acceptance testing. Notify the department's Electrical Field Unit at (414) 266-1170 and participate in the acceptance testing. The department has the final determination of the cabinet acceptance testing date and time. The acceptance testing procedures will be provided by the department.

Append standard spec 651.3.3 (6) with the following:

Operate the completed traffic signal installation for 30 days consecutively, using the specified signal sequence(s) and all special functions, such as preemption as the plans show or as specified by the engineer.

The department shall not be responsible for project delays and costs due to the delays of delivery by the vendor or by the failure of the Traffic Signal Cabinet to pass acceptance testing.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

C Construction

Perform work in accordance to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

Request a signal inspection of the completed signal installation to the engineer at least five working days prior to the time of the requested inspection. The departments' Region Electrical personnel will perform the inspection.

D Measurement

The department will measure Install Vendor Supplied Traffic Signal Cabinet (Location) as a single lump sum unit of work, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3005	Install Vendor Supplied Traffic Signal Cabinet USH 18 and STH 181	LS
SPV.0105.3024	Install Vendor Supplied Traffic Signal Cabinet STH 181 and W. Dana Court	LS

Payment is full compensation for installing and testing the Traffic Signal Cabinet; for furnishing and installing all other items necessary (such as, wire nuts, splice kits and/or connectors, tape, insulating varnish, ground lug fasteners, etc.) to make the proposed system complete from the source of supply to the most remote unit; and for clean-up and waste disposal.

125. Transporting and Installing State Furnished Autoscope Video Detection System USH 18 and STH 181, Item SPV.0105.3006; STH 181 and W. Dana Court, Item SPV.0105.3025.

A Description

This special provision describes the transporting and installing of department furnished Traffic Signal Autoscope Video Detection System on Monotubes and Luminaire arms.

B Materials

Pick up all the department furnished Autoscope Video Detection System for all state maintained traffic signals for the project at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical field unit at (414 266-1170) to make arrangements for picking up the department furnished materials at least five working days prior to material pick-up.

C Construction

Install the Traffic Signal Terra Power Cable 18/3, the camera manufacturer's connector cable whip, pole/arm mounting bracket, extension arm (if required) and camera as shown on the plans (the final determination of location will be made by the department's electrical personnel to ensure best line of sight). The department's Electrical Field Unit (EFU) will install state-furnished Autoscope video detection equipment in the traffic signal control cabinet.

Install the Traffic Signal Terra Power Cable 18/3 to run continuously (without splices) from the traffic signal cabinet plus an additional 10 feet to the handhole or base. Leave 10 feet of cable in each pull box. Install the camera manufacturer's connector cable whip from the camera to the handhole or base.

Mark each end of the lead appropriately to indicate the equipment label (i.e. VID1, VID2, etc.). Splice, solder and shrink wrap the Terra power cable to the camera manufacturer's cable whip. Allow 3 feet of slack on each cable.

Notify department's Electrical Shop at (414) 266-1170 upon completion of the Monotube and Luminaire arm installation of the Traffic Signal Terra Power Cable 18/3, cable whip and camera at each intersection.

The department will provide notification of the video detection system vendor and provide the vendor's contact information. Coordinate directly with the department's video detection system vendor to arrange for the vendor to program the video detection. Notify the department and vendor at least five working days prior to the date of programming.

D Measurement

The department will measure Transporting and Installing State Furnished Autoscope Video Detection System as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3006	Transporting and Installing State Furnished Autoscope Video Detection System USH 18 and STH 181	LS
SPV.0105.3025	Transporting and Installing State Furnished Autoscope Video Detection System STH 181 and W. Dana Court	LS

Payment is full compensation for transporting and installing the Intersection Autoscope Video Detection System, Traffic Signal Terra Power Cable 18/3, cable whips, mounting hardware, and cameras; and for arranging for and providing programming by the vendor.

126. EVP Detector Head Installation USH 18 and STH 181, Item SPV.0105.3007; STH 181 and W. Dana Court, Item SPV.0105.3026.

A Description

This special provision describes the transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector Head Mounting Brackets at the intersection of USH 18 (W. Bluemound Road) and STH 181 (N. Glenview Avenue) and STH 181 (S. 84th Street) and W. Dana Court.

B Materials

Use materials furnished by the department including: Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector Head Mounting Brackets.

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

C Construction
Install the EVP detector heads and EVP detector head mounting brackets as shown on the plans. The department will determine the exact location to ensure that the installation does not create a sight obstruction. The department will terminate the EVP cable ends and install the discriminators and card rack in the cabinet.

Notify the department's Electrical shop at (414) 266-1170 upon completion of the installation of the Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector Head Mounting Brackets.

D Measurement
The department will measure transporting and installing of department furnished EVP Detector Head (Location) as a single lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3007	EVP Detector Head Installation USH 18 and STH 181	LS
SPV.0105.3026	EVP Detector Head Installation STH 181 and W. Dana Court	LS

Payment is full compensation for transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads and EVP Detector head Mounting Brackets; and for furnishing incidentals necessary to complete this item of work.

127. Temporary EVP System USH 18 and STH 181, Item SPV.0105.3008.

This special provision applies only to Project 1060-33-71.

A Description
This special provision describes furnishing, installing, and maintaining temporary EVP systems at the temporary signalized intersection as shown in the plans.

B Materials
Furnish an emergency vehicle preemption system compatible with the City of Wauwatosa and City of Milwaukee's system and users. Contact the City of Wauwatosa Public Works [Joe Kroll; (414) 471-8422; 11100 W. Walnut Road, Wauwatosa, WI; jkroll@wauwatosa.net], City of Milwaukee Signals Shop [Al Nichols, Interim Manager/Dispatch; (414) 286-3687; 1540 W. Canal Street, Milwaukee, WI 53233] and City of Milwaukee Signals Engineering [Joseph Bondowski, Engineering Technician; (414) 286-5162; 841 N. Broadway, Milwaukee, WI 53202] for information regarding the equipment needs and operational requirements of the emergency vehicle preemption system.

C Construction

The Temporary EVP System, as shown in the temporary traffic signal plans or as directed by the engineer, shall be complete in place, tested, and in full operation during each stage and sub-stage of construction.

Install the temporary vehicle detection system as shown in the plans and according to the manufacturer's recommendations. Determine a suitable location for the temporary EVP detectors for each stage and sub-stage of construction. Detectors may be mounted on the temporary traffic signal span wire or wood poles. Relocate the temporary EVP detectors to a suitable location if construction activities and/or construction staging changes impede the detector operation. Arrange for testing of equipment prior to acceptance of the installation for each construction stage.

All cables associated with the temporary vehicle detection system shall be routed to the cabinet. Each lead shall be appropriately marked as to which EVP channel it is associated.

Periodic adjustment and/or moving of the temporary EVP detectors may be required due to changes in traffic control, staging, or other construction operations.

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

Provide WisDOT records of all EVP settings used during construction.

D Measurement

The department will measure Temporary EVP System (Location) as a single complete lump sum unit of work per intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3008	Temporary EVP System USH 18 and STH 181	LS

Payment is full compensation for furnishing and installing all required equipment, materials, and supplies; for maintaining and changing the EVP detectors to match the plans, traffic control, and construction staging; for relocating the temporary EVP detectors due to construction activities, if required; for testing the EVP system for each stage and sub-stage of construction; for periodically cleaning all temporary EVP detectors; and for cleaning up and properly disposing of waste.

128. Install Vendor Supplied Municipal Traffic Signal Cabinet W. Wisconsin Avenue and STH 181, Item SPV.0105.3009.

This special provision applies only to Project 1060-33-71.

A Description
This special provision describes the installing of the vendor furnished Traffic Signal Cabinet for traffic signals.

B Materials
Arrange for the delivery of the vendor furnished Traffic Signal Cabinet to the project site and protect it from all damage and loss. The City of Wauwatosa will provide notification at the preconstruction meeting of the Traffic Signal Cabinet vendor and provide the vendor's contact information.

Provide the project plans and specifications to the Traffic Signal Cabinet vendor a minimum of 70 calendar days prior to scheduled field installation. Coordinate directly with the Traffic Signal Cabinet vendor to schedule the cabinet delivery date and time to the project site location. Notify the City of Wauwatosa Public Works Department at (414) 471-8422 at least five working days prior to cabinet delivery.

Coordinate directly with the Traffic Signal Cabinet vendor to schedule the cabinet acceptance testing. Notify the City of Wauwatosa Public Works Department at (414) 471-8422 and participate in the acceptance testing. The City of Wauwatosa has the final determination of the cabinet acceptance testing date and time. The acceptance testing procedures will be provided by the City of Wauwatosa.

Append standard spec 651.3.3 (6) with the following:

Operate the completed traffic signal installation for 30 days consecutively, using the specified signal sequence(s) and all special functions, such as preemption as the plans show or as specified by the engineer.

The department shall not be responsible for project delays and costs due to the delays of delivery by the vendor or by the failure of the Traffic Signal Cabinet to pass acceptance testing.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

C Construction
Perform work in accordance to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

Request a signal inspection of the completed signal installation to the engineer at least five working days prior to the time of the requested inspection. The City of Wauwatosa Department of Public Works personnel will perform the inspection.

D Measurement
The department will measure Install Vendor Supplied Municipal Traffic Signal Cabinet [Location] as a single lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3009	Install Vendor Supplied Municipal Traffic Signal Cabinet W. Wisconsin Avenue and STH 181	LS

Payment is full compensation for installing and testing the Traffic Signal Cabinet; for furnishing and installing all other items necessary (such as, wire nuts, splice kits and/or connectors, tape, insulating varnish, ground lug fasteners, etc.) to make the proposed system complete from the source of supply to the most remote unit; and for clean-up and waste disposal.

129. Video Vehicle Detection System W. Wisconsin Avenue and STH 181, Item SPV.0105.3010.

This special provision applies only to Project 1060-33-71.

A Description
This specification sets forth the minimum requirements for a system that detects vehicles on a roadway using only video images of vehicle traffic. Work shall consist of furnishing and installing a video image detector system on all travel approaches.

The video detection camera system shall consist of the latest model video image detector cameras, mounting brackets and hardware, video monitor, video image processor card, power cable, and auxiliary equipment to make the video detector system fully operational. The camera shall be an Iteris brand model and shall be equipped with a battery backup system.

B Materials
B.1 System Hardware
The video detection system shall consist of one to six video cameras, a video detection processor (VDP) capable of processing from one to six video sources, a video monitor, and a pointing device.

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 144 detection zones shall be available. A separate computer shall not be required to program the detection zones. The VDP shall process video from up to 6 video sources simultaneously. The sources can be video cameras or S-VHS video tape players. The video shall be input to the VDP in RS170 format and shall be digitized and analyzed in real time. A separate microprocessor for each video input shall be used.

The VDP shall detect the presence of vehicles in up to 24 detection zones, per camera. A detection zone shall be approximately the width and length of one car. 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 the detection zones quickly and easily. A separate computer shall not be required for programming detection zones.

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 RS-232 port for communications with an external computer. The VDP RS-232 port shall be multi-drop capable.

The VDP shall accept new detection patterns from an external computer through the RS-232 port when the external computer uses the correct communications protocol for downloading detection patterns.

The VDP shall send its detection patterns to an external computer through the RS-232 port when requested when the external computer uses the correct communications protocol for uploading detection patterns.

