HIGHWAY WORK PROPOSAL

Proposal Number: Ø 4

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

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Dane	5992-09-82	WISC 2017 401	City of Verona, North Main Street (Cross Country Road to CTH PD)	CTH M
Dane	5992-09-83	WISC 2017 402	City of Madison, CTH M (CTH PD Intersection)	CTH M
Dane	5992-09-85	WISC 2017 403	City of Madison, South Pleasant View Road (CTH PD to Prairie Hill Road)	CTH M
Dane	5992-09-86		City of Madison, South Pleasant View Road (CTH PD to Prairie Hill Road) (Sanitary Sewer & Watermain)	CTH M
Dane	5992-09-87		City of Verona, North Main Street (Cross Country Road to CTH PD) (Sanitary Sewer & Watermain)	CTH M
Dane	5992-09-88		City of Madison, CTH M (CTH PD Intersection) (Sanitary Sewer)	CTH M

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, $ 1,000,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: August 8, 2017 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time November 1, 2019	
Assigned Disadvantaged Business Enterprise Goal 8 %	This contract is subject to 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 Cleaning and grubbing, earthwork, storm sewer, sanitary sewer, water main, select crushed material, base aggregate, concrete curb and gutter, concrete sidewalk, HMA pavement, MGS guardrail, Structure B-13-845, concrete approach slabs, retaining walls, culverts, topsoil, seeding, sodding, erosion control, street lighting, traffic signals, pavement marking, signing, and traffic control.	
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.

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 5992-09-82, City of Verona, N. Main Street, Cross Country Road to CTH PD, CTH M, Dane County Wisconsin, Project 5992-09-83, City of Madison, CTH M, CTH PD Intersection, CTH M, Dane County, Wisconsin, and Project 5992-09-85, City of Madison, South Pleasant View Road, CTH PD to Prairie Hill Road, CTH M, Dane County, Wisconsin, Project 5992-09-86, City of Madison, South Pleasant View Road, CTH PD to Prairie Hill Road, Sanitary Sewer & Watermain, CTH M, Dane County, Wisconsin; Project 5992-09-87, City of Verona, N. Main Street, Cross Country Road to CTH PD, Sanitary Sewer & Watermain, CTH M, Dane County Wisconsin; and Project 5992-09-88, City of Madison, CTH PD Intersection, Sanitary Sewer, CTH M, Dane 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, 2017 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 (20161130)

2. Scope of Work.

The work under this contract shall consist of clearing and grubbing, earthwork, storm sewer, sanitary sewer, water main, select crushed material, base aggregate, concrete curb and gutter, concrete sidewalk, HMA pavement, MGS guardrail, Structures B-13-845, concrete approach slabs, retaining walls, culverts, topsoil, seeding, sodding, erosion control, street lighting, traffic signals, pavement marking, signing, traffic control, 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. Mandatory Pre-Bid Meeting.

Add the following to standard spec 102.3.1:

Prospective bidders are required to attend a mandatory pre-bid meeting at 8:00 AM, July 13, 2017 at the Larry D. Nelson Engineering Operations Center (Training Conference Room), 1600 Emil Street, Madison, WI 53713.

No meeting minutes will be prepared. Issues discovered at the meeting will be handled by addendum.
stp-102-010 (20150630)

4. Prosecution and Progress.

A General

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

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

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

This is a completion date contract with interim completion dates. Work efforts will possibly require multiple or concurrent controlling operations to occur at the same time. Information included in this Prosecution and Progress article is intended to assist the contractor and its subcontractors and suppliers and shall not be interpreted as a demonstration of specified means and methods or work periods, other than the interim and completion dates. Develop a Relationship Bar Chart (RBC) Progress Schedule as specified in the bid item 'RBC Progress Schedule' to establish the controlling items of work required by the contractor's material production and work efforts to complete all work required by the contract.

B Interim Completion Dates

Stage 1 (2017)

Complete sanitary sewer, water main, storm sewer, select crushed material and base aggregate dense construction on Wellness Way and Meriter Way and complete the Utility Trench Patch Type III Pavement on Meriter Way prior to 12:01 AM December 1, 2017.

If the contractor fails to complete sanitary sewer, water main, storm sewer, select crushed material and base aggregate dense construction on Wellness Way and Meriter Way and complete the Utility Trench Patch Type III Pavement on Meriter Way prior to 12:01 AM December 1, 2017, the department will assess the contractor $2,065 in interim liquidated damages for each calendar day that the work remains incomplete beyond 12:01 AM December 1, 2017. An entire calendar day will be charged for any period within a calendar day that the work is incomplete beyond 12:01 AM.

Complete the required Stage 1 grading and storm sewer construction in advance of work for relocation of ATC owned overhead electric transmission lines prior to 12:01 AM December 15, 2017. Specific details for this work are included in C. Construction Staging. ATC will complete relocation of their overhead electric transmission facilities that are in conflict with the work by April 27, 2018.

If the contractor fails to complete required Stage 1 grading and storm sewer construction in advance of work for relocation of ATC owned overhead electric transmission lines prior to 12:01 AM December 15, 2017, the department will assess the contractor $2,065 in interim liquidated damages for each calendar day that the work remains incomplete beyond 12:01 AM December 15, 2017. An entire calendar day will be charged for any period within a calendar day that the work is incomplete beyond 12:01 AM.

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

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

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

Stage 2, 2B, 3A, and 3B-Preliminary (2018)
Complete all construction operations on Wellness Way and Meriter Way and open Wellness Way and Meriter Way to local traffic prior to 12:01 AM June 15, 2018.

If the contractor fails to complete all construction operations on Wellness Way and Meriter Way and open Wellness Way and Meriter Way to local traffic prior to 12:01 AM June 15, 2018, the department will assess the contractor $2,065 in interim liquidated damages for each calendar day that Wellness Way and Meriter Way remain closed beyond 12:01 AM June 15, 2018. An entire calendar day will be charged for any period within a calendar day that the work is incomplete beyond 12:01 AM.

Complete construction operations on CTH M, CTH PD, and Mid Town Road to the stage necessary to switch traffic to Stage 3 as shown in the staging plans prior to 12:01 AM November 15, 2018. This includes reopening the CTH M and CTH PD intersection to all traffic movements after the short-term closures allowed according to the traffic article. Do not switch traffic to Stage 3 until completing the following work: Concrete curb and gutter, HMA pavement, temporary traffic signals, temporary traffic control, pavement marking, signing, and restoration work, including topsoil, seed, and erosion control on finished areas that will be adjacent to Stage 3 traffic lanes.

If the contractor fails to complete construction operations on CTH M, CTH PD, and Mid Town Road to the stage necessary to switch traffic to Stage 3 as shown in the staging plans prior to 12:01 AM November 15, 2018, the department will assess the contractor $2,065 in interim liquidated damages for each calendar day that the work is incomplete beyond 12:01 AM November 15, 2018. An entire calendar day will be charged for any period within a calendar day that the work is incomplete beyond 12:01 AM.

Complete all work on Raymond Road and reopen Raymond Road, Meriter Way, and Wellness Way to all traffic prior to 12:01 AM November 15, 2018.

If the contractor fails to complete all work on Raymond Road and reopen Raymond Road, Meriter Way, and Wellness Way to all traffic prior to 12:01 AM November 15, 2018, the department will assess the contractor $2,065 in interim liquidated damages for each calendar day that Raymond Road, Meriter Way and Wellness Way remain closed beyond 12:01 AM November 15, 2018. An entire calendar day will be charged for any period within a calendar day that the work is incomplete beyond 12:01 AM.

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

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

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

C Construction Staging

The schedule of operations shall conform to the construction staging as shown in the Traffic Control plans, unless modifications to the plans are approved in writing by the engineer. Stations in the descriptions below are approximate.

The established construction schedule for the contract will involve coordination of construction activities with other projects, which are included in the article entitled Other Contracts.

Stage 1

Stage 1 work consists of utility construction on Raymond Road and limited grading and storm sewer construction work on CTH M, CTH PD and Mid Town Road to prepare sites for utility relocations and provide preliminary subgrade surcharging at designated roadway embankment areas where settlement concerns have been identified.

Maintain all existing roadway pavement, signing, marking, traffic signals, street lighting, and roadside barriers during Stage 1, except as specifically noted in the construction staging plans.

Do not begin Stage 2 work in 2017.

Stage 1A - Raymond Road (2017)

- Construct the storm sewer below Raymond Road from the outlet to Raymond Road. Prior to closing Raymond Road to through traffic for Stage 1B, construct the temporary driveway to the Meriter Health Child & Adolescent Psychiatric Clinic.

- Complete the grading, erosion control, and restoration work between Raymond Road and the storm sewer outlet and re-route the Ice Age National Scenic Trail (IANST) to the pre-construction alignment and Raymond Road crossing condition.
- Construct the temporary pavement for the Ice Age Junction Multi-Use Path and return the path to the pre-construction alignment. Do not disturb the existing detectable warning field and trail crossing signage on Raymond Road.
- Construct the temporary roadway between Raymond Road and CTH PD to provide access to Raymond Road residents from CTH PD for Stage 1B work.

Stage 1B - Raymond Road (2017 – 2018)

- Construct the storm sewer, sanitary sewer, and water main below Raymond Road.
- Remove the temporary driveway to the Meriter Health Child & Adolescent Psychiatric Clinic after the storm sewer and water main is completed past the clinic's pre-construction driveway location and restore access at the existing driveway location.
- Construct Raymond Road to the finish base aggregate dense surface for local traffic use prior to a winter shutdown.

Stage 1 - Meriter Way and Wellness Way (2017)

- Complete water main, sanitary sewer, storm sewer, grading, select crushed material and base aggregate dense on Wellness Way and Meriter Way.
- Complete the water main on Meriter Way to the connection at CTH PD and complete the Utility Trench Patch Type III pavement. Construct, test, and obtain Madison Water Utility acceptance of the main on Meriter Way for service availability to the Meriter Health Clinic.
- Construct a temporary roadway connection on base aggregate dense surface between Station 1"MEW"+00 Wellness Way and existing Raymond Road.
- Complete Stage 1 work on Meriter Way and Wellness Way according to the interim completion dates.

Stage 1 – CTH M, CTH PD, and Mid Town Road (2017)

Grade the proposed roadway subgrade to within one-foot of plan elevation at the following locations and as shown on the construction staging plans. Complete this work to allow for relocation of ATC owned overhead electric transmission lines (by others). The controlling elevation for plan elevation for this stage is the proposed sidewalk terrace grade elevation between the sidewalk or multi-use path and back of proposed curb.

- Station 121 'NB'+00 to Station 128 'NB'+00 RT
- Station 134 'NB'+00 to Station 142 'NB'+50 RT
- Station 142 'SB'+50 to Station 162 'SB'+50 LT
- Station 197 'SB'+50 to Station 207 'SB'+ 00 LT

Grade the locations above to maintain drainage off the existing roadway and provide drainage for the constructed grade. The contractor may construct other areas of subgrade construction as a source for embankment fill material. Perform all grading and erosion control work outside of the existing roadway shoulder and clear zone. Place topsoil, seed, and install permanent erosion control on finished subgrade surfaces outside the proposed path or sidewalk limits. Temporary seed and install temporary erosion control on subgrade areas between the existing roadway and finish sidewalk location. Complete the Stage 1 grading in advance of ATC overhead transmission line relocation work as required in B. Interim Completion Dates.

Clear and grub as required to complete Stage 1 grading requirements, Stage 1 utility installations, and at the following locations in advance of ATC overhead transmission line relocation work:

- Station 110 'NB'+00 to Station 113 'NB'+50 RT
- Station 115 'NB'+00 to Station 118 'NB'+00 RT
- Station 127 'NB'+00 to Station 129 'NB'+00 RT
- Station 142 'SB'+50 to Station 162 'SB'+50 LT
- Station 194 'SB'+00 to Station 195 'SB'+00 LT
- Station 202 'SB'+00 to Station 210 'SB'+ 00 LT

Construct storm the storm sewer trunk between Structures 10.1 and 14.3 and between Structures 15.2 and 19.1.

Construct the following roadway fill surcharges as described in section D. Roadway Embankment Surcharging. Perform all grading and erosion control work outside of the existing roadway shoulder. Shape the grade to maintain drainage off the existing roadway and provide drainage for the constructed roadway embankment. Place topsoil, seed, and install permanent erosion control on finished subgrade surfaces outside the proposed path or sidewalk limits. Temporary seed and install temporary erosion control on any areas not constructed to finish subgrade.

- Station 115 'SB'+15 to Station 124 'SB'+50 Left
- Station 142 'SB'+50 to Station 148 'SB'+50 Left
- Station 178 'NB'+00 to Station 180 'NB'+00 Right *
- Station 303 'WB'+00 to Station 316 'WB'+00 Left (includes 'WB UP' alignment)
- Station 400 'EB'+00 to Station 403 'EB'+50 Right *

  * Roadway fill surcharges at these locations can be completed during Stage 2 pending the contractor's schedule of operations. The estimated surcharge duration time prior to commencing work on structures at these locations is described in section D. Roadway Embankment Surcharging. Install Settlement Gauges at the plan locations to monitor settlement.

Do not disturb planted crops or hay field between Station 170”NB” Right and 197”NB” Right and between 411”WB” Left and 421”WB” Left before October 15, 2017.

Utility Relocation (December 15, 2017 to April 27, 2018)
ATC will relocate their overhead utility facility between the substation at the CTH M and CTH PD intersection and the north project limits according to the utility section. Interim completion dates and liquidated damages are included for completing grading operations in advance of ATC relocation work.

Stage 2
Stage 2 work generally occurs outside of the existing roadways that are required to remain open to traffic. Further breakdown and detail of Stage 2 work, including Stage 2 Preliminary, Stage 2A and Stage 2B are noted.

Stage 2 Preliminary work consists of removing existing raised medians, construction of temporary pavements, constructing temporary drainage, removing pavement markings, placing temporary pavement markings, and installing temporary traffic signals and traffic control devices. Specific details for Stage 2 Preliminary work are called out on Stage 2 and Stage 2A traffic control plans.

Stage 2A and Stage 2B run concurrently with Stage 2 work. Stage 2A and Stage 2B are included in some areas to provide staging for controlling work items that require completion in Stage 2A prior to completion of all remaining Stage 2 work in Stage 2B.

Place permanent and temporary pavement marking epoxy for all Stage 3 pavement markings placed in Stage 2 that will be in place over the winter. Place finished pavement markings on Raymond Road, Wellness Way, Meriter Way, and all completed side road intersections per the signing and marking plans. For mainline pavements, place permanent pavement markings in locations where Stage 3 traffic is in a final traffic configuration and the pavement markings will not conflict with future staging needs. For all other areas on mainline pavement, place temporary pavement marking epoxy per the traffic control staging plans.

