HIGHWAY WORK PROPOSAL

Proposal Number: 1 3

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

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Milwaukee	1060-34-86		Zoo IC, Deep Storm Sewer North Avenue to Center Street	USH 45

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: May 10, 2016 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time December 10, 2016	
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 Deep storm sewer jacked in place, erosion control, traffic control, and pavement marking.	
Notice of Award Dated	Date Guaranty Returned

PLEASE ATTACH
PROPOSAL GUARANTY HERE

Effective with November 2007 Letting

PROPOSAL REQUIREMENTS AND CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

Effective with August 2015 Letting

BID PREPARATION

Preparing the Proposal Schedule of Items

A General

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

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

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

(3) The department will provide bidding information through the department's web site at:
http://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

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

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

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

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

(6) Contractors are responsible for checking on the issuance of addenda and for obtaining the addenda. Notice of issuance of addenda is posted on the department's web site at:
http://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

or by calling the department at (608) 266-1631. Addenda can ONLY be obtained from the departments web site listed above or by picking up the addenda at the Bureau of Highway Construction, Room 601, 4802 Sheboygan Avenue, Madison, WI, during regular business hours.

(7) Addenda posted after 5:00 PM on the Thursday before the letting will be emailed to the eligible bidders for that proposal. All eligible bidders shall acknowledge receipt of the addenda whether they are bidding on the proposal or not. Not acknowledging receipt may jeopardize the awarding of the project.

B Submitting Electronic Bids

B.1 On the Internet

(1) Do the following before submitting the bid:

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

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

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

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

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

(1) Download the latest schedule of items from the Wisconsin pages of the Bid Express™ web site reflecting the latest addenda posted on the department's web site at:

http://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

Use Expedite ™ software to prepare and print the schedule of items. Provide a valid amount for all price fields. Follow instructions and review the help screens provided on the Bid Express™ web site to assure that the schedule of items is prepared properly.

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

Bidder

Name

BN00

Proposals: 1, 12, 14, & 22

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

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

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

1. The check code printed on the bottom of the printout of the Expedite™ generated schedule of items is not the same on each page.
2. The check code printed on the printout of the Expedite™ generated schedule of items is not the same as the check code for that proposal provided on the diskette or CD ROM.
3. The diskette or CD ROM is not submitted at the time and place the department designates.

C Waiver of Electronic Submittal

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

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

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

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

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

PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

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

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

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

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

(Signature of Authorized Contractor Representative) (Date)

March 2010

LIST OF SUBCONTRACTORS

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

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

Name of Subcontractor	Class of Work	Estimated Value

DECEMBER 2000

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1060-34-86, Zoo IC, Deep Storm Sewer, North Avenue to Center Street, USH 45, 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, 2016 Edition, as published by the department, and these special provisions.

If all or a portion of the plans and special provisions are developed in the SI metric system and the schedule of prices is developed in the US standard measure system, the department will pay for the work as bid in the US standard system.
100-005 (20151210)

2. Scope of Work.

The work under this contract shall consist of deep storm sewer jacked in place, erosion control, traffic control, pavement marking, restoration, 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.

Do not begin work prior to 9:30 PM Sunday July 31, 2016.

Shaft locations at manholes N1208 and N1210 will not be available for staging or construction until after September 5, 2016, unless otherwise approved by the engineer.

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 completion date 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.

Be advised that there may be multiple mobilizations and/or remobilizations to complete construction operations. No additional payment will be made, by the department, for additional mobilizations.

Winter weather work, grading, 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 paid for under the bid item Control of Water 1060-34-86.

Anticipate cold weather paving, concrete, and structure work. 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 granted for cold weather construction.

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

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

Final Completion of Work

Supplement standard spec 108.10 with the following:

The department will not grant time extensions to the project completion date 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.

Schedule of Operations

Traffic:

USH 45

- All lanes and ramps open to traffic during peak and off-peak hours.
- Short term lane and ramp closures permitted during night time hours.

Construction:

- Construct deep storm sewer trunkline

Additional Work Area Restrictions:

- The Zoo Interchange Phase 2 (1060-33-81) contractor will be occupying a portion of the North Avenue northbound exit ramp infield as a storage and staging site.

Wisconsin Lane Closure System Advance Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

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

Definitions - Freeway Work Restrictions
The following definitions apply to the contract for freeway work restrictions:

Weekday Peak Hours
- 5:30 AM – 7:00 PM Monday, Tuesday, Wednesday, Thursday, Friday

Weekday Off-Peak Hours
- 7:00 PM – 9:30 PM Monday, Tuesday, Wednesday, Thursday
- 7:00 PM – 11:00 PM Friday

Weekend Peak Hours
- 8:00 AM – 7:00 PM Saturday, Sunday

Weekend Off-Peak Hours
- 7:00 PM – 11:00 PM Saturday
- 7:00 PM – 9:30 PM Sunday

Night Time Hours
- 9:30 PM – 5:30 AM (Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
- 11:00 PM – 8:00 AM (Friday PM to Saturday AM, Saturday PM to Sunday AM)

Freeway Work Restrictions - General
No Weekday Peak or Weekend Peak Hour lane closures are allowed. No Weekday Off-Peak or Weekend Off-Peak Hour lane closures are allowed.

Provide a minimum of three lanes in each direction of the freeway and ensure that the open freeway lanes are entirely clear for traffic during Weekday Peak Hours and Weekend Peak Hours. Provide a minimum of three lanes in each direction of the freeway and ensure that the open freeway lanes are entirely clear for traffic during Weekday Off-Peak and Weekend Off-Peak Hours. Provide a minimum of one lane in each direction of the freeway and ensure that the open freeway lane(s) are entirely clear for traffic during Night Time Hours.

Ramp Closures
All entrance and exit ramps shall be posted three business days in advance of their closure with dates and time of closure.

No ramp closures are permitted during peak hours and off-peak hours.

No two consecutive entrance ramps or consecutive exit ramps may be closed unless it is shown in the traffic control plans or approved by the engineer.

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

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

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

Portable Changeable Message Signs
Obtain acceptance from the engineer regarding the wording of all messages on portable changeable message signs.

Equipment Parking, Materials Storage, Hauling Restrictions, Miscellaneous
Comply with all local ordinances that apply to work operations pertaining to work during night time work hours. Furnish in writing any ordinance variance issued by the municipality or required permits to the engineer no less than three days before performing such work. City of Wauwatosa approval is required for any nighttime noise generating activities; including generator storage locations located within the freeway right-of-way.

No hauling on N. 112th Street will be allowed unless approved by the City of Wauwatosa.

Keep open travel lanes free of construction debris at all times.

Park or store equipment and materials only at work sites approved by the engineer. Parking equipment or storing materials on the shoulders or within 30’ of the roadway during non-working hours is not permitted.

All work and operations shall be completed according to WisDOT Standard Detail Drawings, the MUTCD, and as directed by the engineer.

Installing construction zone signage on existing sign posts or utility poles is not permitted.

Permitting the contractor to continue and finish the work or any part of after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the department of any of its rights under the contract.

Northern Long-eared Bat (*Myotis septentrionalis*)
Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees and structures (bridges, culverts, buildings). Roosts may not have been observed on this project, but conditions to support the species exist. The species and all active roosts are protected by the Federal Endangered Species Act.

The department has contracted with others to cut all trees for this project prior to construction. Remove any downed trees and grub the stumps and any remaining vegetation within the identified grubbing limits.

If additional trees need to be removed, no clearing shall occur without prior approval from the WisDOT Regional Environmental Coordinator (REC). Additional tree removal beyond the area originally specified will require consultation with the United States Fish and Wildlife Service (USFWS) and may require a bat presence/absence survey. Notify the engineer if additional clearing cannot be avoided to begin coordination with the WisDOT REC. The WisDOT REC will initiate consultation with the USFWS and determine if a survey is necessary.

Submit a schedule and description of clearing and/or grubbing operations with the ECIP 14 days prior to any clearing operations. The department will determine, based on schedule and scope of work, what additional erosion control measures shall be implemented prior to the start of clearing operations, and list those additional measures in the approval letter for the ECIP.

4. Lane Rental Fee Assessment.

A General

The contract designates some lane closures to perform the work. If a lane is closed outside of the allowable hours, the contractor will be subject to Lane Rental Fee Assessments. If a lane is obstructed at any time due to contractor operations, it is considered a closure.

The contractor will incur a Lane Rental Fee Assessment for each lane closure outside of the allowable hours. The contractor will not incur a Lane Rental Fee Assessment for closure of lanes during the allowable hours. The allowable hours for closing lanes are stated in the Prosecution and Progress article.

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

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

A.1 Lane Rental Fee Assessment
The Lane Rental Fee Assessment incurred for each lane closure, each ramp closure, and each full closure of a roadway, per direction of travel, is as follows:

$2,000 per USH 45 traffic lane or USH 45 ramp per 15 minutes

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

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

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

B (Vacant)

C (Vacant)

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

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

E (Vacant)

5. Traffic.

Perform the work under this contract in a manner that will interfere as little as possible with active traffic on local streets. Do not park or store vehicles, equipment, or materials on City of Wauwatosa streets adjacent to active traffic or within the clear zone 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. Do not close or remove driveway approaches or parking stalls from service without a five day notice given to the occupants of the premises to remove their vehicles prior to driveway removal or closing of the driveway approach access.

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

Traffic:

USH 45

- All lanes and ramps open to traffic during peak and off-peak hours.
- Short-term lane and ramp closures permitted during night time hours.

6. Holiday and Special Event Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying USH 45 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 special event and holiday periods:

- From noon Friday, May 27, 2016 to 6:00 AM Tuesday, May 31, 2016 for Memorial Day;
- From noon Friday, July 1, 2016 to 6:00 AM Tuesday, July 5, 2016 for Independence Day;
- From noon Friday, September 2, 2016 to 6:00 AM Tuesday, September 6, 2016 for Labor Day;
- From Noon Wednesday, November 23, 2016 to 6:00 AM Monday, November 28, 2016 for Thanksgiving Day;
- From noon Friday, December 23, 2016 to 6:00 AM Monday, December 26, 2016 for Christmas Day.

Additional Freeway Restrictions

During Summerfest and State Fair:

- Maintain two open lanes on northbound USH 45 until one hour after the event closes each night.

During Milwaukee Brewer home games at Miller Park:

- Maintain two open lanes on northbound USH 45 until two hours after the game ends.

During other special events at Miller Park:

- Restrictions will be defined during construction on an as needed basis as determined by the engineer.

During Green Bay Packers home games:

- Maintain three open lanes on northbound USH 45 from three hours prior to the game time, until 4 hours after the game ends.

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 Douglas Gendron at (414) 750-4362 for further information.

Underground and overhead utility facilities are located within the project limits. 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.

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.

There may be discontinued utility facilities within the project limits. If a conflict with a discontinued 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:

Wauwatosa, City of – Sanitary has an existing underground sanitary sewer beginning at a manhole at Station 441NS+27, 167’ LT and running northeasterly across USH 45 to a manhole at 442NS+74, 162’ RT. From there the sanitary line continues north in the center of N. 112th Street to beyond the northerly project limits. This line will remain in place without adjustment.

Contact Bill Wehrley, (414) 479-8929, of City of Wauwatosa - Sewer 7 days in advance to coordinate locations and any excavation near their facilities.

We Energies – Electric has an existing overhead electric line beginning at a pole at Station 443NS+13, 149’ LT and running easterly, crossing USH 45 at Station 443NS+00, and continuing easterly to a pole at Station 442NS+85, 143’ RT. This line will remain in place without adjustment.

Contact Erich Wuestenhagen, (414) 651-3948, of We Energies 7 days in advance to coordinate locations and any excavation near their facilities.

We Energies – Gas has an existing underground gas line beginning beyond the westerly project limits and running easterly, crossing USH 45 on the Meinecke Avenue Bridge, and continuing easterly to beyond the project limits. This line will remain in place without adjustment.

Contact Erich Wuestenhagen, (414) 651-3948, of We Energies 7 days in advance to coordinate locations and any excavation near their facilities.

WisDOT – Lighting has existing lighting facilities along USH 45 and along the ramps at the North Avenue interchange throughout the project area. These facilities will remain in place without adjustment.

Contact Eric Perea, (262) 574-5422 office / (414) 750-0935 cell, of WisDOT - Lighting 7 days in advance to coordinate locations and any excavation near their facilities.

WisDOT STOC has existing communication facilities along USH 45 and along the ramps at the North Avenue interchange throughout the project area. These facilities will remain in place without adjustment.

Contact Jeff Madson, (414) 225-3723, of WisDOT - STOC 7 days in advance to coordinate locations and any excavation near their facilities.

8. Other Contracts.

Coordinate work according to standard spec 105.5.

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

The following projects may be under construction concurrently with the work under this contract. Coordinate activities, detours, work zone traffic control, roadway and lane closures, and other work items as required with other contracts.

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

Project 1060-33-81
Zoo IC, Zoo Interchange Phase 2
WisDOT Contact: Mark Klipstein, (414) 750-1496

Project 1060-34-84
Zoo IC, Center Street Bridge
WisDOT Contact: Jay Obenberger, (414) 750-3259

9. Erosion Control.

Supplement standard spec 107.20 with the following:

Erosion control best management practices (BMP's) shown on the plans are at suggested locations. The actual locations will be determined by the contractor's ECIP and by the engineer. Include each dewatering (mechanical pumping) operation in the ECIP submittal. The ECIP will supplement information shown on the plans and not reproduce it. The ECIP will identify how to implement the project's erosion control plan. ECIP will demonstrate timely and diligently staged operations, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-application of top soil to minimize the period of exposure to possible erosion.

Provide the ECIP 14 days prior to the pre-construction conference. Provide one copy of the ECIP to the department and 1 copy of the ECIP to the WDNR Liaison Kristina Betzold, (414) 263-8517, Kristina.betzold@wisconsin.gov. Do not implement the ECIP until department approval, and perform all work according to the approved ECIP.

Maintain Erosion Control BMP's until permanent vegetation is established or until the engineer determines that the BMP is no longer required.

Stockpile excess materials or spoils on upland areas away from wetlands, floodplains, and waterways. Immediately install perimeter silt fence protection around stockpiles. If stockpiled materials will be left for more than 14 days, install temporary seed or other temporary erosion control measures the engineer orders.

Re-apply topsoil on graded areas, as designated by the engineer, immediately after grading is completed within those areas. Seed, fertilize, and mulch/erosion mat top-soiled areas, as designated by the engineer, within 5 days after placement of topsoil. If graded areas are left not completed and exposed for more than 14 days, seed those areas with temporary seed.

Do not allow any excavation for; structures, utilities, grading, maintaining drainage that requires dewatering(mechanical pumping) of water containing sediments (sand, silt, and clay particles) to leave the work site or discharge to a storm water conveyance system without sediment removal treatment. Prior to each dewatering operation, submit to the department a separate ECIP amendment describing in words and pictorial format an appropriate BMP for sediment removal, according to WisDNR Storm Water Construction Technical Standard, Code 1061, Dewatering. Include reasoning, location, and schedule duration proposed for each operation. Per Code 1061, include all selection criteria: site assessment, dewatering practice selection, calculations, plans, specifications, operations, maintenance, and location of proposed treated water discharge. Provide a stabilized discharge area. If directing discharge towards or into an inlet structure, provide additional inlet protection for back-up protection.
SEF Rev. 15_0120

10. 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, unless prior written approval is obtained from the engineer.

Noise levels between the night-time hours of 9:00 PM to 7:00 AM shall be restricted as follows including the use of pneumatic hammers and pavement removal, unless compliance is waived by the engineer:

Residential areas	Do not exceed 5 dB(A) over preconstruction ambient noise levels
All other areas outside WisDOT right-of-way	Do not exceed 5 dB(A) over preconstruction ambient noise levels

Prior to waiving the noise compliance by the engineer, provide 48 hour advance notice to Mr. William Wehrley, City Engineer, at (414) 479-8929 regarding the evening noise generating construction operations.

11. Notice to Contractor – Airport Operating Restrictions.

Fill out the FAA Notice Criteria tool for any permanent structure (bridge, light pole, etc.) or equipment (crane, etc.) used during construction.

http://oeaaa.faa.gov/oeaaa/external/portal.jsp

If required by the Notice Criteria tool, and for any crane or construction equipment higher than 200 feet above the ground, submit completed form 7460-1 (Notice of Proposed Construction or Alteration) to The Federal Aviation Administration (FAA) at least 45 days before starting construction.
SEF Rev. 14_0609

12. Notice to Contractor – Contamination Beyond Construction Limits.

Contaminated soil is present at the following site:

1. 722NOB+00 to 728NOB+00, from reference line to project limits right (NE Quad of USH 45 and North Ave., WDNR BRRTS No. 02-41-564068). Soil at this site is contaminated with petroleum and metals.

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

The Hazardous Materials Report is available by contacting: Andrew Malsom Wisconsin Department of Transportation, 141 NW Barstow, Waukesha, WI 53187, (262) 548-6705, Andrew.Malsom@dot.wi.gov.

107-100 (20050901)

13. Public Involvement Meetings.

Participate in department-sponsored public involvement meetings as the engineer requests. Ensure that representatives of subcontractors also participate in those meetings if the engineer requests.
SEF Rev. 14_0312

14. Traffic Meetings and Traffic Control Scheduling.

Every Wednesday by 9:00 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 at 10:00 AM on Wednesdays at the Zoo Interchange project office on 2424 S. 102nd Street; 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 10:00 AM meeting.

Every Wednesday at 2:00 PM, 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 by 12:00 PM on Thursdays.

Obtain approval from the engineer for any changes to the closure schedule that is proposed outside the Wednesday meetings, including additional closures or cancellations. Submit requests for additional closures or cancellations for Friday, Saturday, Sunday or Monday of the current schedule week by 12:00 PM on Thursday. Revise the 2-week look-ahead as needed to reflect these changes and submit to the engineer.

15. Material and Equipment Staging.

Submit a map showing all proposed material stockpile or equipment storage locations to the engineer 14 days prior to either preconstruction or proposed use, whichever comes first. Identify the specific purposes for the location. Obtain written permits from the property

owner, and submit two copies to the engineer before use. Do not stockpile or store materials or equipment on wetlands.
SEF Rev. 13_0204

16. Available Documents.

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

- Environmental Document
- Preconstruction survey
- Traffic Management Plan

These documents are available from Chris Zacharias at 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-6716.

SEF Rev. 15_0619

17. Geotechnical Investigation Information.

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

Available information relative to subsurface exploration, borings, soundings, water levels, elevations or profiles are available for review at the department's Regions office. Contact Chris Zacharias, 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-6716.

Geotechnical Baseline Report:

- Geotechnical Baseline Report, Zoo Interchange Reconstruction, North Leg Storm Sewer Tunnel–(North Leg Tunnel), January, 2016.

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 according to the plans and specifications.
SEF Rev. 14_1211

18. 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 standard spec 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 standard spec 104.3.5 as early as possible to assist the engineer in the timely resolution of an identified issue. The engineer will not require, in subsequent submissions, duplication of information already provided.
SEF Rev. 14_1211

19. Contractor Document Submittals.

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

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

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

Submit electronic copies in Portable Document Format (PDF) to the engineer-designated folder within the department's SharePoint site, and send alerts with a link to the document via email to (an) account(s) the engineer determines. If possible, translate original documents from their native format (e.g. Word, Excel, AutoCAD, etc.) using a Portable Document Format translation routine. Scan other documents to PDF format with a minimum resolution of 600 dpi.

All costs for contractor document submittals are incidental to the contract.
SEF Rev. 15_0619

20. Information to Bidders, Use of Recovered Material.

Supplement standard spec 106.2.1 with the following:

(3) Submit a material reuse proposal to the department prior to the Project kickoff and Initial Work Plan mobilization workshop, identifying, at a minimum, conformance to all of

Wisconsin Administrative Code NR 538, demonstrating specification gradation conformance, and following standard engineering practice for intended use.
http://docs.legis.wisconsin.gov/code/admin_code/nr/500/538

Obtain department acceptance of the material reuse proposal prior to incorporating any waste material, special waste, or industrial byproducts into the project. The department reserves the right to deny any proposed material reuse proposal.

(4) Provide the department with copies of all documentation and notifications required under Wisconsin Administrative Code NR 538.

(5) Within 60 days of placement, provide 3D model data recording as-built locations of industrial byproduct reuse in LandXML v1.2 files and AutoCAD Civil 3D 2014 (or later version) TIN surface DWG file formats; provide data using horizontal datum - NAD-83 (GRS-1980) (2007), vertical datum - NAVD-1988 (2007), and coordinate projection - Wisconsin County Coordinate System in U.S. survey feet, or in other format/datum as approved by the engineer.

21. Dust Control Implementation Plan.

A Description

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

B (Vacant)

C Construction

C.1 General

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

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

C.2 Dust Control Implementation Plan Contents

Develop a DCIP tailored to the specific needs of the project. Consider potential impacts to businesses and residences adjacent to the job site. Describe in detail all land disturbing, dust generating activities. Identify strategies to prevent, mitigate, and collect excess dust.

Establish clear lines of communication with the engineer to ensure that all dust control issues can be dealt with promptly.

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

1. A single contact person with overall responsibility for the DCIP development as well as surveillance and remediation of job related dust. Include the following:
    - Name, firm, address, and working-hours phone number.
    - Non-working-hours phone number.
    - Email address.
2. Individual contact persons and their respective areas of responsibility. Include the following:
    - Name, firm, address, and working-hours phone number.
    - Non-working-hours phone number.
    - Email address.
3. A site map locating project features, the job site boundaries, all ingress and egress points, air intakes and other dust-sensitive areas, and all public and private paved surfaces within and immediately adjacent to the job site. Show where specific land disturbing, dust generating activities will occur and, to the extent possible, where employing various dust control or prevention strategies.
4. A matrix showing, for each anticipated land disturbing, dust generating activity, the following:
    - Preventive measures that shall be employed.
    - The applicable contact person.
    - The contractor's timetable and surveillance measures used to determine when remediation is required.
    - The specific dust control and remediation measures that shall be employed. List the specific contract bid items that shall be used for payment. Also indicate costs that are incidental to the contract.
    - Both maintenance and cleanup schedules and procedures.
    - How excess and waste materials shall be disposed of.
5. A description of how off-site impacts shall be monitored and dealt with.
6. Provide the department a copy of any DNR approved permits for relocation of mobile crushing operations.

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:

624.0100	Water
628.7560	Tracking Pads
SPV.0105.0002	Pavement Cleanup Project 1060-34-86

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

E Payment

All costs associated with the development and updating of the DCIP are incidental to the contract. The department will pay separately for the work required to implement the actions approved in the DCIP under the contract bid items approved as a part of the DCIP. All other costs associated with work approved under the DCIP are incidental to the contract.
SEF Rev. 14_1211

22. Project Site Air Quality.

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

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 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.

ATTENTION
TRUCK DRIVERS

PROJECT SITE
STAGING ZONE

SHUT DOWN IF QUEUED UP FOR MORE THAN 10 MINUTES

Portable 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.
SEF Rev. 14_1212

23. Maintaining Drainage.

Maintain drainage at and throughout the worksite during construction according to standard specifications 107.22, 204, 205 and 520.