B.3 Vehicle Detection

Up to 144 detection zones shall be supported and each detection zone can be sized to suit the site and the desired vehicle detection region. Detection zones shall be capable of being OR'ed or AND'ed together to indicate vehicle presence on a single detector output channel.

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 three detection zone patterns shall be saved for each camera within the VDP memory and this memory shall prevent 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 available within 1 second of activation.

When a vehicle is detected crossing a detection zone, the corners of the detection zone will flash 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 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. See the traffic signal installation plans for recommended camera placement.

The VDP shall provide 32 channels of detection through either a NEMA TS1 port or a NEMA TS2 port. 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 zones shall be directional to reduce false detections from objects traveling in directions other than the desired direction of travel in the detection area. Detection zone setup shall not require site-specific information such as latitude and longitude to be entered into the system. Detection zone setup shall not require temporal information such as date and time.

The VDP shall process the video input from each camera using a separate microprocessor at 30 frames per second.

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.

B.4 VDP Hardware

The VDP shall be housed in a durable metal enclosure suitable for shelf-mounting or rack mounting in a roadside traffic equipment cabinet. The VDP enclosure shall not exceed 7" high, 17.75" wide, and 10.5" deep. The VDP shall be modular in construction with plug-in field replaceable units (FRU's) to minimize troubleshooting and repair time. The VDP shall operate satisfactorily in a temperature range from -30°F to +165°F and a humidity range from 0%RH to 95%RH, non-condensing as set forth in NEMA specifications.

The VDP shall be powered by 120 VAC 60 Hz single-phase power source. Surge ratings shall be as set forth in NEMA specifications. Power consumption shall not exceed 135 watts.

The VDP shall include an RS-232 port for serial communications with a remote computer. The VDP RS-232 port shall be multi-drop capable. This port shall be a 9-pin female “D” subminiature connector on the front of the VDP.

The VDP shall include ports for transmitting TS1 and TS2 detections to a traffic controller. The TS1 port shall be a 37-pin female “D” connector on the front of the VDP. The TS2 port shall be a 15-pin female “D” connector on the front of the VDP. The front of the VDP shall include up to six BNC video input connections suitable for RS-170 video inputs. Each 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.

The front of the VDP shall include one BNC video output. Any one of the six video inputs shall be switch selectable for output on this BNC connection via the pointing device at the VDP, or through software and a personal computer connected through the RS-232 multi-drop port via a full duplex modem link.

The video inputs to the VDP shall include transient voltage suppression and isolation. Amplification that shall assure the 1-volt peak-to-peak video signal integrity is maintained despite video cabling losses and externally induced transients. The amplifier shall have a minimum common mode rejection at 60 Hz of 90 dB. The VDP enclosure shall include provisions to be bonded to a good earth ground.

The front face of the VDP shall contain indications, such as LED displays, to enable the user to view real time detections for up to 8 detector output channels at a time.

B.5 Camera

The video cameras used for traffic detection shall be furnished by the 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 of 0.1 lux to 10,000 lux.

The camera shall use a CCD sensing element and shall output monochrome video with resolution of not less than 380 lines vertical and 380 lines horizontal. The camera shall include an electronic shutter control lens.

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. A single camera configuration shall be used for all approaches in order to minimize the setup time and spares required by the user.

The camera electronics shall include AGC to produce a satisfactory image at night. The camera shall be housed in a weather-tight sealed enclosure. 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 5" in diameter, less than 14" long, and shall weigh less than 5 pounds when the camera and lens are mounted inside of the enclosure.

The camera enclosure shall include a thermostatically controlled heater to assure proper operation of the lens shutter at low temperatures and prevent moisture condensation on the optical faceplate of the enclosure.

When mounted outdoors in the enclosure, the camera shall operate satisfactorily in a temperature range from -30°F to +140°F and a humidity range from 0% RH to 100% RH. The camera shall be powered by a 120 VAC 60 Hz power source. Power consumption shall be 15 watts or less, under all conditions.

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 be connected within the same connector. The video signal output by the camera shall be black and white in RS-170 or CCIR format. The video signal shall be fully isolated from the camera enclosure and power cabling.

B.6 Manufacturer Warranty

The manufacturer / supplier shall provide a limited two-year warranty on the video detection system. Refer to the supplier's standard warranty included in the Terms and Conditions of Sale documentation.

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.

B.7 Video Detection Coaxial Cable
The coaxial cable to be used between the camera and the VDP in the traffic cabinet shall be Belden 8281 or a 75 ohm, precision video cable with 20-gauge solid bare copper conductor (9.9 ohms/M), solid polyethylene insulating dielectric, 98% (min) tinned copper double-braided shield and black polyethylene outer covering. The signal attenuation shall not exceed 0.78 dB per 100 feet at 10 MHz. Nominal outside diameter is 0.304 inches.

This cable shall be suitable for installation in conduit or overhead with the appropriate span wires. 75-ohm BNC plug connectors shall 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.

B.8 Video Detection 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 power cable shall be terminated at the camera per manufacturer's instructions and shall only require standard wire strippers and a screw driver for installation (no special connectors or crimping tools shall be used for installation). The cabling shall comply with the National Electric Code, as well as local electrical codes. Cameras may acquire power from the luminaire, if necessary.

B.9 Video Detection 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) and 10" (H). Weight shall not exceed 10 pounds.

C Construction
Install the Video Vehicle Detection System (Location) in accordance to the pertinent sections of the standard specifications and manufacturer's recommendations.

The coaxial cable and power cable shall be installed as a continuous unbroken run from the cameras to the VDP.

D Measurement
The department will measure Video Vehicle Detection System (Location) as a single lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3010	Video Vehicle Detection System W. Wisconsin Avenue and STH 181	LS

Payment is full compensation for furnishing and installing the Video Detection Camera system on signal poles or mast arms as shown on the plans; and for aiming the camera.

130. Install Fiber Optic Communications in Cabinet USH 18 and STH 181, Item SPV.0105.3011; W. Wisconsin Avenue and STH 181, Item SPV.0105.3012; STH 181 and W. Dana Court, Item SPV.0105.3027.

A Description
This special provision describes installing fiber optic communications equipment in traffic signal cabinets.

B Materials
The department will furnish pre-terminated fiber optic patch panels and managed Ethernet switches. The materials will be provided with the traffic signal cabinet. The patch panels will have pre-terminated fiber optic cable pigtails. Provide two each 1-meter lengths of ST-ST single mode fiber jumper (2 fibers per jumper) from the patch panel to the Ethernet switch. Provide a 1-meter length of CAT-5e cable from the Ethernet switch to the controller. Provide a 1-meter length of CAT-5e cable from the Ethernet switch to the Interface Panel. CAT-5e patch cords shall have factory pre-terminated RJ45 / 8P8C connectors on both ends per TIA/EIA T568B. Provide all patch panel, Ethernet switch, and Interface Panel attachment hardware.

Provide a 14 AWG XLP insulated, stranded, copper, 600 volt AC locate wire through the conduit run from the communication vault to the traffic signal cabinet. Connect the locate wire by using a silicone filled wire nut at each pull box, vault or other access point. Alternatively, use a single wire through the access points, leaving a 6 foot coil in each pull box, vault or other access point for splicing. All material under this item shall meet the requirements of standard spec 655.

C Construction

Install the patch panel and Ethernet switch on the side of the traffic signal cabinet opposite the electrical service at a location as approved by the engineer. With approval by the engineer, the Ethernet switch may be placed on a shelf near the patch panel. Install the pre-terminated fiber optic cable in conduit from the patch panel to the communication vault as specified in standard spec 678.3.1. Fiber optic cable ends shall be covered securely to protect open ends during installation in raceways. Leave the remainder of the fiber optic cable coiled in the communication vault.

Install the fiber jumpers and CAT-5e cable and provide a communications link from the communication vault to the controller. Install the CAT5-e cable from the Interface Panel to the Ethernet switch.

Connect the locate wire by using a wire nut at each access point. Alternatively, use a single wire through the access points.

D Measurement

The department will measure Install Fiber Optic Communications in Cabinet (Location) as a single lump sum unit of work in place and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.3011	Install Fiber Optic Communications in Cabinet USH 18 and STH 181	LS
SPV.0105.3012	Install Fiber Optic Communications in Cabinet W. Wisconsin Avenue and STH 181	LS
SPV.0105.3027	Install Fiber Optic Communications in Cabinet STH 181 and W. Dana Court	LS

Payment is full compensation for installing pre-terminated patch panels, Ethernet switches, and fiber optic cable in conduit; and for furnishing and installing attachment hardware, fiber jumpers, CAT-5e cable, and locate wire.

131. Concrete Sidewalk 5-Inch Special, Item SPV.0165.0001.

A Description

This special provision describes placing colored concrete. Placement, forming, and aggregate of the concrete shall be in accordance to the pertinent requirements of standard spec 415, 416 and 501, in accordance to the details as shown on the plans, and as hereinafter provided.

B Materials
At least 15 working days prior to the start of colored concrete installation supply one 2-foot x 2-foot panel sample of the colored concrete. The final color and finish is to be approved by the City of Wauwatosa, Mr. William Wehrley, (414) 479-8927, prior to placement of any colored concrete in the field.

The accepted sample shall be the standard of finish for all colored concrete work within the project.

The concrete shall be grade A2 or grade A-FA as specified in standard spec 501. All colored concrete shall originate from the same batch plant.

C Construction
Concrete shall be placed by installers experienced with colored, broom finished concrete.

Concrete sidewalk shall match the visual appearance of the approved sample. Concrete sidewalk not conforming to the color and finish of the approved sample shall be replaced at the contractor's expense.

C.1 Color Admixture
Use integral color admixture material specifically designed for coloring concrete.

Blend admix at plant per manufacturers specifications to achieve the indicated color. Color admixtures manufacturer and colors include:

Solomon Color – Brick 417
Schofield System – Quarry Red C-32
Davis Colors – Brick Red 160

Or approved equal

C.2 Finish
Finish shall be a medium brushed (broom) finish with a 6-inch smooth troweled finish as shown in the plans.

D Measurement
The department will measure Concrete Sidewalk 5-Inch Special in area by the square foot placed and acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.0001	Concrete Sidewalk 5-Inch Special	SF

Payment is full compensation for installation of colored concrete; excavating and preparing the foundation; providing all materials, including concrete, and expansion joints; placing, finishing, protecting and curing concrete; and for preparing sample panels.

132. Fixed Message Sign Special, Item SPV.0165.0011.

A Description

This special provision describes furnishing, installing, and maintaining Fixed Message Sign Special as shown on the plans.

Fixed Message Sign Special becomes property of the department after final acceptance by the engineer.

B Materials

Use materials in accordance to the pertinent provisions of standard spec 643.2.9 and as hereinafter provided.

C Construction

Perform work in accordance to the pertinent provisions of standard spec 643.3.8, as shown on the plans, and as hereinafter provided.

D Measurement

The department will measure Fixed Message Sign Special by square foot area of the sign face, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.0011	Fixed Message Sign Special	SF

Payment is full compensation for providing all materials; for the manufacture and assembly of the sign; including all messages; and for hauling, handling, installing, and maintaining the signs, including posts, fasteners and necessary hardware and vertical supports.