Grade between the finished work in Stage 2 and the existing travel lanes to a grade of 4:1 or flatter in fill conditions where Stage 3 traffic will be elevated from the existing grade. In cut conditions, grade to 3:1 or flatter. Grades steeper than 3:1 are acceptable if there is a clear runout area at the bottom of the fill slope or the slope is shielded. Install concrete barrier temporary precast at the plan locations or as directed by the engineer when these conditions are not met.

Stage 2A – Raymond Road (2018)

- Complete all remaining work on Raymond Road between Station 503’R’+00 and 531’R’+00.

Stage 2A – Meriter Way and Wellness Way (2018)

- Complete all remaining work on Meriter Way and Wellness Way.

Stage 2B – Raymond Road (2018)

- Complete water main between Station 531'R'+00 and the project limits.
- Construct Structure C-13-2084.
- Complete all remaining work between Station 531'R'+00 and the project limits.

Stage 2-Prelim – CTH M (2018)

- Remove existing median curb and gutter and construct temporary pavement for Stage 2a and Stage 2 traffic control.
- Construct the storm sewer from EW 16.A to a point between Structure MH16.1 and MH15.2.

Stage 2 – CTH M (2018)

- Construct the northbound lanes of CTH M between Station 65'NB'+33 and Station 108 'NB'+50. Between Station 86'NB'+50 and Station 108'NB'+50, the median northbound lane will not be completed until Stage 3A.
- Construct the stormwater ponds between Station 88'NB'+00 and Station 94'NB'+00 Right.
- Construct the southbound lanes of CTH M between B-13-845 and Station 122'SB'+00.
- Construct the northbound lanes of CTH M between Station 123'NB'+50 and Station 140'NB'+00.
- Construct the west segment of C-13-2080 and C-13-2081 and construct retaining walls R-13-292 and R-13-293.
- Construct the southbound lanes of CTH M between Station 140'SB'+00 and Station 169'SB'+50.
- Construct the northbound lanes of CTH M between Station 170'NB'+50 and Station 208'NB'+00.
- Construct the east segment of C-13-2082. Provide a temporary connection drainage channel between the completed end of C-13-2082 and the existing cross culvert at Station 178'NB'+95.

Stage 2A – CTH PD and CTH M/CTH PD Intersection (2018)

- Construct the MMSD sanitary sewer between Structures MH12-307 to MH12-311. Close CTH PD east of CTH M and close CTH M south of CTH PD to all traffic according to the requirements of the traffic article in these to complete this work.
- Construct the storm sewer between Structures 9.1 and 9.3 and between Structures 9.3 and 35.3. Close CTH M south of CTH PD to all traffic according to the requirements of the traffic article in these to complete this work.
- Construct the storm sewer between Structures 9.1 and 8.2. Construct the east end of the culvert pipe at Station 109'NB'+55.

- Construct temporary pavement widening for CTH M between Station 110'NB'+15 and Station 116'NB'+75 Right.
- Construct the temporary roadway for CTH PD traffic, Station 306'EB'+50 to Station 320'EB'+00.
- Begin construction of the west side of B-13-845.

Stage 2B – CTH PD and CTH M/CTH PD Intersection (2018)

- Construct the roadway embankment fill for CTH PD between Station 312'WB'+00 and Station 317'WB'+00 according to the Roadway Embankment Surcharging section of this article.
- Construct the north segment of C-13-2086.
- Construct walls R-13-300 and R-13-301.
- Construct wall R-13-303 to the construction joint at wall point E.
- Construct the sanitary sewer from MMSD Structure MH12-311 to Station 106'SB'+00.
- Construct the water main from Station 106'SB'+00 to Station 112'SB'+00.
- Construct the southbound lanes of CTH M between Station 107 'SB'+00 and Station 112 'SB'+00.
- Complete construction of the west side of B-13-845.
- Construct the westbound lanes of CTH PD between Station 300 'WB'+50 and CTH M.
- Construct the westbound lanes of CTH PD between Station 318'WB'+50 and Meriter Way.

Stage 2A – Mid Town Road (2018)

- Relocate the southernmost water main in conflict with the Structure C-13-2085.
- Construct the temporary roadway widening from Station 401'EB'+75 to CTH M.
- Construct the westbound lanes of Mid Town Road from Station 411'WB'+50 to Station 417'WB'+00. Connect these lane to the existing Mid Town Road pavement with temporary pavement.
- Remove existing median cub and gutter and construct temporary pavement at the Waldorf Boulevard and Jeffy Trail intersection.

Stage 2B – Mid Town Road (2018)

- Construct the south half of Structure C-13-2083.
- Construct the south half of Structure C-13-2085.
- Construct retaining walls R-13-298 and R-13-299.
- Construct the eastbound lanes of Mid Town Road from Station 400'EB'+00 to Station 410'EB'+50.
- Construct the eastbound lanes of Mid Town Road from Station 411'EB'+00 to Station 429'EB'+00.

Stage 3
Complete all Stage 2 work, and complete all Stage 3A work and all Stage 3B Preliminary work at the CTH M and CTH PD intersection prior to the completion the interim completion date and any winter work suspension between 2018 and 2019. The contractor may begin work in Stage 3 or 3B in 2018 according to the winter suspension requirements in the Traffic article.

The Traffic Control Staging plans include required locations for installing Concrete Barrier Temporary Precast. Install the barrier at the plan locations and as approved by the engineer to provide traffic control guidance and long term lane and roadway closures for an anticipated winter work suspension. Complete the installation and adjust temporary traffic control devices as directed in the Traffic article prior to any work suspension. Request the engineer's approval in writing for any changes to the traffic control to accommodate work or an end to a winter work suspension. Provide the request a minimum of 14 calendar days prior to requiring the change.

The contract work includes Temporary Pavement Marking Epoxy bid items for lane lines, edge lines, and lane designation markings (words and arrows). Place these markings as shown in the traffic control plans prior to switching traffic to a configuration that will remain over the winter.

Stage 3A – CTH M (2018)

- Construct the northbound median lane of CTH M from Station 88'NB'+00 to Station 105"NB"+50. Close the southbound lane of CTH M to traffic to complete grading work and extend storm sewer, sanitary sewer, and water main crossings across the existing CTH M roadway according to the requirements of the traffic article.
- Construct the southbound lanes of CTH M from Station 112'SB'+00 to Station 113'SB'+50. Construct the temporary pavement widening required for Stage 3B traffic (northbound right turn lane). Close the west leg of the CTH PD intersection according to the requirements of the traffic article. Upon completion of the pavement, pavement marking, signing, and temporary traffic signals for Stage 3B, immediately switch traffic to Stage 3B-Preliminary.

Stage 3B – Preliminary (2018)

- Construct the northbound lanes of CTH M between Station 113'NB'+00 and Station 113'NB+90 and construct the temporary pavement to the east for the east leg of the CTH M and CTH PD intersection. Close the east leg of the CTH PD intersection according to the requirements of the traffic article.

Stage 3 - CTH M (2019)

- Construct the water main from Station 69'SB'+25 to Station 83'SB'+50.
- Construct retaining wall R-13-307.
- Construct the southbound lanes of CTH M from Station 68'SB'+00 to Station 85'SB'+00.
- Construct the sanitary sewer from Station 101'SB'+00 to Station 106'SB'+00.

- Construct the northbound lanes of CTH M from Station 114'NB'+25 to Station 121'NB'+50.
- Construct the southbound lanes of CTH M from Station 122'SB'+00 to Station 142'SB'+00.
- Complete construction of C-13-2080 and C-13-2081.
- Construct R-13-294 and R-13-295.
- Construct the northbound lanes of CTH M from Station 141'NB'+50 to Station 168'NB'+00.
- Construct the southbound lanes of CTH M from Station 170'SB'+00 to Station 209'SB'+00.
- Construct the remaining northbound lanes of CTH M from Station'NB'+50 to Station 213'NB'+00.

Stage 3B – CTH M (2019)

- Construct the sanitary sewer from Station 83'SB'+00 to Station 101'SB'+00.
- Construct the water main from Station 83'SB'+50 to Station 106'SB'+00.
- Construct the southbound lanes of CTH M from Station 85'SB'+00 to Station 107'SB'+00.
- Construct the northbound lanes of CTH M from Station 109'NB'+00 to Station 113'NB'+25.
- Complete construction of B-13-845 and the Westbound underpass lanes below the bridge.

Stage 3B - CTH PD (2019)

- Construct the eastbound lanes of CTH PD from Station 307'EB'+00 to Station 316'EB'+50. Construct the roadway embankment from Station 310'EB'+00 to Station 316'EB'+50 according to the Roadway Embankment Surcharging requirements in this article.
- Complete construction of C-13-2086 and R-13-303.
- Construct R-13-302.
- Construct the eastbound lanes of CTH PD from Station 318'EB'+00 to Meriter Way.

Stage 3 – Mid Town Road (2019)

- Construct the westbound lanes of Mid Town Road from Station 400'WB'+50 to Station 410'WB'+00.
- Construct the westbound lanes of Mid Town Road from Station 417'WB'+00 to Station 428'WB'+00.

Stage 4 - CTH M, CTH PD, and Mid Town Road

Stage 4 work includes completing all remaining curb and gutter and pavement sections not completed during Stage 2 or Stage 3. Stages 4A and 4B are identified where multiple traffic control is required to complete the work.

During Stage 4, complete all remaining work on the following items:

- Median sidewalk and architectural pavement
- Site restoration (topsoil, seeding, erosion matting, sod lawn)
- Street lighting system
- Permanent traffic signals
- Permanent signing

Stage 4 - Removing cross overs:
Stake the finish concrete curb and gutter and saw the temporary asphaltic surface for removal at the flag line of the finish curb and gutter. Reconstruct the median curb and gutter tight to the saw cut line, no more than 2-inch from the saw cut line. Fill any void between the curb and gutter flange and the lower pavement layers to remain with HMA and thoroughly compact. Mill the existing surface layer and pave the new surface layer at the plan locations.

Stage 4 and Stage 5 – Removing temporary pavement markings:
Remove temporary pavement markings from finish surface pavement using the bid items Removing Pavement Markings Water Blasting.

Stage 5 - CTH M, CTH PD, and Mid Town Road

- Place remaining permanent Pavement Marking Epoxy.

D Roadway Embankment Surcharging
Construct the roadway embankments to the grade elevations indicated within each station range below to surcharge the existing ground and pre-consolidate subgrade soils. Minimum durations for surcharge are included and are measured from the time that the surcharge elevation achieves the required elevation. The bid item Settlement Gauges is included to monitor settlement.

- Station 115 ‘SB’+15 to Station 124 ‘SB’+50 Left (Stage 1). Construct the roadway embankment to within 6-inches of final roadway surface elevation. The surcharge loading duration shall be 4 months. Do not begin excavation for construction of the substructure units of B-13-845 or complete final subgrade grading before the 4-month time has elapsed unless approved by the engineer.
- Station 142 ‘SB’+50 to Station 148 ‘SB’+50 Left (Stage 1). Construct the roadway embankment to a minimum elevation of 1020.00. The surcharge load duration shall be 2 months. Do not begin excavation for construction of the substructure units of R-13-292, R-13-293, C-13-2080, or C-13-2081, or complete final subgrade grading before the 4-month time has elapsed unless approved by the engineer. Prior to placing the fill, install a temporary culvert extension for the existing cross culvert.
- Station 178 ‘NB’+00 to Station 180 ‘NB’+00 Right (Stage 1 or Stage 2). Construct the roadway embankment to within 6-inches of final subgrade elevation. The surcharge loading duration shall be 2 months. Do not begin excavation for the construction of Structure C-13-2082 before the 2-month time has elapsed unless approved by the engineer.

- Station 303 ‘WB’+00 to Station 316 ‘WB’+00 Left (including the ‘WB UP’ alignment) (Stage 1 or Stage 2). Construct the roadway embankment to within 6-inches of final subgrade elevation. The surcharge loading duration shall be 1 month. Do not begin excavation for the construction of Structures C-13-2086, R-13-300, or R-13-301 before the 2-month time has elapsed unless approved by the engineer.
- Station 400 ‘EB’+00 to Station 403 ‘EB’+50 Right (Stage 1 or Stage 2). Construct the roadway embankment to within 6-inches of final subgrade elevation. The surcharge loading duration shall be 2 months. Do not begin excavation for the construction of Structure C-13-2083 before the 2-month time has elapsed unless approved by the engineer.
- Station 312 ‘WB’+00 to Station 317 ‘WB’+00 Left (Stage 2B). Construct the roadway embankment to within 6-inches of final subgrade elevation. The surcharge loading duration shall be 1 month. Do not begin excavation for the construction of Structures C-13-2086, R-13-300, or R-13-301 before the 1-month time has elapsed unless approved by the engineer.
- Station 310’EB’+00 to Station 316’EB’+00 Right (Stage 3). Construct the roadway embankment to within 6-inches of final subgrade elevation. The surcharge loading duration shall be 1 month. Do not begin excavation for the construction of Structures C-13-2086, R-13-302, or R-13-303 before the 1-month time has elapsed unless approved by the engineer.

E HMA Paving

Construct HMA pavement lanes to the lines and grades as shown on the paving details and traffic control plans. Construct all pavement to full pavement thickness and full lane width in the stage shown, unless the traffic control plans or engineer directs otherwise. When constructing roadways only partial width to accommodate staging, pave the lane farthest from completed curb and gutter an additional foot wider than the typical section lane width. The surface layer of this additional pavement width shall be milled off with the bid item Milling Longitudinal Joints to provide a clean but joint for paving subsequent surface layers.

F Contractor Coordination

Have a superintendent or designated representative for the prime contractor on the job site during all work operations, including periods limited to only subcontractor work operations, to serve as a primary contact person and to coordinate all work operations.

Conduct weekly progress meetings. The contractor’s superintendent or representative, designated materials representative, subcontractor’s representatives for ongoing subcontract work or subcontract work expected to begin within the next three weeks shall attend. Provide and discuss the schedule and updates to the RBC schedule at the weekly progress meetings. Agenda items at the meeting shall include, but not be limited to, the following:

- Review of the contractor’s and subcontractors’ schedule. Indicate if the project is on, ahead or behind schedule. If behind indicate why, how much behind and how the project will get back on schedule.
- Utility conflicts and relocation schedule.
- Evaluation of progress to date.

- Outstanding Requests for Information (RFI's) or issues that may cause contract modifications.
- Shop drawing submittal status.
- Materials submittal status.
- Materials sampling and testing activities and results.
- Lane and road closure schedules.
- Impacts to businesses and private properties.
- Impacts to bus routes, emergency services, postal services.
- Equipment status of orders and deliveries.
- Plans and schedules for upcoming work to prevent potential conflicts between contractors.

Based on the weekly progress meeting, if the engineer requests a new revised schedule, submit it according to standard spec 108.4. Failure to submit a revised schedule shall result in the engineer holding pay requests according to standard spec 108.4.