Use existing storm sewers, existing culvert pipes, existing drainage channels, temporary culvert pipes, or temporary drainage channels to maintain existing surface and pipe drainage. Pumps may be required to drain the surface, pipe, and structure discharges during construction. Costs for furnishing, operating, and maintaining the pumps is considered incidental to the project.

Dewatering (Mechanical Pumping) for Bypass Water (sediment-free) Operations
If dewatering bypass operations are required from one pipe structure to another downstream pipe structure or from the upstream to downstream end of a culvert and the bypass flow is not transporting sediments (sand, silt, and clay particles) from a tributary work site area, bypass pumping operations will be allowed provided that the department has been made aware of and approves operation. When pumping bypass flows, the discharge location will need to be stable and not produce any erosion from the discharge velocity that would cause release of sediment downstream.

Dewatering (Mechanical Pumping) for treatment Water (sediment-laden) Operations
If dewatering operations require pumping of water containing sediments (sand, silt, and clay particles), the discharge will not be allowed to leave the work site or discharge to a storm water conveyance system without sediment removal treatment. Refer to article Erosion Control in these special provisions for additional requirements.
SEF Rev. 15_0209

24. 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. Additional information regarding OCIP can be found at http://wisconsindot.gov/Pages/doing-bus/contractors/hcci/prelim-plan-se.aspx.

If you have any questions regarding the OCIP, including whether your company needs to be enrolled into the OCIP, please contact Chris Luttrell at (608) 381-2340, or chris.luttrell@dot.wi.gov.
SEF Rev. 15_0715

25. Notice to Contractor – OCIP Exclusions.

The Owner Controlled Insurance Program (OCIP) insurance coverage excludes environmental/abatement work, including but not limited to hazardous materials/chemicals, lead and other materials considered hazardous – see Article – Owner Controlled Insurance Program for additional information. Environmental/abatement work must be performed by a qualified contractor and the work will not be covered under OCIP. The contractor performing Environmental/abatement work may potentially be enrolled in the OCIP if also performing other work not excluded from the OCIP umbrella. The qualified subcontractor must carry Construction Pollution Liability insurance with limits of at least $1,000,000 per Occurrence and $2,000,000 Aggregate.

Report only payroll from non-environmental work under the OCIP. Do not report payroll generated from environmental/abatement work.

Direct questions regarding this or any other aspects of OCIP to Chris Luttrell at (608) 381-2340, or chris.luttrell@dot.wi.gov.
SEF Rev. 15_0126

26. Owner Controlled Insurance Program.

Standard spec 107.26, “Standard Insurance Requirements” is deleted in its entirety and the following standard spec 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 Contractors and Subcontractors 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 standard spec 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 days of a receipt of a Notice to Proceed, and prior to commencement of work. 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 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

m. Contractors must provide their own insurance for owned, leased, rented and borrowed equipment, whether such equipment is located at a project site or "in transit". Contractors are solely responsible for any loss or damage to their personal property including, without limitation, property or materials created or provided under the contract until installed at the project site, contractor tools and equipment, scaffolding and temporary structures.

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.

1. 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.

2. 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 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 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 Officers, 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.

23. 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.

24. 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.
SEF-ZOO IC 15_0112

27. Subletting the Contract.

Replace standard spec 108.1.1 (3) with the following:

If proposing to have a party other than a subcontractor perform work, notify the engineer and submit details of this arrangement in writing. The engineer will determine if that arrangement constitutes subcontracting. Submit copies of all other agreements between any parties regarding the performance of work under the contract with the Request to Sublet.
SEF Rev. 14_1212

28. CPM Progress Schedule.

Modify the standard specs as follows:

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

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

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

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

With each Monthly CPM Progress Schedule Update also include:

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

SEF Rev. 14_1211

29. Force Account.

Supplement standard spec 109.4.5.1 (3)1 *with the following:*

Include accumulation of wages to date for each employee performing force account work and identify allowable Federal Unemployment Tax (FUTA) and State Unemployment Tax (SUTA) multipliers.
SEF Rev. 14_1211

30. 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 spec 201.3 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 according to standard spec 201.3 (14).

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

May be trucked to a licensed landfill within the quarantined zone with the engineer's approval according 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 according to standard spec 201.3 (14)(15).

May be trucked to a licensed landfill within the quarantined zone with the engineer's approval according 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 be 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)

31. Removing Crash Cushion, Item 204.9060.S.0001.

A Description
This special provision describes removing Crash Cushion according to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Crash Cushion in each, acceptably completed.

E Payment
Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.0001	Removing Crash Cushion	Each

204-025 (20150630)

32. Excavation, Hauling, and Disposal (Bioremediation) of Petroleum Contaminated Soil, Item 205.0501.S.

A Description
A.1 General
This special provision describes excavating, loading, hauling, and bioremediation of petroleum contaminated soil at a DNR licensed facility. The closest DNR licensed landfill facilities that can bioremediate this soil once excavated are:

Waste Management Orchard Ridge Landfill
N96W13503 County Line Road
Menomonee Falls, WI 53051
Phone (262) 253-8620

Advanced Disposal Emerald Park Landfill, LLC
W124 S10629 S 124th St
Muskego, WI 53150
Phone (414) 529-1360

Perform this work according 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 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 is present at the following locations as shown on the plans:

- Station 725NOB+80 to 726NOB+20 from 105 to 130 feet right of reference line, from approximately 8 to 29 feet below grade. Soil excavated from this area will require off-site bioremediation. The estimated volume of contaminated soil to be excavated at this location is 382 cubic yards (approximately 650 tons using a conversion factor of 1.7 tons per cubic yard).

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

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 the engineer and protect them to maintain their integrity. The environmental consultant will determine if monitoring wells need to be maintained. For monitoring wells that do need to be maintained, adjust the wells that do not conflict with structures or curb and gutter to be flush with the final grade. For wells that conflict with the previously mentioned items or if monitoring wells are not required to be maintained, they will be abandoned by others.

If dewatering is required at the above location, conduct the dewatering according to Section C below.

A.3 Excavation Management Plan
The excavation management plan for this project has been designed to minimize the offsite bioremediation 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 in these areas contact:

Name:	Andrew Malsom
Address:	141 NW Barstow Street, PO Box 798, Waukesha, WI 53187-0798
Phone:	(262) 548-6705
Fax:	(262) 548-6891
E-mail:	andrew.malsom@dot.wi.gov

A.4 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:	Bryan Bergmann, P.G.
Phone:	(262) 901-2126 office / (262) 227-9210 cell
Fax:	(262) 879-1220
E-mail:	bbergmann@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 bioremediation 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 bioremediation of contaminated soil from the bioremediation 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. Also notify the environmental consultant at least three calendar days prior to commencement of excavation activities in each of the contaminated areas.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated areas. Perform excavation work in each of the contaminated areas on a continuous basis until excavation work is completed.

Identify the DNR licensed bioremediation facility that will be used for bioremediation of contaminated soils, and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation activities in the contaminated areas or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals from the bioremediation

facility for bioremediation of contaminated soils. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

A.5 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 and metals. 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 each 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 areas to minimize the quantity of contaminated soil excavated.

The environmental consultant will periodically monitor soil excavated from the contaminated areas. 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 bioremediation 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.

If dewatering is required in an area of known contamination, water generated from dewatering activities may contain contaminants and require special handling and disposal. Such water may, with approval of the City of Wauwatosa and the Milwaukee Metropolitan Sewerage District (MMSD), be discharged to the sanitary sewer as follows:

- 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.
- 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 and 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 the construction project.

Limit excavation in the location described above in A.2 to minimize the handling of groundwater. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge or dispose of contaminated water. Provide copies of such Permit to the engineer. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities. 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.

D Measurement

The department will measure Excavation, Hauling, and Disposal of Petroleum Contaminated Soil in tons of contaminated soil, accepted by the bioremediation facility as documented by weight tickets generated by the bioremediation 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 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.

33. Storm Sewer.

Supplement standard spec 204.3.2.2 with the following:

Material placed within storm sewer trenches is subject to the quality control for the zone that the material is being placed and shall conform to QMP Subgrade article listed elsewhere in this special provision document.

Supplement standard spec 204.5.1 with the following:

QMP sampling, testing and documentation if applicable is incidental to removing storm sewer bid item and no separate payment will be made.

Supplement standard spec 607.3.1.1 with the following:

Two weeks prior to start of storm sewer construction, provide a shoring design and installation sequence for each location where shoring is to be used. Have a professional engineer, currently registered in the State of Wisconsin and knowledgeable of the specific site conditions and requirements, verify the adequacy of the design. Submit one electronic copy in portable document format of each shoring design, signed and sealed by the same professional engineer verifying the design, to the engineer for incorporation into the permanent project record.

Supplement standard spec 607.3.5 with the following:

Material placed within storm sewer trenches is subject to the quality control for the zone that the material is located in and shall conform to QMP Subgrade article listed elsewhere in this special provision document.

Replace standard spec 607.3.5(1) with the following:

Conform to backfill detail as shown on the plans. Backfill all trenches and excavations immediately after completing storm sewer construction per detail(s) shown on the plans. Backfill all trenches and excavations of all new storm sewer and storm sewer structures not occupied by backfill slurry with backfill material conforming to standard spec 209.

Supplement standard spec 608.3 with the following:

Place rubber gasket joints over the spigot end or tongue of the entering pipe for all round storm sewer pipes horizontal and elliptical pipes with a rise less than or equal to 40-inches. Clean the gasket and the ends of the pipe from sand and gravel. If the gasket provided is neither factory lubricated nor self-lubricating, lubricate the outside of the gasket and the inside of the bell or groove of the last pipe with an engineer - approved vegetable lubricant immediately before making the joint. 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 may order the use of a jack or "come-along" if deemed necessary to ensure that the joints are completely tight.

Replace standard spec 608.5(2) with the following:

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 all submittals; for excavating and wasting excess material, except rock excavation; for providing rubber gaskets; Lubrication of rubber gaskets; mastic joint sealer; for supporting utilities in storm sewer trench; for shoring design, providing a signed and sealed copy of the design; for installation, monitoring, and removal of shoring; for forming foundation; for laying pipe; for sealing joints and making connections to new or existing features, bedding material; for backfilling and providing backfill slurry and granular backfill material; for QMP sampling, testing and documentation; for cleaning out; and absent the pertinent contract bid items, for restoring the work site.

34. Catch Basins, Manholes, and Inlets.

Furnish Grade A concrete conforming to standard spec 501 as modified in 716.

Supplement standard spec 611.3.1 with the following:

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, latest Edition. Provide non-rocking covers for all drainage structures subject to traffic loading.

Submit shop drawings for all drainage structures. For structures where WisDOT standard detail drawings are not available, provide shop drawings prepared, verified and stamped by a professional engineer currently registered in the State of Wisconsin. Submit one electronic copy of shop drawings in portable document format for engineer's review two weeks prior to start fabrication. Show clearly on shop drawings information for all pipe connections to the structure. The contractor is responsible for all errors of detailing and fabrication. The omission from the shop drawings of any pipe connection shall not relieve contractor of the responsibility of furnishing and installing such materials, even though the shop drawings may have been reviewed and accepted by the engineer.

Supplement standard spec 611.3.2 with the following:

Conform to storm sewer concrete collar detail for storm sewer pipes to structure connections as shown on the plans.

Replace standard spec 611.5.2 (1) with the following:

Payment for Catch Basins, Manholes, and Inlets bid items is full compensation for providing all submittals; materials, including all masonry, and concrete bricks; conduit and sewer connections, steps, and other fittings; for providing and installing butyl rubber joints; for

furnishing backfill, backfilling; all excavating, disposing of surplus material, and for cleaning out and restoring the work site; except that the department will pay for covers, including frames, grates and lids separately.

35. Backfill Slurry.

This special provision describes furnishing and placing backfill slurry for, but not limited to, removing and abandoning utility pipes and structures, installation of storm sewer, sanitary sewer and water pipes and structures, and exposing existing utility items as shown on the plans.

Use fine aggregate according to standard spec 501.2.5.3 and number 1 coarse aggregate conforming to standard spec 501.2.5.4, and water conforming to standard spec 501.2.4 in the backfill slurry mix. 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. Submit a mix design for the engineers review prior to placement. Backfill Slurry is considered a class III concrete mix and the department will accept the mix by certification and will follow the QMP process per standard spec 716. Mix acceptance and testing in the field is not required.

Prior to placement of backfill slurry provide for positive drainage of the area to be backfilled. Discharge from the truck in a manner to prevent segregation. Consolidation or compaction effort will not be required. Twelve hours shall elapse before paving over the backfill.

Material placed within the roadway foundation as defined in standard spec 101.3 is subject to the quality control for the zone that the material is located in and shall conform to QMP Subgrade article listed elsewhere in this special provision document. Non-conforming slurry will be replaced at no additional cost to the department.

Include backfill slurry used for, but not limited to, removing and abandoning utility pipes and structures, installation of storm sewer, sanitary sewer and water pipes and structures, and exposing existing utility items under appropriate bid items. No separate payment will be made for providing positive drainage of the area to be backfilled; for providing mix design; for furnishing, mixing, transporting and placing backfill slurry, and for QMP certification.

36. QMP Subgrade.

A Description

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

- Storm sewer construction under future USH 45 roadway as shown in the plans.

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://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/cmm.aspx

B Materials

B.1 Quality Control Plan

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

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

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

B.3 Laboratory

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

Materials Laboratory
3502 Kinsman Boulevard
Madison, Wisconsin 53704-2583
Telephone: (608) 246-7938
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-lab-req.aspx

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

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

B.5 Soil Source Study

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

Perform characterization tests on each of the soil types selected for the soil source study. The tests for roadway include AASHTO T 89, AASHTO T 90, AASHTO T 27, and AASHTO T 11. Classify each soil type selected according to the AASHTO soil

classification system based on the characterization tests. Do not begin grading operations until the engineer accepts the soil source study.

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

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

Regional Materials Laboratory
Attn: SE Freeways Materials
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 removal, pipe culvert, sewer and waterline trenches.
5. Structure and granular backfill placed at bridge abutments.
6. Embankments of the project where embankments are 20 feet or higher regardless of location to be known as special compaction area.

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

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

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

B.6.2 Records

Document all observations, inspection records, adjustments to fill placement procedures, soil changes, and test results daily. Note the results of the observations and inspection records as they occur in a permanent field record. Density test locations shall be identified by a specific test number and include horizontal and vertical control for reference as noted in Section B.7.1.

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

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

B.7 Contractor Testing

B.7.1 General

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

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

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically. Use project stationing to determine horizontal location and grade stakes to determine vertical location. Elevations must be referenced to NAV88 datum.

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

B.7.2 Field Density and Field Moisture

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

performing the textural identification. Use a coarse particle correction according to AASHTO T 224.

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

B.7.3 One-Point Proctor

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

B.7.4 Testing Frequency

B.7.4.1 Subgrade Embankment portions of the project, except within 200 Feet of Bridge Abutments

Perform the required tests at the following frequencies:

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

B.7.4.2 Subgrade Embankment Within 200 Feet of Bridge Abutments

Perform the required tests at the following frequencies:

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

B.7.4.3 Subgrade Cut

Perform the required tests at the following frequencies:

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

B.7.4.4 Subgrade Embankment in Pipe Removals, 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 Embankments of the project 20 feet or higher regardless of location to be known as special compaction area

Perform the required tests at the following minimum frequencies but exclude MSE wall backfill:

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 6,000 cubic yards or when a change in fill material occurs.

B.7.5 Compaction Zones

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

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

B.7.5.2 Subgrade Embankment Within 200 Feet of Bridge Abutments
All embankment material placed within 200 feet of bridge abutments is subject to the quality controls for upper zone material.

B.7.5.3 Subgrade Cut
Subgrade material in cut areas is subject to the quality controls for upper zone material.

B.7.5.4 Subgrade Embankment in Pipe Removal and Culvert Pipe Trenches
Material placed within pipe removal and culvert pipe trenches are 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 Embankments of the project 20 feet or higher regardless of zone to be known as special compaction area
All embankment material placed where embankments are 20 feet or higher regardless of zone is subject to the quality controls for upper zone material. Exclude MSE wall backfill.

B.7.6 Control Limits
B.7.6.1 Field Density
B.7.6.1.1 General Conditions
The lower control limit for field density measurements in the upper zone is a minimum of 95.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 92.0% of the maximum dry density for any individual test.

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

B.7.6.1.2 Embankments of the project 20 feet or higher regardless of zone to be known as special compaction area excluding MSE wall backfill
The lower control limit for field density measurements in the special compaction area is a minimum of 98.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 95.0% of the maximum dry density for any individual test.

B.7.6.2 Field Moisture Content
B.7.6.2.1 General Conditions
The upper control limit for the field moisture content in the upper and lower zones is 105.0% of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average.

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

B.7.6.2.2 Embankments of the project 20 feet or higher regardless of zone to be known as special compaction area excluding MSE wall backfill

The upper control limit for the field moisture content in the special compaction area is 105.0% of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average. The lower control limit for the field moisture content in the special compaction area is 90% of the determined optimum moisture for the 4-point running average.

B.7.6.2.3 Winter Conditions

If the critical path of the project schedule requires grading activities between November 15 and May 1, the upper control limit for soil moisture content may be raised to 110 percent of the optimum moisture content. This specification change may be applied to lower zone material and upper zone material greater than 5 feet below finished subgrade if weather conditions do not allow for standard drying procedures (discing, aerating, etc.) and if approved by the engineer. The upper soil moisture control limit for embankments supporting MSE walls may not be raised. The engineer may allow the higher moisture content specification outside of the aforementioned dates if dictated by schedule and soil and weather conditions.

A written request must be submitted to the department for approval of the higher specification limit for soil moisture content. The request must include the affected grading areas, start and finish dates of grading activities, and total float provided for the activities. Once approved, this change may be applied to the quality control program and should be reflected in the control charts and testing records."

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. The field density tests, soil moisture content tests and soil stability must meet the requirements of this special provision for the fill to be considered 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 20,000 cubic yards.

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

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, the engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional

testing as well as review and observation of both the department's and contractor's sampling and testing procedures and equipment. Both parties will document all investigative work.

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

B.8.3 Independent Assurance Testing

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

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. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

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

B.10 Acceptance
The department will accept the material tested under this provision based on the contractor QC tests unless it is shown through verification testing or the dispute resolution process that the contractor's test results are in error.

C (Vacant)

D (Vacant)

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

37. Contact Grouting.

A Description
Contact grouting is performed to fill any remaining voids between the ground and jacked pipe or between the ground and perimeter of a shaft excavation support system. This section covers furnishing, mixing and placing grout, furnishing all labor, materials, equipment, and incidentals, and all other related work necessary for grouting.

B Materials
Contact grout shall consist of a mixture of water, sand and Portland cement, with mineral fillers or admixtures as necessary to achieve a non-shrink, non-bleed, flowable grout. The grout shall have a minimum 24-hour compressive strength of 75 psi and a minimum 28-day compressive strength of 250 psi.

Portland cement, water and fly ash shall conform to requirements in standard spec 501.2. Type I Portland cement must be used.

Sand shall conform to requirements for concrete aggregates specified in standard spec 501.2.5, except that it shall have a fineness modulus between 1.5 and 2.0 and be graded as specified in the following table.

Sieve Size	Percent Passing Minimum
No. 8	100
No. 16	95 – 100
No. 30	60 – 85
No. 50	20 – 50
No. 100	10 – 30
No. 200	0 – 5

Fluidifier shall be a compound that holds the solid constituents of grout in colloidal suspension, be compatible with the water/cement grout mix, and contain a shrinkage compensator. Fluidifier shall not contaminate the groundwater. Fluidifier shall be furnished in moisture resistant paper sacks shipped in sealed containers. Fluidifier shall be handled and stored in a manner that avoids absorption of moisture, damage or waste. Material that has caked due to absorption of moisture will be rejected.

Suitable stop valves shall be installed at the collar of grout holes to maintain pressure until the grout has set.

C Construction

C.1 Submittals

C.1.1 General

Prepare and submit the contact grout mix and contact grout work plan at least 21 calendar days prior to the start of grouting. The engineer will accept the submittal as is or return the submittal with requested revisions. Do not start grouting until the engineer accepts submittals for the contact grout mix and contact grout work plan. Acceptance of the submittals does not relieve the contractor of their responsibility to successfully perform contact grouting around shafts and the tunnel.

C.1.2 Submittals for Approval

Contact Grout Mix:

Submit mix designs for each contact grout mix proposed for use. Resubmit as appropriate if the mixes are modified during the course of work. Each mix design shall show the ingredients of the mix and include:

i. Type, brand, source, amounts of cement, admixtures, and other additives.
ii. Source and amount of water.
iii. Representative samples of materials for material testing and mix proportion testing.
iv. Combined grading of each mix design.
v. Specific gravity of all materials.
vi. Results of required tests.

a) Submit material specifications and instructions for use of any proposed concrete admixtures.
b) Submit certificates of compliance for each load of Portland cement and fly ash (if used), which must be according to ASTM C618, and certificates of compliance for all admixtures. Supporting test data shall be furnished when requested by the engineer. All testing and sampling procedures shall be according to ASTM C311.
c) Submit mill test reports for Portland cement.
d) Submit water quality test results.

Contact Grouting Work Plan: The work plan for placing contact grout shall cover each type of contact grouting and include:

a. Contact grouting methods, procedures and sequences for each tunnel segment.
b. Grout hole locations and depths of injection ports.
c. Plans for discharging (venting) water, disturbed soil, and/or slurry while placing contact grout.
d. Method for transporting grouting equipment, grout and materials into and within the tunnel.
e. Quantitative estimate of grout volumes required at each location. Estimates should consider the volume of annular space between the excavated diameter and outside diameter of the initial support system or jacked pipe, ground loss volumes, soil stand-up time, and diametric closure.
f. Means for measuring grout takes (volume) per foot of initial support system or pipe.
g. Means for measuring grout pressures and planned grout pressure limits for refusal criteria.
h. Timing of grout injection after completion of a pipe jacking drive.
i. Measures to ensure voids are filled with grout in the event grouting operations are interrupted.
j. Contact grouting equipment and manufacturer's specifications and operation manual. Pump specifications. Grout hose, valve, and port sizes and specifications. Grout pressure gages and calibration data.

C.1.3 Information Submittals

Contact Grouting Daily Records: Submit the following daily reports and records for jacked pipe contact grouting.

a. Daily log of grouting operations at all grout ports (station and position), which should include pressures, grout volumes, grout mix, injection times, locations of grout samples retrieved for test cylinders, and grout slump test results.
b. An evaluation of the overcut annulus volume at the time of grouting, considering soil stand-up time, diametric closure, and volume of injected bentonite slurry. Provide a comparison of the expected annulus volume and grout volume placed during contact grouting for each pipe.
c. Compressive strength test reports from a certified testing laboratory.

C.1.4 Acceptance

The engineer will evaluate the Submittals for Approval with requirements in this special provision. Within 14 calendar days after receipt of the Submittals for Approval, the engineer will notify the contractor of acceptance or request revisions. Any unacceptable part of the Submittals for Approval will require resubmission. The contractor must resubmit the Submittals for Approval for review with the necessary changes or additional information requested. The engineer will provide a written notice of acceptance or rejection of the contractor’s resubmitted Submittals for Approval within 14 calendar days of its receipt.