133. Concrete Pavement 8-Inch Special, Item SPV.0180.0002.

A Description

This special provision describes placing colored concrete. Placement, forming, and aggregate of the concrete shall be in accordance to the pertinent requirements of standard spec 415, 416 and 501, in accordance to the details as shown on the plans, and as hereinafter provided.

B Materials
At least 15 working days prior to the start of colored concrete installation supply one 2-foot x 2-foot panel sample of the colored concrete with the proposed broom finish and troweled edge. The final color and finish is to be approved by the City of Wauwatosa, Mr. William Wehrley, (414) 479-8927, prior to placement of any colored concrete in the field.

The accepted sample shall be the standard of finish for all colored concrete work within the project.

The concrete shall be grade A2 or grade A-FA as specified in standard spec 501. All colored concrete shall originate from the same batch plant.

C Construction
Concrete shall be placed by installers experienced with colored, broom finished concrete.

Concrete pavement shall match the visual appearance of the approved sample. Concrete pavement not conforming to the color and finish of the approved sample shall be replaced at the contractor's expense.

Tie the pavement to adjacent Concrete Pavement 8-Inch using No. 4 tie bars spaced 2'-0" center to center.

C.1 Color Admixture
Use integral color admixture material specifically designed for coloring concrete.
Blend admix at plant per manufacturers specifications to achieve the indicated color. Color admixtures manufacturer and colors include:

Solomon Color – Brick 417
Schofield System – Quarry Red C-32
Davis Colors – Brick Red 160

Or approved equal

C.2 Finish
Finish shall be a medium brushed (broom) finish with a 6-inch smooth troweled finish as shown in the plans.

D Measurement
The department will measure Concrete Pavement 8-Inch Special in area by the square yard placed and acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0002	Concrete Pavement 8-Inch Special	SY

Payment is full compensation for installation of colored concrete; excavating and preparing the foundation; providing all materials, including concrete, and expansion joints; placing, finishing, protecting and curing concrete; and for preparing sample panels.

ADDITIONAL SPECIAL PROVISION 4

Payment to all Subcontractors. Within 10 calendar days of receipt by a contractor of a progress payment for work performed, materials furnished, or materials stockpiled by a subcontractor, the contractor shall pay that subcontractor for all work satisfactorily performed and for all materials furnished or stockpiled.

The contractor agrees further to release retainage amounts to each subcontractor within 10 calendar days after the subcontractor's work is satisfactorily completed. In addition, whenever the Department reduces the contract retainage amount, within 10 calendar days of receipt by a contractor of a retainage payment, the contractor must reduce the total amount retained from subcontractors to no more than remains retained by the Department.

The contractor shall pay the subcontractor within the time frames described above unless the contractor complies with both of the following within 10 calendar days of receiving the Department's progress payment:

1) The contractor notifies the subcontractor in writing that the work is not satisfactorily completed.
2) The contractor requests approval from the Department to delay payment because the subcontractor has not satisfactorily completed the work.

The contractor's request for approval should include the written notification to the subcontractor and shall provide sufficient documentation of good cause to assist the engineer in making a timely decision. If the engineer does not grant approval, the contractor shall pay the subcontractor within 10 calendar days of the Department's decision.

All subcontracting agreements made by a contractor shall include the above provisions and shall be binding on all contractors and subcontractors.

The contractor certifies compliance with the requirements of this Additional Special Provision by signing the contract. This clause applies to both DBE and non-DBE subcontractors.

ADDITIONAL SPECIAL PROVISION 6
ASP 6 - Modifications to the standard specifications

Make the following revisions to the 2013 edition of the standard specifications:

106.3.4.3.1 General

Replace paragraph two with the following effective with the November 2012 letting:

(2) Required sampling and testing methodologies and documentation are specified in CMM chapter 8.

(3) If disputed, approval of materials and components, as well as acceptance of the work incorporating those materials or components, is subject to review under the QMP dispute resolution process.

107.17.3 Railroad Insurance Requirements

Replace the entire text with the following effective with the August 2012 letting:

(1) If required by the special provisions, provide or arrange for a subcontractor to provide railroad protective liability insurance in addition to the types and limits of insurance required in 107.26. Keep railroad protective liability insurance coverage in force until completing all work, under or incidental to the contract, on the railroad right of way or premises of the railroad and until the department has accepted the work as specified in 105.11.2.4.

(2) Provide railroad protective liability insurance coverage written as specified in 23 CFR part 646 subpart A. Provide a separate policy for each railroad owning tracks on the project. Ensure that the railroad protective liability insurance policies provide the following minimum limits of coverage:

1. Coverage A, bodily injury liability and property damage liability; $2 million per occurrence.
2. Coverage B, physical damage to property liability; $2 million per occurrence.
3. An annual aggregate amount of $6 million that shall apply separately to each policy renewal or extension.

(3) Obtain coverage from insurance companies licensed to do business in Wisconsin that have an A.M. Best rating of A- or better. The cost of providing the required insurance coverage and limits is incidental to the contract. The department will make no additional or special payment for providing insurance.

(4) Submit the following to each railroad owning tracks on the project as evidence of that railroad's respective coverage:

1. A certificate of insurance for the types and limits of insurance specified in 107.26.
2. The railroad protective liability insurance policy or other acceptable documentation to the railroad company.

(5) Submit the following to the region as evidence of the required coverage:

1. A copy of the letter to the railroad company transmitting the submittal documents specified in 107.17.3(4).
2. A certificate of insurance for the required railroad protective liability coverages.

(6) Do not begin work on the right of way or premises of the railroad company until the region receives the submittals specified in 107.17.3(5) and notification from the railroad company that the contractor has provided sufficient insurance information to begin work.

(7) Notify the railroad and the region immediately upon cancellation or initiating cancellation, whichever is earlier, or any material change in coverage. Cease operations within 50 feet of the railroad right of way immediately if insurance is cancelled or reduced. Do not resume operations until the required coverage is in force.

460.2.8.3.1.4 Department Verification Testing Requirements

Replace paragraph four with the following effective with the December 2012 letting:

(4) The department will randomly test each design mixture at the following minimum frequency:

FOR TONNAGES TOTALING:	
Less than 501 tons	no tests required
From 501 to 5,000 tons	one test
More than 5,000 tons	add one test for each additional 5,000-ton increment

501.2.1 Portland Cement

Replace paragraph one with the following effective with the March 2013 letting:

(1) Use cement conforming to ASTM specifications as follows:

- Type I portland cement; ASTM C150.
- Type II portland cement; ASTM C150.
- Type III portland cement; ASTM C50, for high early strength.
- Type IP portland-pozzolan cement; ASTM C595, except maximum loss on ignition is 2.0 percent.
- Type IS portland blast-furnace slag cement; ASTM C595.
- Type IL portland-limestone cement; ASTM C595, except maximum nominal limestone content is 10 percent with no individual test result exceeding 12.0 percent.

501.2.5.5 Sampling and Testing

Replace the entire text with the following effective with the January 2013 letting:

(1) Sample and test aggregates for concrete according to the following:

Sampling aggregates	AASHTO T2
Lightweight pieces in aggregate	AASHTO T113
Material finer than No. 200 sieve	AASHTO T11
Unit weight of aggregate	AASHTO T19
Organic impurities in sands	AASHTO T21
Sieve analysis of aggregates	AASHTO T27
Effect of organic impurities in fine aggregate	AASHTO T71
Los Angeles abrasion of coarse aggregate	AASHTO T96
Freeze-thaw soundness of coarse aggregate	AASHTO T103
Sodium sulfate soundness of aggregates	AASHTO T104
Specific gravity and absorption of fine aggregate	AASHTO T84
Specific gravity and absorption of coarse aggregate	AASHTO T85
Flat & elongated pieces based on a 3:1 ratio	ASTM D4791[1]
Sampling fresh concrete	AASHTO R60
Making and curing concrete compressive strength test specimens	AASHTO T23
Compressive strength of molded concrete cylinders	AASHTO T22

[1] As modified in CMM 8-60.

501.2.6 Fly Ash

Replace paragraph three with the following effective with the March 2013 letting:

(3) Test fly ash using a recognized laboratory, as defined in 501.2.2(1), starting at least 30 days before its proposed use, and continuing at ASTM-required frequencies as the work progresses. The manufacturer shall test the chemical and physical properties listed in tables 1 and 2 of ASTM C618 at the frequencies and by the test methods prescribed in ASTM C311.

501.3.1.1.1 Air-Entrained Concrete

Replace paragraph one with the following effective with the March 2013 letting:

(1) Prepare air-entrained concrete with type I, IL, II, IS, or IP portland cement and sufficient air-entraining admixture to produce concrete with the air content specified in 501.3.2.4.

503.2.2 Concrete

Replace paragraph five with the following effective with the March 2013 letting:

(5) Furnish prestressed concrete members cast from air-entrained concrete, except I-type girders may use non-air-entrained concrete. Use type I, IL, IS, , IP, II, or III portland cement. The contractor may replace up to 30 percent of type I, IL, II, or III portland cement with an equal weight of fly ash, slag, or a combination of fly ash and slag, except for prestressed box girders and slabs, the contractor shall replace 20-30 percent of the cement with fly ash, slag, or a combination of fly ash and slag. Ensure that fly ash conforms to 501.2.6 and slag conforms to 501.2.7. Use only one source and replacement rate for work under a single bid item. Use a department-approved air-entraining admixture conforming to 501.2.2 for air-entrained concrete. Use only size No. 1 coarse aggregate conforming to 501.2.5.4.

506.3.22 Shop Inspection

Replace paragraph one with the following effective with the July 2010 letting:

(1) The engineer or an independent inspection agency under department contract may inspect all structural steel and miscellaneous metals furnished. The department will provide the contractor with monthly consultant inspection invoices and identify any quality deficiencies at the fabrication facility.

506.5 Payment

Add paragraph nine as follows effective with the June 2010 letting:

(9) The department will limit costs for inspections conducted under 506.3.2 to $0.05 per pound of material and deduct costs in excess of that amount from payment due the contractor. The department will determine costs for in-house inspections based on hourly rates for department staff plus overhead and use invoiced costs for contracted-out inspections. The department will administer deductions for the contractor's share of the total inspection cost under the Excess Costs For Fabrication Shop Inspection administrative item.

507.2.2.1 General

Replace paragraph four with the following effective with the December 2012 letting:

(4) Ensure that there are no unsound knots or knot holes. Also ensure that there are no tight knots of a diameter exceeding one-quarter of the greater dimension at the point where they occur. Measure a knot by taking its diameter at right angles to the length of the timber. Ensure that the sum of sizes of all knots in any one-foot length does not exceed 2 times the size of the largest allowed single knot. The engineer will treat cluster knots as if they were a single knot. A cluster knot is 2 or more knots grouped together, with the fibers of the wood deflected around the entire unit.

512.3.1 Driving and Cutting Off

Replace the entire text with the following effective with the December 2012 letting:

512.3.1.1 General

(1) Coordinate driving operations to prevent damage or displacement of concrete in substructure units or damage to adjacent facilities due to vibrations.

(2) Drive sheeting with a variation of 1/4 inch or less per foot from the vertical or from the batter the plans show. Ensure that the sheetpiles are within 6 inches of the plan position after driving. Do not damage sheetpiles attempting to correct for misalignment.

(3) Remove and replace, or otherwise correct, sheetpiles the engineer deems unacceptable under 105.3. Submit details of planned corrections to the engineer for review and approval before initiating any corrective actions.