Contact and coordinate with City of Madison for signal timing and phasing setup for temporary signals a minimum of 10 working days prior to the start of a traffic change or stage. The City of Madison Traffic Engineering contact for this project is Brian Smith, (608) 261-9625.

Notify property owners, business owners, and residents a minimum of 48 hours in advance of commencing any work that will restrict or close access to the property or shut off water service. A property owner list will be provided to the contractor.

Notify the Meriter Health Child & Adolescent Psychiatric Clinic and residents on Raymond Road a minimum of 48 hours in advance of switching access routes to Raymond Road. Access to these properties is required at all times and may be provided via the temporary roadway between Raymond Road and CTH PD, Meriter Way and Wellness Way, or the north project limits.

Notify the City of Verona Public Works Department five working days in advance of requiring the school crossing guard shelter removed at the corner of Prairie Oaks Drive and CTH M. The Public Works Department will remove and salvage this shelter, but not prior to June 8, 2018.

Notify Dane County Parks staff a minimum of seven calendar days prior to beginning any work within the limits of Dane County Park lands, inclusive of erosion control. Contact Chris James, (608)224-3763 James@countyofdane.com.

G Work Restrictions

Where a closure has been permitted by the engineer in conjunction with the contractor's work schedule, make a continuous effort to complete the work within the said closure in a timely manner.

At the beginning of any side street closure for underground utility, grading, or paving operations, close the side street to through traffic for a maximum of the calendar days listed for each side street. Do not reopen until completing the following work: restoration of the side street access to a surface consisting of base aggregate dense 1 ¼", salvaged asphaltic pavement base aggregate, temporary pavement, or HMA pavement as proposed for final paving. If opening to traffic on proposed final paving, complete both of the lower paving layers.

Do not conduct construction operations on both sides of open traffic lanes without written permission from the engineer.

Complete underground utility, grading, and roadway construction (base, curb, pavement) south of Station 71+00 during Verona Public Schools summer recess. This period is estimated to be June 9, 2018 to August 31, 2018 and June 8, 2019 to August 31, 2019. Confirm these dates with the engineer before commencing work in 2018 and 2019.

H Northern Long-eared Bat (*Myotis septentrionalis*)
Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees. 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. If an individual bat or active roost is encountered during construction operations, stop work and notify the engineer and the WisDOT Regional Environmental Coordinator (REC).

According to the final 4(d) rule issued for the NLEB, the department has determined that the proposed activity may affect, but will not result in prohibited take of the NLEB. The activity involves tree removal, but will not occur within 0.25 miles of a known hibernacula, nor will the activity remove a known maternity roost tree or any other tree within 150 feet of a known maternity roost tree.

If additional trees need to be removed, no Clearing shall occur without prior approval from the engineer, following coordination with the WisDOT 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 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 ECIP.

I Rusty Patched Bumble Bee (*Bombus affinis*)
Rusty patched bumble bees have the potential to inhabit the project limits because there are confirmed habitat areas within 10 kilometers of the project limits. Habitat may not have been observed on this project, but conditions to support the species may exist. This species is protected by the Federal Endangered Species Act. If a population of bees is encountered during construction operations, stop work, and notify the engineer and the WisDOT Regional Environmental Coordinator (REC)."

5. Traffic.

A General
Perform work conforming to the requirements of standard spec 643, the Manual on Uniform Traffic Control Devices (MUTCD) and as hereinafter provided.

Replace standard spec 104.6.1 (2) with the following:

> Maintain, at no cost to the department, only those facilities or portions of facilities, including the roadbed surfaces, on which construction has begun or been completed, or has been damaged by the contractor's operations or has been damaged due to the contractor's negligence or noncompliance with the requirements of the contract.
>
> Maintain existing pavement surface and structure, pavement markings, and traffic signs on roadways open to traffic for the entire project once construction operations begin. The department will pay for materials that engineer deems necessary to maintain these items at contract unit prices, or as extra work.

Provide 24 hours-a-day availability of equipment and forces to expeditiously restore devices such as, but not limited to, concrete barrier temporary precast (maintain a barrier clamp on site at all times), crash cushions, pavement marking, lights, signs, drums, barricades, arrow boards or other traffic control devices that are damaged or disturbed. Provide equipment and forces on site within 1 hour of being notified by the engineer of a disturbed or damaged device. The department will pay for materials that engineer deems necessary to maintain these items at contract unit prices, or as extra work, if the disturbance or damage is not the result of the contractor's operations, negligence or noncompliance with the requirements of the contract. Payment for maintaining a clamp on site at all times for concrete barrier temporary precast is incidental to pay item concrete barrier temporary precast.

Before starting any work, provide the State Patrol, Dane County Sheriff's Office, City of Verona Police Department, City of Verona Fire Department, City of Madison Police Department, City of Madison Fire Department, Fitch-Rona EMS, and the engineer a current telephone number for at least three individuals which the contractor or his representatives can be contacted 24 hours-a-day in the event a safety hazard develops. Also contact the above listed parties, as well as local emergency services, local school districts and Madison Metro (to discuss bus routes), and the post office, prior to starting work and at critical times; such as traffic switches, detours and road closures to inform them of traffic modifications.

Do not disturb, remove or obliterate any traffic control signs, advisory signs, shoulder delineators, beam guard or temporary concrete barriers in place along the traveled roadways without the approval of the engineer. Immediately repair or replace any damage done to the above during the construction operations at contractor expense.

Submit to the engineer for approval a detailed traffic control plan for any changes to the proposed traffic control shown on the plans. Submit the plan 14 calendar days prior to the preconstruction conference, or if after the preconstruction conference, 14 calendar days prior to the intended use of the revised traffic control. A request does not constitute approval.

Conduct operations in such a manner that causes the least interference and inconvenience to the free flow of vehicles, bicyclists and pedestrians on the roadways. This includes the following:

- Do not park or store any vehicle, piece of equipment, or construction materials within the clear zone without approval of the engineer.
- All construction vehicles and equipment entering or leaving live traffic lanes must yield to through traffic, bicyclists and pedestrians.
- All construction access is subject to approval of the engineer.
- Equip all vehicles and equipment entering or leaving the live traffic lanes with a high-intensity rotating, flashing, oscillating, or strobe lights according to Section 6G.02 of the Manual of Uniform Traffic Control Devices (FHWA, 2009).
- Maintain vehicle and pedestrian access at all times to buildings within the limits of construction. Provide temporary sidewalk, crosswalk, bicycle access and bus access as described in the special provisions under bid items Temporary Pedestrian Surface Asphalt and as detailed in the plans. Provide temporary sidewalk, crosswalk, bicycle access and bus access according to the current Americans with Disabilities Act Accessibility Guidelines (ADAAG), which are free from mud, sand, and other construction debris. Provide temporary curb ramps throughout construction operations as described in the special provisions under bid item Temporary Curb Ramp, according to the ADAAG.
- Additional intermediate construction staging or staging gaps, not shown on the plans, may be necessary to maintain continuous property access. If the contractor coordinates the closure of any access to a business or private property with the owner(s), provide written documentation of coordination with the owner(s) to the engineer 48 hours in advance of the closure.
- Do not deliver and store materials and equipment within open travel lanes, open side roads, bike paths, pedestrian paths, or sidewalks during any stage of construction. Temporary lane closures and/or halting of traffic within open roadways and pedestrian paths require flaggers and will not be permitted outside the lane closure hours defined within this article. Flagging operations will be incidental to the work item being performed for the contract according to standard spec 104.6.1(4).

Notify local law enforcement and emergency personnel a minimum of 72 hours in advance switching traffic patterns for staged construction, setting lane, traffic movement, or road closures, or otherwise restrict traffic flow. Include notification to the following agencies:

- Dane County Sheriff
- City of Madison Police Department
- City of Verona Police Department
- University of Wisconsin Madison Police Department
- City of Madison Fire Department
- City of Verona Fire Department

Furnish and operate Portable Changeable Message Signs (PCMS) for all roadway or specific movement closures for a minimum of 7 calendar days in advance of the closure, unless specified otherwise. Locate the advance notice PCMS signs near the location where the closure is located.

Furnish and operate PCMS signs in advance of detour routes at the locations shown on the detour plans. Operate the PCMS for the duration of the detour. Turn off and remove the PCMS within 4 hours of reopening the closed roadway to through traffic.

Furnish and operate PCMS signs in advance of any traffic pattern or staging switches. Locate the signs in advance of the traffic pattern switch.

Place PCMS a minimum of 7 calendar days prior to starting work that requires temporary traffic control devices on CTH M, CTH PD, or Mid Town Road. Locate the PCMS near, but in advance of the planned work areas. This includes the commencement of Stage 1 work in 2017, Stage 2 work in 2018, and resuming Stage 3 work in 2019.

Submit all PCMS messages to the engineer a minimum of 7 calendar days in advance of operating PCMS for review. The engineer must approve all PCMS messages.

Upon switching traffic to any permanent or temporary roadways or combination thereof, designate a representative to monitor the condition of the traffic and roadways for a period of not less than eight consecutive hours after traffic is switched and prior to beginning any work on the next stage or phase. Monitoring the switched traffic is incidental to bid item Traffic Control Surveillance and Maintenance. Should the permanent or temporary roadways or combination thereof show any signs of distress, failure, or lack of drainage immediately notify the engineer. Following a traffic switch, should traffic begin to utilize lanes or intersections incorrectly from that shown on the plans immediately notify the engineer.

Closure and traffic switch requests will be reviewed by the engineer and final weekly schedule information will be forwarded to the local media on each Friday by 9:00 AM by the engineer.

B Traffic Operations

This information is included to assist the contractor and its subcontractors; do not interpret this information as a demonstration of specified means and methods. Coordinate the schedule of operations for the construction staging as shown in the plans and as noted in these special provisions. Do not move operations within the proposed construction staging unless modifications to the staging and schedule are approved in writing by the engineer.

General traffic operations during all stages

Maintain one lane of traffic in each direction at all times on CTH M, CTH PD, and Mid Town Road except for lane and roadway closures according to this article.

Maintain a minimum lane width of 11-feet on a paved surface for each direction of traffic on CTH M, CTH PD, and Mid Town Road at all times during construction.

Temporary shoulder closures are allowed to complete various construction for various stages of the project. Conform to the shoulder closure restrictions in Section C of this article.

During daytime construction operations on the local side roads, except as shown in the plans, maintain at least one lane open to local traffic. Flagging may be required and is incidental to the work item being performed. Maintain a minimum width of 16 feet and a paved or base aggregate dense surface for open lane(s). Open the roadway to the existing width when flaggers and work operations are not present on the local side roads. Closures of local side roads are allowed as described in Section C. of this article.

Maintain bicycle and pedestrian traffic on the Ice Age Junction multi-use path at all times. The traffic control plans include temporary paving and detour routing for the path crossing of Raymond Road. Detour routes for the Ice Age Junction multi-use path shall be constructed according to current ADAAG guidelines.

Maintain pedestrian access for the Ice Age National Scenic Trail (IANST) at all times. The traffic control plans include temporary signing and detour route locations. Detour routes for the IANST shall be a minimum width of 5-feet of established turf grass, base aggregate, or paved surface, and have a maximum longitudinal slope of 10%.

Furnish and operate PCMS on CTH M, CTH PD, and Mid Town Road for seven calendar days in advance of, and, for seven days after a switch in traffic patterns. Locate the PCMS in advance of the traffic pattern switch location.

Traffic operations – Stage 1 (2017-2018)

Maintain all traffic on existing travel lanes utilizing existing pavement markings, signs, and traffic signal equipment, except as noted for Raymond Road. Install temporary traffic control devices in the work zones as described in the traffic control plans. Close shoulders only in areas of active work areas as needed to complete the required work operations. Upon completion of the work, remove the temporary traffic control devices.

Raymond Road – Stage 1A (2017)

- Maintain all traffic on Raymond Road between CTH PD and the project limits. Maintain access to residents on Raymond Road and to the Meriter Health Child & Adolescent Psychiatric Clinic driveway at all times.
- Detour the Ice Age Junction Path and Ice Age National Scenic Trail (IANST) along the Meriter Health Child & Adolescent Psychiatric Clinic Driveway and along Raymond Road.

Raymond Road – Stage 1B (2017 – 2018)

- Close Raymond Road to through traffic. Furnish and operate PCMS on Raymond Road for seven calendar days in advance of the closure.
- Provide access to the Meriter Health Child & Adolescent Psychiatric Clinic Provide through the north project limits.
- Provide access to residents on Raymond Road via the temporary roadway constructed in Stage 1A and close the existing Raymond Road connection to CTH PD. Once the storm sewer and sanitary sewer are completed on Raymond Road between Wellness Way and the north project limits, provide access to Raymond Road from Meriter Way and Wellness Way. Close the temporary Raymond Road access road once access to all residents on Raymond Road is provided via Meriter Way and Wellness Way. At all times, provide access to Raymond Road residents. Temporary access roads alongside the progressing work may be utilized and shall conform to the following requirements:
  - Minimum accessible clear width of 18’ on a compacted aggregate surface, asphaltic pavement millings, or paved surface. The access route for vehicles shall be clear of obstructions or hazards, including material stockpiles, equipment, exposed utility structures, and open excavations. The access route shall be a minimum of 15’ wide. Delineate hazards adjacent to the route with traffic control devices.
  - Maintain the driving surface of the access route to be free of ruts, holes, and bumps and in a condition passable to passenger, parcel and mail delivery, emergency, and service (i.e. refuse pickup), vehicles.
- Provide eastbound left turn access from CTH PD to Raymond Road via the temporary road constructed in Stage 1A, east of the existing Raymond Road connection. Maintain this turn lane until Meriter Way and Wellness Way are constructed to final pavement condition.
- Restore the alignments and maintain access for the Ice Age Junction Path and IANST. Maintain the Ice Age Junction Path on a paved surface that meets ADA requirements at all times.

Intersections

All intersections remain open to traffic with existing traffic pattern, lane widths, and lane designations with the exception of the intersection of Raymond Road and CTH PD.

Traffic operations – Stage 2 (2018)

CTH M – Stage 2

- Maintain one lane of CTH M traffic in each direction on existing travel lanes. Construct temporary median crossovers at the south and north project limits and temporary pavement widening as shown on the traffic control plans. Exceptions as follows:
  - Weekend closure – Stage 2A: Close CTH M to all traffic between CTH PD and Stony Ridge Circle (north intersection) according to section C Closures of this article. A maximum of two weekend closures are permitted for constructing the MMSD sanitary sewer and storm sewer across CTH M. Provide local traffic access on CTH M between Stony Ridge Circle (north intersection) and Cross Country Road. Post the CTH M detour as shown in the detour plans. Furnish and operate PCMS on CTH M and CTH PD for seven calendar days in advance of the closure and for the duration of the closure. Do not close CTH M and CTH PD at the same time.