After the engineer accepts Submittals for Approval, no changes to the Submittals for Approval can be made without written consent of the engineer.

All Information Submittals should be submitted to the engineer. The engineer can reject submittals that do not provide adequate detail, as required herein. The contractor shall resubmit rejected submittals within 7 days upon receipt of the engineer's rejection notice.

C.2 General Grouting Requirement

Notify the engineer at least 24 hours before the start of grouting operations.

If there is no visual contact between the grout plant and injection point, continuous telephonic communication shall be maintained.

Continuously agitate grout in the mixer and holding tanks. Remove grout from the mixer, holding tank, and supply line that is not injected into a grout port within 2 hours after mixing and discard it.

Maintain grout at temperatures above 50 degrees F until injected. The temperature of mixing water shall range from 50 degrees F to 100 degrees F when added to the grout mixer. Store grout materials at temperatures above freezing. Grouted ground shall be at least 40 degrees F when grout is injected, and for at least 5 days thereafter.

Grout holes shall be protected from clogging or obstruction with a cap or other suitable device on the collar of the hole. Clean out holes in a satisfactory manner or replace any hole that becomes blocked or otherwise unsuitable for grouting operations. This shall be at the expense of the contractor.

Flag and protect all grout hole locations. Clearly label grout locations for easy identification.

C.3 Contact Grout Injection

Perform contact grouting to reduce groundwater inflow, to fill voids, to minimize ground movement into the excavation, and to provide firm and uniform contact between the support system and the ground.

Equipment and lines shall be kept clean by constant circulation of grout and periodic flushing with water. Leakage from connections shall not be permitted. Plugs on the ends of nearby grout holes or pipes shall be removed to permit air and water to escape and so that grout will fill the voids.

Once started, grouting of a hole shall not be interrupted. Grouting of a hole shall not be considered complete until that hole refuses to take grout, as defined under the approved contact grouting work plan. After a hole has reached refusal, pressure on the hole shall be maintained by means of a stopcock or other suitable device until the grout has set.

Grout in the approved sequence submitted by the contractor and implement approved measures if grouting operations are interrupted. Grout that cannot be placed prior to initial set shall be discarded. Check operating gauges daily to determine that they are in working order. Do not grout without appropriate gauges in place and in working order.

Continuously inject grout along the length of the tunnel or perimeter of a shaft. Always fill the grout holes in sequence and do not skip grout holes by first injecting through holes further along the length of the tunnel. Where grout holes circumvent the perimeter of the tunnel, lower grout holes shall be filled until grout of normal consistency is observed exiting higher grout holes; at which time grout may be injected into higher grout holes. Ensure voids on each side of any obstruction interfering with the passage of grout are completely filled. Vent holes shall be provided as necessary to release air and water while grouting the crown and invert cavities.

When grouting in soil, the grouting pressure at the injection point shall not exceed 0.6 psi per foot of overburden, unless proposed otherwise by the contractor with the engineer's concurrence. In all cases, grouting pressures shall be limited as necessary to avoid damage to the final lining.

The grouting of any hole shall not be considered complete until all voids have been filled to the maximum extent practicable. When a hole is finished, pressure shall be maintained by means of a stop valve until the grout has set to the extent that it will not flow out of the grout hole.

C.4 Contact Grouting for Shaft

Perform contact grouting outside of the initial support system where overcutting results in a ½ inch or wider void between the ground and the excavation support system.

Locate areas where grout holes are necessary to completely fill voids greater than ½ inch outside of the initial support system. Drill grout holes through initial supports and into the annular space between the initial support and surrounding ground.

Each day perform contact grouting once the excavation support system has been advanced to its greatest depth for that day.

Perform contact grouting to reduce groundwater inflow, fill voids, minimize ground movement into the excavation, and to provide firm and uniform contact between the support system and the ground. The contractor’s designer of the ground support system shall determine refusal criteria and the maximum allowable grout pressure for the ground support system. The engineer may periodically request that check holes be drilled to determine if unacceptable voids exist outside of the ground support system. Additional contact grouting shall be completed at no additional cost to the department when spot checks indicate the presence of unacceptable voids.

C.5 Contact Grouting after Pipe Jacking

The contractor shall commence contact grouting promptly (within 24 hours) following completion of each Tunnel drive. Once started, perform continuous contact grouting until contact grouting for the entire drive is complete.

Grout holes for contact grouting of jacked pipe shall be pre-installed pipe nipples. New grout holes shall not be drilled through pipe walls unless specifically approved by the engineer.

Inject grout continuously along the length of the tunnel drive and always fill the grout holes in sequence. A sufficient number of grout holes ahead of the hole being grouted shall be opened to discharge (vent) lubrication slurry, disturbed soil, and groundwater from the overcut annulus. Limit the distance between grout and discharge ports to prevent excessive displacement of slurry prior to replacement with contact grout. Grout holes should be cleaned, plugs should be removed, and valves should be attached to control discharge (venting). Continue venting from each open port until grout of normal consistency (not mixed with slurry, soil or water) is discharged. After an acceptable grout discharge is observed, close the port. As necessary, discontinue or regulate discharge at ventilation ports to prevent ground loss, squeezing, blow-in, or excessive groundwater seepage.

Attempt to hook-up a grout hose and pump grout at every port unless approval is granted by the engineer to skip selected holes. Contact grouting at each port will be considered complete when less than one cubic foot of grout can be pumped in 5 minutes under the specified maximum pressure. After grouting is finished the valve shall be closed until grout has set, and the grout header and hoses shall be moved to the next port in sequence.

The volume of injected grout shall be measured, recorded and compared with the anticipated volume per foot of pipe, accounting for grout wasted in lines and vented through ports.

At the completion of grouting, remove valves after grout has set and replace with screw type grout plugs.

C.6 Cleanup
Minimize spilling and prevent grout from setting on finished pipes or structural surfaces. Remove any spilled grout and restore the pipe or structural surface to its original condition. Properly dispose of all waste materials. Remove all grouting equipment and accessories from the tunnel.

D (Vacant)

E Payment
Contact grout used to fill voids outside of the jacked pipe shall be included under the pay item Tunnel Excavation. Contact grout used to fill any remaining voids outside of shaft excavation support system shall be included under the pay item Shaft Excavation Support System.

38. 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.
SEF-ZOO IC 14_1212

39. Traffic Control.

The work under this item shall be according to the pertinent requirements of standard spec 643, as shown on the plans, or as approved by the engineer, except as hereinafter set forth.

Place traffic control devices for work in the proper location before operations proceed. Traffic Control is subject to change at the direction of the engineer in the event of an emergency.

Provide the Milwaukee County Sheriff's Department, City of Wauwatosa Police Department, Wisconsin State Patrol, the Statewide Traffic Operations Center and the engineer a current telephone number with which the contractor or his representative can be contacted during non-working hours in the event a traffic control safety hazard develops.

Do not park or store equipment, vehicles, or construction materials within 30 feet of the edge of freeway traffic lanes without barrier separation for any roadway carrying freeway traffic; or within 20 feet off the edge of a freeway service interchange ramp during any time except as approved by the engineer. At such locations, the materials and equipment involved shall not constitute a hazard to the traveling public.

Do not store materials, equipment, or park vehicles within 4 feet of barrier wall that has not been pinned.

Do not park personal vehicles within the access control limits of the freeway. Do not cross live freeway traffic lanes with equipment or vehicles.

Yield to all through traffic at all locations. Equip the top of all contractor and personal vehicles and equipment operating in live traffic lanes with a hazard identification beam (flashing yellow signal light) that is visible from 360 degrees. Operate the flashing yellow beam only when merging or exiting live traffic lanes or when parked or operating on shoulders.

Do not use flag persons to direct, control, or stop freeway or ramp traffic. Obtain approval from the engineer to use a flag person to direct, control, or stop local street traffic.

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

40. Traffic Control Signs Removal.

Supplement standard spec 643.3.8.3 with the following:

Remove all signs on temporary mounts and other potential associated hazards to the traveling public from the right-of-way when not in use.
SEF Rev. 14_1212

41. Crash Cushion Temporary Left In Place, Item SPV.0060.0001.

A Description
This special provision describes furnishing, installing, and maintaining Crash Cushion Temporary Left In Place as shown on the plans.

Crash Cushion Temporary Left In Place becomes property of the department after final acceptance by the engineer.

B Materials
This work shall be according to the pertinent provisions of standard spec 614.2.7 and as hereinafter provided.

Use Model SCI 100GM Crash Attenuator from Smart Cushion Innovations (SCI) Products.

C Construction
This work shall be according to the pertinent provisions of standard spec 614.3.4, as shown on the plans, and as hereinafter provided.

D Measurement
The department will measure Crash Cushion Temporary Left In Place as each crash cushion, acceptably left in place.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0001	Crash Cushion Temporary Left In Place	Each

Payment is full compensation for providing, installing, and maintaining the Crash Cushion.

42. Traffic Control Close-Open Freeway Entrance Ramp, Item SPV.0060.0002.

A Description
This item shall consist of furnishing the labor and equipment required for closing and subsequently opening a freeway entrance ramp and associated auxiliary lane according to standard spec 643, the plans, and as directed by the engineer.

B (Vacant)

C Construction
Drums, barricades and signs may remain along the roadway when the exit ramp is open to traffic. Handle signs according to the spec "Traffic Control Detour Signs Not in Use" when the exit ramp is open.

D Measurement
The department will measure Traffic Control Close-Open Freeway Entrance Ramp by each individual traffic control, close-open freeway ramp acceptably completed. Closure or partial closure of the adjacent auxiliary lane is considered incidental to 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.0060.0002	Traffic Control Close-Open Freeway Entrance Ramp	Each

Payment is full compensation for closing and subsequently opening a freeway entrance ramp. No separate payment will be made for closure or partial closure of adjacent auxiliary lanes. Drums, barricades and signs will be paid for separately under the various traffic control items.

43. Traffic Control Interim Freeway Lane Closure, Item SPV.0060.0003.

A Description
This special provision describes adjusting existing traffic control items that have previously been placed on the freeway for a lane closure, intended lane closure or are in position for staged construction as shown on the plans into position for an additional lane closure, and for readjusting the traffic control items to their original state or position upon removal of the additional lane closure within a 24 hour period. All work shall be according to standard spec 643, the plans, and as directed by the engineer.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Traffic Control Interim Freeway Lane Closure as each individual freeway lane closure is setup and subsequently removed per direction of traffic within a 24-hour time period, 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.0060.0003	Traffic Control Interim Freeway Lane Closure	Each

Payment is full compensation for setup and subsequent removal per direction of traffic within a 24-hour time period of a freeway lane closure.

44. Traffic Control Interim Freeway Two Lane Closure, Item SPV.0060.0004.

A Description

This item shall consist of adjusting existing traffic control items that have previously been placed on the freeway for a two lane closure, intended two lane closure or are in position for staged construction as shown on the plans into position for an additional two lane closure, and for readjusting the traffic control items to their original state or position upon removal of the two lane closure within a 24 hour period. All work shall be according to standard spec 643, the plans, and as directed by the engineer.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Traffic Control Interim Freeway Two Lane Closure as each individual freeway two lane closure setup and subsequently removed per direction of traffic within a 24-hour time period, acceptably completed. Single lane closures or shoulder closures placed during off-peak hours just prior to freeway night time hour two lane closures are considered incidental to 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.0060.0004	Traffic Control Interim Freeway Two Lane Closure	Each

Payment is full compensation for setup and subsequent removal per direction of traffic within a 24-hour time period of a freeway lane or two-lane closure. No separate payment will be made for single lane closure or shoulder closure placed during off-peak hours just prior to freeway night time hour two lane closures.

45. Crash Cushion Temporary, Item SPV.0060.0005.

A Description

This special provision describes furnishing, installing, and maintaining Crash Cushion Temporary as shown on the plans.

B Materials

This work shall be according to the pertinent provisions of standard spec 614.2.7 and as hereinafter provided.

Use Model SCI 100GM Crash Attenuator from Smart Cushion Innovations (SCI) Products.

C Construction
This work shall be according to the pertinent provisions of standard spec 614.3.4, as shown on the plans, and as hereinafter provided.

D Measurement
The department will measure Crash Cushion Temporary as each crash cushion, 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.0060.0005	Crash Cushion Temporary	Each

Payment is full compensation for providing, installing, and maintaining the Crash Cushion.

46. Cover Plates Left-In-Place, Item SPV.0060.8005.

A Description
This special provision describes furnishing and installing a steel plate to cover storm sewer structures which will support construction, backfill material, and traffic loading according to standard spec 611, as shown on the plans, and as hereinafter provided.

B Materials
Provide a ¾-inch minimum thickness steel plate that extends to the outside edge of the masonry walls.

Provide ¼-inch diameter steel bolts and epoxy to secure the cover plate to the top deck of the structure.

Backfill with base aggregate dense, 1 ¼-inch.

C Construction
Remove all loose debris and other material on the structure deck which would interfere with cover plate installation. Drill 3/8-inch holes in the cover plate, centered in each corner. Set the cover plate on the structure deck, ensuring the access hole is completely covered and that the cover plate extends to the edges of the masonry. The cover plate shall be below the proposed flow line elevation. Embed and epoxy each ¼-inch steel bolts a minimum of 2-inches into the structure deck through each drilled hole. Backfill to the subgrade elevation any voids above the cover plate with base aggregate dense 1 ¼-inch.

Cover plates left in place become the property of the department after obtaining final acceptance from the engineer

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

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.8005	Cover Plates Left-In-Place	Each

Payment is full compensation for furnishing and installing the cover plate and leaving cover plates in place; furnishing and installing steel bolts; base aggregate dense 1 ¼-inch backfill; and for excavation.

47. Manhole 9-Foot Special, Item SPV.0060.8012.

A Description
This work shall consist of design and construction of either a cast-in-place or precast storm sewer structure made of concrete with necessary reinforcement, metal frames, grates and lids, including required excavating and backfilling.

B Materials
Conform to standard spec 611.2.

C Construction
Conform to standard spec 611.3.

D Measurement
The department will measure Manhole (Size) Special 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.0060.8012	Manhole 9-Foot Special	Each

Payment is full compensation for structure design; providing all materials, including all masonry, for Grade "A" concrete adjustments; conduit and sewer connections, steps and other fittings; for furnishing all excavating and backfill; disposing of surplus material; and for cleaning out and restoring the work site. The department will pay for covers, including frames, grates, and lids separately.

The department will apply contract unit prices without adjustments to the quantities of manholes constructed to depths not greater than one foot above or below the elevations shown on the plans. Manholes that the engineer orders constructed to a depth greater than one foot above or below elevations shown on the plans will be specified for extra work and paid for according to standard spec 109.4.

48. Removing Bulkhead, Item SPV.0060.8018.

A Description

This special provision describes removing existing bulkhead as shown in the plans, and as hereinafter provided.

B (Vacant)

C Construction

Carefully remove the bulkhead without damaging the pipe. Replace portion of damaged pipe with similar size and material.

D Measurement

The department will measure Removing Bulkhead by each bulkhead removed, 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.0060.8018	Removing Bulkhead	Each

Payment is full compensation for furnishing all materials; removing bulkhead, replacing damaged pipe material including concrete collar around the pipe; and excavating and backfilling where necessary.

49. Obstructions Tunnel Excavation, Item SPV.0075.8097.

A Description

A.1 General

This special provision addresses removing, drilling/coring through, or otherwise clearing boulders and known/identified or unknown/unidentified man-made subsurface obstructions encountered during tunnel excavation with the MTBM.

A.2 Definitions

Natural boulders and man-made obstructions defined per specified conditions described in the Geotechnical Baseline Report.

B (Vacant)

C Construction

C.1 Submittals

Submit a tunnel work plan including a contingency plan with proposed details, methods and equipment that will be used to clear obstructions as specified in the special provisions, article Tunnel Excavation.

C.2 Obstruction Removal: Should an obstruction impede forward progress of the tunnel machine, the contractor shall notify the engineer in writing within three hours after encountering an obstruction. Upon acceptance of notification by the engineer, the contractor shall begin work according to the approved contingency plan to remove, treat, clear or otherwise make it possible for the tunnel machine to advance past the obstruction(s) impeding forward progress.

If the contractor has exhausted all means of clearing the obstruction using methods and equipment delineated in the approved contingency plan, the contractor shall submit a revised plan to remove the obstruction, referred to herein as the "correction plan." Upon acceptance of the correction plan by the engineer, the contractor shall continue work according to the correction plan, to remove, treat, clear or otherwise make it possible for the tunnel machine to advance past the obstruction(s) impeding forward progress.

D Measurement

The department will measure Obstructions Tunnel Excavation as each hour the contractor actively spends removing or clearing boulders and known/identified or unknown/unidentified man-made subsurface obstructions. A quantity of one hour will be paid once it is determined that an obstruction has reduced the rate of tunnel excavation by the cutterhead, to the rate defined in the Geotechnical Baseline Report, for at least 60 minutes. Objects that do not impact tunneling progress as defined in the Geotechnical Baseline Report will not be considered payable obstructions. Upon removal of the obstruction, portions of the final hour measured will be rounded up to the next whole hour. Down time spent planning for removal of subsurface obstructions, time to develop a correction plan, or delays caused by the mobilization of special equipment and tools not readily available at the site will not be measured for payment.

Measurement Example		**Paid Obstruction Hours**
1	Tunnel excavation machine encounters possible obstruction. Contractor notifies engineer. Start clock.	0.00*
2	Tunnel excavation machine does not advance at a rate greater than 30% of normal forward progress (average rate when obstructions are not encountered) for at least 60 minutes using a MTBM cutterhead.	1.00*
3	Contractor resumes work clearing obstruction the following day. Assume the obstruction is cleared in an aggregate total of 6 hours and 30 minutes. Obstruction is identified as a previously unknown and unidentified man-made obstruction.	7.00*

*The shown quantity is for example only, not an actual quantity. Quantities are shown in the bid table.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0075.8097	Obstructions Tunnel Excavation	HRS

Payment for Obstructions Tunnel Excavation is full compensation for removal of man-made or boulder obstructions through the tunnel face as described in the Geotechnical Baseline Report; and for furnishing additional concrete necessary to complete the work.

50. Concrete Barrier Temporary Precast Delivered Special, Item SPV.0090.0001.

A Description

This special provision describes leaving in place temporary precast reinforced concrete barrier conforming to the shape, dimensions, and details the plans show and according to the pertinent provisions of standard spec 603, these special provisions, and as hereinafter provided.

Concrete Barrier Temporary Precast Delivered Special becomes property of the department after final acceptance by the engineer.

B (Vacant)

C Construction

C.1 Delivery, On-The-Project Trucking and Removal

Replace standard spec 603.3.2.2 (1) with the following:

Under the Concrete Barrier Temporary Precast Delivered Special bid item, furnish and deliver temporary barrier to worksites within the project and leave it in place upon project completion.

D Measurement

The department will measure the Concrete Barrier Temporary Precast Delivered Special by the linear foot acceptably completed, measured as the linear feet of installed length left in place once for each contract-identified worksite within the project and other moves the engineer directs. The department will only measure moves requiring a truck haul. The department will not measure moves made solely to accommodate the contractor's means and methods.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0001	Concrete Barrier Temporary Precast Delivered Special	LF

Replace standard spec 603.5.3 (1) with the following:

Payment for Concrete Barrier Temporary Precast Delivered Special is full compensation for providing barrier, initial delivery, trucking between worksites and leaving barrier, steel rail connections and steel cap rail in place after contract completion.
SEF Rev. 14_0916

51. Maintain Concrete Barrier Temporary Precast, Item SPV.0090.0002.

A Description
This special provision describes maintaining existing concrete barrier temporary precast including any attached temporary glare screen and reflectors. The temporary barrier has been left in place under a previous contract. Assume ownership and responsibility of the temporary barrier, temporary glare screen and reflectors upon the contract's Notice to Proceed. The location of this temporary barrier is shown in the Traffic Control plans.

Concrete barrier temporary precast, including any attached temporary glare screen and reflectors that are to remain in place at the end of this contract as shown in the Traffic Control plans, becomes property of the department after final acceptance by the engineer.

B Materials
The concrete barrier temporary precast left in place from a previous project is Wisconsin type concrete barrier temporary precast.

C Construction
Maintain Wisconsin type concrete barrier temporary precast left in place according to standard spec 603.

Realign the wall after snow plow operations or as directed by the engineer. Maintain reflectors and hardware in a condition similar to when new on the project.

Keep drainage/lifting slot holes free from debris.

D Measurement
The department will measure Maintain Concrete Barrier Temporary Precast by the linear foot of concrete barrier temporary precast, acceptably maintained.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0002	Maintain Concrete Barrier Temporary Precast	LF

Payment is full compensation for receiving, maintaining, keeping concrete barrier temporary precast drainage/lifting slot holes free from debris, and leaving on the project site concrete barrier temporary precast including any attached temporary glare screen and reflectors.
SEF 14_1215

52. Fence Temporary 6-Foot, Item SPV.0090.0003.

A Description

This special provision describes furnishing, erecting, maintaining, and removing temporary chain link fence 6-foot including gates, as shown on the plans and as directed by the engineer, according to standard spec 616, and as hereinafter provided.

B Materials

Fencing parts furnished do not have to be new materials. Used, re-rolled and open seam materials will be permitted. Gates shall be a minimum of 12 feet wide.

No specific metallic coating will be required for the chain link fencing materials. Materials furnished do not have to be of the same type. Fence height shall be a minimum of 6 feet.

The engineer may reject fencing materials which are deemed too damaged or misaligned to provide acceptable closure.

C Construction

Fence posts may be driven into the ground or set in augered holes, backfilled and compacted. Minimum embedment shall be 4 feet. In paved areas fence posts shall be fastened to either temporary concrete barrier or the pavement by methods ensuring a secure enclosure. Where fence is installed in areas that are not to be disturbed by subsequent construction activities, the disturbed area shall be restored in kind at no additional cost to the department.

D Measurement

The department will measure Fence Temporary 6-Foot in place by the linear foot from end posts, center to center, along the ground line, acceptably completed. Temporary fence will be measured once for payment. Additional measurement for fence maintenance and removal will not be made.

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	Fence Temporary 6-Foot	LF

Payment is full compensation for furnishing all materials; erecting posts, gates and fence; maintaining fencing; removing and disposing of fencing; and for restoring disturbed areas.

53. Removing Concrete Barrier Precast, Item SPV.0090.0004.

A Description

This special provision describes Removing Concrete Barrier Precast according to the pertinent provisions of standard spec 204 and as hereinafter provided. The barrier has been left in place under a previous contract.

The concrete barrier precast including any attached temporary glare screen and reflectors becomes the property of the contractor at the completion of the contract.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Concrete Barrier Precast in linear feet, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0004	Removing Concrete Barrier Precast	LF

Payment is full compensation for removing concrete barrier temporary precast including any attached temporary glare screen and reflectors.