(4) Drive sheetpiles to or beyond the required tip elevation the plans show.

512.3.1.2 Driving System

(1) Furnish a sheetpile driving system capable of driving the sheetpiles to the required minimum tip elevation the plans show.

(2) The engineer may order the contractor to remove a pile driving system component from service if it causes insufficient energy transfer or damages the sheetpiles. Do not return a component to service until the engineer determines that it has been satisfactorily repaired or adjusted.

(3) Drive sheetpiles with diesel, air, steam, gravity, hydraulic, or vibratory hammers.

512.3.1.3 Cut-Offs

(1) Cut off sheetpiles at the elevations the plans show or as the engineer directs. Pile cut-offs become the property of the contractor. Dispose of cut-offs not incorporated into the work.

518.2.1 General

Replace paragraph one with the following effective with the March 2013 letting:

(1) Furnish portland cement and water as specified in 501.2. Unless the engineer allows an alternate, use either type I, IL, IS, , or IP portland cement.

526.3.3 Temporary Structures

Replace paragraphs two through four with the following effective with the January 2013 letting:

(2) Inspect temporary structures conforming to the National Bridge Inspection Standards (NBIS) and the department's structure inspection manual before opening to traffic. Perform additional inspections, as the department's structure inspection manual requires, based on structure type and time in service. Submit inspection reports on department form DT2007 to the engineer and electronic copies to the department's bureau of structures maintenance section. Ensure that a department-certified active team leader, listed online in the department's highway structures information system (HSIS), performs the inspections.

(3) Maintain temporary structures and approaches in place until no longer needed. Unless the engineer directs otherwise, completely remove and dispose of as specified in 203.3.4. Contractor-furnished materials remain the contractor's property upon removal.

614.2.5 Wood Posts and Offset Blocks

Retitle and replace the entire text with the following effective with the July 2012 letting:

614.2.5 Posts and Offset Blocks

614.2.5.1 Wood Posts and Offset Blocks

(1) Furnish sawed posts and offset blocks of one of the following species:

Douglas fir	Southern pine	Ponderosa pine	Jack pine	White pine
Red pine	Western hemlock	Western larch	Hem-fir	Oak

(2) Ensure that posts are the size the plans show and conform to the nominal and minimum dimensions tabulated in 507.2.2.3. The contractor does not have to surface the posts. Provide posts of the net length the plans show after setting and cut off.

(3) Use stress graded posts rated at 1200 psi f_b or higher. Determine the stress grade rating for douglas fir, western larch, and southern pine as specified in 507.2.2.4.

(4) For hem-fir, hemlock, red pine, white pine, jack pine, ponderosa pine, and oak conform to the following:

TABLE 614-1 PROPERTIES FOR WOOD POSTS AND BLOCKS

SPECIES			WESTERN HEMLOCK, HEM-FIR, RED PINE, WHITE PINE, JACK PINE, PONDEROSA PINE		OAK	
MAXIMUM SLOPE OF GRAIN			1 in 15		1 in 12	
NOMINAL WIDTH OF FACE			6"	8"	6"	8"
SHAKES, CHECKS, AND SPLITS		GREEN	1"	1 3/8"	2 3/8"	3 1/8"
		SEASONED	1 1/2"	2"	2 5/8"	3 1/2"
MAXIMUM WANE			1"	1 3/8"	1 1/8"	1 5/8"
MAXIMUM ALLOWABLE KNOTS	NARROW FACE	MIDDLE 1/3 OF LENGTH	1 3/8"	1 5/8"	2 1/8"	2 3/8"
		END[1]	2 3/4"	3 1/4"	4 1/4"	4 3/4"
		SUM IN MIDDLE 1/2 OF LENGTH[2]	11"	13"	17"	19
	WIDE FACE	EDGE KNOT N MIDDLE 1/3 OF LENGTH	1 3/8"	1 5/8"		
		EDGE KNOT AT END[1]	2 3/4" 7	3 1/4"		
		CENTERLINE	1 3/8"	1 7/8"	2 1/4"	2 7/8"
		SUM IN MIDDLE 1/2 OF LENGTH	5 1/2"	7 1/2"	9"	11 1/2"

[1] But do not exceed the maximum allowable knot on the centerline of the wide face of the same piece.

[2] But do not exceed 4 times the maximum allowable knot on the centerline of the wide face of the same piece.

(5) Pressure treat posts and offset blocks as specified in 507.2.2.6. Use one of the oil-soluble preservatives or chromated copper arsenate conforming to 507.2.3. Use the same material for offset blocks and posts and treat material used in each continuous installation with the same type of preservative.

614.2.5.2 Steel Posts

(1) Furnish steel posts conforming to AASHTO M270 Grade 36 and galvanized according to AASTHO M111.

614.2.5.3 Plastic Offset Blocks

(1) Furnish plastic offset blocks from the department's approved products list.

614.3.1 General

Replace the entire text with the following effective with the July 2012 letting:

(1) Paint the ends of cut-off galvanized posts, rail, bolts, cut or drilled surfaces of galvanized components, and areas of damaged zinc coating with 2 coats of zinc dust/zinc oxide paint. Clean the damaged and adjacent areas thoroughly before applying paint.

(2) Apply 2 coats of wood preservative to cut surfaces of wood components. Use the same preservative originally used to treat that component or use a 2-percent solution of copper naphthenate conforming to AWPA Standard P8 or P36.

614.3.2.1 Installing Posts

Replace paragraph four with the following effective with the July 2012 letting:

(4) Cut post tops to the finished elevation the plans show.

628.2.13 Rock Bags

Replace paragraph one with the following effective with the November 2012 letting:

(1) Furnish rock bags made of a porous, ultraviolet resistant, high-density polyethylene or geotextile fabric that will retain 70% of its original strength after 500 hours of exposure according to ASTM D4355 and a minimum in-place filled size of 18-inches long by 12-inches wide by 6-inches high. Ensure that the fabric conforms to the following:

TEST REQUIREMENT	METHOD	VALUE
Minimum Tensile	ASTM D4632	
Machine direction		70 lb minimum
Cross direction		40 lb minimum
Elongation	ASTM D4632	
Machine direction		20% minimum
Cross direction		10 % min
Puncture	ASTM 4833	65 lbs minimum
Minimum Apparent Opening		0.0234 inches (No. 30 sieve)
Maximum Apparent Opening		0.0787 inches (No. 10 sieve)

639.2.1 General

Replace paragraph two with the following effective with the March 2013 letting:

(2) For grout use fine aggregate conforming to 501.2.5.3 and type I, IL, IS, or IP portland cement.

649.3.1 General

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

(3) For pavements open to all traffic, apply centerline and no-passing barrier line markings as follows:

- On intermediate pavement layers, including milled surfaces, on the same day the pavement is placed or milled.
- On the upper layer of pavement, on the same day the pavement is placed unless the contractor applies permanent marking on the same day the pavement is placed.

If weather conditions preclude same-day application, apply as soon as weather allows. Do not resume next-day construction operations until these markings are completed unless the engineer allows otherwise.

(4) If required to apply no passing zone temporary pavement marking, reference the beginning and end of all existing no-passing barrier lines. Apply temporary no-passing barrier lines at those existing locations. If the contract contains the Locating No-Passing Zones bid item, relocate the no-passing zones as specified in section 648 for permanent marking.

701.4.2 Verification Testing

Replace paragraph two with the following effective with the December 2012 letting:

(2) The department will sample randomly at locations independent of the contractor's QC tests and use separate equipment and laboratories. The department will conduct a minimum of one verification test for each 5 contractor QC tests unless specific QMP provisions specify otherwise.

715.2.3.1 Pavements

Replace paragraph two with the following effective with the March 2013 letting:

(2) Provide a minimum cement content of 565 pounds per cubic yard, except if using type I, IL, or III portland cement in a mix where the geologic composition of the coarse aggregate is primarily igneous or metamorphic materials, provide a minimum cement content of 660 pounds per cubic yard.

715.3.1.3 Department Verification Testing

Replace paragraph one with the following effective with the December 2012 letting:

(1) The department will perform verification testing as specified in 701.4.2 except as follows:

- Air content, slump, and temperature: a minimum of 1 verification test per lot.
- Compressive strength: a minimum of 1 verification test per lot.

Errata

Make the following corrections to the 2013 edition of the standard specifications:

102.12 Public Opening of Proposals

Correct 102.12(1) errata by changing htm to shtm in the web link.

(1) The department will publicly open proposals at the time and place indicated in the notice to contractors. The department will post the total bid for each proposal on the Bid Express web site beginning at 9:30 AM except as specified in 102.8. If a proposal has no total bid shown, the department will not post the bid. After verification for accuracy under 103.1, the department will post bid totals on the department's HCCI web site.

http://roadwaystandards.dot.wi.gov/hcci/bid-letting/index.shtm

107.22 Contractor's Responsibility for Utility Facilities, Property, and Services

Correct errata by eliminating references to the department. Costs are determined by statute.

(3) If the contractor damages or interrupts service, the contractor shall notify the utility promptly. Coordinate and cooperate with the utility in the repair of the facility. Determine who is responsible for repair costs according to Wisconsin statutes 66.0831 and 182.0175(2).

204.3.2.2 Removing Items

Correct errata by changing the reference from 490.3.2 to 490.3.

(5) Under the Removing Asphaltic Surface Milling bid item, remove and dispose of existing asphaltic pavement or surfacing by milling at the location and to the depth the plans show. Mill the asphaltic pavement or surfacing as specified for milling salvaged asphaltic pavement in 490.3.

501.2.9 Concrete Curing Materials.

Correct errata by changing AASHTO M171 to ASTM C171.

(4) Furnish polyethylene-coated burlap conforming to ASTM C171 for white burlap-polyethylene sheets.

506.2.6.5.2 Pad Construction

Correct errata by changing ASTM A570 to ASTM A1011.

(4) For the internal steel plates use rolled mild steel conforming to ASTM A36, or ASTM A1011 grade

512.3.3 Painting

Correct errata by changing 511.3.5 to 550.3.11.3.

(1) Paint permanent steel sheet piling as specified for painting steel piling in 550.3.11.3.

513.2.2.8 Toggle Bolts

Correct errata by changing ASTM A570 to ASTM A1011.

(1) Use toggle bolts made of steel, conforming to the plans. Make the assembly from the material specified below:

Toggle bolt and pin ..... Cold finished steel heat-treated Brinell 311-363 ASTM A354.

Toggle washer ..... Hot rolled steel ASTM A1011. Manufacturer's standard washer.

Spacer nut ..... Grade 1213, ASTM A108. Cold finished steel heat-treated ASTM A325.

660.2.1 General

Correct errata by changing section 511 to 550.

(1) Furnish materials conforming to the following:

Concrete ..... section 501

Concrete bridges ..... section 502

Luminaires ..... section 659

Steel piling ..... section 550

Steel reinforcement ..... section 505

660.3.2.3 Pile Type Foundations

Correct errata by changing section 511 to 550.

(1) Drive piles as specified in for steel piling in section 550.

701.3 Contractor Testing

Correct errata by updating AASHTO T141 to AASHTO R60 and changing AASHTO T309 to ASTM C1064.