CTH PD – Stage 2A

- Maintain one lane of CTH PD traffic in each direction on existing travel lanes. Exceptions as follows:
  - Weekend closure: Close CTH PD to all traffic between CTH PD and Meriter Way according to section C Closures of this article. A maximum of two weekend closures are permitted for constructing the MMSD sanitary sewer and the storm sewer across CTH PD east of the CTH M intersection. Post the CTH PD detour as shown in the detour plans. Furnish and operate PCMS on CTH M and CTH PD for seven calendar days in advance of the closure and for the duration of the closure. Do not close CTH PD and CTH M at the same time.

CTH PD – Stage 2B

- Maintain one lane of CTH PD traffic in each direction on the temporary roadway west of CTH M and existing travel lanes east of CTH M.

Mid Town Road Stage 2A

- Maintain one lane of Mid Town Road traffic in each direction on existing travel lanes.

Mid Town Road Stage 2B

- Maintain one lane of Mid Town Road traffic in each direction on the existing travel lanes west of CTH M and east of Station 419'WB'+00. Construct temporary pavement to connect the existing travel lanes east of Station 419'WB'+00 and the finished westbound approach lanes at the CTH M and Mid Town Road intersection.

Raymond Road – Stage 2A

- Raymond Road remains closed to through traffic.
- Provide access to the Meriter Health Child & Adolescent Psychiatric Clinic at all times through the north project limits.
- Provide access to residents on Raymond Road via Meriter Way and Wellness Way.

Raymond Road – Stage 2B

- Close Raymond Road to all traffic between Station 530'R'+75 and Station 535'R'+00.
- Provide access to Meriter Health Child & Adolescent Psychiatric Clinic and residents on Raymond Road via the completed Meriter Way, Wellness Way, and Raymond Road.

Intersections – Stage 2

- CTH M and CTH PD - Maintain all movements and existing dedicated turn lanes at all times, except as follows.
  - The northbound CTH M right turn lane at CTH PD may be closed during Stage 2A to remove traffic signals, traffic island curb, and traffic island pavement and to construct the temporary pavement over the existing traffic island. Right turns shall be permitted from the northbound through lane. Provide traffic flagging on the westbound lanes of CTH PD to allow right turners a wide turn at the intersection.
- CTH M and Mid Town Road - Maintain all movements and existing dedicated turn lanes at all times.
- Local side roads - Maintain existing access and traffic patterns at local side road intersections at all times except as follows. Access through the work zone on side roads shall be a minimum clear width of 24 feet on a paved surface (existing or completed), compacted base aggregate, or compacted asphaltic pavement millings. Maintain the driving surface of the access route to be free of ruts, holes, and bumps and in a condition passable to passenger vehicles. The access route shall be clear of obstructions or hazards, including material stockpiles, equipment, exposed utility structures, and open excavations. Delineate hazards adjacent to the route with traffic control devices. Construct asphaltic surface temporary connections between existing pavement and completed mainline pavement as shown in the traffic control plans.
- Bering Drive – northbound left turns prohibited. Provide advanced notification fixed message sign at Cross Country Road.
- Prairie Oaks Drive
  - Southbound left turns from CTH M prohibited
  - Prairie Oaks Drive may be closed to all traffic a maximum of four times for a maximum of one calendar day per closure to complete storm sewer, grading, roadway base construction, curb and gutter, and HMA paving. Do not close Prairie Oaks Drive and Ineichen Drive at the same time. Furnish and operate PCMS for northbound CTH M traffic for 3 calendar days in advance of a closure and for the duration of the closure.

- Harmony Drive –Reduce the available access route width to a minimum of 14-feet during active work operations requiring clearance from traffic.
- Ineichen Drive
  - Southbound left turns prohibited
  - Ineichen Drive may be closed to all traffic a maximum of four times for a maximum of six calendar days for the duration of the project to complete water main, storm sewer, grading, roadway base construction, curb and gutter, and paving. Do not close Ineichen Drive and Prairie Oaks Drive at the same time. Furnish and operate PCMS for CTH M traffic for 3 calendar days in advance of a closure and for the duration of a closure.
- Stony Ridge Circle
  - Maintain local access to either the north or south intersection with CTH M at all times.
- Meriter Way – Close Meriter Way to through traffic at CTH PD to complete water main and storm sewer connections between 7:00 PM Friday and 6:00 PM Sunday. Maintain access for local traffic and employees at the Meriter Health Clinic.
- Flagstone Drive
  - Stage 2A – Flagstone Drive may be closed for a maximum of 2-calendar days for construction of storm sewer. Close Flagstone Drive to all traffic at Talc Trail. Do not close Flagstone Drive if Mica Road or Jeffy trail are closed at Mid Town Road. Furnish and operate PCMS on CTH M three calendar days in advance of the closure and for the duration of the closure.
- Shale Drive - Southbound left turns prohibited. Install flexible tubular markers on the temporary centerline to reinforce the signing.
- Mica Road – Stage 2B
  - Eliminate the dedicated westbound left turn lane
  - Mica Road may be closed to all traffic a maximum of four times for a maximum 7-calendar days total for the duration of Stage 2A and 2B. Do not close Mica Road if Flagstone Drive at CTH M or Jeffy Trail at Mid Town Road are closed. Furnish and operate PCMS on Mid Town Road three calendar days in advance of a closure and for the duration of a closure.
- Waldorf Boulevard – Stage 2A - the eastbound left turn lane may be closed to remove the median curb and gutter and construct temporary pavement
- Jeffy Trail – Stage 2B
  - Jeffy Trail may be closed to all traffic a maximum of four times for a maximum of six-calendar days total for the duration of Stage 2A and 2B. Do not close Jeffy Trail if Flagstone Drive at CTH M or Mica Road at Mid Town Road are closed. Furnish and operate PCMS on Mid Town Road three calendar days in advance of a closure and for the duration of a closure.

Traffic Operations – Stage 3 (2018-2019)

CTH M – Stage 3

- Maintain one lane of CTH M traffic in each direction on the completed pavement sections of CTH M as shown on the traffic control plans. Construct temporary crossovers of the existing CTH M roadway with temporary asphaltic surface at the plan locations.
- Nightly lane closure – Stage 3A (2018): Close the southbound lane of CTH M between CTH PD and Cross Country Road according to section C Closures of this article. Sign the southbound CTH M detour as shown in the detour plans. The southbound lane may be closed for a maximum of seven nights to complete grading work on the northbound median lane between Station 84'NB'+00 and Station 106'NB'+00. Schedule the closures for consecutive nights. Furnish and operate PCMS on CTH M and CTH PD for seven calendar days in advance of the closure and for the duration of the closure.

CTH PD – Stage 3

- Maintain one lane of CTH PD traffic in each direction on the completed pavement sections of CTH M as shown on the traffic control plans.
- Stage 3A - Weekend closure: Close CTH PD to through traffic between Northern Lights Road and CTH M according to section C Closures of this article. One weekend closure is permitted. Post the CTH PD detour as shown in the detour plans. Furnish and operate PCMS on CTH M and CTH PD for seven calendar days in advance of the closure and for the duration of the closure. Upon completion of the work for CTH PD Stage 3A, immediately switch traffic to Stage 3B-Preliminary.
- Stage 3B – Preliminary - Closure: Close CTH PD to all traffic between CTH PD and Meriter Way according to section C Closures of this article. CTH PD may be closed for a maximum of four calendar days following the weekend closure of the west leg of the intersection. Post the CTH PD detour as shown in the detour plans. Furnish and operate PCMS on CTH M and CTH PD for seven calendar days in advance of the closure and for the duration of the closure.

Mid Town Road – Stage 3

- Maintain one lane of Mid Town Road traffic in each direction on the completed pavement sections for eastbound Mid Town Road.

Intersections – Stage 3

- CTH M and CTH PD - Maintain all movements and existing dedicated turn lanes at all times, except as noted for lane and road closures.
- CTH M and Mid Town Road - Maintain all movements and existing dedicated turn lanes at all times.
- Local side roads - Maintain existing access and traffic patterns at local side road intersections at all times except as follows. Access through the work zone on the side roads shall be a minimum clear width of 24 feet on a paved surface (existing or completed), compacted base aggregate, or compacted asphaltic pavement millings. Maintain the driving surface of the access route to be free of ruts, holes, and bumps

and in a condition passable to passenger vehicles. The access route shall be clear of obstructions or hazards, including material stockpiles, equipment, exposed utility structures, and open excavations. Delineate hazards adjacent to the route with traffic control devices. Construct asphaltic surface temporary connections between existing pavement and completed mainline pavement as shown in the traffic control plans.

- Bering Drive
  - Stage 3A (2018) and winter work suspension – maintain full access to Bering Drive.
  - Stage 3B (2019) northbound left turns prohibited. Provide advanced notification fixed message sign at Cross Country Road.
  - Stage 3B (2019) may be closed to all traffic a maximum of five times for a maximum of one calendar day per closure to complete water main, storm sewer, grading, roadway base construction, curb and gutter, and HMA paving.
- Prairie Oaks Drive
  - Stage 3A (2018) and winter work suspension – maintain full access to Prairie Oaks Drive.
  - Stage 3B (2019) Southbound left turns prohibited.
- Flagstone Drive
  - Flagstone Drive may be closed a maximum of four times for a maximum of six calendar days during Stage 3. Close Flagstone Drive to all traffic at Talc Trail. Do not close Flagstone Drive if Shale Drive at CTH M, or Mica Road or Jeffy trail are closed at Mid Town Road. Furnish and operate PCMS on CTH M three calendar days in advance of the closure and for the duration of the closure. Close Flagstone Road only between June 20 and August 31.
- Shale Drive
  - Shale Drive may be closed a maximum of four times for a maximum of four calendar days during Stage 3. Close Shale Drive to all traffic at Talc Trail. Do not close Shale Drive if Flagstone Drive at CTH M or Mica Road or Jeffy trail are closed at Mid Town Road. Furnish and operate PCMS on CTH M three calendar days in advance of the closure and for the duration of the closure.
  - Waterbend Drive at Mid Town Road
    - Waterbend Drive at Mid Town Road may be closed a maximum of two times for a maximum of two calendar days during Stage 3. Do not close Waterbend Drive at Mid Town Road and CTH M at the same time. Furnish and operate PCMS on Mid Town Road three calendar days in advance of the closure and for the duration of the closure.
  - Waterbend Drive at CTH M
    - Waterbend Drive at CTH M may be closed a maximum of three times for a maximum of four calendar days during Stage 3. Do not close Waterbend Drive at Mid Town Road and CTH M at the same time. Furnish and operate PCMS on CTH M three calendar days in advance of the closure and for the duration of the closure.

Traffic operations – Stage 4 (2019)

- Maintain a minimum of one lane of traffic on CTH M, CTH PD, and Mid Town Road at all times.
- Provide dedicated turn lanes for all intersection movements at the CTH M and CTH PD intersection and at the CTH M and Mid Town Road intersection except as follows:
  - Stage 4A – Close the northbound left turn lane to CTH PD. Furnish and operate PCMS on CTH M seven calendar days in advance of the closure and for the duration of the closure.
  - Stage 4A - Close the northbound right turn lane at Mid Town Road. Furnish and operate PCMS on CTH M south of Flagstone Drive seven calendar days in advance of the closure and for the duration of the closure.
  - Stage 4B – Close the following movements at Mid Town Road for a maximum of two calendar days between 7:00 PM on Friday and 6:00 AM on Monday.
    - Northbound left
    - Southbound left
    - Eastbound through and right
    - Westbound through and right

    Furnish and operate PCMS as follows for seven calendar days in advance of the closure and for the duration of the closure.
    - CTH M northbound south of Flagstone Drive
    - CTH M southbound between Waterbend Drive and Mid Town Road
    - Mid Town Road eastbound at Water Bend Drive
    - Mid Town Road westbound at Waldorf Boulevard
- Maintain access to all intersecting side roads at all times. Provide dedicated turn lanes as shown in the traffic control plans. Stage median pavement construction to allow access. Provide traffic flagging for active work operations.

Traffic operations – Stage 5 (2019)

- Maintain a minimum of one lane of traffic on CTH M, CTH PD, and Mid Town Road at all times.
- Provide dedicated turn lanes for all intersection movements at the CTH M-CTH PD intersection and at the CTH M and Mid Town Road intersection at all times.

B Definitions

The following definitions apply to this contract:

Peak Travel Periods (Monday through Friday)

- 6:00 AM to 7:00 PM

Nighttime Travel Periods

- 7:00 PM to 6:00 AM

Weekend Travel Periods

- Friday 7:00 PM to Monday 6:00 AM

C Lane and Road Closure Restrictions

The lane and road closures noted in the traffic operations details shall conform to the following restrictions.

Full or partial road closures will be permitted during the travel periods listed in the table below:

Highway or Street	Segment	Stage	Permitted Travel Period for Closure
CTH M	Closure: Cross Country Road to Stony Ridge Circle	2A	Weekend
CTH M	Closure: Soutbhbound Lanes – CTH PD to Cross Country Rd	3A	Nighttime
CTH PD	Closure: Northern Lights Road to CTH M	3A	Weekend
CTH PD	Closure: CTH M to Meriter Way	2A	Weekend
CTH PD	Closure: CTH M to Meriter Way	3B Prelim	NA – Immediately follows CTH PD closure in Stage 3A
CTH PD	Lane closures – flagging for single lane operation	Any	Weekend, Nighttime
Mid Town Road	Lane closures – flagging for single lane operations	Any	Weekend, Nighttime

Lane, traffic movement, or roadway closures are not permitted at any time during the following special events. These are annual events typically occurring around the same time each year. Dates for calendar year 2017 have been confirmed and are listed below. For closures in 2018 or 2019, some dates are not yet finalized. Coordinate with the engineer to determine the restricted dates required for these events.

- Epic XGM – April 24–May 5, 2017 – Event is held at Epic Systems Corporation, 1979 Milky Way, Verona, WI
- PGA Champions Tour event (American Family Insurance Championship) – June 21–25, 2017 – Event is held at University Ridge Golf Course, 9002 CTH PD, Madison, WI
- Ironman Wisconsin – September 10, 2017 – Event is held throughout Dane County and the race course includes CTH PD and CTH M near the project limits
- Epic UGM – September 25th–28th May 5, 2017 – Event is held at Epic Systems Corporation, 1979 Milky Way, Verona, WI
- NCAA Cross Country Championship – November 17, 2018 – Event is held at the Zimmer Championship Course at University Ridge, 9002 CTH PD, Madison, WI
- NCAA Great Lakes Regional Cross Country Meet – November 15, 2019 - Event is held at the Zimmer Championship Course at University Ridge, 9002 CTH PD, Madison, WI

- School year – Madison Public Schools: The school year begins September 5, 2017 and continues through June 8, 2017. Metro Transit operates a bus route that utilizes roadways within the project limits. Do not close the following streets on a Madison Public Schools school day.
    - Waterbend Drive (at CTH M and/or Mid Town Road)
    - Flagstone Drive
    - Mica Road
- School year – Verona Public Schools: The school year begins September 1, 2017 and continues through June 8, 2017 (estimated date, not yet finalized). Do not close the following streets on a Verona Public Schools school day.
    - Ineichen Drive
    - Prairie Oaks Drive

D Clear Zone Working Restrictions

Do not leave any slopes steeper than 3:1 within the clear zone or any drop offs at the edge of the traveled way greater than 2 inches.