54. Tunnel Excavation, Item SPV.0090.8096; Intermediate Jacking Station, Item SPV.0060.8099.

A Description
This section includes the requirements for tunnel excavation of the Storm Sewer Pipe between a future detention pond and Manhole N1208, using a one-pass system that utilizes reinforced concrete pipe jacked behind a Microtunnel Boring Machine (MTBM).

A.1 Contractor's Qualifications
The contractor or subcontractor shall have demonstrated the ability and capacity to perform the work under this contract to the satisfaction of the engineer. In addition, the contractor or subcontractor hired to perform tunneling operations shall have a successful record with similar construction for a minimum of 5 years and experience with at least five similar projects (i.e., tunnel bores in soil with an outside diameter of at least 5 feet and a total tunnel length of at least 1000 feet per project).

The contractor shall provide and utilize personnel satisfying qualification requirements stated below. The engineer may suspend work with no additional compensation or schedule extension if the contractor substitutes unqualified personnel for accepted personnel during construction. If work is suspended due to the substitution of unqualified personnel, adjustment in contract time resulting from the suspension of work will not be permitted.

Superintendent: Each shift shall be supervised by at least one person with previous experience performing similar work. The superintendent must have at least 5 years and 1,000 feet of experience supervising similar-sized projects (minimum three projects).

Operator: System operators shall be experienced personnel with demonstrated ability to operate the systems being employed. Operators must have at least 5 years of experience and completed at least 1,000 feet of tunnel with similar equipment on at least three projects.

Surveyor: The contractor's surveyor, who is responsible for line-and-grade control, shall be a Licensed Surveyor registered in the state of Wisconsin with prior experience on similar projects.

The contractor shall provide evidence of OSHA certification for site safety representatives and personnel responsible for air quality monitoring.

B Materials

B.1 General

The contractor is responsible for supplying all materials, equipment, qualified personnel, and submittals required to meet these specifications. The contractor shall select a MTBM that meets the requirements presented below.

In the event that other specification clauses create ambiguity or conflict with this special provision, this special provision shall take precedence unless otherwise accepted by the engineer. Open-face or no-face pressure mining methods are not permitted and shall not be considered.

The selected MTBM shall include the following features, as a minimum:

a. A slurry shield MTBM shall be used for all tunneling work required for this project. The machine shall be manufactured by a company that specializes in the design and fabrication of this type of equipment. The machine shall be capable of providing pressurized face support during both excavation and shutdown periods.
b. The machine shall be capable of exerting adjustable pressure against the face during excavation and shutdown periods to support the excavated face, prevent groundwater inflow, and to prevent excessive ground loss. Determine and submit for approval a safe range of slurry pressures at the face that are high enough to provide adequate face support and groundwater pressure resistance while also low enough to prevent ground heave. The cutting wheel chamber shall be equipped with at least one operational and calibrated pressure cell, with accuracy that allows face pressure to be maintained within ±0.1 bar of the desired pressure during mining.
c. A slurry mixture and consistency that minimizes slurry migration into the ground and forms a slurry cake for ground support shall be used. Slurry line density measurements or any other approved method shall be used to check excess ground loss (over mining) by comparing the weight of tunnel muck removed as a percentage of the theoretical weight of excavated soil removed for each jacked pipe.

d. Pumps and intake/discharge piping that is compatible with tunnel drive lengths, depths, soil types, and anticipated rate of machine advancement shall be used. The slurry return lines shall consist of abrasion-resistant hoses with a high pressure rating that can resist abrasive cutting from crushed cobbles and boulders. The size of intake ports for slurry return lines shall allow passage of all crushed materials in the crushing chamber. Select the type and size of pump impellers to accommodate anticipated cobble and boulder cuttings.
e. A surface separation plant shall be provided and equipped with screens, centrifuges, cyclones and settling tanks for efficient separation of muck (both coarse and fine-grained fractions) from the slurry. The rate of separation shall be compatible with the anticipated advancement rate of the machine.
f. Tunneling equipment selected for the project shall be suitable for efficiently advancing through geologic conditions described in the Geotechnical Baseline Report.
g. The MTBM shall have sufficient torque and speed to efficiently operate in anticipated ground conditions and capable of rotating clockwise and counter-clockwise to adjust for rolling effects. The machine's torque capacity shall be high enough to mine through zones of cobbles and boulders.
h. The MTBM shall have a rock crusher, or similar means, capable of fracturing rocks as large as 24 inches. The cutting wheel shall include a combination of disk cutters and other types of cutters designed for boulder fracturing and mining in anticipated soil formations. The MTBM shall have interchangeable cutters. The contractor shall determine the cutter types and configuration.
i. The size and structural capacity of the MTBM shall be compatible with one-pass pipe jacking and the jacked pipe support system. A skinned-up MTBM is not permitted.
j. The machine shall be able to maneuver in both the vertical and horizontal direction so the operator can maintain the specified line and grade and tolerances.
k. The machine shall be equipped with a digital guidance system with continuous display of actual tunnel alignment vs. the design alignment.
l. The selected machine shall be able to withstand all loads and pressures likely to be encountered during tunneling operations, without distress or excessive deformation. The shield, cutting wheel, and other metal work in contact with moving soil or muck shall be suitably protected to minimize damage from abrasion.
m. The machine shall have a uniform exterior surface from the leading edge to the trailing edge, free of projections, except beads used to create an over-cut annulus.
n. Total overcut around the jacked pipe, defined as the difference between the excavated diameter at the heading and outside diameter of the jacked pipe, shall be less than 3 inches.
o. The tail of the machine shall have a sealing system that prevents infiltration of the ground and groundwater, and a joint cushion that prevents damage to the pipe when thrusting or reacting against it.
p. The machine shall include monitoring and recording equipment capable of documenting thrust forces, start and stop times, rate of advance, position (heading station and pitch), line and grade deviation, cutting head torque and speed, advancement thrust, face pressure, face standup time/stability, computed muck volume, ventilation and atmosphere monitoring data, and any other pertinent information for advancement of each pipe or initial support.

q. The machine shall be equipped with a ventilation and atmospheric control system capable of reducing and/or eliminating dust, vapors, fumes, and other atmospheric impurities.
r. The machine shall be equipped with a continuous monitoring system for noxious and explosive gases. Include audible and visual alarms at the end of the shield that will be triggered if threshold levels, as specified by OSHA, are reached at any point along the shield. The tunnel machine shall have an emergency shut-off switch or control in case noxious or explosive gasses are detected.
s. All components and systems shall be new or refurbished. If refurbished, a certificate from the manufacturer must be provided, indicating equipment was refurbished less than one year prior to the commencement of tunnel excavation.

B.2 Lubrication System

Provide a pipe lubrication system that injects bentonite slurry and/or polymer around the tunnel machine and pipe segments to minimize friction from the ground and jacking forces. Monitor and control injection pressures in the overcut annulus to prevent ground heave and/or "frac-out" (hydraulic fracturing of the ground).

Only bentonite or polymers shall be used as pipe lubricant. Oil-based lubricant is prohibited.

Bentonite: Bentonite shall be high-swelling montmorillonite clay or another product approved by the engineer.

Polymers: Polymers used as pipe lubricant or additive to bentonite shall be non-toxic.

B.3 Jacked Pipe

Pipe class and inside diameter of the jacked pipes shall be per plan, and conform to standard specification 608.2 - Reinforced Concrete Pipe Storm Sewers, and ASCE 27-00 - Standard Practice for Direct Design of Precast Concrete Pipe for Jacking in Trenchless Construction. Selection of the pipe's outside diameter shall be coordinated with the selected tunnel machine so that the overcut diameter is less than that specified herein. In case of a conflict between standard specification 608.02 and ASCE 27-00, the most-stringent requirement shall apply.

Pipe jacked into place shall have a minimum concrete compressive strength of 6,000 psi and flush joints. No pipe shall be delivered to the jobsite until the concrete compressive strength has reached 6,000 psi, determined from core samples tested according to AASHTO T22 or from a manufacturer's certificate.

Each piece of pipe shall have one lubrication/grout port with threaded fittings at the crown and at the spring line on each side of the tunnel for pressure grouting. Ports and fittings shall be attached to the pipe in a manner that will not materially affect the strength of the pipe. Each grout port shall have a one-way check valve with a diameter of at least a 2 inches, and plugs cast into the pipe at the time it is manufactured. Plugs for sealing the fitting shall be able to withstand all external and internal pressures without leaking. Pipe plugs shall have equivalent resistance to corrosion as the pipe coating and lining.

C Construction

C.1 Submittals

C.1.1 General

Prepare and submit shop drawings, a tunnel work plan, and documentation indicating the contractor's qualifications at the first preconstruction meeting or at least 21 calendar days prior to beginning tunnel construction, whichever date is earlier. The engineer will either accept the submittal as is or return it with requested revisions. Do not start any work until the engineer accepts documentation indicating the contractor's qualifications, shop drawings and tunnel work plan. Acceptance of submittals does not relieve the contractor of their responsibility for successful completion of the tunnel.

C.1.2 Subsurface Conditions

The contractor shall review the Geotechnical Baseline Report – North Leg Storm Sewer Tunnel (North Leg Tunnel), January, 2016 (referred to as "Geotechnical Baseline Report" herein) for baselined subsurface conditions.

C.1.3 Submittals for Approval

Documentation of Contractor's Qualifications: The contractor shall submit documentation of their project experience and resumes of site engineers, superintendents, shifters, operators, and all other key personnel to satisfy qualifications delineated in the article Contractor's Qualifications. Documentation of project experience must include, for each project, a brief project description, size and length of the tunnel(s), tunneling methods used during installation, local soil conditions, actual construction time, and contact information that includes an individual's name and current phone number. Contacts must be capable of verifying project participation. Resumes must contain a summary of each individual's experience and demonstrate to the engineer that each individual has satisfied the qualification requirements.

Shop Drawings: The contractor shall prepare and submit detailed shop drawings with pertinent descriptions, information, and calculations for all items that will be incorporated into the finished work. The Drawings and calculations shall show compliance with specified requirements and applicable codes, and shall bear the seal, signature and date of a professional engineer registered in the State of Wisconsin. As a minimum, include the following:

a. A tunnel cross-section showing the theoretical excavation perimeter, based on proposed tunneling equipment. Also include the proposed inside and outside perimeter of the pipe.
b. Pipe drawings which include reinforcement details, joint details, joint cushion materials, fabrication tolerances, and grout/lubrication port detail.
c. Design calculations demonstrating that the pipe is capable of sustaining the maximum stresses that will be imposed during jacking, according to ASCE 27-00-Standard Practice for Direct Design of Precast Concrete Pipe for Jacking in Trenchless Construction. The axial strength of the selected pipe shall be designed with a factor of safety against failure of at least 2.5 under the maximum anticipated jacking force. The calculations shall take into account the maximum anticipated ground loads (earth, groundwater and surcharge pressure), live loads, jacking forces, eccentric forces due to

steering, external loads such as traffic, and any other loads that may be reasonably anticipated. All loads shall be shown and described. Use the maximum allowable bearing stress criteria specified in this section.

d. Calculations showing the hydraulic pressure that is required to develop the maximum allowable jacking capacity for main jacks and intermediate jacking stations. A description of controls to ensure the maximum allowable hydraulic pressure will not be exceeded during jacking operations. Calculations shall demonstrate that soils behind the backstop (or thrust wall) will sustain the maximum forces imposed by the main jacks.
e. Calculations showing anticipated face pressure and side resistance along the tunnel machine and pipe string. Calculations shall indicate the number of anticipated intermediate jacking stations per tunnel drive.
f. Details of intermediate jacking station(s) and the connection between the intermediate jacking station(s) and the pipe.
g. Details of the main jacking station.

Tunnel Work Plan: Prior to the start of work, the contractor shall submit a detailed work plan to the engineer. The work plan shall include descriptions describing methods of construction and indicate the proposed locations of shafts, facilities, and equipment. Items shall include, but are not limited to:

a. Tunneling Equipment:
    i. A detailed description of methods and equipment intended to complete each tunnel drive. Include a description of how proposed equipment and operations will prevent ground loss and surface heave during operations. This description should include procedures to handle face stability, groundwater inflow, and a plan for inspection of ground conditions and removal of obstructions. Clearly state the maximum size of boulders or rock fragments that can be excavated and removed by the proposed tunnel machine. Include the intended procedure and equipment that will be used to fracture/split and excavate boulders or rock blocks that are encountered and unable to be digested by the tunnel machine. The plan shall also detail proposed methods and procedures for excavating the tunnels, hauling and disposing of muck, ventilation, and illumination.
    ii. Manufacturer's literature describing the tunneling system, including all other ancillary equipment. Provide the model number, shield and machine controls, shield dimensions and cut diameter, specifications, and operating procedures. Provide descriptions of projects on which this system has been successfully used. Include names, addresses, and telephone numbers of the owners' representatives for these projects as well as lengths, diameters, pipe materials, and ground conditions. If a refurbished tunnel machine is proposed, submit the manufacturer's refurbishment certificate and list previous usage, modifications made, dates of modifications, and a detailed description of the extent of refurbishment.
    iii. Shop drawings showing propulsion system, safety systems, steering provisions, provisions for ground improvement, arrangement of the cutting tools, and muck removal system and trailing components, including muck conveyors. Include a description of the methods intended to maintain face pressure. Also include a description of procedures intended to ensure stability at the face if tunneling operations are interrupted.

iv. Hoisting plant (crane) for placement of tunnel, jacking equipment, pipe, and muck removal.
v. Submit samples of automated tunneling records that will be provided during tunneling. Samples shall include electronic data, any programs/software needed to interpret data, and manual logs or records that will be produced.
vi. Maintenance procedures and a list of spare parts that will be kept onsite.
vii. Description of procedures for tunnel machine demobilization and removal from the tunnel.
viii. Description of the alignment control systems including manufacturer's literature and drawings showing setup, support provisions, and other details for the laser guidance system. Submit a description of surveying methods to be used to set laser guidance system positions and a description of procedures to check and reset or realign guidance system during construction. Confirm that these systems can achieve the required pipeline line and grade within the specified tolerances.
ix. Details of spoil handling, transport, disposal equipment and procedures, including details of spoil additives, and the location of permanent spoil disposal sites. Confirm that spoils shall be contained at all times and shall not be stockpiled or dumped on site. Provide manufacturers description for any spoil additives and Material Safety Data Sheets (MSDS's). Provide written documentation from the disposal site(s) indicating that they will accept the spoils and are in compliance with applicable regulations.

b. Tunneling sequence plan.
c. Bulkhead placement and removal.
d. Details of the lubrication system and description of pipe lubricants to be used during pipe jacking.
e. Shaft Layout Drawings: The contractor shall submit shaft layout drawings detailing dimensions and locations of all equipment, including overall work area boundaries. Layout drawings will be required for tunnel launch and retrieval locations and shall be to scale, or show correct dimensions. The contractor's layout drawings shall show that all equipment and operations will be completely contained within the allowable work areas shown on the drawings.
f. Safety Plan: The contractor shall prepare a Safety Plan for tunneling operations. The plan shall be project-specific and include air monitoring equipment and procedures, provisions for lighting, ventilation, and electrical system safeguards. The plan shall include incident response and tunnel/shaft rescue plan, hazard recognition, site safety analysis, tunnel and shaft access, flooding controls, and fire and explosion prevention. The plan shall also address ground support, communication, handling of materials and equipment, pressurized fluids and noise.
g. Contingency Plans: The following list includes problem scenarios that may be encountered during tunneling operations. The contractor shall submit contingency plans for dealing with each problem scenario while satisfying the Specifications. These plans shall include the observations and measurements required to clearly identify the cause of the problems. Possible scenarios include:
    i. Tunnel machine unable to advance due to obstructions: possible obstructions include boulders, rock blocks, old foundations, metallic debris, or reinforced concrete.

ii. Cutter head or face support problems.
iii. Loss of cutter tools during tunnel drive.
iv. Strong hydrocarbon smell detected in the spoils or in the shaft.
v. Laser distorted by heat, humidity, or physical disturbance.
Ground heave

C.1.4 Information Submittals

Prior to Each Tunnel Drive: Submit results and field notes of line and grade surveys to the engineer at least 24 hours prior to the start of each drive to ensure that the thrust block, jacking frame, guide rails, and entry and exit eyes are installed properly.

Tunnel Daily Records: Submit the following daily records to the engineer by noon on the day following the shift for which data or records were taken:

vi. and settlement.
vii. Steering difficulties resulting in exceedance of line and grade tolerances.
viii. Loss of control or inability to monitor position, thrust, or other performance parameters.
ix. Inflow of water that threatens stability at the face.

a. Tunneling Records: The contractor shall provide complete tunneling records to the engineer. These records shall include, at a minimum: date, time, name of operator, tunnel drive identification, installed ground support element number and corresponding tunnel length, rate of advance, jacking forces, excavated muck rates and volumes, total muck volume to date, changed face conditions encountered, lubrication, steering jack positions, line and grade offsets, any movement of the guidance system, shield inclination and roll, problems encountered with the tunnel machine or other components or equipment, and the duration and reason for any delay. Computer-recorded data, if used, should be referenced to time and distance and should be recorded at time intervals of 1 minute. Manually recorded observations should be made as directed by the engineer and at intervals no less than once per ground support element, as conditions change.
b. Survey Measurements: Survey measurements of tunnel alignment and all surface and subsurface settlement monitoring points.

As-built Plans: Submit as-built plans of excavated tunnels and installed pipelines.

C.1.5 Acceptance

The engineer will evaluate Submittals for Approval with the requirements in this special provision. Within 14 calendar days after receipt of Submittals for Approval, the engineer will notify the contractor of acceptance or request additional information and/or changes. Any unacceptable part of Submittals for Approval will require resubmission. The contractor must resubmit Submittals for Approval for review with the necessary changes or additional information requested. The engineer will provide a written notice of acceptance or rejection of the contractor's resubmitted Submittals for Approval within 14 calendar days after its receipt.

After the engineer accepts Submittals for Approval, no changes to Submittals for Approval can be made without written consent of the engineer.

All Informational Submittals should be submitted to the engineer. The engineer can reject submittals that do not provide adequate detail, as required herein. The contractor shall resubmit rejected submittals with revisions within 7 days upon receipt of the engineer's rejection notice.

C.2 Tunnel Excavation

Construct the pipeline with one-pass tunneling methods that utilize jacked reinforced concrete pipe, or other types of linings permitted by the engineer, subject to restrictions on methods stated elsewhere in this special provision. The acceptable tunneling method shall be tunnel excavation with a slurry shield MTBM. Blasting is not permitted anywhere on the Project.

The contractor shall complete tunnel excavation using the tunnel machine, and according to approved Submittals and all applicable permit conditions, and provide details regarding all temporary electrical, water, telephone, and other facilities required to complete the tunnel. Detailed construction sequencing shall be the contractor's responsibility, consistent with requirements in this special provision.

The contractor's selection of means and methods for excavation is integral to the planning and execution of work, as specified for this project. Selection of means and methods is the responsibility of the contractor and shall consider feasibility for all subsurface conditions, including obstructions, outlined in the Geotechnical Baseline Report. Excavation shall include removal of excavated material from the tunnel face and transport to the ground surface. Loading, conveying, dumping, and disposal of materials offsite from shaft and tunnel excavation shall be performed as specified herein.

Tunnel excavation by the tunnel machine shall not begin until the following tasks have been completed:

a. All required submittals have been provided, reviewed, and approved.
b. Shaft excavation, stabilization, and shoring have been satisfactorily completed according to special provisions, article Shaft Excavation Support System.
c. Groundwater control has been implemented per the special provisions, article Control of Water.
d. Survey control has been established for the tunnel.
e. All required geotechnical instrumentation has been properly installed and baseline readings recorded, as per special provisions, article Geotechnical Instrumentation.
f. A startup inspection of all mechanical and hydraulic systems associated with tunneling operations is complete. The system shall be tested on the surface to ensure the machine and supporting equipment is functioning properly. The engineer shall be notified at least 72 hours prior to the start-up inspection and will be present during the inspection. Key machine performance data shall be measured and recorded by the contractor during the inspection, including face support components, functionality of the main and steering jacks, laser and target, and other components. The records of the start-up inspection shall be submitted to the engineer within 24 hours after the inspection is complete.

g. A site safety representative has prepared a code of safe practices and an emergency plan according to OSHA, the Owner's Controlled Insurance Program (OCIP), and other applicable requirements. Provide the engineer with a copy of each document before tunneling begins. Hold safety meetings and provide safety instruction for new employees as required by OSHA and OCIP. Conduct a preconstruction safety conference according to OSHA requirements. Arrange this conference and inform the engineer of the time and place at least 7 days in advance.

Excavate the tunnel in a manner that minimizes ground loss at the face and around the perimeter of the excavation to minimize subsidence at the ground surface and prevent damage to structures and utilities in the vicinity of the excavation. Implement ground support that prevents excessive ground loss provides stability around the perimeter and face of the tunnel, in passages, and at bottoms of work shafts. Support the face of the excavation during all shut down periods.

Excavation shall be to the lines, grades, and dimensions shown on the plans and shop drawings. Excavation shall not extend beyond the excavation line shown on shop drawings. Methods shall be used and precautions shall be taken to minimize removal, loosening, and raveling of material beyond the planned limits of the excavation. The contractor shall provide means to accurately measure the amount of ground removed from the tunnel. After each tunnel drive, fill the annular space outside the pipe with grout per special provision, article Contact Grouting.

Do not advance the tunnel machine at any time the tunnel guidance system is out of order. Validate line and grade continuously with survey control by the qualified surveyor. Line and grade shall be validated frequently, and no less than once per installation of each pipe segment. Horizontal and vertical tolerances for the tunnel shall be plus-or-minus 1 inch. When the tunnel alignment varies from the specified line and/or grade, immediately take corrective action to return the excavation alignment to the specified line and grade.

Completely contain all excavated materials and additives and transport to offsite locations for disposal. Space for stockpiling is limited and may not be available at the work site. All spoils must be contained in trucks, tanks, or other containers at all times. Dumping spoils on the ground or discharging into sewers, ditches, or shafts is not permitted. Only use sites identified in approved submittals for disposal of muck and spoils.

Spare parts shall be deliverable to the site within 5 days in the event replacement is necessary.

When the cutterhead cannot split or break boulders into a size that can be ingested through the muck handling system, the contractor shall be prepared to implement other methods for removing boulders.

At the end of each tunnel drive, the contractor shall examine the wear-and-tear condition of each cutting tool equipped on the cutterhead. The contractor shall promptly change damaged and severely worn cutter tools at this time so that they will not have to be replaced during a subsequent tunnel drive.

C.3 Pipe Jacking

The contractor shall perform Pipe Jacking between shafts in the directions recommended in the Geotechnical Baseline Report. The contractor shall minimize loss of lubricant or soil into the shaft at the point of pipe entry and exit.

The pipe is to be jacked on properly braced and supported guide rails. Axial forces from the thrust jacks shall be distributed to the pipe uniformly through cushion material to prevent damage to the end of the pipe. Control the advance rate and volume of material excavated to avoid over-excavation or heave.