(1) Perform contract required QC tests for samples randomly located according to CMM 8-30. Also perform other tests as necessary to control production and construction processes, and additional testing enumerated in the contractor's quality control plan or that the engineer directs. Use test methods as follows:

TABLE 701-2 TESTING STANDARDS

TEST	TEST STANDARD
Washed P 200 analysis	AASHTO T11[1]
Sieve analysis of fine and coarse aggregate	AASHTO T27[1]
Aggregate moisture	AASHTO T255[1]
Sampling freshly mixed concrete	AASHTO R60
Air content of fresh concrete	AASHTO T152[2]
Concrete slump	AASHTO T119[2]
Concrete temperature	ASTM C1064
Concrete compressive strength	AASHTO T22
Making and curing concrete cylinders	AASHTO T23
Standard moist curing for concrete cylinders	AASHTO M201

[1] As modified in CMM 8-60.

[2] As modified in CMM 8-70.

ADDITIONAL SPECIAL PROVISION 7

A. Reporting 1st Tier and DBE Payments During Construction

1. Comply with reporting requirements specified in the department's Civil Rights Compliance, Contractor's User Manual, Sublets and Payments.
2. Report payments to all DBE firms within 10 calendar days of receipt of a progress payment by the department or a contractor for work performed, materials furnished, or materials stockpiled by a DBE firm. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.
3. Report payments to all first tier subcontractor relationships within 10 calendar days of receipt of a progress payment by the department for work performed. Report the payment as specified in A(1) for all work satisfactorily performed.
4. All tiers shall report payments as necessary to comply with the DBE payment requirement as specified in A(2).
5. Require all first tier relationships, DBE firms and all other tier relationships necessary to comply with the DBE payment requirement in receipt of a progress payment by contractor to acknowledge receipt of payment as specified in A(1), (2), (3) and (4).
6. All agreements made by a contractor shall include the provisions in A(1), (2), (3), (4) and (5), and shall be binding on all first tier subcontractor relationships and all contractors and subcontractors utilizing DBE firms on the project.

B. Costs for conforming to this special provision are incidental to the contract.

ADDITIONAL SPECIAL PROVISION 9
Electronic Certified Payroll Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to submit certified payrolls electronically. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm

(2) Ensure that all tiers of subcontractors, as well as all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Tess Mulrooney at 608-267-4489 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator send several sample electronic files to Tess two months before a payroll needs to be submitted. Not every contractor's payroll system is capable of producing export files. For details, see section 3.2 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/docs/crc-basic-info.pdf

Effective with September 2004 Letting

WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS AND TRANSPORTATION FACILITIES

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

I. WAGE RATES, HOURS OF LABOR AND PAYMENT OF WAGES

The schedule of "Minimum Wage Rates" attached hereto and made a part hereof furnishes the prevailing wage rates that have been determined pursuant to Section 103.50 of the Wisconsin Statutes. These wage rates are the minimum required to be paid to the various laborers, workers, mechanics and truck drivers employed by contractors and subcontractors on the construction work embraced by the contract and subject to prevailing hours and wages under Section 103.50, Stats. If necessary to employ laborers, workers, mechanics or truck drivers whose classification is not listed on the schedule, they shall be paid at rates conformable to those listed for similar classifications. Apprentices shall be paid at rates not less than those prescribed in their state indenture contacts.

While the wage rates shown are the minimum rates required by the contract to be paid during its life, this in not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

Pursuant to Section 103.50 of the Wisconsin Statutes, the prevailing hours of labor have been determined to be up to 10 hours per day and 40 hours per calendar week Monday through Friday. If any laborer, worker, mechanic or truck driver is permitted or required to work more than the prevailing number of hours per day or per calendar week on this contract, they shall be paid for all hours in excess of the prevailing hours at a rate of at least one and one-half (1 1/2) times their hourly rate of pay. All work on Saturday, Sunday and the following holidays is to be paid at time and a half: (1) January 1, (2) the last Monday in May, (3) July 4, (4) the first Monday in September, (5) the fourth Thursday in November, (6) December 25, (7) the day before if January 1, July 4 or December 25 falls on a Saturday and (8) the day following if January 1, July 4 or December 25 falls on a Sunday.

All laborers, workers, mechanics and truck drivers shall be paid unconditionally not less often than once a week. Persons who own and operate their own trucks must receive the prevailing truck driver rate for the applicable type of truck (i.e. 2 axle, 3 or more axle, articulated, eculid or dumptor) he or she operates, plus an agreed upon amount for the use of his or her truck. Every owner-operator MUST be paid separately for their driving and for the use of their truck.

For those projects subject to the requirements of the Davis-Bacon Act, the Secretary of Labor will also have determined "Minimum Wage Rates" for work to be performed under the contract. These rates are, for all or most of the labor, worker, mechanic or truck driver classifications, identical to those established under Section 103.50 of the Wisconsin Statutes. In the event the rates are not identical, the higher of the two rates will govern.

II. PAYROLL REQUIREMENTS

All contractors and subcontractors must submit weekly Certified Payrolls and Compliance Statement verifying that all laborers, workers, mechanics and truck drivers working on the project have been paid the prevailing wage rates for all work performed under the contract required by Section 103.50 of the Wisconsin Statutes.

III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the Department, the contractor shall post the following in at least one conspicuous place at the site of work:

a. "NOTICE TO EMPLOYEES," which provides information required to be posted by the provisions of Section 103.50 of the Wisconsin Statutes.

b. A copy of the State of Wisconsin Minimum Wages Rates. (Four pages.)

c. A copy of the contractor's Equal Employment Opportunity Policy.

d. On any project involving federal aid, in addition to the furnished postings, the contractor shall post a copy of the "Davis-Bacon Act, Minimum Wage Rates". (Three pages.)

IV. WAGE RATE REDISTRIBUTION

The amount specified as the hourly basic rate of pay and the amount(s) specified as the fringe benefit contribution(s), for all classes of laborers, workers, mechanics or truck drivers may be redistributed, when necessary, to conform to those specified in any applicable collective bargaining agreement, provided that both parties to such agreement

request and receive the approval for any such redistribution from both the Department of Transportation and the Department of Workforce Development prior to the implementation of such redistribution.

V. ADDITIONAL CLASSIFICATIONS

Any unlisted laborer or mechanic classification that is needed to perform work on this project, and is not included within the scope of any of the classifications listed in the application prevailing wage rate determination, may be added after award only if all of the following criteria have been met:

1. The affected employer(s) must make a written request to WisDOT Central Office to utilize the unlisted classification on this project.

2. The request must indicate the scope of the work to be performed by the unlisted classification and must indicate the proposed wage/fringe benefit package that the unlisted classification is to receive.

3. The work to be performed by the unlisted classification must not be performed by a classification that is included in the applicable prevailing wage rate determination.

4. The unlisted classification must be commonly employed in the area where the project is located.

5. The proposed wage/fringe benefit package must bear a reasonable relationship to those set forth in the applicable prevailing wage rate determination.

6. The request should be made prior to the actual performance of the work by the unlisted classification.

7. DWD must approve the use of the unlisted classification and the proposed wage/fringe benefit package. USDOL also must approve the use of the unlisted classification and the proposed wage/fringe benefit package on federal aid projects.

8. WisDOT and DWD may amend the proposed wage/fringe benefit package, as deemed necessary, and may set forth specific employment ratios and scope of work requirements in the approval document.

The approved wage/fringe benefit package shall be paid to all laborers, workers, mechanics or truck drivers performing work within the scope of that performed by the unlisted classification, from the first day on which such work is performed. In the event that work is performed by the unlisted classification prior to approval, the wage/fringe benefit package to be paid for such work must be in conformance with the wage/fringe

benefit package approved for such work. Under this arrangement a retroactive adjustment in wages and/or fringe benefits may be required to be made to the affected laborers, workers, mechanics or truck drivers by the affected employer(s).

ANNUAL PREVAILING WAGE RATE DETERMINATION
FOR ALL STATE HIGHWAY PROJECTS
MILWAUKEE COUNTY

Compiled by the State of Wisconsin - Department of Workforce Development
for the Department of Transportation
Pursuant to s. 103.50, Stats.
Issued on April 1, 2012

CLASSIFICATION: Contractors are required to call the Department of Workforce Development if there are any questions reqarding the proper trade or classification to be used for any worker on a public works project.

OVERTIME: Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

FUTURE INCREASE: If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

PREMIUM PAY: If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

SUBJOURNEY: Wage rates may be available for some of the classifications indicated below. Any employer that desires to use any subjourney classification on a project MUST request the applicable wage rate from the Department of Workforce Development PRIOR to the date such classification is used on such project. Form ERD-10880 is available for this purpose and can be obtained by writing to the Department of Workforce Development, Equal Rights Division, P.O. Box 8928, Madison, WI 53708.

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Bricklayer, Blocklayer or Stonemason	32.66	15.92	48.58
Carpenter	33.43	19.31	52.74
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Cement Finisher	29.33	17.03	46.36
Future Increase(s): Add $1.86 on 6/1/12; Add $1.87 on 6/1/13; Add $1.87 on 6/1/14; Add $1.87 on 6/1/15; Add $1.75 on 6/ 1/ 16.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Electrician	31.64	23.78	55.42
Fence Erector	35.62	0.00	35.62
Ironworker	31.31	21.54	52.85
Line Constructor (Electrical)	35.97	18.08	54.05
Painter	27.87	14.39	42.26
Pavement Marking Operator	27.87	14.39	42.26
Piledriver	29.56	24.96	54.52
Premium Pay: Add $.65/hr for Piledriver Loftsman; Add $.75/hr for Sheet Piling Loftsman. DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Roofer or Waterproofer	28.85	14.60	43.45
Teledata Technician or Installer	24.65	15.17	39.82
Tuckpointer, Caulker or Cleaner	34.30	15.47	49.77
Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	33.87	16.10	49.97
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	29.64	14.64	44.28
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.18	13.07	38.25
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27
TRUCK DRIVERS			
Single Axle or Two Axle	22.35	16.19	38.54
Future Increase(s): Add $1.75/hr on 6/1/2012; Add $1.85/hr on 6/1/2013.			
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Three or More Axle	24.91	15.63	40.54
Articulated, Euclid, Dumptor, Off Road Material Hauler	22.50	16.19	38.69
Future Increase(s): Add $1.75/hr on 6/1/2012; Add $1.85/hr on 6/1/2013.			
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Pavement Marking Vehicle	23.84	14.70	38.54
Shadow or Pilot Vehicle	24.76	15.35	40.11
Truck Mechanic	24.91	15.63	40.54
LABORERS			
General Laborer	24.34	17.85	42.19
Future Increase(s): Add $1.60/hr on 6/1/2012: Add $1.70/hr on 6/1/2013; Add $1.60/hr on 6/1/2014.			
Premium Pay: Add $.15/hr for air tool operator, joint sawer and filler (pavement), vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add $.35/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add $.50/hr for line and grade specialist; Add $.65/hr for blaster and powderman; Add $2.01/hr for topman; Add $2.46/hr for bottomman; Add $3.23/hr for pipelayer. / DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Asbestos Abatement Worker	22.00	16.86	38.86
Landscaper	23.71	15.03	38.74
Flagperson or Traffic Control Person	20.83	17.85	38.68
Future Increase(s): Add $1.60/hr on 6/1/2012; Add $1.70/hr on 6/1/2013; Add $1.60/hr on 6/1/2014.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.09	14.40	31.49
Railroad Track Laborer	17.00	1.06	18.06