Store materials and equipment a minimum of 10 feet from the edge of the traveled way for all roads that are open to traffic.

Maintain a minimum of 4 feet clearance behind any concrete barrier to any stored equipment or materials that extend above the concrete barrier.

If unsure whether an individual work operation will meet the safety requirements for working within the clear zone, review the proposed work operation with the engineer before proceeding with the work.

Do not store vehicles, equipment or materials on adjacent or intersecting streets beyond the project limits without specific approval of the engineer.

E Property Access

Maintain local vehicle traffic access to all properties within the work zone that do not have alternate access available outside the work zone, at all times, except as allowed herein. Maintain ramped driveway access at a maximum slope of 12% on existing driveway surface, compacted base aggregate dense, or finished driveway surface. Vehicular access to a property driveway may be closed for a maximum of 72 hours in total for installation of storm sewer, sanitary sewer, or water main. Vehicle access to a property driveway may be closed for a maximum of 24 hours in total for excavation to roadway subgrade. Vehicle access to a property driveway maybe closed for a maximum of 5 calendar days in total to complete concrete curb and gutter, sidewalk, and driveway pavement. Notify the property resident a minimum of 72 hours in advance of closing driveway access.

Notify the property resident a minimum of 72 hours in advance of driveway reconstruction to verify closure or staged driveway construction methods. Residential driveways may be closed for a maximum of 10 calendar days to complete concrete curb and gutter, concrete driveway, and concrete sidewalk items at the driveway approach.

F Pedestrian Access

Maintain pedestrian and bicycle access, according to the current ADAAG, at existing local side roads with existing sidewalk and along CTH M between Cross Country Road and Prairie Oaks Drive/Bering Drive. Construct Temporary Pedestrian Surface Asphalt bid item, Temporary Pedestrian Surface Special bid item, Sidewalk Pavement bid item, Temporary Curb Ramp bid item, or new sidewalk at a minimum width of 5 feet as shown in the traffic control staging plans. Keep a minimum width of 5 feet of existing sidewalk as long as practicable to maintain pedestrian access.

When required, close sidewalks according to the standard detail drawing "Traffic Control, Pedestrian Accommodation." Provide temporary pedestrian, bicycle and bus access as detailed in the plans and as directed by the engineer. Maintain pedestrian, bicycle and bus access at all times utilizing a hard surface approved by the engineer, of either asphalt of concrete. Construct hard surfaces to match the width of the existing facility being maintained. The bid items Temporary Pedestrian Surface Asphalt, Temporary Pedestrian Surface Special, Sidewalk Pavement and Temporary Curb Ramp have been provided to complete this work.

G Winter suspension

The contract includes an interim completion date for Stage 1 work and restriction of work on contract items in between Stages 1 and 2. The contract also requires that all traffic be switched to Stage 3 or Stage 3B prior to November 15, 2018. The following requirements are for traffic control over the winter periods. Contract work is allowed during winter shutdown traffic configurations as long as it does not affect the winter shutdown traffic configurations.

Remove all drums and other temporary traffic control devices from the roadway clear zone unless otherwise noted on the Stage 1, and Stage 3 traffic control plans. For traffic control devices that are required to remain over a winter suspension, clean all traffic control devices of dirt and debris including, but not limited to, signs, drums, message boards and barrier wall reflectors once every month, after each occurrence when county or city maintenance crews have completed winter plowing operations, or as directed by the engineer.

The plans include concrete barrier temporary precast to provide road closure at cross overs between completed work areas during a winter work suspension. Install the barriers a minimum of 15 feet from the travel lane. The contractor may gap the barrier per the standard detail drawing for contractor access. The barriers may be removed when work is resumed to provide access to the work site for the contractor.

During winter months, store equipment and materials a minimum of 20 feet from the edge of the traveled way to prevent damage to equipment from snow plowing operations. Do not store equipment or materials within the work zone that may interfere with sight distances along any roadway.

Dane County and local municipalities will perform snow removal operations for roads that are open to through traffic. During Stage 1, City of Madison will perform snow removal operations on Raymond Road between CTH PD, along the temporary roadway or along Wellness Way to Station 514”R”+50 and snow removal operations on Raymond Road between Station 530”R”+00 and the project limits. Prior to any winter suspension, construct Raymond Road to final base course condition between Station 514”R”+50 and Station 530”R”+00 and open this roadway to local traffic and for City of Madison to perform snow removal operations. Coordinate placement of through traffic closure traffic control equipment with the engineer and City of Madison Streets Division.

Coordinate any temporary moving traffic control devices to allow for winter plowing in and around the devices as requested by the maintaining authority or as directed by the engineer. Re-install or adjust any traffic control devices that may be damaged, removed, or shifted as part of the winter maintenance operations. This work is included in the cost of Traffic Control Surveillance and Maintenance.

Snow may be plowed from the traveled roadway into the work site by the maintaining authority. The contractor is responsible for any snow removal from the work site that may be required to continue work operations. The local maintaining authority will not provide snow plowing operations in areas outside of the active travel lanes. Provide snow removal in those areas closed to through traffic as required to facilitate construction activities and to provide access to properties within the work area.

The contractor is responsible for plowing any areas which may need to be cleared of snow or ice to accommodate changes in traffic control and to facilitate construction staging during winter months.

Anticipated locations of traffic control devices are shown in the plans. Review the work site with the engineer for locations where additional area may be available to maximize lane and shoulder widths over winter months to aid in winter maintenance operations and to maximize snow storage areas. Adjust traffic control devices in these areas.

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

6. Holiday and Special Event Work Restrictions.

Work is permitted however; lane closures and delivery of materials will not be permitted on any portion of the highway carrying CTH M or CTH PD traffic during the following holiday periods:

2017

- From noon Wednesday, November 22, 2017 to 6:00 AM Monday, November 27, 2017 for Thanksgiving;
- From noon Friday, December 22, 2017 to 6:00 AM Tuesday, December 26, 2017 for Christmas.

2018

- From noon Friday, May 25, 2018 to 6:00 AM Tuesday, May 29, 2018 for Memorial Day;
- From noon Tuesday, July 3, 2018 to 6:00 AM Thursday, July 5, 2018 for Independence Day;
- From noon Friday, August 31, 2018 to 6:00 AM Tuesday, September 4, 2018 for Labor Day;
- From noon Wednesday, November 21, 2018 to 6:00 AM Monday, November 26, 2018 for Thanksgiving;
- From noon Friday, December 21, 2018 to 6:00 AM Wednesday, December 26, 2018 for Christmas.

2019

- From noon Friday, May 24, 2019 to 6:00 AM Tuesday, May 28, 2019 for Memorial Day;
- From noon Wednesday, July 3, 2019 to 6:00 AM Friday, July 5, 2019 for Independence Day;
- From noon Friday, August 30, 2019 to 6:00 AM Tuesday, September 3, 2019 for Labor Day.

The engineer will have the ability to suspend work activities during the holiday periods listed above in the event any undesirable traffic congestion develops that has the potential to cause lengthy motorist delay or unsafe working conditions.

Special Events

Do not perform work on, nor haul materials of any kind along or across any portion of CTH M or CTH PD and all local roads included in the contract, except those local roads that are closed or closed to through traffic, and entirely clear the traveled way and shoulders of such portions of the roadways of equipment, barricades, signs, lights and any other material that might impede the free flow of traffic during the following special event periods. Lane or roadway closures are not permitted at any time during these special events.

Annual events: These are annual events typically occurring around the same time each year. Dates for calendar year 2017 have been confirmed and are listed above. For closures in 2018 or 2019, coordinate with the engineer to determine the restricted dates required for these events or other similar events during these calendar years.

- PGA Champions Tour event (American Family Insurance Championship) – June 19-25, 2017 – Event is held at University Ridge Golf Course, 9002 CTH PD, Madison, WI
    - The contractor is also notified that television networks will be bringing equipment with full size semi-tractor trailers to the OJ Noer Turf Research Facility beginning the Monday preceding the tournament and leaving by the Tuesday after the tournament. Maintain full access to the OJ Noer Turf Research Facility throughout the tournament week.
- Ironman Wisconsin – September 10, 2017 – Event is held throughout Dane County and the race course includes CTH PD and CTH M near the project limits
- Epic UGM – September 25–28, 2017 – Event is held at Epic Systems Corporation, 1979 Milky Way, Verona, WI

Onetime events:

- NCAA Cross Country Championship – November 17, 2018 – Event is held at the Zimmer Championship Course at University Ridge, 9002 CTH PD, Madison, WI
- NCAA Great Lakes Regional Cross Country Meet – November 15, 2019 - Event is held at the Zimmer Championship Course at University Ridge, 9002 CTH PD, Madison, WI

Other Events

- OJ Noer Field Day – last Tuesday in July – the OJ Noer Turf Research Facility hosts a field day for vendors and staff. Vendors arrive the last Monday in July and leave by Wednesday. Maintain full access to the OJ Noer Turf Research Facility at all times during this event. Do not perform work between Station 130”SB” +00 and Station 165”SB”+00 or between Station 400”EB”+00 and 411”EB”+00 during this time.

7. Utilities.

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

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

These plans show utility facilities existing at the time of the original survey in 2011. The utilities have reviewed the plan drawings and have provided comment on any modifications to these facilities since 2011. These comments are included below.

All utilities within the construction limits of Project 5992-09-86, 87, and 88 (utility IDs) were coordinated through the roadway projects 5992-09-82, 83 and 85. There are no other known utility conflicts within the construction limits.

Alliant Energy - *also "Wisconsin Power and Light (WP&L) d/b/a Alliant Energy"* - (Electric Transmission and Distribution)

Alliant Energy has underground and overhead electric facilities within the project limits as further described below. Facilities are in conflict with the contract work and Alliant will remove and relocate or discontinue these as described below. All discontinued facilities will be de-energized and left in place.

Alliant will begin relocation, removal, and construction of new facilities work beginning July 1, 2017. Alliant will complete their work in 60-90 calendar days and be completed prior to construction.

Existing overhead facilities:

CTH M existing:

- Station 62"SB"+00 Left to Station 114"SB"+50 Left (Cross Country Road to CTH PD) (three phase).
  - This line is not in conflict with the contract work between Station 62"SB"+00 and 68"SB"+00 Left and will remain in place.
  - This line is in conflict with the contract work between Station 68"SB"+00 Left and Station 74"SB"+50 Left. Alliant will relocate this facility with a new overhead facility installed along the right-of-way. Poles for this facility will be located 5 feet inside the right-of-way at the following stations (approximate locations)
    - 69"SB"+60 Left
    - 71"SB"+35 Left
    - 73"SB"+40 Left
    - 82"SB"+60, 80' Left
  - This line is in conflict with the contract work between Station 74"SB"+50 Left and Station 114"SB"+50 Left and will be discontinued. Alliant will remove the utility line poles. Alliant will also remove the following overhead lines and crossings:
    - Overhead crossing of CTH M between Station 78"SB"+30 Left and Station 78"NB"+30 Right.
    - Overhead crossing of CTH M between Station 90'SB"+85 Left and Station 90"NB"+80 Right. The pole at Station 90"NB"+80, 75' Right will remain, along with the overhead facility to the east along the south right-of-way of Stony Ridge Circle.
    - Overhead crossing of CTH M between Station 98"SB"+80 Left and Station 98+80 Right, including the street pole at Station 98"NB"+80, 25' Right.
    - Overhead crossing of CTH M between Station 100"SB"+80 Left and Station 100"NB"+55 Right. Alliant will install a new crossing between Station 100"SB"+50, 120' Left to 100"NB"+50, 100' Right, including a new underground single phase electric circuit riser to the

switch gear at Station 100”NB”+30 Right. The existing overhead line to the east along the south Stony Ridge Circle right-of-way will remain. Alliant will install a new pole at Station 100”NB”+50, 100’ Right.

- § Overhead crossing of CTH M between Station 104”SB”+50 Left and Station 103”NB”+90 Right

· Station 119”NB”+60 to Station 149”NB”+30 Right – existing single-phase overhead line on ATC poles. Alliant will remove this facility along with the overhead crossing of CTH M at Station 119”NB”+55.

CTH PD existing:

· Station 306’EB”+15 to Station 315”EB”+75 Right–existing three phase overhead electric circuit. This facility is in conflict with the contract work. Alliant will remove the overhead lines and poles and replace the facility along the south right-of-way of CTH PD (see new facility (J) below).

Midtown existing:

· Station 412”WB”+45 Right to Station 420”WB”+50 Left and Station 420”EB”+85 Right to Station 429”EB”+25 Right, crossing Mid Town Road at Station 421”EB”+82 – existing three phase overhead electric circuit. This facility is in conflict with the contract work. Alliant will remove the overhead lines and poles to Jeffy Trail. Alliant will install new poles at Station 429”EB”+30 Right and Station 429”EB”+70 Right, outside the contract work, and continue the existing overhead line to the east along the south right-of-way of Mid Town Road.

<u>Existing underground facilities:</u>

CTH M existing:

· Station 62”NB”+00 Right to Station 74”NB”+00 Right – three phase underground electric circuit. This facility is not in conflict with the contract work and will remain in place.

· Station 62”SB”+00 Left to Station 112”NB”+00 Right (south project limits to electrical substation) (three phase electric circuit). This facility crosses CTH M between Station 100”SB”+00 Left and 101”NB”+00 Right.

- o This facility is not in conflict with the contract work and will remain in place between Station 62”SB”+00 and 76”SB”+00.
- o This facility is in conflict with the contract work between Station 76”SB”+00 Left and Station 112”NB”+00 Right. Alliant will discontinue this facility in place.

· Station 77”NB”+00 Right to Station 78”NB”+40 Right – Street light pole and underground electric service. This facility is in conflict with the contract work.

- o Alliant will remove the existing street light pole on the northeast corner of CTH M and Harmony Drive and discontinue the underground service.