The main jack and intermediate jacking station(s), if used, shall have a jacking capacity at least 67% greater than the anticipated jacking force. Control jacking forces so as not to exceed the maximum allowable jacking pressures of the pipe. The contractor shall install intermediate jacking station(s) as needed to prevent damage to the pipe and jacking/thrust block system, and to prevent the tunnel machine and pipe string from becoming stuck due to side friction.

Intermediate jacking stations shall allow removal of jacks so gaps between pipe segments can be fully closed within casing used at intermediate jacking stations. Casing for intermediate jacking stations shall be equipped with seals to prevent intrusion of soil and lubrication into the tunnel. Casing for intermediate jacking stations shall have corrosion protection at least equivalent to that of the pipe. The outside diameter of the intermediate jacking station shall be as close as possible to pipe diameter but less than the tunnel machine.

Each pipe section shall be jacked in a manner that leaves no length of tunnel exposed at any time during excavation. Use anti-reverse thrust restraints to prevent pipe movement into the launching shaft when jacks are retracted to place a new section of pipe.

Pipes shall be jacked into place without damaging the pipe. In the event a section of pipe is damaged during the jacking operation, the pipe shall be jacked through to the receiving shaft and removed. Other methods of repairing the damaged pipe may be used, subject to approval by the engineer.

The thrust block at the launching shaft shall be properly designed and constructed to provide a minimum factor of safety of 1.5 against the maximum possible thrust of the main jack. The thrust block shall be aligned with the proposed pipe alignment and designed to withstand the maximum allowable jacking pressure, without excessive deflection of the block or displacement of the soil.

C.4 Lubrication
Apply lubrication to the external surface of the pipe to reduce skin friction. The annular space created by the overcut shall be filled with a lubricant suitable for anticipated soil conditions.

Provide a lubrication system that can inject an approved lubricant at the rear of the tunnel machine and along the length of the pipe, as required, to decrease frictional side resistance while jacking. The lubrication system shall have the capability of being automatically controlled from the operator's cabin, and ability to control locations where lubricant is pumped along the tunnel. Automatic records of lubricant volumes pumped at each location shall be kept.

Monitor, at all times, volumes, pressures, and locations of lubrication injection points to ensure the annulus around the pipe is completely filled with approved lubricant.

C.5 Air Quality
Perform all tunneling operations with methods and equipment that reduce or eliminate dust, fumes, vapors, gases, fibers, fogs, mists, or other atmospheric impurities. Conform to regulations promulgated by OSHA and other regulatory authorities regarding air quality and ventilation in excavations. Provide appropriate instrumentation for testing air quality in the tunnel and take samples under working conditions, all according to requirements by OSHA, the State of Wisconsin, or other jurisdictional entity.

Continuous air testing shall be conducted whenever personnel are underground, and shall adhere to the requirements of OSHA 29 CFR 1926.55.

C.6 Tunnel Ventilation
When tunneled excavations are occupied by workmen the main ventilation system should, at a minimum, deliver fresh air to the face with a volumetric flow rate equal to 60 feet per minute times the area of the excavated face. A higher volumetric flow rate should be provided if needed to conform to OSHA requirements. Operate the tunnel's main ventilation system 24 hours per day, 7 days per week, continuously, until the excavation holes-through to the receiving shaft. During extended periods of inactivity when excavations are unoccupied, such as weekends or holidays, the volumetric flow rate may be reduced to OSHA minimums.

C.7 Tunnel and Shaft Illumination
Adequate light shall be provided at all times in areas where work is in progress so that operations can by properly observed by the contractor and engineer. Lighting intensity shall adhere to applicable regulations for tunnel and shaft construction. Lighting intensity shall be increased, as required by the engineer, for concrete placement, inspection, and final cleanup.

Open flame lights shall not be used. Flashlights shall be explosion-proof. Both power and lighting circuits shall be separated and thoroughly insulated. Voltage shall not exceed 115 volts. All lights shall be placed in porcelain light fixtures with vapor tight enclosures and metal guards. Lighting installation shall conform to National Electric Code NFPA 70.

Maintain underground illumination throughout the life of the Contract, including final inspection, or until permission to remove illumination is received in writing from the engineer.

C.8 Emergency Measures

Whenever there is a condition that is likely to endanger the stability of the excavation or adjacent structures, the contractor shall operate with a full crew for 24 hours a day, including weekends and holidays, and without intermission until those conditions no longer jeopardize stability of the excavation and adjacent facilities.

An emergency supply of electric power shall be provided by the contractor and be independent of the primary electric supply. The emergency power system shall be capable of powering the excavation lighting, ventilation and water control systems and, if used, the low pressure compressed air system.

C.9 Cleanup

After completion of tunneling and pipeline installation, all construction debris, spoils, oil, grease, and other materials shall be removed from the tunneled pipe, launch and retrieval shafts, and all contractor work areas. Cleaning shall be incidental to construction. No separate payment shall be made for cleanup.

D Measurement

The department will measure Tunnel Excavation by the linear foot acceptably completed. This measurement equals the distance along the centerline of the pipe, from the pipe end at a free outlet to the center of the end catch basin, manhole, inlet, junction, or other drainage structure; or from center to center of catch basins, end manholes, inlets, other drainage structures or junctions.

The department will measure Intermediate Jacking Station on per each unit basis, acceptably completed. The contractor shall refer to the quantity in the Geotechnical Baseline Report for bidding purposes.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.8096	Tunnel Excavation	LF
SPV.0060.8099	Intermediate Jacking Station	Each

Payment for Tunnel Excavation is full compensation for completing tunnel work, including, but not limited to, tunneling, boulder removal (which do not impede the defined normal forward progress of the tunnel machine), concrete pipe size and class as specified in the plan, providing, delivery and installation of jacked pipe, lubrication, contact grouting, documentation, all materials, labor, equipment, tools, handling, transporting, disposal of spoils, and equipment mobilization/demobilization.

Payment for Intermediate Jacking Stations is full compensation for actual quantities used in accordance with conditions specified in this special provision.

55. Survey Project 1060-34-86, Item SPV.0105.0001.

A Description
This special provision describes modifying standard spec 105.6 and 650 and as follows to define the requirements for construction staking for this contract.

Replace standard spec 105.6.2 with the following:

The department will not perform any construction staking for this contract. Obtain engineer's approval prior to performing all survey required to layout and construct the work under this contract.

The survey includes establishing horizontal and vertical position for all aspects of construction including but not limited to storm sewer, subgrade, base, curb, gutter, curb and gutter, drainage structures, structure layout, bridges, all retaining wall layout, pavement, pavement markings (temporary and permanent), barriers (temporary and permanent), freeway and local street lighting, electrical installations, supplemental control, slope stakes, ITS, FTMS, parking lots, paths, utilities, conduit, water main, sanitary sewer, landscaping elements, installation of community sensitive design elements, traffic control items, fencing, etc.

The department may choose to perform quality assurance surveys during the project. These quality assurance surveys do not relieve the responsibility for performing all survey work required to lay out and construct the work under this contract.

Delete standard spec 650.1.

B (Vacant)

C Construction
Replace standard spec 650.3.1 (5) and 650.3.1 (6) with the following:

Perform survey work using global positioning or conventional methods. Establish additional benchmarks and control points as necessary to support the method of operation, or as the engineer directs. Do not use global positioning methods to establish the following:

1. Structure layout horizontal or vertical locations.
2. Concrete pavement vertical locations.
3. Curb, gutter, and curb and gutter vertical locations.
4. Concrete barrier vertical locations.
5. Storm Sewer layout horizontal or vertical locations, including but not limited to structure centers, offsets, access openings, rim and invert elevations.
6. Sanitary sewer construction or other gravity –based drainage system, including but not limited to structure centers, offsets, access openings, rim and invert elevations.

Maintain neat, orderly, and complete survey notes, drawings, and computations used in establishing the lines and grades. This includes, but is not limited to:

- Raw data files
- Digital stakeout reports
- Control check reports
- Supplemental control files (along with method used to establish coordinates and elevation)
- Calibration report

Make the survey notes and computations available to the engineer within 24 hours as the work progresses unless a longer period is approved by the engineer.

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 five business days of receiving the contractor's request. The department incurs no additional liability beyond that specified in standard spec105.6 or standard spec 650 by having provided this additional information.

Supplement standard spec 650.3.3.3.6.2 with the following:

Record all subgrade elevation checks and submit a hard copy to the engineer within 24 hours or as requested by the engineer.

Supplement standard spec 650.3 with the following:

650.3.15 Sanitary Sewer and Water Main
Record all elevation data for pipe inverts, outside drops, bends, fittings, casings and other information necessary to accurately record the construction document. Submit a hard copy to the engineer within 24 hours or as requested by the engineer.

Set and maintain construction stakes or marks as necessary to achieve the required accuracy and to support the method of operations. Locate all pipe inverts, drops to within 0.02 feet horizontally and to within 0.01 feet vertically.

Provide the as-built xyz coordinates and elevations, in the project horizontal and vertical datum, of all tie in locations for the as-built plan. Also provide the locations of the casing ends, the elevation of the top of casing and the size and material of all pipes.

D Measurement
Replace standard spec 650.4 with the following:

The department will measure Survey Project 1060-34-86 as separate single lump sum unit of work, acceptably completed.

E Payment
Replace standard spec 650.5 with the following:

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.0001	Survey Project 1060-34-86	LS

Payment is full compensation for performing all survey work required for layout, documentation, recording, asbuilting sanitary sewer and water main, and constructing all work under this contract. The department will not make final payment for any staking item until the contractor submits all survey notes and computations used to establish the required lines and grades to the engineer within 24 hours of completing this work. The department will deduct from payments due the contractor for the additional costs specified in 105.6. No additional payments will be made for restaking due to construction disturbance and knock-outs.
SEF Rev. 14_0909

56. Pavement Cleanup Project 1060-34-86, Item SPV.0105.0002.

A Description
This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site. Pavement Cleanup includes surveillance and reporting of all active haul routes.

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.

Utilize vacuum equipment with 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 Surveillance

Provide daily surveillance of active haul routes to identify if material is being tracked from the jobsite. Document the condition of the roads and if they needed to be swept in a daily report. Submit reports to the engineer daily. Clean up spillage and material tracked to/from the project within an hour of occurrence or as directed by the engineer. Perform cleanup operations in a safe manner.

C.2 Pavement Cleanup

Keep all pavements, curb lanes and gutters both closed and open to public traffic within the job-site boundaries free of dust and debris generated from any activity under the contract. Keep all pavements, curb lanes and gutters adjacent to the project free of dust and debris that are affected by land disturbing, dust generating activities, as defined in the contractor's dust control implementation plan.

Provide 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.

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 of notice.

D Measurement

The department will measure Pavement Cleanup 1060-34-86 as single lump sum unit of work, acceptably completed.

Compensation for mobilizing equipment shall be included in the contract price for Pavement Cleanup and no additional compensation therefore will be allowed.

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 1060-34-86	LS

Payment is full compensation for daily surveillance; preparing and submitting the daily surveillance report; mobilization; sweeping; and disposing of materials.

57. Excavating, Grading, and Shaping for Deep Storm Sewer Shaft Locations, Item SPV.0105.0003.

A Description
This special provision describes the excavation, grading, and shaping at deep storm sewer shaft locations to provide a level and adequate work area, as well as, returning the site to an equal condition as prior to deep storm sewer shaft construction, as reviewed and approved by the engineer.

B (Vacant)

C Construction
Excavate, grade, and shape deep storm sewer shaft locations shown in the plan or as directed by the engineer.

D Measurement
The department will measure Excavating, Grading, and Shaping for Deep Storm Sewer Shaft Locations as single lump sum unit or 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.0105.0003	Excavating, Grading and Shaping for Deep Storm Sewer Shaft Locations	LS

Payment is full compensation for excavating, grading, and shaping deep storm sewer shaft locations to provide an adequate level work area, including hauling and temporary stockpiling of site excavated material; and for grading and shaping to the site to return the site to an adequate preconstruction condition as approved by the engineer. This item does not provide payment for excavation, hauling, and disposing of storm sewer shaft and pipe material, paid for under other items.

58. Control of Water, Item SPV.0105.8098.

A Description
This section addresses the provision for designing and furnishing all labor and material needed to control, handle, dispose of and treat ground and surface water, as required to perform work shown on the plans.

This special provision does not cover temporary drainage. Conform to standard specification 205 for temporary drainage.

Refer to dewatering guidelines in WisDNR Storm Water Management Technical Standards, Code #1061, "Dewatering." This document can be found at the WisDNR website: http://dnr.wi.gov/runoff/stormwater/techstds.htm.

B Materials
The contractor is responsible for determining materials required to meet this special provision.

C Construction
C.1 Submittals
C.1.1 General
The discharge permits and water control plan shall be submitted to the engineer at least 30 days prior to the start of excavation, unless otherwise noted.

C.1.2 Subsurface Conditions
The contractor shall review pertinent geotechnical reports for groundwater information and soil types.

C.1.3 Submittals
Discharge Permit: Submit discharge and well permit applications to the Wisconsin Department of Natural Resources (WDNR) if dewatering wells are to be used. Also submit a design and design calculations for the sedimentation tank or clarifier system to demonstrate sediment levels will be reduced to the minimum levels required by WDNR prior to discharging.

Water Control Plan: The water control plan shall be coordinated with requirements of special provisions, articles Shaft Excavation Support System, Tunnel Excavation, and Geotechnical Instrumentation. The following items shall be included in the water control plan, as a minimum:

a. Descriptions of proposed groundwater and surface water control facilities, including but not limited to, equipment, methods, installation, standby equipment, standby power supply, pollution control facilities, silt removal facilities, discharge locations.
b. Removal of water control systems.
c. Provisions to provide a temporary water supply if nearby water supply wells are impacted by Control of Water operations.
d. The contractor shall submit shop drawings showing locations, dimensions, and relationships of elements for each water control system.
e. Design calculations demonstrating the dewatering zone of influence and adequacy of proposed water control systems and associated components. The contractor may be required to demonstrate performance of water control systems proposed in the water control plan to verify that adequate equipment, personnel, and materials are provided to dewater excavations at all required locations and times. The contractor shall provide the

manufacturer's literature describing installation, operation, and maintenance procedures for all components of the water control system.

f. Monitoring plans that include measurement of: pumping rates at excavated locations and wells, reading of piezometers, and water quality sampling of discharge fluid.
g. Method(s) to measure discharge quantities.

If the system is modified during installation or operation, revise or amend and resubmit the Water Control Plan.

Quality Control: During construction, submit rate of discharge, pumping rate measurements, water level readings taken at piezometers, groundwater quality data, and sediment content test results. The Contractor's readings shall be performed in addition to any readings taken by the engineer. Submit the data and test results within 24 hours of readings.

C.1.4 Acceptance

All Information Submittals should be submitted to the engineer. The engineer can reject submittals that do not contain adequate detail, as required herein. The contractor shall resubmit rejected submittals with revisions within 7 days upon receipt of the engineer's rejection notice.

C.2 General Requirements

The contractor shall continuously control, handle, treat and dispose of water at all times during the course of construction. Adequate backup systems shall be provided to control water, in conformance with this special provision, if the primary systems fail for any reason. All systems, including backup systems, shall be suitable to maintain satisfactory working conditions and will not delay progress of the work. Water that shall be controlled includes groundwater, contaminated groundwater, and surface water (precipitation and run-off).

All required drainage, pumping, treatment, and disposal shall be performed without damage to adjacent property or structures, and without interfering with other contractors, the rights of public and private owners, or pedestrian and vehicular traffic.

The contractor shall modify the water control system at their own expense if, after installation and while in operation, it causes or threatens to damage adjacent property, existing buildings, structures, or utilities.

C.3 Regulatory Requirements

Storm water discharge to storm sewers, watercourses, lakes, and wetlands shall conform to requirements of local, state, and Federal regulations. Water removed from excavations shall be separate from storm water discharge.

In the event contaminated water is encountered, the contractor is required to notify the department prior to discharging. Comply with WDNR regulations regarding disposal of contaminated groundwater. Obtain additional permits, if required. Notify the Milwaukee

Metropolitan Sewerage District if contaminated water is discharged into the sewer system, and provide laboratory test results documenting contaminant concentrations.

C.4. Surface Water Control
Intercept and divert surface drainage away from the work site with dikes, curbwalls, ditches, sumps, or other means. Design surface drainage systems to prevent erosion either on or off the site. Control surface runoff to prevent entry of surface water into excavations and to prevent erosion either on or off the site. Remove drainage systems when no longer needed.

C.5 Water Control in Excavations
Use appropriate water control methods, determined by the contractor, that provide suitable working conditions for construction and meet the requirements of the plans and special provisions. Methods shall consider removal of water accumulating within excavations from precipitation and groundwater infiltration. Methods may include removal of water outside excavations by means of dewatering or pressure relief wells.

Water control methods shall minimize adverse effects that elevated or reduced water pressures may have on construction, the surrounding ground, and adjacent facilities and structures. Design and operate water control measures in a manner that prevents piping of fines and ground loss or loosening and softening of subgrade soils within excavations.

Water control methods shall be capable of lowering and maintaining water levels at least 2 feet below the bottom of an excavation, regardless of natural piezometric levels, precipitation, and natural variations in soil and aquifer properties.

Control ground and surface water to prevent hydrostatic uplift and other potentially adverse effects during construction and installation of tunnels, shafts, trenches, and other structures. If water levels cannot be maintained as specified herein, the contractor shall, at no additional cost to the department, control seepage of groundwater by whatever means necessary to prevent erosion, piping of fines, seepage through shoring or lagging, ground loss, and slope instability.

If water entering an excavation adversely affects the execution of work or has the potential to result in damage to adjacent property or structures, take immediate steps to reduce or mitigate the inflow of water.

Provide standby pumps and power supplies at locations where disruption of the primary water control system could threaten the execution of work or safety of personnel.

C.6 Monitoring of Groundwater Levels
Monitor groundwater levels with piezometers to evaluate the water control system and its ability to satisfy dewatering and water control requirements specified herein. A sufficient number of piezometers shall be installed in an arrangement and at depths that can be used to determine ground water elevations throughout the project site and along the proposed tunnel alignment. A minimum of one piezometer per four dewatering wells or one

piezometer per shaft location shall be installed with the dewatering system. Locations and depths shall be proposed by the contractor.

Piezometers shall be installed according to ASTM D5783 using direct rotary drilling methods and drilling fluid that will not impact piezometric readings. During drilling, soil samples shall be obtained by performing the standard penetration test according to ASTM D1586, at intervals no greater than 2.5 feet. Piezometers shall be constructed and developed according to ASTM D5092, and developed within 24 hours after installation. The contractor's engineer shall determine the depths of the sensing zone for each piezometer based on observations of retained soil samples.

During dewatering periods (includes pumping seepage from sumps within shafts or other excavation areas) a minimum of one reading per 24-hour period, 5 days per week, is required at each piezometer. One reading per week is required at each piezometer during periods of no dewatering until the end of construction.

C.7 Dewatering Wells

Obtain a site-specific dewatering discharge permit or construction site storm water discharge permit if the WDNR has specific concerns that are not addressed by other permits that might otherwise apply.

Obtain a WDNR permit for operation of any well or well system that has a combined pumping capacity of 70 gallons per minute or more (a high capacity extraction system). For purposes of permitting, a well is defined as any opening made in the ground where the depth of the opening is greater than its largest surface dimension and extends more than 10 feet below ground surface. The permit will require that wells be constructed, operated, and abandoned according to Chapter NR 812 of the Wisconsin Administrative Code.

As much as possible, minimize the drawdown zone of influence created by dewatering to perform construction activities. Perform additional testing to obtain geotechnical information needed to design dewatering well systems, which may include pump tests, grain size analyses, groundwater chemical analyses, and subsurface investigations. Design and operate wells with backpack material and screens to prevent seepage of fine-grained soils. Provide means to measure water discharged from each well and to adjust flow rates. Construct and operate wells according to WDNR requirements. Monitor the rate of discharge from each well on a daily basis with an error no greater than 2 percent of the actual flow.

Wells shall be designed, installed, and operated in a manner that will preclude removal of material (mainly clay, silt, and fine sand) when pumping, hereafter referred to as "piping of fines." After installation, each well shall be individually pump-tested at its maximum design flow rate while measuring sediment with a centrifugal tester to verify acceptability with respect to piping of fines. Any well or wellpoint segment found to be piping fines at a rate exceeding 2 parts per million (ppm) by volume at the maximum design flow rate shall be replaced and approved by the engineer at no additional cost to the department. In addition, each well shall be checked for piping of fines and content of the effluent with a centrifugal

test at least once per month during operation. If sediment from the effluent of a well is greater than 1 ppm, the contractor shall identify, abandon, and replace the well. All centrifugal tests shall be performed in the presence of the engineer.

C.8 Ground Loss from Dewatering Operations

Support any structure, including but not limited to, buildings, bridges, freeway surfaces, streets, utilities, footings, foundations, basements, walls, or driveways that become unstable or vulnerable to excessive settlement due to dewatering. Cease excavation and other construction operations that have the potential to result in further settlement until corrective measures are implemented. Support shall include, but is not be limited to, shoring, sheeting, bracing, underpinning, compaction grouting, driving piles, excavating, backfilling, and placing new structural concrete beneath or adjacent to unstable structures; or any other means necessary to rectify the problem.

The contractor shall bear all cost associated with losses and damages due to dewatering, including but not limited to, claims for subsidence, damage to structures, and loss of foundation support. If the contractor fails to correct damages resulting from dewatering operations, the engineer may deem the work unacceptable, as defined in standard spec 105.3.2.2.

C.9 Treatment and Disposal of Water

Discharge all water removed from the construction site through pipes or hoses. Do not convey water in open ditches or trenches. Discharge water in a manner that will not cause soil erosion at the discharge point. Discharge shall not cause sediment accumulation or flooding in any stream, storm sewer, or on adjacent property.

Treat all water to remove suspended solids, oils, cement, bentonite, and other contaminants with settling basins, an on-site treatment plant, or some other means selected by the contractor. Design treatment systems for the maximum discharge rates. Treatment systems shall be capable of increasing their capacity if deemed necessary during the course of construction. The contractor shall provide copies of all records required by the WDNR.

Obtain permission from the jurisdictional authority before using storm sewers or drains to dispose of water. Protection of storm sewers and drains shall conform to the latest revision of the Wisconsin Construction Site Best Management Practices Handbook and requirements of the jurisdictional authority. Any cost for use of storm drains and sewers shall be the responsibility of the contractor. Do not flood or block the flow of drainage facilities, and leave them unrestricted and as clean as originally found. Document the condition of drainage facilities prior to and after their use. The engineer may independently verify the condition of drainage facilities. Repair or restore any damage to drainage facilities resulting from the contractor's operations. Repairs shall be performed as directed by the jurisdictional authority and at the contractor's expense.

Should requirements of any permit be different than requirements herein, the more stringent requirements shall control.

Ventilate enclosures around wells and water discharge points to prevent accumulation of combustible gas that may escape from solution in groundwater.

Upon completion of construction, clean out and dispose of all sediment and residue in settling basins, treatment facilities, and the like. Dispose of sediment and residue according to applicable regulations.