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
HEAVY EQUIPMENT OPERATORS			
Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Traveling Crane (Bridge Type). Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	34.22	18.90	53.12
Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs., & Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.72	18.90	52.62
Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boatmen (NOT Performing Work on the Great Lakes); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, VIbratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane WIth a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches	33.22	18.90	52.12

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
& A- Frames. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or WIthout Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	32.96	18.90	51.86
Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	32.67	18.90	51.57
Fiber Optic Cable Equipment.	24.39	15.45	39.84
Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01
Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	36.20	18.81	55.01
Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks-Great Lakes ONLY.	26.80	18.52	45.32

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 ROADWAY ITEMS					
0010	108.4400 CPM PROGRESS SCHEDULE	1.000 EACH		.		.
0020	201.0105 CLEARING	2.000 STA		.		.
0030	201.0120 CLEARING	280.000 ID		.		.
0040	201.0205 GRUBBING	2.000 STA		.		.
0050	201.0220 GRUBBING	280.000 ID		.		.
0060	204.0100 REMOVING PAVEMENT	25,887.000 SY		.		.
0070	204.0105 REMOVING PAVEMENT BUTT JOINTS	2,467.000 SY		.		.
0080	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH	282,798.000 SF		.		.
0090	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS	2,600.000 SY		.		.
0100	204.0120 REMOVING ASPHALTIC SURFACE MILLING	32,581.000 SY		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0110	204.0150 REMOVING CURB & GUTTER	1,902.000 LF		.		.
0120	204.0155 REMOVING CONCRETE SIDEWALK	2,273.000 SY		.		.
0130	204.0195 REMOVING CONCRETE BASES	10.000 EACH		.		.
0140	204.0210 REMOVING MANHOLES	15.000 EACH		.		.
0150	204.0220 REMOVING INLETS	23.000 EACH		.		.
0160	204.0245 REMOVING STORM SEWER (SIZE) 0001. 12-INCH	2,052.000 LF		.		.
0170	204.0245 REMOVING STORM SEWER (SIZE) 0002. 15-INCH	430.000 LF		.		.
0180	204.0245 REMOVING STORM SEWER (SIZE) 0003. 18-INCH	340.000 LF		.		.
0190	204.0245 REMOVING STORM SEWER (SIZE) 0004. 24-INCH	525.000 LF		.		.
0200	205.0100 EXCAVATION COMMON	25,103.000 CY		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0210	205.0501.S EXCAVATION, HAULING, AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	400.000 TON		.		.
0220	213.0100 FINISHING ROADWAY (PROJECT) 0001. 1060-33-71	1.000 EACH		.		.
0230	213.0100 FINISHING ROADWAY (PROJECT) 0002. 1060-33-90	1.000 EACH		.		.
0240	305.0110 BASE AGGREGATE DENSE 3/4-INCH	99.000 TON		.		.
0250	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	10,819.000 TON		.		.
0260	312.0110 SELECT CRUSHED MATERIAL	20,750.000 TON		.		.
0270	415.0080 CONCRETE PAVEMENT 8-INCH	27,395.000 SY		.		.
0280	415.0210 CONCRETE PAVEMENT GAPS	5.000 EACH		.		.
0290	415.1080 CONCRETE PAVEMENT HES 8-INCH	172.000 SY		.		.
0300	416.0260 CONCRETE DRIVEWAY HES 6-INCH	977.000 SY		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0310	416.0270 CONCRETE DRIVEWAY HES 7-INCH	480.000 SY	.		.	
0320	416.0280 CONCRETE DRIVEWAY HES 8-INCH	74.000 SY	.		.	
0330	416.0610 DRILLED TIE BARS	2,944.000 EACH	.		.	
0340	440.4410.S INCENTIVE IRI RIDE	13,876.000 DOL	1.00000		13876.00	
0350	455.0105 ASPHALTIC MATERIAL PG58-28	836.000 TON	.		.	
0360	455.0605 TACK COAT	2,873.000 GAL	.		.	
0370	460.1103 HMA PAVEMENT TYPE E-3	14,951.000 TON	.		.	
0380	460.2000 INCENTIVE DENSITY HMA PAVEMENT	5,272.000 DOL	1.00000		5272.00	
0390	465.0105 ASPHALTIC SURFACE	194.000 TON	.		.	
0400	465.0125 ASPHALTIC SURFACE TEMPORARY	685.000 TON	.		.	
0410	520.8000 CONCRETE COLLARS FOR PIPE	14.000 EACH	.		.	

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS		UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0420	601.0319 CONCRETE CURB & GUTTER 19-INCH	2,666.000	LF		.		.
0430	601.0322 CONCRETE CURB & GUTTER 22-INCH	2,289.000	LF		.		.
0440	601.0331 CONCRETE CURB & GUTTER 31-INCH	6,123.000	LF		.		.
0450	602.0410 CONCRETE SIDEWALK 5-INCH	18,655.000	SF		.		.
0460	602.0415 CONCRETE SIDEWALK 6-INCH	204.000	SF		.		.
0470	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW	32.000	SF		.		.
0480	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA	312.000	SF		.		.
0490	608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH	46.000	LF		.		.
0500	608.0315 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH	777.000	LF		.		.
0510	608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	47.000	LF		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0520	608.0324 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH	1,339.000 LF		.		.
0530	608.0330 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 30-INCH	1,622.000 LF		.		.
0540	608.0336 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 36-INCH	135.000 LF		.		.
0550	610.0119 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 19X30-INCH	402.000 LF		.		.
0560	610.0124 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 24X38-INCH	104.000 LF		.		.
0570	611.0535 MANHOLE COVERS TYPE J-SPECIAL	15.000 EACH		.		.
0580	611.0612 INLET COVERS TYPE C	4.000 EACH		.		.
0590	611.0648 INLET COVERS TYPE R	38.000 EACH		.		.
0600	611.2004 MANHOLES 4-FT DIAMETER	2.000 EACH		.		.
0610	611.2005 MANHOLES 5-FT DIAMETER	21.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0620	611.2006 MANHOLES 6-FT DIAMETER	5.000 EACH		.		.
0630	611.2007 MANHOLES 7-FT DIAMETER	3.000 EACH		.		.
0640	611.3003 INLETS 3-FT DIAMETER	9.000 EACH		.		.
0650	611.3004 INLETS 4-FT DIAMETER	29.000 EACH		.		.
0660	611.3225 INLETS 2X2.5-FT	1.000 EACH		.		.
0670	611.8120.S COVER PLATES TEMPORARY	3.000 EACH		.		.
0680	611.9800.S PIPE GRATES	1.000 EACH		.		.
0690	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 0001. 1060-33-71	1.000 EACH		.		.
0700	619.1000 MOBILIZATION	1.000 EACH		.		.
0710	620.0300 CONCRETE MEDIAN SLOPED NOSE	597.000 SF		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0720	623.0200 DUST CONTROL SURFACE TREATMENT	29,776.000 SY		.		.
0730	624.0100 WATER	53.000 MGAL		.		.
0740	625.0100 TOPSOIL	5,543.000 SY		.		.
0750	627.0200 MULCHING	130.000 SY		.		.
0760	628.1104 EROSION BALES	15.000 EACH		.		.
0770	628.1504 SILT FENCE	213.000 LF		.		.
0780	628.1520 SILT FENCE MAINTENANCE	213.000 LF		.		.
0790	628.1905 MOBILIZATIONS EROSION CONTROL	9.000 EACH		.		.
0800	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL	5.000 EACH		.		.
0810	628.2027 EROSION MAT CLASS II TYPE C	531.000 SY		.		.
0820	628.7005 INLET PROTECTION TYPE A	61.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0830	628.7010 INLET PROTECTION TYPE B	37.000 EACH		.		.
0840	628.7015 INLET PROTECTION TYPE C	107.000 EACH		.		.
0850	628.7020 INLET PROTECTION TYPE D	23.000 EACH		.		.
0860	628.7560 TRACKING PADS	1.000 EACH		.		.
0870	628.7570 ROCK BAGS	100.000 EACH		.		.
0880	629.0210 FERTILIZER TYPE B	4.000 CWT		.		.
0890	630.0120 SEEDING MIXTURE NO. 20	8.000 LB		.		.
0900	631.0300 SOD WATER	125.000 MGAL		.		.
0910	631.1000 SOD LAWN	5,232.000 SY		.		.
0920	632.0101 TREES (SPECIES, ROOT, SIZE) 0001. ELM PROSPECTOR B&B 2 1/2-INCH CAL	2.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0930	632.0101 TREES (SPECIES, ROOT, SIZE) 0003. GINKGO MALE ONLY B&B 2 1/2-INCH CAL	4.000 EACH		.		.
0940	632.0101 TREES (SPECIES, ROOT, SIZE) 0005. HACKBERRY COMMON B&B 2 1/2-INCH CAL	4.000 EACH		.		.
0950	632.0101 TREES (SPECIES, ROOT, SIZE) 0007. OAK CRIMSON SPRIRE B&B 2 1/2-INCH CAL	2.000 EACH		.		.
0960	632.0101 TREES (SPECIES, ROOT, SIZE) 0009. ALDER BLACK B&B 2-INCH CAL	3.000 EACH		.		.
0970	632.0101 TREES (SPECIES, ROOT, SIZE) 0011. CRABAPPLE CAMELOT B&B 2-INCH CAL	3.000 EACH		.		.
0980	632.0101 TREES (SPECIES, ROOT, SIZE) 0013. CRABAPPLE LANCELOT B&B 2-INCH CAL	9.000 EACH		.		.
0990	632.0101 TREES (SPECIES, ROOT, SIZE) 0015. LILAC IVORY SILK TREE B&B 2-INCH CAL	2.000 EACH		.		.
1000	632.0101 TREES (SPECIES, ROOT, SIZE) 0017. PEAR AUTUMN BLAZE B&B 2-INCH CAL	5.000 EACH		.		.
1010	632.9101 LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES	24.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1020	634.0616 POSTS WOOD 4X6-INCH X 16-FT	109.000 EACH		.		.
1030	634.0618 POSTS WOOD 4X6-INCH X 18-FT	16.000 EACH		.		.
1040	634.0812 POSTS TUBULAR STEEL 2X2-INCH X 12-FT	55.000 EACH		.		.
1050	637.0202 SIGNS REFLECTIVE TYPE II	1,887.330 SF		.		.
1060	637.0402 SIGNS REFLECTIVE FOLDING TYPE II	82.060 SF		.		.
1070	638.2102 MOVING SIGNS TYPE II	13.000 EACH		.		.
1080	638.2602 REMOVING SIGNS TYPE II	264.000 EACH		.		.
1090	638.3000 REMOVING SMALL SIGN SUPPORTS	114.000 EACH		.		.
1100	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 0001. 1060-33-71	102.000 DAY		.		.
1110	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 0002. 1060-33-90	33.000 DAY		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1120	643.0300 TRAFFIC CONTROL DRUMS	42,781.000 DAY		.		.
1130	643.0410 TRAFFIC CONTROL BARRICADES TYPE II	309.000 DAY		.		.
1140	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	3,660.000 DAY		.		.
1150	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C	8,484.000 DAY		.		.
1160	643.0800 TRAFFIC CONTROL ARROW BOARDS	285.000 DAY		.		.
1170	643.0900 TRAFFIC CONTROL SIGNS	8,658.000 DAY		.		.
1180	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	4.000 EACH		.		.
1190	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE	846.000 SF		.		.
1200	643.2000 TRAFFIC CONTROL DETOUR (PROJECT) 0001. 1060-33-71	1.000 EACH		.		.
1210	643.3000 TRAFFIC CONTROL DETOUR SIGNS	6,178.000 DAY		.		.
1220	646.0106 PAVEMENT MARKING EPOXY 4-INCH	17,907.000 LF		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1230	646.0109 PAVEMENT MARKING PREFORMED PLASTIC 4-INCH	1,445.000 LF		.		.
1240	646.0129 PAVEMENT MARKING PREFORMED PLASTIC 8-INCH	685.000 LF		.		.
1250	646.0136 PAVEMENT MARKING EPOXY 12-INCH	12.000 LF		.		.
1260	646.0139 PAVEMENT MARKING PREFORMED PLASTIC 12-INCH	500.000 LF		.		.
1270	646.0600 REMOVING PAVEMENT MARKINGS	6,026.000 LF		.		.
1280	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH	1,046.000 LF		.		.
1290	646.0843.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH	2,103.000 LF		.		.
1300	646.0881.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH	625.000 LF		.		.
1310	646.0883.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH	691.000 LF		.		.
1320	647.0456 PAVEMENT MARKING CURB EPOXY	4,174.000 LF		.		.