- CTH M crossing – Station 84”SB”+95 Left to Station 85”NB”+15 Right (South east quadrant of the CTH M and Ineichen Drive intersection) (three phase).
    - This facility is in conflict with the contract work. Alliant will discontinue this facility in place. The underground facility continuing east, south of the Ineichen Drive right-of-way is not in conflict with the contract work and will remain.
- Station 108”SB”+25, 50’ LT to Station 110”NB”+15 Right – existing three phase underground electric circuit from pole on west side of CTH M to substation, crossing CTH M at Station 110”NB”+50. This facility is in conflict with the contract work and will be discontinued in place.
- Station 112”NB”+00 Right (Substation) to Station 119”NB”+60, 65’ Right – existing three phase underground electric circuits. This facility crosses CTH PD at Station 318”WB”+20, continuing between the substation and Flagstone Drive. The line goes overhead at Station 119”NB”+60 Right on ATC poles. This facility is in conflict with the contract work. Alliant will discontinue it in place.
- Station 112”NB”+00 Right (substation) to Station 170”SB”+00 Left – existing three phase underground electric circuit. This facility extends west from the substation, crossing CTH M at Station 112”NB+05 to the west side of CTH M, turns north and crosses CTH PD at Station 316”WB”+70. This facility then parallels the west side of CTH M to Mid Town Road, Station 170”SB”+00. At Station 170”SB”+00, it turns and continues east on the north side of Mid Town Road to Station 412”WB”+45 Left and continues overhead. This facility is in conflict with the contract work and will be discontinued in place.
- Station 147”NB”+40 Right to Station 167”NB”+20, 70’ Right - Existing three phase underground electric circuits. This facility crosses CTH M to Station 167”NB”+35 to the west side of CTH M, then continues along the west side of CTH M from Station 167”SB”+40 Left to Mid Town Road. One circuit continues across Mid Town Road to the switch gear at Station 170”SB”+50 Left. One circuit continues across Mid Town Road to Station 170”SB”+20 Left and continues west along the north side of the existing sidewalk on Mid Town Road.
    - This facility is in conflict with the contract work and will be removed in place from Station 147”NB”+40 Right to Station 167”NB”+20 Right.
    - This facility is in conflict with the contract work between Station 167”NB”+20 Right to Mid Town Road. Alliant will discontinue this facility in place.
- Station 167”SB”+50 Left to Station 215”SB”+14 Left – existing three phase underground electric circuit.
    - The switch gear at Station 170”SB”+50 Left is in conflict with the contract work. Alliant will remove the switch gear.
    - This circuit is in conflict with the contract work at the following locations. Alliant will adjust the location of the facility as noted:
        - Station 167”SB”+50 Left to Station 180”SB”+50 Left. Alliant will discontinue the line in place.
        - Station 178”SB”+00 Left to Station 180”SB”+50 Left. Alliant will directionally drill new duct below the box culvert a minimum of 4 feet clear of the bottom of the structure.

        - § Station 197”SB”+50 Left to Station 200”SB” +50 Left. Alliant will relocate the existing duct work to a depth behind the proposed sidewalk, at the existing location.
        - § Station 207”SB”+50 Left to Station 214”SB”+00 Left. Alliant will relocate the existing duct work to the sidewalk terrace.
    - o This circuit is not in conflict with the contract work at the following locations. The circuit will remain in place.
        - § Station 180”SB”+50 Left to Station 197”SB”+50 Left
        - § Station 200”SB”+50 Left to Station 206”SB”+50 Left
        - § Station 214”SB”+14 Left to project limits

CTH PD Existing:

- Station 300”WB”+00 Left to Station 306”WB”+80 Left (EPIC feeder). This facility is along the existing north CTH PD right-of-way. The facility is not in conflict with the contract work and will remain in place.
- Station 323”WB”+50, 80’ Left to Station 335”WB”+55, 80’ Left, crossing CTH PD at Station 323”WB”+50 – (2) three phase underground electric circuits. The facility is not in conflict and will remain in place.

Raymond Road existing:

- Station 323”WB” +50 Left (crosses CTH PD from substation) to Station 529”R”+85, Left – three phase underground electric circuit. This facility is along the east right-of-way of Raymond Road to Station 507”R”95 where it cross Raymond Road to the west or north right-of-way and continues to the project limits on Raymond Road.
    - o This facility crosses Raymond Road between Station 529”R”+85 and Station 529’R”+90 and enters the switch gear at Station 529”R”+88 Right.
    - o This facility is in conflict with the contract work on CTH PD and the anticipated excavation limits for sewer construction. Alliant will discontinue this facility in place. Alliant will replace this facility with a new facility, directionally drilled 2 feet inside of the west or north right-of-way of Raymond Road, at a depth of 4 to 15 feet below existing ground.
    - o The switch gear at Station 529”R”+88 Right is not in conflict with the work and will remain.
- Station 529”R”+88 Right to Station 534”R”+55 Right – (1) single-phase underground electric circuit along the south right-of-way of Raymond Road. This facility is in conflict with the contract work and will be discontinued in place.

Mid Town Road Existing

- Station 400”WB”+00 to Station 410”WB”+25 – three phase underground electric circuit located on the north side of the existing sidewalk.
    - o This facility is in conflict with the new box culvert and will be replaced from Station 400”WB”+50 to Station 404”WB”+00 Left.
    - o Station 404”WB”+00 to Station 410”WB”+25: This facility is in conflict with the pedestrian underpass construction and will be discontinued in place.

- Station 410”WB”+00 Left (Station 170”SB”+50 Left) to Station 412”WB”+45 Right three phase underground electric circuit, crosses CTH M from the switch gear on the northwest corner of CTH M and Mid Town Road to the utility pole at Station 412”WB”+45 right. This facility is in conflict with the contract work and will be discontinued in place.

Electrical Substation

Alliant Energy maintains the electrical substation facility on the southeast quadrant of the CTH M and CTH PD intersection. Surrounding the substation facility is a perimeter fencing system that includes a 3-foot +/- deep electrical grounding grid. This grid is located approximately 5-feet beyond the outer perimeter of the fence and further out at the fence gates. Maintain 10 feet of clearance between the fence and all equipment, materials, and work in progress at all times. Notify Alliant Energy of the contract work schedule for completing MMSD sanitary sewer, storm sewer, grading, and restoration of disturbed areas within 20 feet of the perimeter fence and for the work to complete the Alliant Energy driveway at Station 318”EB”+90 RT to finish condition. Notify Alliant Energy five calendar days in advance of work.

New facilities:

- (A) Station 74”SB”+50 Left to Station 74”NB”+50 Right. Alliant will install a new three phase underground electrical conduit, connecting to the existing underground facility along the west side of CTH M.
- (B) Station 74”NB”+50 Right to Station 108”NB”+40 Right (substation). Alliant will install new three phase underground electric circuits located along the east side of the proposed sidewalk. New at grade switch gear or junction boxes associated with this facility will be installed at the following locations:
    - Station 85”NB”+10, 70’ Right (Southeast quadrant of the CTH M and Ineichen Drive intersection)
    - Station 90”NB”+60, 75’ Right (Southeast quadrant of the CTH M and Stony Ridge Circle (south) intersection)
    - Station 100”NB”+30, 80’ Right (Southeast quadrant of the CTH M and Stony Ridge Circle (new north) intersection)
    - Station 103”NB”+90 Right
    - Station 108”NB”+40, 120’ Right. Located outside the right-of-way near at the electric substation facility.
- (C) Station 78”NB”+30 Right to Station 85”NB”+10 Right. Alliant will install a new riser to the pole at Station 78”NB”+30 Right and continue the three phase underground electric circuit to the switch gear at Station 85”NB”+10 Right, in the same trench as facility (B).
- (D) Station 85”NB”+10 Right to Station 108”NB”+40, 120’ Right. Alliant will install a three phase underground electric circuit in the same trench as facility (B).

- (E) Station 85”NB”+10 Right to Station 108”NB”+40 Right. Alliant will install a single phase underground electric circuit in the same trench as facility (B). This single phase electric circuit will include the following connections:
  - Single phase electric service line to the existing utility pole at Station 90”NB”+80 Right. The overhead line continuing east along the south side of Stony Ridge Circle will remain in place.
  - The existing underground service to the church at Station 103”NB”+90 Right is not in conflict with the contract work and will be maintained in place.
- (F) Station 109”NB”+20, 110’ Right to Station 111”SB”+50, 200’ LT. Alliant will install (2) three phase electric circuits from the substation to the west project limits on CTH PD.
  - These circuits will be joint with facility (B) from Station 107’NB”+40 Right to the substation.
  - The circuits will cross CTH M at Station 107”NB”+40.
  - The circuits will parallel the west right-of-way of CTH M and south right-of-way of CTH PD, continuing as Facility (J).
- (G) Station 112”NB”+50, 110’ Right to Station 169”NB”+40, 230’ Right. Alliant will install and maintain (3) three phase underground electric circuits along the east right-of-way of CTH M from the substation to Mid Town Road.
  - All three circuits will be in new duct from Station 112”NB”+50 to Station 147”NB”+40 Right. This facility will be directionally drilled and installed to a minimum clearance of 5 feet from the contract work.
  - Alliant will install switch gear at Station 118”NB”+10, 90’ Right.
  - From Station 147”NB”+40 Right to Station 167”NB”+20 Right, existing duct work will be utilized for the two circuits, along with one new duct bank installed by Alliant along the existing facility. The existing ducts are not in conflict with the contract work.
  - From Station 167”NB”+20 Right to Station 169”NB”+40, 230’ right, new ducts will be installed along the east right-of-way of CTH M in a joint trench with MG&E Gas.
  - Alliant will install switch gear at Station 169”NB”+40, 230’ right
- (H) Station 118”NB”+10, 90’ Right to Station 139”NB”+30, 60’ Right. Alliant will install two single phase underground electric circuits beginning at the switch gear at Station 118”NB”+10 Right.
  - One single phase underground circuit will continue to the splice at Station 121”NB”+70, 70’ Right and continue east underground at the existing location.
  - One single phase underground electric circuit will continue to Station 128”NB”+70, 65’ Right.
  - Alliant will install junction boxes at:
    - Station 119”NB”+60, 70’ Right – An existing underground single phase circuit will continue east from this junction box.
    - Station 128”NB”+70, 65’ Right –Alliant will install a new single phase riser up a new pole at Station 128”NB”+90, 80’ Right.
  - Alliant will install a new pole at Station 139”NB”+30, 60’ Right.

- Alliant will install a new overhead crossing between Station 139”NB”+30 Right to an existing pole at Station 139”SB”+75, 65’ Right. This pole is within the slope intercepts and will remain in place.

· (I) Station 169”NB”+40, 230’ Right to Station 180”SB”+50, Left. Alliant will install one three phase underground electric circuit from the switch gear at Station 169”NB”+40, 230’ Right. This facility will cross Mid Town Road at Station 413’EB”+15 and follow the north right-of-way of Mid Town Road and east right-of-way of CTH M to Station 172”NB” +40. The circuit will cross CTH M at Station 172”NB”+40. It will then be located beneath the southbound terrace, path, and behind the path to Station 180”SB”+50 where it will splice into the existing circuit.

· (J) Station 306”EB”+15, 30’ Right to Station 316”EB”+00, 180’ Right. Alliant will install (2) three phase underground electric circuits along the south right-of-way of CTH PD. Facility (J) is a continuation of facility (F).
  - One circuit will begin at a riser at the existing pole at Station 306”EB”+15, 30’ Right. This pole is not in conflict with the contract work.
  - Alliant will install a new crossing of CTH PD at Station 306”EB”+80, splicing with the circuit on the north side of CTH PD.

· (K) Station 324”EB”+40, 40’ Right to Station 335”WB”+55, 80’ Left. Alliant will install (2) three phase underground electric circuits that will enter the highway right-of-way from the adjacent parcel and turn east and parallel the south right-of-way of CTH PD to the east project limits. The facility will cross CTH PD at Station 335”EB”+55 and enter the existing junction box and switch gear on the northeast corner of CTH PD and Meriter Way. The trench for this facility will be joint with MG&E Gas.

· (L) Station 0”MNS”+75, 40’ Right, to Station 5”MNS”+50, 40’Right. Alliant will install (1) three phase underground electric circuit along the east right-of-way of Meriter Way
  - The trench for this facility will be joint with MG&E Gas
  - The facility will cross Meriter Way at Station 5”MNS”+50 for service to the Meriter Health Clinic.

· (M) Station 0”MNS”+75, 40’ Right to Station 7”MNS”+50, 30’ Right. Alliant will install a single phase underground electrical circuit along the east right-of-way of Meriter Way in the same trench as facility (L). This facility will cross Wellness Way at Station 12”MEW”+15 and continue along the north right-of-way of Wellness Way from Station 12”MEW”+15 to Station 7”MEW”+80, 30’ Left.

· (N) Station 400”WB”+60 Left to Station 409”EB”+00 Right. Alliant will install an underground electric circuit from the existing facility at 400”WB”+60 Left to 404”WB”+00 Left, following the existing right-of-way line. The circuit then crosses Midtown Road at Station 404”WB”+00. From 404”EB”+00 Right to 409”EB” Right, the circuit will run just inside the new south right-of-way line.

· (O) Station 413”EB”+00, 50’ Right, to Station 429”EB”+30, Right. Alliant will install (2) three phase underground electric circuits from new switch gear at Station 413”EB”+00, 50’ Right.
  - One circuit will terminate at a riser on a new pole on the southeast corner of the Mid Town Road and Jeffy Trail intersection, Station 429”EB”+30, 25’ Right.

- One circuit will terminate at new switch gear Alliant will install at Station 428”EB”+20, 40’ Right.
    - Alliant will install a junction box at Station 423”EB”+50, 40’ Right.
    - Additional three phase and single phase circuits will extend from the new switch gear south from this junction box along the west side of Jeffy Trail (outside the project limits).
- Alliant will install a new crossing of Mid Town Road for a three phase, underground electric circuit at Station 426”EB”+80. This circuit will begin at the new switch gear at Station 428”EB”+20, 40’ Right.

· (P) Station 400”WB”+60 Left to Station 409”EB”+00 Right. Alliant will install an underground electric circuit from the existing facility at 400”WB”+60 Left to 404”WB”+00 Left, following the existing right-of-way line. The circuit then crosses Midtown Road at Station 404”WB”+00. From 404”EB”+00 Right to 409”EB” Right, the circuit will run just inside the new right-of-way line.

Alliant will be in a joint utility trench with MG&E Gas for these facilities: (B), (C), (D), (E), (F), (G), (H), (I), (J), (K), (L), (M).

American Transmission Company (ATC) (Electric Transmission)

Existing overhead facilities:

CTH M existing: ATC owns and maintains a double circuit overhead 69/138 kV transmission line that runs parallel to CTH M from CTH PD to the north project limits at the following locations.

- Between the east shoulder and east right-of-way of CTH M from Station 108”NB”+40 Right (substation) to Station 161”NB”+25 Right (Shale Drive)
- Between the west shoulder and west right-of-way of CTH M from Station 163”SB”+60 Left (Shale Drive) to the north project limits
- The overhead lines cross CTH M near Station 162”NB”+40
- The overhead lines cross Mid Town Road near Station 410”EB”+25

CTH PD existing: ATC owns and maintains a double circuit overhead 69/138 kV transmission line that runs parallel to CTH PD from CTH M to the east project limits.