C.10 Abandonment of Piezometers and Dewatering Wells
Abandon design phase piezometers and all piezometers and dewatering wells installed during construction according to standard spec 204.3.3.3 or according to NR 812 of the Wisconsin Administrative Code, whichever is more stringent.

D Measurement
Measurement for Control of Water will be a lump sum unit of work, acceptably completed according to this special provision. The contractor is responsible for removing all surface and ground water, regardless of the quantity removed during construction to accomplish the work.

E Payment
The department will pay for Control of Water at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.8098	Control of Water	LS

Payment for Control of Water shall be full compensation for, but not limited to, complete dewatering system design, installation, monitoring, discharge, and all necessary incidental work, as specified in this special provision.

59. Geotechnical Instrumentation, Item SPV.0105.8099.

A Description
This special provision provides details regarding the geotechnical instrumentation plan, including furnishing, installing, maintaining, removing instrumentation when applicable, and requirements for the type and location of geotechnical instrumentation for the tunnel and working shafts along the Storm Sewer Pipe extending between a future detention pond and future Manhole N1208. The purpose of the instrumentation program is to monitor ground movements within and around the tunnel and shafts. The instrumentation program specified herein is not intended to ensure safety during construction.

A.1 Personnel Qualifications
Technicians: A qualified technician shall be a licensed surveyor registered in the State of Wisconsin and have a minimum of 5 years' of experience installing geotechnical instrumentation specified herein.

Instrumentation Engineer: The contractor shall hire a professional civil or geotechnical engineer or engineering geologist licensed in the State of Wisconsin with a minimum of 5 years' of experience installing instrumentation specified herein.

B Materials

Protective Cover: Protective covers shall be guard casings or valve boxes depending on the installation location, as specified in this special provision. Each protective cover shall be 2 inches larger than the instrument or have a minimum inside diameter of 4 inches. Guard casing shall consist of Schedule 40 steel pipe or an approved equivalent. Guard casings shall extend at least 2 feet below the ground surface and 2 feet to 4 feet above the ground surface, or as instructed by the engineer. Covers for guard casing shall be secured with a bolt or screw, free of sharp edges and burrs, and easy to remove. Valve boxes shall be cast iron or steel to resist traffic loading, which is typical for roadway installation. Valve boxes shall extend at least 1.5 feet below the ground surface and be flush with the ground surface at the top. Valve box covers shall be secured with a bolt.

Inclinometers (INC): Inclinometer casing shall be grooved plastic casing with a 2.75-inch OD and compatible with the inclinometer provided. The casing shall have the necessary rigid self-aligning couplings and end plugs. The inclinometer monitoring system shall include a probe, 100 feet of cable, cable relief, pulley assembly, cable hold, and readout. The inclinometer readout shall measure inclinations at any depth selected by the operator and digitally store, process and report lateral movements (by display and downloadable digital files) relative to a stored baseline reading. The cable connecting the sensor and indicator shall have a stranded steel core to take the stress of pulling, so as not to break any connectors or wires. The cable shall be jacketed with waterproof material and marked externally at 1-foot intervals for accurate depth determination. The cable guide pulley shall be mounted to the top of the inclinometer casing.

Utility Settlement Markers (UM): Subsurface settlement markers for monitoring movement of utilities shall consist of a 0.75-inch solid rod or No. 6 steel reinforcing rod set in 2-inch Schedule 80 PVC pipe casing. The upper end of the rod shall have a rounded head or cap set perpendicular to the rod axis. Equivalent types of subsurface settlement markers may be used, subject to the engineer’s approval.

Ground Settlement Markers (GM): Surface settlement markers in paved areas shall be hardened steel markers treated or coated to resist corrosion, with an exposed convex head having a minimum diameter of 1/2 inch and similar to the surveyor's PK nails. Surface settlement markers in unpaved areas shall be a 2-inch by 2-inch by 18-inch long hardwood hub driven to grade.

Facility Settlement Marker (FM): Facility settlement markers shall be a readily identifiable existing feature or new paint marking on an existing building or above-grade facility. An inscribed marking, approved surveyor's nail, brass or stainless steel rod (pin) installed onto a manhole, vault, or similar structure at a predetermined location approved by the engineer may also be used to measure vertical elevation changes of a facility or structural element.

C Construction

C.1 Submittals

C.1.1 General

Prepare and submit the qualifications, instrumentation plan and shop drawings at least 21 calendar days prior to installing instrumentation. The engineer will accept the submittal as is or return the submittal with requested revisions. Do not install any instrumentation until the engineer accepts the qualifications of personnel, the instrumentation plan, and shop drawings. Acceptance of submittals does not relieve the contractor of their responsibility to successfully complete construction and installation of instrumentation.

C.1.2 Submittals for Approval

Qualifications: Submit qualifications of the technicians and the instrumentation engineer.

Instrumentation Plan and Shop Drawings: The instrumentation plan and shop drawings shall be prepared by the instrumentation engineer and shall bear the seal, signature and date of the instrumentation engineer. As a minimum, include the following:

a. Shop drawings that detail locations (coordinates), depths, types, geometry, and other pertinent information needed to install each type of required instrumentation.
b. Shop drawings that indicate locations (coordinates) of control points and benchmarks.
c. Description of methods for installing and protecting all instruments.
d. Materials and mix portions for cement-bentonite or cement-lime grout used to install subsurface settlement markers and inclinometers.
e. Schedule of instrument installation that is baselined relative to significant activities or milestones for the overall project.
f. Manufacturer's literature describing installation, operation, maintenance procedures, materials, readout units, and accessories for all instruments.
g. Submit permits or documented consent from jurisdictional authorities, if applicable, to drill holes at the ground surface and conduct monitoring activities.
h. Plans for optional geotechnical instrumentation to be installed by the contractor.
i. Contingency plan when monitoring indicates Threshold Limits are exceeded.

As-built Plans: Following installation of instruments and prior to the start of underground construction, submit as-built drawings showing installed locations (coordinates and elevation), locations of survey control points and benchmarks, inclinometers' groove orientation relative to the shafts, identification numbers also indicating instrumentation type, and the installation date and time. When applicable, include the heading station, portal or shaft excavation depth at the time of installation or the anchor/tip elevation and length. Include details of installed instruments, including dimensions, materials, accessories, and protective measures.

C.1.3 Information Submittals

Certificates: As applicable, submit certificates issued by manufacturers stating that instruments have been inspected and tested before leaving the factory to confirm instruments are working correctly and have no defects or missing parts.

Reports and Records:

a. Drilling and installation logs prepared by the instrumentation engineer.
b. As soon as possible, submit copies of completed WDNR abandonment forms for subsurface settlement markers and inclinometers once they are abandoned.
c. Submit a pre-construction assessment report documenting the results of a pre-construction survey.
d. Submit a post-construction assessment report at the end of construction.
e. Submit initial/baseline readings to the engineer. Readings should be taken and reported at least 15 days prior to the start of any construction within 50 feet of the tunnel alignment centerline or edge of the shafts, or before dewatering within 100 feet of any instrument.
f. Weekly monitoring reports shall be submitted by the instrumentation engineer on a weekly basis. As a minimum, these reports shall include construction status (dewatering activity, excavation depth, tunnel progress, etc.), monitoring data (with comparison to baseline readings), interpreted results, exceedances and comments, and an impact assessment of adjacent roadways/structures based on monitored movements. Supply copies of field notes if requested.
g. The contractor shall submit monthly reports, prepared by the contractor's design engineer for the shaft excavation support systems, which includes their field observations and a review of monitored performance.

C.1.4 Acceptance

The engineer will evaluate Submittals for Approval based on requirements in this special provision. Within 14 calendar days after receipt of Submittals for Approval, the engineer will notify the contractor of acceptance or request additional information and/or changes. Any unacceptable part of Submittals for Approval will require resubmission and subsequent review of requested changes or additional information. The engineer will provide a written notice of acceptance or rejection of the contractor's resubmitted Submittals for Approval within 14 calendar days after its receipt.

After the engineer accepts Submittals for Approval, no changes to Submittals for Approval can be made without written consent of the engineer.

All Information Submittals should be submitted to the engineer. The engineer can reject submittals that do not provide adequate detail, as required herein. The contractor shall resubmit rejected submittals within 7 days upon receipt of the engineer's rejection notice.

C.2 General Requirement

The contractor shall conduct a pre-construction survey prior to the start of any construction or dewatering. The pre-construction survey shall include the condition of existing roadways, utilities, and any structure within the zone of influence, defined herein. At the end of construction, the contractor shall perform a post-construction assessment of existing roadways, utilities, and any structure within the zone of influence. The post and pre-construction condition shall be compared.

The contractor shall develop the instrumentation plan based on the following requirements:

a. Monitoring shall be performed within tunnel and shaft zone of influence. The tunnel zone of influence shall be defined as a 1.5H:1V slope from the spring line of the tunnel excavation. The shaft zone of influence shall be defined as a 1H:1V slope from the bottom of the shaft excavation.
b. INCs shall be installed at the following locations:
    i. One within the shaft zone of influence at the future detention pond shall be between the shaft and adjacent ramp.
    ii. One within the shaft zone of influence at N1371 and shall be between the shaft and USH 45 northbound.
    iii. One within the shaft zone of influence at N1210 and shall be between the shaft and USH 45 northbound.
    iv. One within the shaft zone of influence at N1208 and shall be between the shaft and USH 45 northbound.
c. UMs shall be installed for all active utilities 18 inches (or greater) in diameter, deeper than 5 feet below the ground surface, and located within the tunnel or shaft zone of influence.
d. GMs shall be installed:
    i. At four equally spaced locations around each shaft and within 5 feet from the shaft perimeter.
    ii. Along the tunnel centerline and spaced no more than 100 feet.
    iii. Above utilities within the shaft or tunnel zone of influence that do not require UM installation
    iv. Adjacent to any existing structure located within the tunnel or shaft zone of influence as defined herein, or dewatering zone of influence as specified in the special provisions, article Control of Water.
e. FMs shall be installed at the following locations:
    i. One on the W. Meinecke Ave. Bridge abutment.
    ii. One on each column of pier 3 (eastern most pier) of the W. Meinecke Ave. Bridge.

C.3 Installation

The contractor shall install instruments per approved submittals. The instrumentation engineer shall be physically present to supervise and direct technicians during installation and is responsible for proper installation of all instruments.

Geotechnical instrumentation shall be installed and baseline readings completed:

a. Before commencing any work associated with Control of Water for those instruments located within the dewatering zone of influence.
b. Before installation of shaft excavation support systems for those instruments within 50 feet of the shaft perimeter.
c. Before excavating shafts and tunnels for those instruments located within 50 feet of the tunnel alignment centerline or perimeter of the shaft.

The contractor shall locate conduits and underground utilities in all areas where borings are to be drilled and instruments installed. Instrument locations shall be modified, as approved by the instrumentation engineer, to avoid interference with the existing conduits and utilities.

Repair damage to existing utilities resulting from installation of instruments at no additional cost to the department.

All instruments shall be clearly marked, permanently labeled, and protected to avoid being obstructed or otherwise damaged during construction or by the general public. Protective housing and box or vault covers shall be marked.

After installation of each instrument survey as-built locations and define the vertical and lateral position.

Provide a protective cover for all instruments installed in boreholes at the ground surface. Maintain exposed parts of installed instruments as necessary to ensure accessibility during the course of work. Replace, at no cost to the department, instrumentation that is damaged, inaccessible, or inoperable as a result of the contractor's means and methods for construction, installation, or changes in the contractor's means and methods for construction. Locations of replaced instruments shall be determined by the engineer and the contractor. Complete repairs or replacement as soon as practicable.

The contractor shall abandon all instruments upon completion of work.

C.4 Tremie Grouting

Pump grout through a tremie pipe positioned 3 to 5 feet above the bottom of the space being grouted. Keep the bottom end of the tremie pipe submerged in grout as the grout level is brought up to the ground surface. The density of grout flowing from the space at the ground surface shall have the same density throughout the entire cavity. Allow grout to set for at least 12 hours before placing anything over the grouted cavity. If grout settles while curing, place additional grout so the filled cavity is flush with the ground surface.

C.5 Installing Inclinometer

During INC installation hollow-stem augers shall be utilized while drilling, per ASTM D6151. Drill borings for inclinometers using at least a 6 inch inside diameter casing and water, or where ground conditions permit, use drilling mud in a borehole with a diameter of at least 6 inches. During drilling, obtain soil samples at intervals no greater than 2.5 feet with the standard penetration test according to ASTM D1586.

Install inclinometer casing with an end plug and sufficiently tape joints (to prevent intrusion of grout). Install inclinometer casing at least 10 feet below the bottom of the planned shaft excavation. Orient casing grooves as instructed by the instrumentation engineer and grout the inclinometer casing in place. Tremie grout into place according to section C.4, Tremie Grouting. If steel casing is used to support the borehole during drilling, remove the casing in increments after grout is poured. As casing is pulled, add grout after each increment to keep grout levels flush with the ground surface.

Grout shall have a water-to-cement ratio by weight ranging from 2.5 to 1 for hard soil and 6.6 to 1 for soft soil. The specific ratio will be determined by the instrumentation engineer. The bentonite-to-cement ratio by weight will be 0.3 to 1, adjusted to produce grout with the

consistency of heavy cream. Mix cement and water first. Add bentonite as necessary to achieve the specified consistency.

Provide a cap at the top of each inclinometer casing. The cap shall prevent intrusion of surface water but be easy to remove.

Perform a groove tracking test after installation is complete to ensure the inclinometer casing is vertical and not twisted. Lower the inclinometer sensor to the bottom of the casing in all four possible orientations and verify the orientation of the sensor is unchanged when removed.

C.6 Utility Settlement Markers

UMs shall be installed approximately 3 feet above the upper elevation of the utility. Potholing methods shall be used to carefully advance a hole at least 4 inches in diameter to the upper surface of the utility for installation of a utility settlement marker. Temporary casing shall be set if necessary. Care shall be taken to prevent damage to the utility.

Potholing is defined as vacuum excavation or low pressure water jetting and vacuum excavation, with low risk of damage to utilities, to confirm utility locations. This allows holes for grout pipes to be advanced and installation of geotechnical instrumentation at depths below utilities of concern.

PVC casing shall extend the entire length of the borehole and then sealed at the bottom with at least 6 inches of bentonite to prevent annular backfill and surrounding soil from entering. The bentonite shall be hydrated with water prior to placement.

The annular space outside the PVC casing shall be backfilled with either coarse sand or grout. Sand shall be placed in lifts no greater than 1 foot and tamped with a rod. Grout shall be placed with tremie methods according to section C.4, Tremie Grouting. Grout for subsurface settlement markers shall consist of cement and water, with the least amount of water necessary to allow pumping. Any temporary casing set while potholing shall be withdrawn in a manner that prevents collapse of the borehole. After the annular space is filled, PVC casing shall be flushed with clean water to remove soil and grout. A steel rod or pipe cut to the required length shall be set with centralizers and firmly abut the top of the utility. A protective cover shall be installed. Installation shall conform to details shown on the plans.

C.7 Ground and Facility Settlement Markers

The method of installation shall be determined by the contractor. However, the marker shall be rigidly affixed to a surface so that it does not move relative to that surface.

C.8 Monitoring Instruments

Horizontal and vertical accuracy of a survey shall be 1/8 inch or less.

The contractor shall take at least two sets of initial readings. Once initial readings are approved by the instrumentation engineer, the average shall be used to establish a baseline reading.

For shafts, monitor all instruments within the shaft zone of influence as follows:

a. Monitor all instruments within 50 feet of the shaft perimeter or within the dewatering zone of influence daily. Begin monitoring when shaft construction or dewatering begins, whichever comes first.
b. Monitor daily or once per shift, whichever is more frequent, during excavation of the shaft, launching of the tunnel, and/or break-through and reception of the tunnel.
c. Monitor twice per week during all other construction activities until the shafts are backfilled and excavation support systems are removed.
d. Scenarios that require the greatest monitoring frequency shall control.

For tunnels, monitor all instruments within the tunnel zone of influence as follows:

a. If tunnel excavation advanced to within 50 feet of an instrument begin monitoring twice daily or twice per shift, whichever is more frequent, and continue monitoring until tunnel excavation advances 100 feet beyond the instrument or the tunnel drive is completed.
b. Upon completion of a tunnel drive, monitor instruments daily until contact grouting has filled annular voids.
c. Monitor weekly until shafts are backfilled and excavation support systems are removed.
d. Scenarios that require the greatest monitoring frequency shall control.

Monitoring threshold limits for all instruments are established as follows:

Facilities Monitoring	**Threshold Limit Level 1**	**Threshold Limit Level 2**
Facility Settlement	0.5 inch	1 inch
Pavement Settlement	1 inch	1.5 inch
Open Area Settlement	1 inch	2 inch
Underground Utilities	0.75 inch	1 inch
Inclinometer	0.50 inch	1 inch
Lateral Deflection of Excavation Support System	0.75 inch	1.5 inch

Use whatever means and methods necessary to limit ground movement, settlement, and damage to utilities, structures and other facilities during construction. Means and methods include, but are not limited to, installation of excavation support systems, tunneling methods, underpinning of vulnerable facilities, grouting, and ground improvement.

C.9 Actions to Mitigate Excessive Ground Movements

If measured movement at any location exceeds Threshold Limit Level 1, the contractor shall proceed with the approved contingency plan. The likely cause of movement shall be identified and promptly discussed with the engineer and, if necessary, the contractor's designer of the excavation support systems. Upon exceedance of Threshold Limit Level 1,

the contractor shall increase the frequency of instrumentation readings as directed by the engineer or the contractor's designer of the excavation support systems.

If instruments indicate Threshold Limit Level 2 has been exceeded, the contractor shall immediately report to the engineer and cease excavation of tunnels and shafts and other construction operations until the approved contingency plan has been implemented. The cause of excessive ground loss and/or displacement shall be identified and discussed with the engineer and, if necessary, the contractor's designer of the excavation support systems. Upon exceedance of Threshold Limit Level 2, the contractor shall increase the frequency of instrumentation readings as directed by the engineer or the contractor's designer of the excavation support systems. The contractor shall not resume construction until ground movements are stabilized, as determined by the instrumentation engineer. If the contractor exhausts all measures in the preapproved contingency plan and is unable to stabilize ground movements, the contractor shall submit a correction plan to the engineer. Upon acceptance by the engineer, the contractor shall implement the correction plan immediately.

Costs associated with corrective measures required to comply with Threshold Limits and/or repairs to damaged property shall be borne by the contractor at no additional cost to the department.

D Measurement

The department will measure Geotechnical Instrumentation as a single lump sum unit of work, acceptably completed according to this special provision.

E Payment

The department will pay for measured or installed quantities agreed to in advance, at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.8099	Geotechnical Instrumentation	LS

Payment for Geotechnical Instrumentation shall be full compensation for furnishing, installing, and monitoring each instrument, including all costs associated with submittals.

60. Vibration Monitoring, Item SPV.0135.0001.

A Description

This special provision describes developing a vibration monitoring plan, deploying seismographs for continuous monitoring and recording, documentation, and reporting.

B (Vacant)

C Construction

C.1 General

Vibration Monitoring establishes vibration recordings at the closest affected locations beginning the first day of operations for various vibration inducing activities identified herein and lasting the entire duration of said activities unless monitored readings are

sufficiently below nuisance limits in Figure 1 and engineer determines that continued monitoring will be at the contractor's discretion without further payment.

C.2 Equipment
Utilize a seismograph meeting the requirements of Wisconsin Department of Safety and Professional Services SPS307.43. Utilize monitoring equipment with an instantaneous alert notification system that consists of a text message or an e-mail alert message automatically sent anytime the nuisance limits in Figure 1 are exceeded.

C.3 Preconstruction Survey
The engineer will conduct preconstruction surveys of structures that may be potentially affected by vibration prior to any work. The engineer will visually inspect and record all existing defects in the structures before construction. Photographs or video may be used to assist in documentation.

The contractor may conduct and document pre-construction surveys of any additional nearby buildings or structures not identified by the engineer at no additional cost. Provide results to engineer prior to construction. Any damage resulting from excessive vibration-causing operations or claims of damage during construction is the responsibility of the contractor to resolve.

C.4 Monitoring Plan
Submit a monitoring plan that includes the following:

- Location of each vibration-inducing activity to be monitored.
- Locations at which the approved seismographs will be placed.
- Anticipated vibration levels at the closest building(s) or other sensitive facility during the various activities.
- Anticipated monitoring duration for each monitoring location.
- Maximum allowable vibration limits.
- Mitigation plan to reduce potentially excessive vibration levels to acceptable limits.

Obtain the engineer's acceptance seven calendar days before any vibration-inducing activity for the project.

C.5 Monitoring and Recording
Monitor the following operations:

- Bridge and sign bridge pile driving or bridge demolition.
- Sheet pile installation and removal.
- MSE wall compaction.
- Asphalt compaction.
- Pavement breaking.
- All compaction activities utilizing large vibratory rollers.
- Any other activities that may cause vibration damage to adjacent buildings, structures, or utilities.

Ensure that a qualified person operates and continuously monitors the vibration monitoring equipment. If any vibration levels exceed the nuisance levels shown, immediately halt the vibration-inducing work, and notify the engineer.

Monitor between the construction vibration source and the closest structure or other sensitive facility subject to vibration damage, and as close as practical to the subject structure or facility. Monitor vibration levels according to Figure 1 and SPS 307.43.

Compare the measured peak particle velocity and frequency data to the nuisance limits specified in Figure 1. Record peak particle velocity and frequency in three mutually perpendicular directions.