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PROJECT(S): 1060-33-71, 1060-33-90
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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1330	647.0559 PAVEMENT MARKING STOP LINE PREFORMED PLASTIC 12-INCH	25.000 LF		.		.
1340	647.0606 PAVEMENT MARKING ISLAND NOSE EPOXY	13.000 EACH		.		.
1350	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH	435.000 LF		.		.
1360	647.0779 PAVEMENT MARKING CROSSWALK PREFORMED PLASTIC 12-INCH	190.000 LF		.		.
1370	647.0960 REMOVING PAVEMENT MARKINGS SYMBOLS	3.000 EACH		.		.
1380	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	68,856.000 LF		.		.
1390	649.0801 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH	1,216.000 LF		.		.
1400	649.1200 TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 18-INCH	317.000 LF		.		.
1410	652.0215 CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/4-INCH	74.000 LF		.		.
1420	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	3,126.000 LF		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
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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
1430	652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	2,223.000 LF		.		.
1440	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	3,387.000 LF		.		.
1450	652.0610 CONDUIT SPECIAL 2 1/2-INCH	65.000 LF		.		.
1460	652.0615 CONDUIT SPECIAL 3-INCH	562.000 LF		.		.
1470	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM	3.000 EACH		.		.
1480	653.0135 PULL BOXES STEEL 24X36-INCH	10.000 EACH		.		.
1490	653.0140 PULL BOXES STEEL 24X42-INCH	52.000 EACH		.		.
1500	654.0101 CONCRETE BASES TYPE 1	17.000 EACH		.		.
1510	654.0102 CONCRETE BASES TYPE 2	1.000 EACH		.		.
1520	654.0105 CONCRETE BASES TYPE 5	24.000 EACH		.		.
1530	654.0110 CONCRETE BASES TYPE 10	5.000 EACH		.		.

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FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1540	654.0113 CONCRETE BASES TYPE 13	3.000 EACH		.		.
1550	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL	4.000 EACH		.		.
1560	655.0144 CABLE IN DUCT 4-4 AWG	720.000 LF		.		.
1570	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG	2,020.000 LF		.		.
1580	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG	1,752.000 LF		.		.
1590	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG	3,680.000 LF		.		.
1600	655.0270 CABLE TRAFFIC SIGNAL 15-14 AWG	366.000 LF		.		.
1610	655.0320 CABLE TYPE UF 2-10 AWG GROUNDED	200.000 LF		.		.
1620	655.0505 ELECTRICAL WIRE TRAFFIC SIGNALS 14 AWG	2,890.000 LF		.		.
1630	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	3,630.000 LF		.		.
1640	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	3,666.000 LF		.		.

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PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1650	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	47.000 LF		.		.
1660	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG	1,800.000 LF		.		.
1670	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG	728.000 LF		.		.
1680	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG	15,871.000 LF		.		.
1690	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE	1,734.000 LF		.		.
1700	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 0001. USH 18 & STH 181	LUMP	LUMP			.
1710	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 0002. W. WISCONSIN AVENUE & STH 181	LUMP	LUMP			.
1720	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 0003. CCTV-40-0100	LUMP	LUMP			.
1730	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 0021. STH 181 & W. DANA COURT	LUMP	LUMP			.

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PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1740	656.0400 ELECTRICAL SERVICE MAIN LUGS ONLY METER PEDESTAL (LOCATION) 0001. NEW UU	LUMP	LUMP			.
1750	657.0100 PEDESTAL BASES	17.000 EACH		.		.
1760	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	25.000 EACH		.		.
1770	657.0315 POLES TYPE 4	1.000 EACH		.		.
1780	657.0322 POLES TYPE 5-ALUMINUM	24.000 EACH		.		.
1790	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3. 5-FT	4.000 EACH		.		.
1800	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	7.000 EACH		.		.
1810	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	2.000 EACH		.		.
1820	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	4.000 EACH		.		.
1830	657.0605 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 4-FT	30.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1840	657.0609 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT	1.000 EACH		.		.
1850	657.1345 INSTALL POLES TYPE 9	5.000 EACH		.		.
1860	657.1355 INSTALL POLES TYPE 12	3.000 EACH		.		.
1870	657.1515 INSTALL MONOTUBE ARMS 15-FT	1.000 EACH		.		.
1880	657.1525 INSTALL MONOTUBE ARMS 25-FT	2.000 EACH		.		.
1890	657.1530 INSTALL MONOTUBE ARMS 30-FT	2.000 EACH		.		.
1900	657.1545 INSTALL MONOTUBE ARMS 45-FT	2.000 EACH		.		.
1910	657.1550 INSTALL MONOTUBE ARMS 50-FT	1.000 EACH		.		.
1920	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL	42.000 EACH		.		.
1930	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL	8.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1940	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH	42.000 EACH		.		.
1950	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH	8.000 EACH		.		.
1960	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH	22.000 EACH		.		.
1970	658.0500 PEDESTRIAN PUSH BUTTONS	24.000 EACH		.		.
1980	658.0600 LED MODULES 12-INCH RED BALL	36.000 EACH		.		.
1990	658.0605 LED MODULES 12-INCH YELLOW BALL	36.000 EACH		.		.
2000	658.0610 LED MODULES 12-INCH GREEN BALL	36.000 EACH		.		.
2010	658.0615 LED MODULES 12-INCH RED ARROW	14.000 EACH		.		.
2020	658.0620 LED MODULES 12-INCH YELLOW ARROW	28.000 EACH		.		.
2030	658.0625 LED MODULES 12-INCH GREEN ARROW	8.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2040	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH	22.000 EACH		.		.
2050	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 0001. USH 18 & STH 181	LUMP	LUMP			.
2060	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 0002. W. WISCONSIN AVENUE & STH 181	LUMP	LUMP			.
2070	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 0021. STH 181 & W. DANA COURT	LUMP	LUMP			.
2080	659.0125 LUMINAIRES UTILITY HPS 250 WATTS	12.000 EACH		.		.
2090	659.0802 PLAQUES SEQUENCE IDENTIFICATION	46.000 EACH		.		.
2100	661.0200 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 0001. STH 18 & STH 181	LUMP	LUMP			.
2110	661.0300 GENERATORS	2.000 DAY		.		.
2120	670.0100 FIELD SYSTEM INTEGRATOR 0001. FTMS	LUMP	LUMP			.
2130	670.0100 FIELD SYSTEM INTEGRATOR 0002. W. WISCONSIN AVENUE & STH 181	LUMP	LUMP			.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2140	670.0100 FIELD SYSTEM INTEGRATOR 0021. STH 181 & W. DANA COURT	LUMP	LUMP			.
2150	670.0200 ITS DOCUMENTATION 0001. FTMS	LUMP	LUMP			.
2160	670.0200 ITS DOCUMENTATION 0002. W. WISCONSIN AVENUE & STH 181	LUMP	LUMP			.
2170	670.0200 ITS DOCUMENTATION 0021. STH 181 & W. DANA COURT	LUMP	LUMP			.
2180	671.0122 CONDUIT HDPE 2-DUCT 2-INCH	65.000 LF		.		.
2190	671.0132 CONDUIT HDPE 3-DUCT 2-INCH	2,940.000 LF		.		.
2200	672.0230 BASE CAMERA POLE 30-FT	1.000 EACH		.		.
2210	673.0105 COMMUNICATION VAULT TYPE 1	11.000 EACH		.		.
2220	673.0225.S INSTALL POLE MOUNTED CABINET	1.000 EACH		.		.
2230	675.0400.S INSTALL ETHERNET SWITCH	1.000 EACH		.		.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2240	677.0100 INSTALL CAMERA POLE	1.000 EACH		.		.
2250	677.0200 INSTALL CAMERA ASSEMBLY	1.000 EACH		.		.
2260	677.0300.S INSTALL VIDEO ENCODER	1.000 EACH		.		.
2270	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT	1,453.000 LF		.		.
2280	678.0072 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 72-CT	4,214.000 LF		.		.
2290	678.0300 FIBER OPTIC SPLICE	69.000 EACH		.		.
2300	678.0400 FIBER OPTIC TERMINATION	12.000 EACH		.		.
2310	678.0500 COMMUNICATION SYSTEM TESTING 0001. FTMS	LUMP	LUMP			.
2320	678.0500 COMMUNICATION SYSTEM TESTING 0002. W. WISCONSIN AVENUE & STH 181	LUMP	LUMP			.
2330	678.0500 COMMUNICATION SYSTEM TESTING 0021. STH 181 & W. DANA COURT	LUMP	LUMP			.

CONTRACT: 20130312012
PROJECT(S): 1060-33-71, 1060-33-90
FEDERAL ID(S): N/A, N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2340	690.0150 SAWING ASPHALT	311.000 LF		.		.
2350	690.0250 SAWING CONCRETE	12,288.000 LF		.		.
2360	SPV.0035 SPECIAL 7001. SHREDDED BARK MULCH	38.300 CY		.		.
2370	SPV.0035 SPECIAL 8003. CONCRETE SLOPE PAVING AT STORM SEWER OUTFALL	8.000 CY		.		.
2380	SPV.0045 SPECIAL 0001. TEMPORARY CROSSWALK AND BUS STOP ACCESS	119.000 DAY		.		.
2390	SPV.0060 SPECIAL 0001. EXPOSING EXISTING UTILITY	3.000 EACH		.		.
2400	SPV.0060 SPECIAL 0002. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 1	1.000 EACH		.		.
2410	SPV.0060 SPECIAL 0003. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2	22.000 EACH		.		.
2420	SPV.0060 SPECIAL 0004. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 3	11.000 EACH		.		.
2430	SPV.0060 SPECIAL 0005. PAVEMENT MARKING GROOVED PREFORMED WORDS	17.000 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
2440	SPV.0060 SPECIAL 1003. LIGHTING BOX OUT CITY OF MILWAUKEE	4.000 EACH		.		.
2450	SPV.0060 SPECIAL 1005. POLYMER CONCRETE PULL BOX CITY OF MILWAUKEE	7.000 EACH		.		.
2460	SPV.0060 SPECIAL 1010. LAMP DISPOSAL HIGH INTENSITY DISCHARGE	25.000 EACH		.		.
2470	SPV.0060 SPECIAL 1023. SALVAGING LUMINAIRES - WAUWATOSA	25.000 EACH		.		.
2480	SPV.0060 SPECIAL 1032. REMOVING CONCRETE LIGHT POLE AND ARM	20.000 EACH		.		.
2490	SPV.0060 SPECIAL 1060. LUMINAIRE LED	31.000 EACH		.		.
2500	SPV.0060 SPECIAL 1070. TEMPORARY WOOD LIGHTING POLE	12.000 EACH		.		.
2510	SPV.0060 SPECIAL 1080. TEMPORARY WOOD POLE 40 FT	6.000 EACH		.		.
2520	SPV.0060 SPECIAL 1090. SALVAGE DISTRIBUTION CENTERS	1.000 EACH		.		.
2530	SPV.0060 SPECIAL 1110. DISTRIBUTION CENTER LIGHTING	1.000 EACH		.		.