- Between the south shoulder and south right-of-way of CTH PD from Station 319”EB”+90 Right (substation) to the east project limits.

These facilities are in conflict with the contract work; ATC will relocate them as described in Proposed Facilities.

Proposed facilities:

ATC will construct new overhead 69/138 kV transmission lines and remove the existing overhead line and poles.

CTH M new location:

- ATC will relocate their overhead transmission line to a location in the finished terrace between the curb and path along the northbound lanes of CTH M from CTH PD to Flagstone Drive. The overhead line will cross CTH M to the west side, south of Structure C-13-2081 (drainage box culvert) between Station 141"NB"+77 Right and Station 143"NB"+41 Left (ATC transmission poles 121793 and 121794).
- From the crossing of CTH M, ATC will relocate their overhead transmission line to the finished terrace between the curb and path along the southbound lanes of CTH M from structure ATC transmission pole 121794 to the north project limits.

ATC will commence relocation work along CTH M by December 15, 2017 and will complete work by April 27, 2018. Refer to the required contract work and interim completion date for this work in the Prosecution and Progress article. The contract work and interim completion date is critical to ATC's work and work schedule to relocate utilities that will occur during construction.

ATC's contractor will work from timber matting to reduce rutting or other damage to the rough graded sub grade. ATC's contractor will restore the subgrade to the grade and elevation completed prior to completing work and vacating the site.

ATC will remove all existing overhead line poles within the project limits and along CTH M and replace them with 29 new transmission poles installed within or near the project limits. ATC will construct new overhead line poles at the following locations.

POLE #	CTH M 'NB' STATION	CTH M "NB" OFFSET	DESCRIPTION
121783	110+43	253.8' RT	Steel pole – Guyed
121784	110+49	116.9' RT	Steel Pole – Foundation
121785	112+44	119.3' RT	Steel Pole – Foundation
121786	112+87	287.5' RT	Steel Pole – Foundation
121787	117+10	47.8' RT	Steel Pole – Foundation
121788	120+34	48.0' RT	Steel Pole – Foundation
121789	124+48	46.2' RT	Steel Pole – Foundation
121790	128+71	47.0' RT	Steel Pole – Direct Embed
121791	133+24	47.0' RT	Steel Pole – Direct Embed
121792	137+23	47.0' RT	Steel Pole – Direct Embed
121793	141+77	79.4' RT	Steel Pole – Foundation
121794	143+41	88.9' LT	Steel Pole – Foundation
121795	146+24	82.7' LT	Steel Pole – Direct Embed
121796	149+58	70.9' RT	Steel Pole – Direct Embed
121797	153+98	69.0' LT	Steel Pole – Direct Embed
121798	157+88	69.0' LT	Steel Pole – Direct Embed
121799	161+97	71.5' LT	Steel Pole – Foundation
121800	167+79	156.8' LT	Steel Pole – Foundation

POLE #	CTH M 'NB' STATION	CTH M "NB" OFFSET	DESCRIPTION
121801	173+79	105.1' LT	Steel Pole – Foundation
121802	179+67	69.0' LT	Steel Pole – Direct Embed
121803	183+69	69.0' LT	Steel Pole – Direct Embed
121804	187+66	69.0' LT	Steel Pole – Direct Embed
121805	192+24	69.0' LT	Steel Pole – Direct Embed
121806	195+45	69.3' LT	Steel Pole – Direct Embed
121807	200+17	69.0' LT	Steel Pole – Direct Embed
121808	203+21	69.0' LT	Steel Pole – Direct Embed
121809	206+75	69.0' LT	Steel Pole – Direct Embed
121810	210+67	70.0' LT	Steel Pole – Foundation
121811	215+35	79.4' LT	Steel Pole – Direct Embed

CTH PD new location:

- ATC will relocate the overhead transmission line along the south right-of-way of CTH PD and remove the overhead transmission pole structures in conflict prior to construction. This work will be complete by June 1, 2017.

POLE #	CTH PD 'EB' STATION	CTH PD "EB" OFFSET	DESCRIPTION
141	323+33	210.4	Steel Pole – Direct Embed
142	323+95	54.5	Steel Pole – Direct Embed
143	327+29	55.6	Steel Pole – Direct Embed
144	331+27	57.9	Steel Pole – Direct Embed
145	335+21	59.8	Steel Pole – Direct Embed

At existing transmission poles on concrete foundations, ATC will remove the concrete foundations so they are not in conflict with the proposed work. The foundations will be removed down to the limits described in the following table. Below this elevation, ATC will crack the foundations that will remain in place. ATC will backfill the foundation locations to the existing ground conditions.

STATION	OFFSET	REMOVAL LIMITS (Approx. Elevation)
112"NB"+33	59' RT	2- feet below existing ground surface (1004.0)
161"NB"+24	30' RT	4-feet below finish subgrade (1023.8)
163"SB"+59	9' LT	4-feet below finish subgrade (1024.8)
208"SB"+82 to 209"SB"+06	51' LT to 53' LT	Pole guy foundations (4) 4-feet below finish sidewalk grade (1083.2)
209"SB"+32 to 209"SB"+60	38'LT to 60' LT	Pole guy foundations (5) 3-feet below storm sewer invert elev. (1076.0)
209"SB"+77 to 210"SB"+52	12' LT to 25'LT	Pole guy foundations (9) 4-feet below finish subgrade (1081.3)

- ATC's facility is a double circuit line with one circuit at 138 kV and another at 69 kV. ATC recommends the contractor to assume both circuits are 138 kV and maintain OSHA Safe Working Clearance from the ATC based on the latest OSHA requirements with respect to a 138 kV line. ***It is the contractor's responsibility to determine the distance that needs to be maintained for the type of equipment being used.***

Exercise caution when working and driving near ATC transmission facilities. Any contact with or damage to the ATC facilities must be reported immediately to:

- Matt Dopp, ATC Construction Manager, at (608) 225-5983 or
- Doug Vosberg ATC Maintenance Specialist, at (608) 438-7650

Contact ATC at least three days in advance of:

- Any grade change (cut or fill) within 1 foot of any ATC facility.
- Excavations up to 3 feet deep within 10 feet of any ATC facility.
- Excavations greater than 3 feet deep within 20 feet of any ATC facility.
- Any grade change in excess of 1 foot change from the plan drawings within 20 feet horizontally of ATC facility (including OH wires).
- Directional bore or plowing work within 10 feet of any ATC facility.
- Clearing and grubbing within the limits of ATC facility as defined by OSHA standards.

Should the roadway contractor identify operations that require an outage of ATC facilities, please complete a template of ATC's Transmission Facility Outage Agreement from the City of Madison. After completing the outage request details, contact Matt Dopp, ATC Construction Manager, at (608) 225-5983 for instructions on how to start the agreement process. Note that early coordination increases opportunity for the requested outage timeframe to be granted and also note that peak loads are common during summer months and therefore outage requests during that time are rarely allowed. A minimum of 90 days is recommended for an outage request.

Charter Communications (Telecom fiber optic and coaxial cable)

Existing facilities:

Charter Communications owns and maintains fiber optic and coaxial cable telecom facilities within the project limits as described below).

Charter will relocate and construct new facilities beginning in May 2017 and will be complete by October 1, 2017 prior to construction.

CTH M existing:

- South project limits to Station 114”SB”+50 Left (CTH PD). Fiber optic cable is located between the west right-of-way and west shoulder of CTH M. At Station 114”SB”+50, the fiber optic cable crosses CTH M to the northeast corner of the intersection and continues east and north.
    - This facility is not in conflict with the contract work and will remain in place at the following locations:
        - South project limits to Station 76”SB”+00 Left. Charter will raise the power supply pedestal at Station 72+00”SB” Left.
    - This facility is in conflict with the contract work at the following locations:
        - Station 76”SB”+00 Left – Station 91”SB”+00 Left – this facility is in conflict with excavation limits for the retaining wall R-13-307. Charter will relocate this facility west of the 1.5:1 excavation limits for the wall.
        - Station 87”SB”+00 Left to Station 110”SB”+60 Left. Charter will relocate this facility.
        - Station 110”SB”+60 Left to Station 114”SB”+50 Left. Charter will discontinue this facility in place.
    - There are two crossings of CTH M near Station 90”NB”+75 from a pair of pedestals on the west side of CTH M to one pedestal on the east side of CTH M, in the southeast corner of the CTH M and Stony Ridge Circle intersection (south).
        - One crossing is a coaxial cable, which enters the pedestal, then continues north across Stony Ridge Circle.
        - The other crossing is a fiber optic cable, which continues along the south side of Stony Ridge Circle.
        - These facilities are in conflict with the contract work. Charter will relocate both facilities below plan storm sewer and water main locations across CTH M. Charter will discontinue the coaxial cable crossing of Stony Ridge Circle in place.
- South project limits to Station 69”NB”+50 Right – Coaxial cable is located along the east right-of-way of CTH M. This facility is not in conflict and will remain in place.
- Station 114”NB”+50 Right to Station 141”SB”+90 Right. Fiber optic and coaxial cable lines are located between the edge of pavement and east right-of-way of CTH M. This facility is in conflict with the contract work. Charter will relocate this facility along the east right-of-way of CTH M.
    - Charter will convert the pedestal at Station 141”SB”+90 Right to an at-grade utility vault and adjust the elevation of this vault to finish grade.
    - There is a fiber optic and coaxial cable line crossing CTH M near Station 141”NB”+90 from the pedestal on the east side of CTH M. The facility turns south to a vault on private property. This facility is in conflict and will be replaced. The existing facility will be discontinued in place.
- Station 141”SB”+90 Right to Station 147”NB”+00 Right. Fiber optic and coaxial cable lines are located along the east edge of CTH M. This facility is in conflict with the contract work. Charter will relocate this facility. Charter will discontinue the facility in place.

- Station 147”NB”+00 Right to Station 167”NB”+20 Right. Fiber optic and coaxial cable lines are located on the east side of the sidewalk along CTH M. These facilities are not in conflict and will remain in place.
- Station 170”SB”+50 Left to north project limits. Fiber optic line is located along the west right-of-way of CTH M, on the west side of the sidewalk.
    - This facility is in conflict with the contract work at the following locations:
        - Station 170”SB”+50 Left to Station 174”SB”+00 Left. Charter will relocate this facility. The existing facility will be abandoned in place.
        - Station 194”SB”+45 Left (pedestal) to north project limits. Charter will construct a new fiber optic line along the right-of-way at a minimum depth of 2 feet below the excavation limits. Charter will discontinue the existing fiber optic line.
    - This facility is not in conflict and will remain in place from Station 180”SB”+00 Left to Station 194”SB”+45 Left (pedestal).

Midtown existing:

- Station 400”WB”+60 Left to Station 170”SB”+50 Left. Underground fiber optic line is located north of the sidewalk on the north side of Mid Town Road from the west project limits to CTH M. This facility is in conflict with the contract work. Charter will relocate the utility vault near Station 409”WB”+20 Left and relocate the fiber optic line to the west right-of-way of CTH M, where it will cross CTH M at the joint utility trench at Station 172”NB”+40. Charter will discontinue the existing fiber optic line in place.
- Station 170”SB”+50 Left to Station 412”WB”+45 Right. Underground fiber optic line crosses CTH M near Station 170”SB”+60 from the utility vault on the northwest corner of the CTH M and Mid Town Road intersection to the east side of CTH M. The fiber line turns south, then east to a riser on the Alliant Energy pole near Station 412”WB”+45 Left.
    - This facility is in conflict with the contract work. Charter will relocate the crossing to the joint utility trench crossing CTH M at Station 172”NB”+40.
- Station 412”WB”+45 Right to east project limits. Overhead facilities are located on Alliant Energy poles.
    - The overhead facility is in conflict with the contract work. Alliant Energy will remove the utility poles. Charter will relocate their facility to the new Alliant trench along the south right-of-way of Mid Town Road.
    - An underground feed to a private property is located between Station 420”EB”+50 right to a riser at the Alliant pole near Station 420”EB”+90 Right. Charter will connect this service to the new underground facility and discontinue the existing service line in place.

Proposed facilities:

- Station 62”NB”+10 to Station 109”NB”+90 Right. Charter will place new fiber optic and coaxial cable in a joint trench with MG&E located behind and underneath the new sidewalk.

- An underground fiber optic crossing will be located at Station 75”NB”90 in a joint trench with MG&E and Alliant Energy.
- An underground coaxial crossing will be located at approximately Station 102”NB”+00.
- An underground fiber optic crossing will be located at Station 109”NB”85 in a joint trench with MG&E.

· Station 109”SB”+85 to Station 112”SB”+25 Left. Charter will place new fiber optic cable in a joint trench with MG&E located behind the new sidewalk.
· Station 306”SB”+10 Right to Station 112”SB”+25 Left. Charter will place new fiber optic cable in a joint trench with MG&E located just inside the new right-of-way.
· Station 109”NB”+90 Right to Station 335”EB”+60 Right. Charter will place new fiber optic cable in a joint trench with MG&E. The new fiber optic will begin at 109”NB”+90 Right behind the new sidewalk and run to the east, south of the substation, parallel to CTH PD. At Station 327”EB”+00 Right, south of the substation, the new line will bend to run perpendicular to CTH PD to Station 327”EB”+00 Right, beneath the finished terrace. From 327”EB”+00 Right to 335”EB”+60 Right, the new fiber optic will run parallel to CTH PD beneath the finished terrace.
· Station 120”NB”+70 Right to 507”R”+00 Left. Charter will place fiber optic in a utility easement in a joint trench with MG&E.
· Station 507”R”+00 Left to Station 7”MNS”+90 Right. Charter will place new fiber optic north of Meriter Way within a utility easement in a joint trench with MG&E.
· Station 335”EB”+60 Right to Station 7”MNS”+90 Right. Charter will place new facilities on the east side of Meriter Way, crossing CTH PD at 335”EB”+60. A portion of this segment (Station 3”MNS”+50 Right to Station 7”MNS”+90 Right) will be in a utility easement.
  - Station 335”EB”+60 Right to Station 1”MNS”+25 Right will be in a joint trench with Alliant.
  - Station 1”MNS”+25 Right to Station 7”MNS”+90 Right will be in a joint trench with MG&E.
· Station 120”NB”+70 to Station 146”NB”+75 Right. Charter will place new fiber optic cable in a joint trench with MG&E and Alliant located behind or under the finished sidewalk.
  - A new underground fiber optic and coaxial cable crossing of CTH M will be located at Station 141”NB”+00.
· Station 141”SB”+00 to Station 168”SB”+50 Left. Charter will place a new fiber optic facility beneath the sidewalk.
  - The new facility will be in a joint trench with Alliant Energy and MG&E from Station 141”SB”+00 to 165”SB”+90 Left.
  - The new facility will be in a joint trench with Alliant Energy from Station 165”SB”+90 Left to Station 168”SB”+50 Left.
  - The new facility will cross CTH M at Station 166”SB”+90 in a joint trench with MG&E.