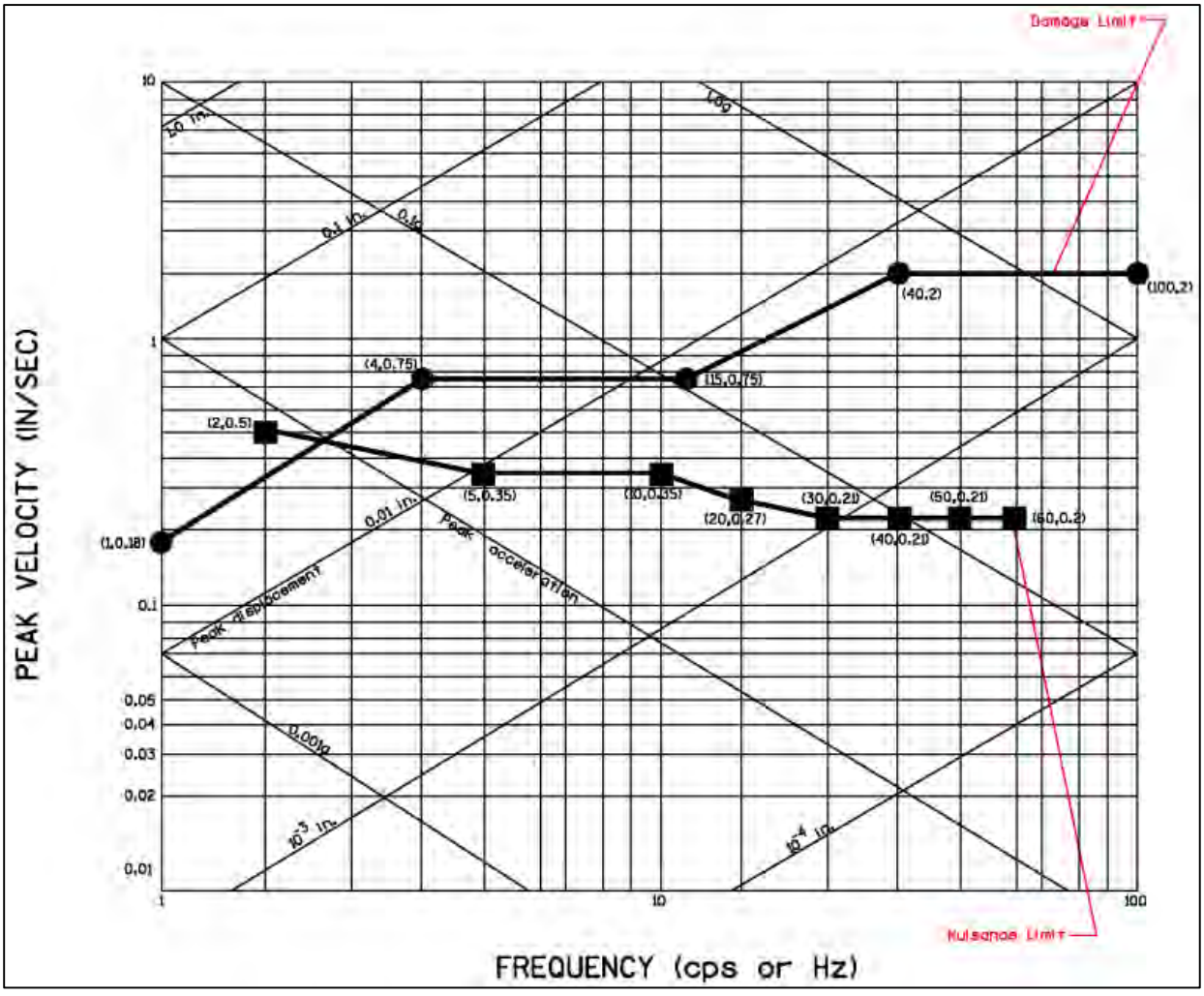

Figure 1: Amplitude of Vertical Vibrations

C.6 Reporting

Furnish a weekly bound report of data recorded at each location to the engineer by 4:00 PM CST every Friday. Additionally, provide a separate daily report documenting any work that

was halted prior to the next vibration-causing workday. Include the following in both reports:

- Date vibration monitoring operations began for each location with an associated compilation of total days currently monitored at each site.
- Identification of vibration inducing activities monitored each day at each location.
- Serial number of vibration monitoring instrument used and record of latest calibration.
- Description of contractor's equipment.
- Name of qualified observer and interpreter.
- Distance and direction of recording station from vibration source.
- Surficial material type at recording station.
- Principal frequency and particle velocity in each component direction.
- Copy of records of seismograph readings, dated and signed by the person qualified to perform vibration monitoring.
- Contractor documentation of any operational changes necessary to reduce vibration levels below nuisance levels.

D Measurement

The department will measure Vibration Monitoring by months, or partial months where applicable, for each seismograph monitoring site, 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. 0135.0001	Vibration Monitoring	MON

Payment of the item Vibration Monitoring is full compensation for providing, setting up and removal of recording unit, an approved vibration monitoring plan, continuous monitoring and recording vibrations, and reporting. No payment for Vibration Monitoring will be paid for without agreement on recommended locations.

61. Shaft Excavation Support System, Item SPV.0165.8095.

A Description

This special provision includes requirements for design/redesign, furnishing, installing, and removing, when applicable, excavation support systems for working shafts at the future detention pond and Manholes N1371, N1210 and N1208. The contractor shall design shaft excavation support systems as recommended in the Geotechnical Baseline Report and according to requirements in this special provision.

A.1 Qualifications of the Contractor

The contractor’s designer of excavation support systems shall be a professional civil engineer registered in the State of Wisconsin with at least ten years of experience in design and construction of excavation support systems similar to the contractor’s proposed system.

A.2 Design Criteria

All elements of ground support systems, including shoring and bracing, shall conform to requirements in Subpart P, Excavations (1926 of 29 CFR), of the Occupational Safety and Health Administration (OSHA).

The design shall provide adequate overall stability, internal stability, basal stability and stiffness to meet contract requirements for control of water, ground movements and protection of adjacent work and property. The design shall be compatible with the contractor's selected methods for excavation and control of water. The design of the excavation support system shall be feasible to place and remove, as required. The design shall allow installation of permanent structures and accommodate operational requirements for construction.

Design shaft excavation support systems and working slabs to accommodate earth pressures, groundwater pressures, basal heave, equipment loads, thrust block loads from pipe jacking, construction of portal entries/exits for tunneling, traffic and construction loads, and all other applicable surcharge loads. Excavation support systems shall be safe during tunnel construction and limit ground movements to prevent damage to adjacent structures, streets, and utilities. Excavation support systems shall be compatible with geologic conditions described in the Geotechnical Baseline Report and according to applicable AISC and ACI code provisions.

Select shaft geometry, size, and type of excavation support system per plans and the Geotechnical Baseline Report.

Design each support member or element to resist maximum loads that will occur during construction and with appropriate factors of safety. Maximum combination of load or stress shall be no greater than 67% of a structural element's yield strength.

The stiffness and method of installation for each ground support system shall minimize horizontal and vertical movements, per limits delineated in the special provision, article Geotechnical Instrumentation, and protect adjacent utilities, streets, facilities and property from damage.

Provide a minimum factor of safety of 1.5 for overall stability. Maintain a minimum factor of safety of 1.5 for basal heave due to adjacent surcharge pressures and hydrostatic uplift from seepage pressures.

Install walers, struts or tie-back anchors as required to provide lateral support and brace excavation support systems. Care should be taken to prevent ground loss with soldier pile and lagging, liner plate, and other ground support systems during installation, operation, and control of groundwater. If buckling occurs during construction, provide additional bracing and/or lateral support. Trench shields and/or speed shores are not allowed for shaft construction.

Design a gravel or concrete working platform equipped with a sump to pump out water entering as a result of construction operations and storm events. This is to maintain a stable bottom during construction.

Design shaft sizes as indicated on the drawings.

Design considerations for hydrostatic pressure shall be coordinated with the contractor's water control plan.

Excavation support systems shall ensure no earth pressures or other loading is placed on new permanent structures (i.e. manholes) prior to completion and until design strengths have been reached. The contractor shall be solely and completely responsible for any damage or loss due to premature loading of these new permanent structures.

Design of excavation support systems shall specify, as a minimum, the following items:

a) Constraints on excavation limits relative to installation of bracing.
b) Tolerances for size and position of ground support elements.
c) Required preloading of bracing elements.
d) Restrictions on surcharge loads and other loads that may act on excavation support systems, such as jacking forces, grouting, and groundwater pressures.
e) Allowable ground movements.
f) Provisions for subgrade stability and protection.
g) Constraints on removal of bracing elements as permanent structures are completed and backfilled.

B Materials

Materials used in construction of the shaft excavation support systems shall meet these requirements:

a) All timber and structural steel used for support systems, whether new or used, shall be sound and free of defects that may reduce strength.
b) Structural Steel: Conform to ASTM A572 Grade 50 unless approved otherwise.
c) Timber: All timber shall be structural grade with a minimum allowable flexural strength of 1,100 psi.
d) Steel Segments (Liner Plates): Segments shall be accurately bent to the approved shape and radius of each shaft. Rib segments shall fit closely and be bolted with butt-plate joint connections. Every 4th ring (rib), a grout port at least 1-1/2 inches in diameter shall be fitted in each plate. All steel appurtenances required to install steel segments, such as bolts, gaskets, shims, spacers, and other necessary accessories shall be provided. Segments (liner plates), channels, plates, rods, and accessories shall be structural steel conforming to ASTM A36 or ASTM A572. Bolts shall conform to ASTM A325 or A449. Nuts shall conform to ASTM A307, Grade A.
e) Contact Grout: Conform to special provisions, article Contact Grouting.
f) Anchor Tendons: Conform to ASTM A615 for Grade 60 or 75 or ASTM A722 for Grade 150.

g) Anchor Grout: Grout shall be a pumpable neat mixture of cement and water, stable (bleed less than 2 percent), fluid, and have a minimum 28-day compressive strength specified in the contractor's design. Grout material shall conform to requirements in standard specification 501.2. Use Type I Portland cement.

C Construction

C.1 Submittals

C.1.1 General

Prepare and submit qualifications, shop drawings and a work plan at the preconstruction meeting or 14 calendar days prior to beginning shaft construction, whichever date is earlier. The engineer will accept the submittal as is or return the submittal with requested revisions. Do not start any work until the engineer accepts the qualifications, shop drawings and work plan. Acceptance of submittals does not relieve the contractor of their responsibility to successfully construct and complete the shafts.

C.1.2 Subsurface Conditions

The contractor must review the Geotechnical Baseline Report – North Leg Storm Sewer Tunnel (North Leg Tunnel), January, 2016 (referred as "Geotechnical Baseline Report" herein) for baseline subsurface conditions.

C.1.3 Submittals for Approval

Excavation Support System Design Engineer Qualifications: Submit written documentation (including evidence of professional registration in the State of Wisconsin) as supporting evidence of the design engineer's qualifications.

Shop Drawings and Work Plan: Submit plans and shop drawings for shaft excavations, excavation support systems, and other related information. Drawings and calculations shall be prepared and sealed by the contractor's engineer. As a minimum, the submittal shall include the following information:

a. Construction method for installation of each system, including sequence of installation and a description of equipment.
b. Details addressing, at a minimum, penetration of existing storm sewer pipes, maintenance of existing pipe flow throughout the course of construction, sequence of construction for proposed pipes, inlets, and manholes.
c. Shop drawings and design calculations showing assumed loading conditions, estimated deflections of support system, estimated ground movements, design of system components, arrangement of support/bracing elements, and sequence of construction for proposed support systems. Show the elevation of struts, anchors, and other bracing elements, and the depth of excavation during installation of each level of bracing/support. Indicate sizes, shapes, and material specifications for all support elements, including lagging, if used.
d. Provide details concerning installation of the bottom slab, drains, and sump.
e. Calculations shall show the shaft wall is able to sustain the maximum jacking forces transferred through the thrust block during pipe jacking.

f. The design submittal for soldier pile and lagging systems shall, as a minimum, address:
    i. Drilled hole advancement, including drilling equipment, expected hole diameters, and methods to maintain hole stability.
    ii. Interference with utilities.
    iii. Structural design of soldier piles, including size, weight, steel grade, depth, and loading.
    iv. Method of shaft excavation.
    v. Method to remove boulder obstructions.
    vi. Method of lagging installation and backfilling or contact grouting due to over excavation.
    vii. Design and installation of internal bracing or tie-backs.
g. The design submittal for steel ribs and lagging/liner plate systems shall, as a minimum, address:
    i. Interference with utilities.
    ii. Structural design of steel ribs and lagging/liner plates, including size, weight, steel grade, depth, and loading.
    iii. Liner plate details, including geometry, joints, connectors (bolts and dowels), compression packings, gaskets, inserts, and accessories.
    iv. Method of assembly.
    v. Method of shaft excavation.
    vi. Method to remove boulder obstructions.
    vii. Method of lagging/liner plate installation and backfilling or contact grouting due to over excavation.
h. A site plan for each shaft indicating utilities, access roads, details of site grading and development, limits of shaft excavation, and proposed limits of the work area surrounding each shaft excavation.
i. Portal plans indicating installation of additional support to maintain integrity of the ground support system and stability of the excavation when commencing tunneling and/or holing through at the end of a tunnel drive. Provide details of bracing, seals, and ground improvement (if needed) used at each portal to maintain face stability.

C.1.4 Information Submittals

Contractor's Engineer Certification: Submit to the engineer, no later than the 5th day of each month, signed and sealed certification (letter, memorandum, or report) from the contractor's engineer that, based on their observations, excavation support systems were either installed or are performing according to their design. The contractor's engineer shall report any significant deviations from submitted design concepts, performance concerns, and any recommended remedial actions deemed necessary. Certification by the contractor's engineer shall be made monthly, beginning during the installation of ground support and continuing until the ground support system has been abandoned/removed and backfilled.

As-built Plans: Submit as-built drawings of abandoned excavation support systems.

C.1.5 Acceptance

The engineer will evaluate Submittals for Approval with requirements in this special provision. Within 14 calendar days after receipt of Submittals for Approval the engineer will

notify the contractor of acceptance or the need for additional information, clarification, and/or required changes. Any unacceptable part of Submittals for Approval will require resubmission. The contractor must resubmit Submittals for Approval for review with the necessary changes or additional information requested. The engineer will provide a written notice of acceptance or rejection of resubmitted Submittals for Approval within 14 calendar days after its receipt.

After the engineer's acceptance of Submittals for Approval, no changes to Submittals for Approval can be made without written consent of the engineer.

All Information Submittals should be submitted to the engineer. The engineer can reject submittals that do not provide adequate detail, as required herein. The contractor shall resubmit rejected submittals within 7 days upon receipt of the engineer's rejection notice.

C.2 General Shaft Construction Requirements

The contractor shall review plans and special provisions for this project to coordinate utility abandonment and relocation adjacent to the shaft prior to construction. The contractor shall support and maintain live utilities that penetrate through shaft excavations and remove man-made objects and abandoned utilities, as discussed in the Geotechnical Baseline Report and shown on the plans. Effort, material, and labor required to remove, support or avoid utilities and underground structures during shaft construction shall be considered incidental work, and performed at no additional cost to the department.

Excavation support systems for shafts shall consist of drilled-in soldier pile and lagging and/or steel ribs and lagging/liner plate systems, as recommended in the Geotechnical Baseline Report.

The contractor shall design and install ground support systems according to contract documents and approved submittals. The contractor shall furnish materials for installing, monitoring, maintaining, and removing ground support systems. The contractor's engineer shall maintain involvement and responsibility during design, installation, performance and abandonment or removal of ground support systems.

The contractor shall implement groundwater control measures, as required in the special provision, article Control of Water. Excavation support systems shall not be installed without groundwater control measures.

Adequately support and brace excavations to prevent ground loss and to protect adjacent structures, property, workmen, and the public. All shoring and bracing shall conform to jurisdictional safety requirements (i.e. federal, state, or local agencies). The most stringent of these requirements shall apply.

The contractor shall install excavation support systems to permit safe construction and to ensure no earth loading or other loading is placed on new permanent structures prior to completion. Excavation support systems shall be installed in a manner that minimizes ground loss, minimizes ground movements outside the excavation, maintains stability

during and after excavation, and preserves the in-situ strength of surrounding soil. Control vibrations due to boulder splitting and installation and removal of excavation support elements to prevent damage to new structures and adjacent property. Ground movements shall be monitored per special provision, article Geotechnical Instrumentation.

Contact between the ground and excavation support system is required and must be maintained according to the contractor's approved means and methods, such as blocking, cribbing, wedging, or grouting. Contact grout overcut voids greater than that specified in the special provision, article Contact Grouting. Contact grouting shall be performed to control ground movements and provide firm and uniform contact between the support system and the ground. An adequate number of grout holes shall be positioned as necessary to accomplish this work.

C.4 Drilled-in Soldier Pile and Lagging Wall

The contractor shall design soldier pile and lagging walls to allow penetration of the new storm sewer pipe. The contractor shall install soldier piles into pre-drilled holes and subsequently fill with concrete. Driven soldier piles are prohibited.

Soldier piles shall be installed within 2 inches of their planned location. The contractor shall replace soldier piles not installed within this tolerance level or damaged due to any cause, at no additional cost to the department.

The contractor's engineer shall ensure soldier piles will be restrained from excessive horizontal or vertical movement and distortion in their design. Lagging shall be assembled true to the lines and grades presented on approved shop drawings.

Install lagging in conformance with the manufacture's recommendations and in a manner that will not deform or overstress the soldier piles. The contractor shall prevent lagging from deflecting more than contractor's design deflection.

Before allowing the excavation to stand overnight, advance lagging to within 1 foot of the excavation level and perform contact grouting.

C.5 Steel Ribs and Lagging/Liner Plates

The contractor shall design and install steel ribs and lagging/liner plate systems to allow penetration of the new storm sewer pipe. The contractor shall install steel ribs and lagging/liner plates according to approved shop drawings and conform to the manufacturer's recommendations.

The contractor shall be prepared to handle wet sand seams and lenses during installation of steel ribs and lagging. The contractor shall avoid ground loss from unstable wet sand seams and lenses, if encountered.

Unsupported excavation is prohibited overnight or for extended periods. The steel ribs and lagging/liner plate system shall be advanced to the bottom of the excavation prior to the end of each work day.

C.6 Bracing System

The contractor shall install bracing systems consisting of walers, struts or tie-back anchors in the sequence specified by the contractor's engineer and per approved submittals.

Install steel supports true to the lines and grades per approved shop drawings. The contractor shall install steel plates to ensure firm contact between walers (if used) and soldier piles.

If tie-back anchors are used, requirements specified herein shall be followed. Tie-back anchors shall be positioned plus or minus 6 inches from elevations shown on approved shop drawings. At the point of entry, the anchor shall be installed within plus-or-minus 3 degrees of the declination from horizontal shown on approved shop drawings. Minimum grout cover for tendons shall be ½ inch. Tie-back anchors that do not satisfy specified tolerances will be replaced at no additional cost to the department.

Anchor holes shall be drilled at specified locations, angles, lengths and minimum diameters shown on approved shop drawings. Over-drilling of holes shall be utilized only if described in approved work plan. The contractor shall check orientation of anchor hole prior to and during drilling. Drilling mud or foam shall not impact load transfer of ground anchors.

Immediately prior to tendon installation, flush hole with water to create a clean contact surface, then remove any standing water and sound the hole to check compliance with the required length. Tendons shall be free of dirt, loose rust, grease, or other deleterious substances and placed according to approved shop drawings. The contractor shall provide rigid and adequate support during placement of grout. The tendon bars shall be continuous, without splices or welds.

The contractor shall place a separate bond breaker if a corrugated sheath is used or if recommended by the manufacturer. Pump grout to the bottom of the hole through clean and leak-free grout pipes. If grout inside the sheath is not pre-manufactured, the contractor shall grout the area outside and inside the sheath simultaneously, maintaining the same grout level inside and outside of the sheath. Grout volumes shall be measured and compared to theoretical volumes to avoid overfilling the hole. Continuously monitor the location of the grout surface using a measuring rod extending through holes in the tendon base plate to verify that grout is at the correct distance from the excavated face. Maintain the tip of the grout pipe below the grout surface at all times to avoid entrapment of air. After the grout operation is complete, do not move or disturb the tendon until grout has cured and reached its minimum specified strength, as determined by ASTM C942. If the ungrouted length is longer or shorter than the specified length by one or more feet, perform the following remedial action:

a. Remove tendon, flush hole, and redrill if tendon is too short, or remove grout to the required elevation if the unbonded length is too long.
b. Replace tendon with new tendon if damaged.

Do not tension the tendon before grout has cured for the specified period required to attain the required design strength. Tension tendon by means of equipment recommended by the tendon manufacturer.

C.7 Removal of Excavation Support Systems
The contractor shall remove all elements of an excavation support system within 6 feet of the existing or proposed ground surface, whichever is lower. Repair any damage to new structures or adjacent property resulting from removal of an excavation support system. Excavation support systems that cannot be safely removed or removed without causing settlement and damage shall be left in place, at no additional cost to the department.

The contractor shall be responsible for backfill material that is loosened and settles more than one inch while removing ground support elements, and must re-compact or consolidate loosened backfill. The contractor's engineer shall be responsible for determining if a ground support system can be safely removed. Elements of an excavation support system left in place shall be at the contractor's expense. Cost associated with remediation of disturbed backfill or damage to new structures and adjacent property caused by removal of a ground support system shall be at the contractor's expense.

C.8 Shaft Backfilling
Backfill shafts according to standard spec 206.3.13. Backfill around the pipe and inside the shaft shall be according to standard spec 209.2, 520.3.2 and 520.3.4.

D Measurement
The department will measure Shaft Excavation Support System by the square foot, acceptably completed according to this special provision. Additional excavation beyond the limits of plan dimensions will not be measured for payment, unless authorized and agreed to in advance by the department.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.8095	Shaft Excavation Support System	SF

Payment for Shaft Excavation Support System is full compensation for furnishing, installing, and removing excavation support systems for working shafts, including but not limited to: excavation, all elements of excavation support systems, removing encountered boulders and known or unknown abandoned man-made objects (regardless of quantities), ground improvement, ancillary work for tunnel portals, providing and placing backfill, compaction of base material in the shaft, the work slab, removal of excavation support systems, disposing of surplus material, and mobilization/demobilization of equipment.

62. Topsoil Special, Item SPV.0180.0001.

A Description

This special provision section describes furnishing, placing, spreading, and finishing humus-bearing soil, adapted to sustain plant life, commonly known as topsoil, from locations the contractor furnishes beyond the limits of the right-of-way.

This special provision also describes removing topsoil from the sites of proposed roadway excavations and embankments in amounts and depths available and necessary to cover the work slopes. This work also includes reclamation, placing, spreading, and finishing of this topsoil.

B Materials

Furnish material that is relatively free from large roots, sticks, weeds, brush, stones, litter, and waste products.

Furnish material, either obtained offsite, or material obtained within project limits, consisting of loam, sandy loam, silt loam, silty clay loam, or clay loam humus-bearing soils adapted to sustain plant life. Do not use surface soils from ditch bottoms, drained ponds, and eroded areas, or soils which are supporting growth of NR 40 listed plants and noxious weeds or other undesirable vegetation. Ensure that the material conforms to the following:

Topsoil Requirements	Minimum Range	Maximum Range
Material Passing 2.00 mm (#10) Sieve*	90%	100%
PH Range	6.0	7.0
Organic Matter**	5%	20%
Clay	5%	30%
Silt	10%	70%
Sand and Gravel	10%	70%

*See standard spec 625.3.3 for sieve requirements when using either sod or seed mixture 40.
**Organic matter determined by loss on ignition test of samples oven dried to constant weight at 212 F (100 C).

C Construction

C.1 Preparing the Roadway for Topsoil

Undercut or underfill all areas designated to receive topsoil to a degree that if covered to the required depth with topsoil the finished work conforms to the required lines, grades, slopes and cross sections the plans and drawings show.

C.2 Processing Topsoil

Mow topsoil procurement areas to a height of approximately 6 inches. Remove litter such as brush, rock, and other materials that will interfere with subsequent vegetation establishment.

Strip off the humus-bearing soil. Take care to minimize removing the underlying sterile soil. Then stockpile the topsoil on the right-of-way or place it directly on the designated areas.

Obtain topsoil from embankment areas outside the roadway foundation only if that additional material is required to cover the slopes, and conforms to the requirements of section B above. Utilize excess topsoil on the project or dispose of as specified in standard spec 205.3.12.