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PROJECT(S): 1060-33-71, 1060-33-90
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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2540	SPV.0060 SPECIAL 1152. ELECTRIC SERVICE METER BREAKER PEDESTAL TEMPORARY LIGHTING	1.000 EACH		.		.
2550	SPV.0060 SPECIAL 1153. REMOVING ELECTRIC SERVICE METER PEDESTAL LIGHTING	1.000 EACH		.		.
2560	SPV.0060 SPECIAL 2001. INSTALL FIBER OPTIC MEDIA CONVERTE	2.000 EACH		.		.
2570	SPV.0060 SPECIAL 2002. GROUND ROD	1.000 EACH		.		.
2580	SPV.0060 SPECIAL 2003. INSTALLING CONDUIT INTO EXISTING MANHOLES	3.000 EACH		.		.
2590	SPV.0060 SPECIAL 2004. 4-FOOT DIAMETER MANHOLE TYPE TES	6.000 EACH		.		.
2600	SPV.0060 SPECIAL 3001. POLES TYPE 9	3.000 EACH		.		.
2610	SPV.0060 SPECIAL 3002 POLES TYPE 10	1.000 EACH		.		.
2620	SPV.0060 SPECIAL 3003. MONOTUBE ARMS 30-FT	4.000 EACH		.		.
2630	SPV.0060 SPECIAL 3004. LUMINAIRE ARMS STEELS 6-FT	1.000 EACH		.		.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2640	SPV.0060 SPECIAL 3005. EVP DETECTOR TYPE 1	4.000 EACH		.		.
2650	SPV.0060 SPECIAL 3006. EVP DISCRIMINATOR TYPE IV	1.000 EACH		.		.
2660	SPV.0060 SPECIAL 3008. EVP CONFIRMATION LIGHT ASSEMBLY TYPE I	4.000 EACH		.		.
2670	SPV.0060 SPECIAL 3009. CONCRETE BASES TYPE 10, CONTRACTOR SUPPLIED ANCHOR BOLTS & ROD TEMPLATE	4.000 EACH		.		.
2680	SPV.0060 SPECIAL 3010. REMOVING TRAFFIC SIGNAL VAULT	13.000 EACH		.		.
2690	SPV.0060 SPECIAL 3021. BOLLARDS	2.000 EACH		.		.
2700	SPV.0060 SPECIAL 5011. ADJUSTING SANITARY MANHOLES	13.000 EACH		.		.
2710	SPV.0060 SPECIAL 5014. ADJUSTING WATER MANHOLES	2.000 EACH		.		.
2720	SPV.0060 SPECIAL 5019. ADJUSTING WATER VALVES - WAUWATOSA	13.000 EACH		.		.
2730	SPV.0060 SPECIAL 5020. HYDRANT REMOVAL	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
2740	SPV.0060 SPECIAL 5021. HYDRANT INSTALLATION	2.000 EACH		.		.
2750	SPV.0060 SPECIAL 5022. ADJUSTING WATER VALVES - MILWAUKEE	3.000 EACH		.		.
2760	SPV.0060 SPECIAL 5023. CURB STOP INSTALLATION	1.000 EACH		.		.
2770	SPV.0060 SPECIAL 5024. ROADWAY SERVICE BOX INSTALLATION	1.000 EACH		.		.
2780	SPV.0060 SPECIAL 7001. CORAL BELLS PALACE PURPLE CONT 6 INCH	20.000 EACH		.		.
2790	SPV.0060 SPECIAL 7003. GRASS KARL FOERSTER REED CONT 6 INCH	10.000 EACH		.		.
2800	SPV.0060 SPECIAL 7005. SEDUM AUTUMN JOY CONT 6 INCH	26.000 EACH		.		.
2810	SPV.0060 SPECIAL 8004. INLET COVERS TYPE 57	3.000 EACH		.		.
2820	SPV.0060 SPECIAL 8006. INLET COVERS TYPE R SPECIAL	10.000 EACH		.		.
2830	SPV.0060 SPECIAL 8007. RECONNECT STORM SEWER LATERALS	5.000 EACH		.		.

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	SPV.0090 SPECIAL 0001.					
2840	PAVEMENT MARKING GROOVED PREFORMEDTHERMOPLASTIC STOP LINE 18-INCH	482.000 LF		.		.
	SPV.0090 SPECIAL 0002.					
2850	PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 6-INCH	2,992.000 LF		.		.
	SPV.0090 SPECIAL 0003.					
2860	REMOVING PAVEMENT MARKING WATER BLASTING	40.000 LF		.		.
	SPV.0090 SPECIAL 1020.					
2870	TEMPORARY OVERHEAD CABLE QUADRUPLEX 6 AWG	1,448.000 LF		.		.
	SPV.0090 SPECIAL 1021.					
2880	TEMPORARY OVERHEAD CABLE QUADRUPLEX 4 AWG	1,564.000 LF		.		.
	SPV.0090 SPECIAL 2001.					
2890	4-DUCT CONDUITCEMENT ENCASED 4-INCH CONDUIT DB-60	3,080.000 LF		.		.
	SPV.0090 SPECIAL 2002.					
2900	1-DUCT CONDUITCEMENT ENCASED 4-INCH CONDUIT DB-60	25.000 LF		.		.
	SPV.0090 SPECIAL 3001.					
2910	TYPE UF CABLE 2 CONDUCTOR NO. 14	750.000 LF		.		.
	SPV.0090 SPECIAL 5020.					
2920	DUCTILE IRON HYDRANT BRANCH 6-INCH	17.000 LF		.		.

CONTRACT: 20130312012
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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2930	SPV.0090 SPECIAL 5021. DUCTILE IRON HYDRANT BRANCH 8-INCH	33.000 LF		.		.
2940	SPV.0105 SPECIAL 0001. SURVEY PROJECT 1060-33-71	LUMP	LUMP			.
2950	SPV.0105 SPECIAL 0002. PAVEMENT CLEANUP PROJECT 1060-33-71	LUMP	LUMP			.
2960	SPV.0105 SPECIAL 0003. PAVEMENT CLEANUP PROJECT 1060-33-90	LUMP	LUMP			.
2970	SPV.0105 SPECIAL 0004. SURVEY PROJECT 1060-33-90	LUMP	LUMP			.
2980	SPV.0105 SPECIAL 0006. CONCRETE PAVEMENTJOINT LAYOUT	LUMP	LUMP			.
2990	SPV.0105 SPECIAL 1005. MAINTENANCE OF LIGHTING SYSTEM	LUMP	LUMP			.
3000	SPV.0105 SPECIAL 3001. REMOVE TRAFFIC SIGNALS USH 18 & STH 181	LUMP	LUMP			.
3010	SPV.0105 SPECIAL 3002. REMOVE TRAFFIC SIGNALS W. WISCONSIN AVENUE & STH 181	LUMP	LUMP			.
3020	SPV.0105 SPECIAL 3003. REMOVE LOOP DETECTOR WIRE AND LEAD-IN CABLE USH 18 & STH 181	LUMP	LUMP			.

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3030	SPV.0105 SPECIAL 3004. TRANSPORTING SIGNAL AND LIGHTING MATERIALS USH 18 & STH 181	LUMP	LUMP			.
3040	SPV.0105 SPECIAL 3005. INSTALL VENDOR SUPPLIED TRAFFIC SIGNAL CABINET USH 18 & STH 181	LUMP	LUMP			.
3050	SPV.0105 SPECIAL 3006. TRNSPRT. & INSTLL. S-F AUTOSCOPE VIDEO DETECTION SYSTEM USH 18 & STH 181	LUMP	LUMP			.
3060	SPV.0105 SPECIAL 3007. EVP DETECTOR HEAD INSTALLATION USH 18 & STH 181	LUMP	LUMP			.
3070	SPV.0105 SPECIAL 3008. TEMPORARY EVP SYSTEM USH 18 & STH 181	LUMP	LUMP			.
3080	SPV.0105 SPECIAL 3009. INST VENDOR MUNCPL SUPPLIED TRAF SIG CABINET W. WISCONSIN AVE & STH 181	LUMP	LUMP			.
3090	SPV.0105 SPECIAL 3010. VIDEO VEHICLE DETECTION SYSTEM W. WISONSIN AVENUE & STH 181	LUMP	LUMP			.
3100	SPV.0105 SPECIAL 3011. INSTALL FIBER OPTIC COMMUNICATION IN CABINET USH 18 & STH 181	LUMP	LUMP			.

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3110	SPV.0105 SPECIAL 3012. INSTALL FIBER OPTIC COMMUNICATION IN CABINET W. WISCONSIN AVENUE & STH 181	LUMP	LUMP			.
3120	SPV.0105 SPECIAL 3021. REMOVE TRAFFIC SIGNALS STH 181 & W. DANA COURT	LUMP	LUMP			.
3130	SPV.0105 SPECIAL 3022. REMOVE LOOP DETECTOR WIRE AND LEAD-IN CABLE STH 181 & W. DANA COURT	LUMP	LUMP			.
3140	SPV.0105 SPECIAL 3023. TRANSPORTING SIGNAL AND LIGHTING MATERIALS STH 181 & W. DANA COURT	LUMP	LUMP			.
3150	SPV.0105 SPECIAL 3024. INSTALL VENDOR SUPPLIED TRAFFIC SIGNAL CABINET STH 181 & W. DANA COURT	LUMP	LUMP			.
3160	SPV.0105 SPECIAL 3025. TRANSPORTING & INST. SF AUTOSCOPE VIDEO DET. SYS. STH181 & W. DANA COURT	LUMP	LUMP			.
3170	SPV.0105 SPECIAL 3026. EVP DETECTOR HEAD INSTALLATION STH 181 & W. DANA COURT	LUMP	LUMP			.
3180	SPV.0105 SPECIAL 3027. INSTALL FIBER OPTIC COMM. CABINET STH 181 & W. DANA COURT	LUMP	LUMP			.

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3190	SPV.0165 SPECIAL 0001. CONCRETE SIDEWALK 5-INCH SPECIAL	5,569.000 SF		.		.
3200	SPV.0165 SPECIAL 0011. FIXED MESSAGE SIGN SPECIAL	15.000 SF		.		.
3210	SPV.0180 SPECIAL 0002. CONCRETE PAVEMENT 8-INCH SPECIAL	1,242.000 SY		.		.
	SECTION 0001 TOTAL					.
	TOTAL BID					.

PLEASE ATTACH SCHEDULE OF ITEMS HERE