C.3 Placing Topsoil

After preparing and finishing the areas designated for topsoil to the required lines, grades, slopes and cross section, place and spread the topsoil to a uniform depth as the plans show or the contract requires. If no depth is shown, place and spread the topsoil to a minimum depth of 4 inches in rural areas and a minimum depth of 6 inches in urban areas, or as the engineer designates.

Break down all clods and lumps using appropriate equipment to provide a uniformly textured soil.

Where using either sod or seed mixture 40 ensure that, for the upper 2 inches, 100 percent of the material passes a one-inch sieve and at least 90 percent passes the No. 10 sieve.

Remove rocks, twigs, foreign material, and clods that cannot be broken down. Dress the entire surface to present a uniform appearance. The engineer will not require rolling.

If light sandy soils are covered with heavier clay bearing loam topsoil, then mix or blend the two types of soils to a more or less homogeneous mixture by using the appropriate equipment.

D Measurement

The department will measure Topsoil Special, acceptably completed, by the square yard. The measured quantity shall equal the actual number of square yards of topsoiled area to the depth specified within the limits of construction designated on the plans, or in the contract, or as the engineer directs.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0001	Topsoil Special	SY

Payment for Topsoil Special is full compensation for removing, stockpiling, reclaiming, providing, processing, excavating, loading, hauling, and placing this material; and for undercutting excavations, or underfilling embankments necessary to receive this material. The department will make no allowance, adjustment, or measurement for payment under the Excavation bid items for undercutting cut sections, underfilling embankments, or deductions for materials obtained from areas of cut sections.

If an area is damaged by erosion after partial acceptance, the department will pay for restoring topsoil in these areas at a unit price determined by multiplying the contract unit price bid for Topsoil multiplied by 3, the department will pay for restoration under the Restoration Post Acceptance Topsoil administrative item.

The department will not pay for removing topsoil from outside the roadway foundation in embankment areas unless that material is necessary to cover the slopes.
SEF Rev.15_0316

ADDITIONAL SPECIAL PROVISION 4

Payment to First-Tier Subcontractors

Within 10 calendar days of receiving a progress payment for work completed by a subcontractor, pay the subcontractor for that work. The prime contractor may withhold payment to a subcontractor if, within 10 calendar days of receipt of that progress payment, the prime contractor provides written notification to the subcontractor and the department documenting "just cause" for withholding payment.

The prime contractor may also withhold routine retainage from payments due subcontractors.

Payment to Lower-Tier Subcontractors

Ensure that subcontracting agreements at all tiers provide prompt payment rights to lower-tier subcontractors that parallel those granted first-tier subcontractors in this provision.

Release of Routine Retainage

After granting substantial completion the department may reduce the routine retainage withheld from the prime contractor to 75 percent of the original total amount retained.

When the Department sends the semi-final estimate the department may reduce the routine retainage withheld from the prime contractor to 10 percent of the original total amount retained.

Within 30 calendar days of receiving the semi-final estimate from the department, submit written certification that subcontractors at all tiers are paid in full for acceptably completed work and that no routine retainage is being withheld. The department will pay the prime contractor in full and reduce the routine retainage withheld from the prime contractor to zero when the department approves the final estimate.

This special provision does not limit the right of the department, prime contractor, or subcontractors at any tier to withhold payment for work not acceptably completed or work subject to an unresolved contract dispute.

ADDITIONAL SPECIAL PROVISION 6
ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

550.5.2 Piling

Add the following as paragraph three effective with the December 2015 letting:

(3) The department will not entertain a change order request for a differing site condition under 104.2.2.2 or for a quantity change under 104.2.2.4.3 for the Piling bid items. Instead the department will adjust pay under the Piling Quantity Variation administrative item if the total driven length of each size is less than 85 percent of, or more than 115 percent of the contract quantity as follows:

Percent of Contract Length Driven	Pay Adjustment
< 85	(85% contract length - driven length) x 20% unit price
> 115	(driven length - 115% contract length) x 5% unit price

643.2.1 General

Replace paragraph two with the following effective with the December 2015 letting:

(2) Use reflective sheeting from the department's approved products list on barricades, drums, and flexible tubular marker posts.

Errata

Make the following corrections to the standard specifications:

641.2.9 Overhead Sign Supports

Correct errata adding back accidentally deleted paragraphs one through three.

(1) Provide commercially fabricated overhead sign supports conforming to AASHTO design and fabrication standards for structural supports for highway signs, luminaires, and traffic signals. Use a design life of 50 years with a wind importance factor of 1.00. Design to withstand a 3 second gust wind speed of 90 mph. Do not use the methods of appendix C of those AASHTO standards.

(2) Design structures, listed as applicable structure types in the AASHTO standards, to the fatigue category criteria as follows:

1. Structures carrying variable message signs:
   - Category I criteria for structures over all roadway types.
2. Structures carrying type II or III signs:
   - Category I criteria for structures used over highways and free flow ramps.
   - Category II criteria for structures with arms greater than 30 feet used over local roads and city streets.
   - Category III criteria for structures with arms 30 feet or less used over local roads and city streets.

(3) Use the posted speed limit of the roadway beneath the structure for truck-induced gusts.

(4) Submit shop drawings identified by structure number, design computations, and material specifications, to the engineer before erecting sign supports. Provide tightening procedures for mast arm or luminaire arm to pole shaft connections on the shop drawings. Have a professional engineer registered in the state of Wisconsin sign, seal, and date the shop drawings and certify that the design conforms to AASHTO standards and the contract.

(5) Provide steel pole shafts and mast arms zinc coated according to ASTM A123. Provide tapered pole and arm shafts with a minimum taper of 0.14 inch per foot for single-member vertical and single-member horizontal structure components. Provide bolts and other hardware conforming to 641.2.2.

ADDITIONAL SPECIAL PROVISION 7

A. Reporting 1st Tier and DBE Payments During Construction

1. Comply with reporting requirements specified in the department's Civil Rights Compliance, Contractor's User Manual, Sublets and Payments.
2. Report payments to all DBE firms within 10 calendar days of receipt of a progress payment by the department or a contractor for work performed, materials furnished, or materials stockpiled by a DBE firm. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.
3. Report payments to all first tier subcontractor relationships within 10 calendar days of receipt of a progress payment by the department for work performed. Report the payment as specified in A(1) for all work satisfactorily performed.
4. All tiers shall report payments as necessary to comply with the DBE payment requirement as specified in A(2).
5. Require all first tier relationships, DBE firms and all other tier relationships necessary to comply with the DBE payment requirement in receipt of a progress payment by contractor to acknowledge receipt of payment as specified in A(1), (2), (3) and (4).
6. All agreements made by a contractor shall include the provisions in A(1), (2), (3), (4) and (5), and shall be binding on all first tier subcontractor relationships and all contractors and subcontractors utilizing DBE firms on the project.

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

ADDITIONAL SPECIAL PROVISION 9
Electronic Certified Payroll Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to submit certified payrolls electronically. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/default.aspx

(2) Ensure that all tiers of subcontractors, as well as all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Tess Mulrooney at 608-267-4489 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator send several sample electronic files to Tess two months before a payroll needs to be submitted. Not every contractor's payroll system is capable of producing export files. For details, see pages 17-22 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payroll-manual.pdf

Effective August 2015 letting

BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or $2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this “Buy America” provision.

http://wisconsindot.gov/rdwy/cmm/cm-02-28.pdf

Upon completion of the project certify to the engineer, in writing using department form WS4567, that all steel, iron, and coating processes for steel or iron incorporated into the contract work conform to these "Buy America" provisions. Attach a list of exemptions and their associated costs to the certification form. Department form WS4567 is available at:

http://wisconsindot.gov/hcciDocs/contracting-info/ws4567.doc

Effective with September 2004 Letting

WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS AND TRANSPORTATION FACILITIES

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

I. WAGE RATES, HOURS OF LABOR AND PAYMENT OF WAGES

The schedule of "Minimum Wage Rates" attached hereto and made a part hereof furnishes the prevailing wage rates that have been determined pursuant to Section 103.50 of the Wisconsin Statutes. These wage rates are the minimum required to be paid to the various laborers, workers, mechanics and truck drivers employed by contractors and subcontractors on the construction work embraced by the contract and subject to prevailing hours and wages under Section 103.50, Stats. If necessary to employ laborers, workers, mechanics or truck drivers whose classification is not listed on the schedule, they shall be paid at rates conformable to those listed for similar classifications. Apprentices shall be paid at rates not less than those prescribed in their state indenture contacts.

While the wage rates shown are the minimum rates required by the contract to be paid during its life, this in not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

Pursuant to Section 103.50 of the Wisconsin Statutes, the prevailing hours of labor have been determined to be up to 10 hours per day and 40 hours per calendar week Monday through Friday. If any laborer, worker, mechanic or truck driver is permitted or required to work more than the prevailing number of hours per day or per calendar week on this contract, they shall be paid for all hours in excess of the prevailing hours at a rate of at least one and one-half (1 1/2) times their hourly rate of pay. All work on Saturday, Sunday and the following holidays is to be paid at time and a half: (1) January 1, (2) the last Monday in May, (3) July 4, (4) the first Monday in September, (5) the fourth Thursday in November, (6) December 25, (7) the day before if January 1, July 4 or December 25 falls on a Saturday and (8) the day following if January 1, July 4 or December 25 falls on a Sunday.

All laborers, workers, mechanics and truck drivers shall be paid unconditionally not less often than once a week. Persons who own and operate their own trucks must receive the prevailing truck driver rate for the applicable type of truck (i.e. 2 axle, 3 or more axle, articulated, eculid or dumptor) he or she operates, plus an agreed upon amount for the use of his or her truck. Every owner-operator MUST be paid separately for their driving and for the use of their truck.

For those projects subject to the requirements of the Davis-Bacon Act, the Secretary of Labor will also have determined "Minimum Wage Rates" for work to be performed under the contract. These rates are, for all or most of the labor, worker, mechanic or truck driver classifications, identical to those established under Section 103.50 of the Wisconsin Statutes. In the event the rates are not identical, the higher of the two rates will govern.

II. PAYROLL REQUIREMENTS

All contractors and subcontractors must submit weekly Certified Payrolls and Compliance Statement verifying that all laborers, workers, mechanics and truck drivers working on the project have been paid the prevailing wage rates for all work performed under the contract required by Section 103.50 of the Wisconsin Statutes.

III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the Department, the contractor shall post the following in at least one conspicuous place at the site of work:

a. "NOTICE TO EMPLOYEES," which provides information required to be posted by the provisions of Section 103.50 of the Wisconsin Statutes.

b. A copy of the State of Wisconsin Minimum Wages Rates. (Four pages.)

c. A copy of the contractor's Equal Employment Opportunity Policy.

d. On any project involving federal aid, in addition to the furnished postings, the contractor shall post a copy of the "Davis-Bacon Act, Minimum Wage Rates". (Three pages.)

IV. WAGE RATE REDISTRIBUTION

The amount specified as the hourly basic rate of pay and the amount(s) specified as the fringe benefit contribution(s), for all classes of laborers, workers, mechanics or truck drivers may be redistributed, when necessary, to conform to those specified in any applicable collective bargaining agreement, provided that both parties to such agreement

request and receive the approval for any such redistribution from both the Department of Transportation and the Department of Workforce Development prior to the implementation of such redistribution.

V. ADDITIONAL CLASSIFICATIONS

Any unlisted laborer or mechanic classification that is needed to perform work on this project, and is not included within the scope of any of the classifications listed in the application prevailing wage rate determination, may be added after award only if all of the following criteria have been met:

1. The affected employer(s) must make a written request to WisDOT Central Office to utilize the unlisted classification on this project.

2. The request must indicate the scope of the work to be performed by the unlisted classification and must indicate the proposed wage/fringe benefit package that the unlisted classification is to receive.

3. The work to be performed by the unlisted classification must not be performed by a classification that is included in the applicable prevailing wage rate determination.

4. The unlisted classification must be commonly employed in the area where the project is located.

5. The proposed wage/fringe benefit package must bear a reasonable relationship to those set forth in the applicable prevailing wage rate determination.

6. The request should be made prior to the actual performance of the work by the unlisted classification.

7. DWD must approve the use of the unlisted classification and the proposed wage/fringe benefit package. USDOL also must approve the use of the unlisted classification and the proposed wage/fringe benefit package on federal aid projects.

8. WisDOT and DWD may amend the proposed wage/fringe benefit package, as deemed necessary, and may set forth specific employment ratios and scope of work requirements in the approval document.

The approved wage/fringe benefit package shall be paid to all laborers, workers, mechanics or truck drivers performing work within the scope of that performed by the unlisted classification, from the first day on which such work is performed. In the event that work is performed by the unlisted classification prior to approval, the wage/fringe benefit package to be paid for such work must be in conformance with the wage/fringe

benefit package approved for such work. Under this arrangement a retroactive adjustment in wages and/or fringe benefits may be required to be made to the affected laborers, workers, mechanics or truck drivers by the affected employer(s).

ANNUAL PREVAILING WAGE RATE DETERMINATION
FOR ALL STATE HIGHWAY PROJECTS
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 May 1, 2015

CLASSIFICATION: Contractors are required to call the Department of Workforce Development if there are any questions reqarding the proper trade or classification to be used for any worker on a public works project.

OVERTIME: Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

FUTURE INCREASE: If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

PREMIUM PAY: If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

SUBJOURNEY: Wage rates may be available for some of the classifications indicated below. Any employer that desires to use any subjourney classification on a project MUST request the applicable wage rate from the Department of Workforce Development PRIOR to the date such classification is used on such project. Form ERD-10880 is available for this purpose and can be obtained by writing to the Department of Workforce Development, Equal Rights Division, P.O. Box 8928, Madison, WI 53708.

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Bricklayer, Blocklayer or Stonemason	35.37	17.99	53.36
Carpenter	33.68	19.99	53.67
Cement Finisher	32.75	19.21	51.96
Future Increase(s): 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	33.93	22.77	56.70
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Fence Erector	23.73	19.09	42.82
Ironworker	30.77	23.97	54.74
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.			
Line Constructor (Electrical)	37.43	18.19	55.62
Painter	29.22	16.69	45.91
Pavement Marking Operator	30.27	18.79	49.06
Piledriver	30.11	26.51	56.62
Future Increase(s): Add $1.50/hr on 6/1/2015; Add $1.60/hr on 6/1/2016. 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	29.40	17.05	46.45
Teledata Technician or Installer	24.89	17.15	42.04
Tuckpointer, Caulker or Cleaner	33.76	17.82	51.58

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Underwater Diver (Except on Great Lakes)	35.40	15.90	51.30
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	35.55	15.57	51.12
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	31.60	14.64	46.24
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.65	13.44	41.09
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.68	12.83	38.51
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	11.63	33.38
TRUCK DRIVERS			
Single Axle or Two Axle	25.18	18.31	43.49
Future Increase(s): Add $1.15/hr on 6/1/2015. Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Three or More Axle	25.28	18.31	43.59
Future Increase(s): Add $1.15/hr on 6/1/2015. Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Articulated, Euclid, Dumptor, Off Road Material Hauler	30.27	21.15	51.42
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Pavement Marking Vehicle	23.16	17.13	40.29
Shadow or Pilot Vehicle	24.37	17.77	42.14
Truck Mechanic	24.52	17.77	42.29
LABORERS			
General Laborer	27.06	20.03	47.09
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: Add $.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	22.05	18.41	40.46
Landscaper	27.06	20.03	47.09
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Flagperson or Traffic Control Person	22.55	19.37	41.92

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.71	16.01	33.72
Railroad Track Laborer	14.50	4.39	18.89
HEAVY EQUIPMENT OPERATORS			
Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Traveling Crane (Bridge Type). Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.	37.72	21.15	58.87
Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs., & Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.	37.22	21.15	58.37
Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boatmen (NOT Performing Work on the Great Lakes); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, VIbratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane WIth a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type);	36.72	21.15	57.87

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A- Frames. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or WIthout Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.	36.46	21.15	57.61
Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.	36.17	21.15	57.32
Fiber Optic Cable Equipment.	28.89	17.95	46.84
Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
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.	41.65	21.71	63.36
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.	35.72	17.85	53.57
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.	35.46	20.40	55.86

CONTRACT: 20160510013 PROJECT(S): 1060-34-86 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 STORM SEWER ITEMS					
0010	108.4400 CPM Progress Schedule	1.000 EACH		.		.
0020	204.0280 Sealing Pipes	4.000 EACH		.		.
0030	204.9060.S Removing (item description) 0001. CRASH CUSHION	1.000 EACH		.		.
0040	205.0501.S Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	650.000 TON		.		.
0050	520.8000 Concrete Collars for Pipe	2.000 EACH		.		.
0060	603.8000 Concrete Barrier Temporary Precast Delivered	1,825.000 LF		.		.
0070	603.8125 Concrete Barrier Temporary Precast Installed	2,038.000 LF		.		.
0080	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	16.000 LF		.		.
0090	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	16.000 LF		.		.

CONTRACT: 20160510013 PROJECT(S): 1060-34-86 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0100	608.0442 Storm Sewer Pipe Reinforced Concrete Class IV 42-Inch	17.000 LF		.		.
0110	619.1000 Mobilization	1.000 EACH		.		.
0120	624.0100 Water	4.000 MGAL		.		.
0130	628.1104 Erosion Bales	60.000 EACH		.		.
0140	628.1504 Silt Fence	2,450.000 LF		.		.
0150	628.1520 Silt Fence Maintenance	2,450.000 LF		.		.
0160	628.1905 Mobilizations Erosion Control	3.000 EACH		.		.
0170	628.1910 Mobilizations Emergency Erosion Control	3.000 EACH		.		.
0180	628.2004 Erosion Mat Class I Type B	11,000.000 SY		.		.
0190	628.7005 Inlet Protection Type A	3.000 EACH		.		.
0200	628.7020 Inlet Protection Type D	21.000 EACH		.		.

CONTRACT: 20160510013 PROJECT(S): 1060-34-86 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0210	628.7560 Tracking Pads	5.000 EACH		.		.
0220	628.7570 Rock Bags	80.000 EACH		.		.
0230	629.0205 Fertilizer Type A	2.600 CWT		.		.
0240	630.0130 Seeding Mixture No. 30	203.000 LB		.		.
0250	630.0200 Seeding Temporary	363.000 LB		.		.
0260	634.0618 Posts Wood 4x6-Inch X 18-FT	1.000 EACH		.		.
0270	634.0622 Posts Wood 4x6-Inch X 22-FT	4.000 EACH		.		.
0280	635.0200 Sign Supports Structural Steel HS	1,000.000 LB		.		.
0290	636.0100 Sign Supports Concrete Masonry	1.600 CY		.		.
0300	636.0500 Sign Supports Steel Reinforcement	98.000 LB		.		.
0310	638.2101 Moving Signs Type I	2.000 EACH		.		.

CONTRACT: 20160510013 PROJECT(S): 1060-34-86 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0320	638.2102 Moving Signs Type II	1.000 EACH		.		.
0330	638.3000 Removing Small Sign Supports	5.000 EACH		.		.
0340	643.0200 Traffic Control Surveillance and Maintenance (project) 0001. 1060-34-86	132.000 DAY		.		.
0350	643.0300 Traffic Control Drums	3,120.000 DAY		.		.
0360	643.0420 Traffic Control Barricades Type III	170.000 DAY		.		.
0370	643.0705 Traffic Control Warning Lights Type A	340.000 DAY		.		.
0380	643.0715 Traffic Control Warning Lights Type C	590.000 DAY		.		.
0390	643.0800 Traffic Control Arrow Boards	70.000 DAY		.		.
0400	643.0900 Traffic Control Signs	3,068.000 DAY		.		.
0410	643.1050 Traffic Control Signs PCMS	70.000 DAY		.		.
0420	646.0106 Pavement Marking Epoxy 4-Inch	2,609.000 LF		.		.

CONTRACT: 20160510013 PROJECT(S): 1060-34-86 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0430	646.0600 Removing Pavement Markings	2,100.000 LF		.		.
0440	647.0196 Pavement Marking Arrows Epoxy Type 5	4.000 EACH		.		.
0450	647.0955 Removing Pavement Markings Arrows	4.000 EACH		.		.
0460	SPV.0060 Special 0001. CRASH CUSHION TEMPORARY LEFT IN PLACE	1.000 EACH		.		.
0470	SPV.0060 Special 0002. TRAFFIC CONTROL CLOSE-OPEN FREEWAY ENTRANCE RAMP	20.000 EACH		.		.
0480	SPV.0060 Special 0003. TRAFFIC CONTROL INTERIM FREEWAY LANE CLOSURE	10.000 EACH		.		.
0490	SPV.0060 Special 0004. TRAFFIC CONTROL INTERIM FREEWAY TWO LANE CLOSURE	10.000 EACH		.		.
0500	SPV.0060 Special 0005. CRASH CUSHION TEMPORARY	2.000 EACH		.		.
0510	SPV.0060 Special 8005. COVER PLATES LEFT IN PLACE	3.000 EACH		.		.
0520	SPV.0060 Special 8012. MANHOLES 9-FT SPECIAL	3.000 EACH		.		.
0530	SPV.0060 Special 8018. REMOVING BULKHEAD	2.000 EACH		.		.

CONTRACT: 20160510013 PROJECT(S): 1060-34-86 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0540	SPV.0060 Special 8099. INTERMEDIATE JACKING STATION	2.000 EACH		.		.
0550	SPV.0075 Special 8097. OBSTRUCTIONS TUNNEL EXCAVATION	40.000 HRS		.		.
0560	SPV.0090 Special 0001. CONCRETE BARRIER TEMPORARY PRECAST DELIVERED SPECIAL	213.000 LF		.		.
0570	SPV.0090 Special 0002. MAINTAIN CONCRETE BARRIER TEMPORARY PRECAST	213.000 LF		.		.
0580	SPV.0090 Special 0003. FENCE TEMPORARY 6-FOOT	500.000 LF		.		.
0590	SPV.0090 Special 0004. REMOVING CONCRETE BARRIER PRECAST	213.000 LF		.		.
0600	SPV.0090 Special 8096. TUNNEL EXCAVATION	1,767.000 LF		.		.
0610	SPV.0105 Special 0001. SURVEY PROJECT 1060-34-86	LUMP	LUMP			.
0620	SPV.0105 Special 0002. PAVEMENT CLEANUP PROJECT 1060-34-86	LUMP	LUMP			.
0630	SPV.0105 Special 0003. ECAVATING, GRADING, AND SHAPING FOR DEEP STORM SEWER SHAFT LOCATIONS	LUMP	LUMP			.

CONTRACT: 20160510013 PROJECT(S): 1060-34-86 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0640	SPV.0105 Special 8098. CONTROL OF WATER	LUMP	LUMP			.
0650	SPV.0105 Special 8099. GEOTECHNICAL INSTRUMENTATION	LUMP	LUMP			.
0660	SPV.0135 Special 0001. VIBRATION MONITORING	4.000 MON		.		.
0670	SPV.0165 Special 8095. SHAFT EXCAVATION SUPPORT SYSTEM	13,255.000 SF		.		.
0680	SPV.0180 Special 0001. TOPSOIL SPECIAL	11,000.000 SY		.		.
	SECTION 0001 TOTAL					.
	TOTAL BID					.

PLEASE ATTACH SCHEDULE OF ITEMS HERE