- Station 165”NB”+90 Right to Station 213”SB”+00 Left. Charter will place a new buried fiber optic facility in a joint trench with MG&E.
    - Station 165”NB”+90 Right to Station 172”SB”+20 Left. New fiber optic facility will be located just inside the right-of-way, crossing Mid Town Road at 412”EB”+60, and crossing CTH M at Station 172+”NB”+20.
    - Station 172”SB”+20 Left to Station 213”SB”+00 Left. The new fiber optic facility will be located behind or beneath the new sidewalk/multi use path. There will be an underground crossing of CTH M in a joint trench with MG&E at Station 213”NB”+00.
- Station 400”WB”+60 Left to Station 409”EB”+20 Right. Charter will place new fiber optic facility in a joint trench with Alliant Energy.
    - Station 400”WB”+60 to Station 404”WB”+00 Left. Charter will place the new facility in the terrace.
    - The new facility will cross Mid Town Road at Station 404”WB”+00.
    - Station 404”EB”+00 Right to Station to Station 409”EB”+20 Right. Charter will place the new facility just inside the new right-of-way.
- Station 412”EB”+60 Right to Station 429”EB”+30 Right. Charter will place new fiber optic facility in a joint trench with Alliant Energy inside right-of-way.
    - At Station 427”EB”+85, Charter will extend their existing crossing of Mid Town Road to connect to this new facility.
- Station 412”WB”+60 Right to Station 421”EB”+20 Left. Charter will place new fiber optic facility in a joint trench with MG&E inside right-of-way.

CenturyLink (Telecom fiber optic) (formerly KMC, Lightcore) – ***also “Wisconsin Telephone Company d/b/a/ CenturyLink”***

Existing buried facilities (fiber optic):

CenturyLink owns and maintains buried telecommunication facilities within the project limits.

CTH M existing:

- 1 ¼’HDPE duct is located along the east side of CTH M from Station 114”NB”+50 Right to the north project limits. The fiber optic line varies in location between the east right-of-way and east pavement edge.
    - This facility is in conflict with the proposed work. CenturyLink will replace this facility to the east right-of-way of CTH M prior to construction. The existing facility will be abandoned in place.

CTH PD existing:

- 1 1’4” HDPE duct is located along the north side of CTH PD from Station 318”WB”+00 to Station 330”WB”+75. The fiber optic line turns north and continues to the Meriter Health clinic near this station. The duct is located 10-25’ off the north pavement edge of CTH PD.
    - This facility is in conflict with the proposed work. CenturyLink will discontinue this facility in place.

Proposed buried facilities (fiber optic):

CenturyLink will commence relocation work by July 1, 2017 and complete their work prior to October 1, 2017, prior to construction.

- CenturyLink will place (2) 1 ¼-Inch HDPE buried fiber optic in a joint trench with MG&E at the following locations:
  - Station 1"MNS"+80 Right to Station 12"MEW"+30 Left. The new facility will run east of Meriter Way.
  - Station 12"MEW"+30 Left to Station 506"R"+50 Left. The new facility will cross Raymond Road near Station 507"R"+00.
  - Station 506"R"+50 Left to Station 121"NB"+10 Right.
  - Station 121"NB"+10 Right to 213"NB"+00 RT. The new facility will be located just inside the roadway right-of-way and will be located as described below:
    - Station 121"NB"+10 Right to Station 141"NB"+00 Right, crossing CTH M at Station 141"NB"+00.
    - Station 141"SB"+00 Left to Station 166"SB"+10 Left, crossing CTH M at Station 166"SB"+10.
    - Station 166"NB"+10 Right to Station 172"NB"+25 Right, crossing Midtown at Station 412"EB"+75 and CTH M at Station 172"NB"+25.
    - Station 172"SB"+25 Left to Station 213"SB"+00 Left, crossing CTH M at Station 213"SB"+00.

City of Madison – Traffic

The City of Madison owns and maintains street lighting and traffic signals at the intersections of CTH M with CTH PD and Midtown (Project 5992-09-85). The contract includes work items to remove and replace the street lighting and traffic signal systems on CTH M. Refer to the plan details for more information.

The City of Madison owns and operates street lighting equipment in the adjacent residential neighborhoods (Project 5992-09-85). Street lighting equipment is near the project limits at the following intersections; these facilities are not in conflict with the contract work.

- Mid Town Road & Waterbend Drive
- Mid Town Road & Mica Road
- Mid Town Road & Waldorf Boulevard
- CTH M and Shale Drive
- CTH M and Flagstone Drive

The City of Madison maintains the traffic signal equipment owned by the City of Verona at the CTH M and Cross Country Road intersection. This equipment is not in conflict with the contract work.

City of Verona

The City of Verona maintains sanitary sewer and water main facilities adjacent to the project (Project 5992-09-82). Facilities are located below Harmony Drive, Bering Drive, and Ineichen Drive. The contract includes work to adjust existing facilities and construct new sanitary sewer and water main within the project limits. Refer to the plan details for more information.

Madison Gas and Electric (MG&E) (Electric transmission and distribution)

MG&E is included on the Transportation Project Plat as an easement owner (Parcel 90) along the west side of CTH M from Mid Town Road to the north project limits. MG&E does not have existing electric facilities in this easement nor within the project limits.

Madison Gas and Electric (MG&E) (Natural gas transmission and distribution)

Existing facilities (4-Inch 60-PSI steel 4-Inch 60-PSI polyethylene, high-pressure (HP) 6-Inch 400 PSI steel, 6-Inch 60-PSI polyethylene, 8-Inch 400-PSI steel, and 12-Inch 400-PSI steel mains):

CTH M existing:

- HP (400 PSI) 6-Inch and 8-Inch steel gas mains
  - 6-Inch and 8-Inch steel gas mains are located within the project limits from the south project limits to the north project limits on CTH M. The main is generally 6 to 8 feet below existing surface elevation.
    - South project limits to Station 114"SB"+50 Left (CTH PD intersection). 6-inch steel gas main is below the west CTH M shoulder and roadway embankment, 10-30 feet off the west pavement edge.
      - Gas main crosses CTH M at Station 114"NB"+50 to an existing regulator station near Station 114"NB"+50, 70' Right.
      - This main is in conflict with the contract work. MG&E will discontinue this main in place from Station 74"SB"+50 Left to Station 114"SB"+50.
  - Station 114"NB"+50 Right (CTH PD intersection) to the north project limits. 8-inch steel gas main is below the east CTH M shoulder and roadway embankment, 10-20 feet off the east pavement edge.
      - Gas main is below the northbound travel lanes at the intersection widening at Flagstone Drive and Shale Drive.
      - This main is in conflict with the contract work. MG&E will discontinue the main.

- 60 PSI 4-Inch steel and polyethylene gas main
  - South project limits to Station 104”NB”+00 Right (Driveway to West Madison Bible Church). Gas main is below the east CTH M shoulder and roadway embankment, 0-15 feet off the east pavement edge. At Station 104”NB”+00 Right, the main turns and continues along the south edge of the driveway.
    - Gas main is below the northbound travel lanes at the intersection widening at Bering/Prairie Oaks and Ineichen Drive.
    - Gas main and services branch off at the following locations:
      - Prairie Oaks Drive – below the north sidewalk terrace
      - Harmony Drive – below the south roadway shoulder
      - Near Station 81”NB”+75
      - Near Station 83”NB”+55
      - Ineichen Drive – below/behind the north sidewalk
      - Near Station 87”NB”+25
      - Stony Ridge Circle (south intersection) – between the north edge of pavement and north right-of-way.
      - Stony Ridge Circle (north intersection) – between the south right-of-way and south edge of pavement.
      - Station 102”NB”+60 (service to the west)
    - This main is in conflict with the contract work.
      - MG&E will discontinue this main in place from Station 63”NB”+00 to Station 104”NB”+50 prior to construction.
  - Gas main is below/behind the north sidewalk of Flagstone Drive (connects to HP main near Station 145”NB”+80 and crosses Flagstone Drive before continuing east on Flagstone Drive. This main is not in conflict with the contract work and will remain in place.
  - Station 189”SB”+10 Left (Waterbend Drive) to Station 215”NB”+80 Right (north project limits). 4-Inch PE gas main is below and west of the existing sidewalk from Station 189”SB”+10 Left to Station 194”NB”+50, turns east and crosses CTH M. Gas main continues north below the shoulder/embankment, 10-30 feet east of the east pavement edge.
      - This main is in conflict with the contract work. MG&E will relocate the gas main around and under storm sewer conflicts between Station 189”NB”+50 and the north project limits prior to construction.

CTH PD existing:

- HP (400 PSI) 8-Inch and 12-Inch steel gas main
  - Station 300”WB”+00 Left (west project limits) to Station 114”NB”+50 Right (CTH M). 8-Inch steel Gas main is below the north CTH PD shoulder and roadway embankment, 10-15 feet off the north pavement edge. Gas main crosses CTH M at Station 114”NB”+50 to an existing regulator station manhole in the northeast corner of the intersection.
    - This main is in conflict with the contract work. MG&E will discontinue this main in place from Station 307”WB”+30 to Station 114”NB”+50 prior to construction.

- Station 114”NB”+50 Right (CTH M intersection) to Station 335”WB”+52 (east project limits). 12-Inch steel gas main is below the north CTH PD shoulder and roadway embankment, 10-15 feet off the north pavement edge. Gas main is below the westbound lanes from Station 331”WB”+50 to the east project limits.
    - This main is in conflict with the contract work. MG&E will discontinue this main in place from Station 114”NB”+50 to Station 335”WB”+52 prior to construction.

Midtown existing:

- HP (400 PS) 6-Inch gas main
    - Station 411”WB”+20 Left to Station 425”WB”+30 Left. Gas main is below the north shoulder and ditch of Mid Town Road, 0-15 feet north of the north pavement edge.
        - This main is in conflict with the contract work. MG&E will discontinue the gas main.
- 60 PSI 6-Inch PE gas main
    - Station 400”WB”+00 Left to Station 411”WB”+20 Left. Gas main parallels the south edge of the north Mid Town Road sidewalk 2-5 feet off the sidewalk. The main turns north at the CTH M and Mid Town Road intersection and crosses CTH M near Station 170”NB”+60 to the valve manhole on the east side of CTH M.
        - This main is in conflict with the contract work between Station 409”WB”+25 and Station 170”NB”+60 Right. MG&E will discontinue this main in place prior to construction. MG&E will construct a replacement main prior to construction. See facility (F) below.
    - Station 411”WB”+20 Left to Station 430”WB”+00. Gas main is below the north shoulder and ditch of Mid Town Road, 0-20 feet north of the north pavement edge. Services branches cross Mid Town Road to the south and to branch to the north for individual properties on Mid Town Road.
        - This main is in conflict with the contract work and will be discontinued in place.

<u>Proposed facilities:</u>

MG&E will construct new facilities prior to discontinuing their existing facilities in conflict with the contract work beginning June 2017. MGE will complete relocations by October 1, 2017, prior to construction, except as noted below.

CTH M new facilities:

- (A) Station 63”NB”+00, Right to Station 107”NB”+50 Right. MG&E will construct a new 4-inch PE 60 PSI gas main along the east right-of-way of CTH M from Station 63”NB”+00 (south project limits) to Station 74”NB” 50. At Station 74”NB”+50 Right, this main will turn west, then north again to run concurrently to a new high-pressure gas main (Facility (B)) that MG&E will construct along the finish sidewalk location on the east side of CTH M.

- (B) MG&E will construct a new 8-Inch steel high pressure (400 PSI) gas main from Station 74”NB”+50 Right to Station 107”NB”+50 Right. This facility will be located on the east side of the finished sidewalk location along the east side of CTH M.
    - This gas main will connect to a new high 12-Inch steel high pressure gas main (Facility (E)) that will cross CTH M at Station 107”NB”+40.
- (C) MG&E will construct a new 8-inch steel high pressure gas main from the existing gas main near Station 121”NB”+75 Right located just inside the east right-of-way, turning west to cross CTH M at Station 141”NB”+00 and continuing to the CTH M west right-of-way. The new main will then follow the west right-of-way around the retaining walls, drainage structure, and pedestrian underpass structure to Station 166”SB”+10 Left. The main will then turn east to cross beneath CTH M at Station 166”SB+10.
- (D) MG&E will construct new 8-inch steel high pressure (400 PSI) and 4-Inch PE gas mains from Station 166”NB”+10 right to Station 213”NB”+00 Right.
    - At the Mid Town Road intersection, the mains will turn east and follow the south right-of-way of Mid Town Road to Station 412”EB”+60 Right.
    - The mains will then turn north and cross Mid Town Road to the north right-of-way of Mid Town Road. The mains will then turn west, following the north right-of-way of Mid Town Road to CTH M, then continue following the east right-of-way of CTH M to Station 172”NB”+25 Right.
    - At Station 172”NB”+25, the mains will then cross CTH M to then follow the west right-of-way to Station 213”SB”+00.

CTH PD new facilities:

- (E) MG&E will construct a new 12-inch steel high pressure gas main and a new 4-inch PE 60 PSI gas main from Station 307”WB”+30 to Station 335”EB”+60 (east project limits). These mains will follow the south right-of-way of CTH PD, except as follows.
    - The mains will cross CTH PD at Station 307”WB”+30.
    - The mains will turn south to follow the west right-of-way of CTH M from Station 111”SB”+50 to Station 107”SB”+40. The mains will turn east to cross CTH M at Station 107”NB”+40. They will then continue east through the Alliant Energy owned property south of the substation.
    - The mains will turn north to the CTH PD right-of-way, entering the right-of-way near Station 323”EB”+50 right. The mains will then turn east to follow the south right-of-way of CTH PD.

Mid Town Road new facilities:

- (F) MG&E will construct a new 6-inch PE 60 PSI gas main from Station 409”WB”+40 Left to Station 425”WB”+50 Left. This main will follow the north right-of-way of Mid Town Road and the west and east right-of-way CTH M. The main will turn and cross CTH M to the east right-of-way near Station 172”SB”+30.
- (G) MG&E will construct a new 4-inch steel high pressure (400 PSI) gas main along the north right-of-way of Mid Town Road from Station 412”WB”+60 Left to Station 425”WB”+50 Left.

Meriter Way and Wellness Way:

- (F) MG&E will construct a new 12-inch steel high pressure gas main and a 4-Inch PE gas main from Station 1"MNS"+30 to Station 121"NB"+75 on CTH M.
    - These mains will follow the east right-of-way of Meriter Way, crossing Wellness Way near Station 12"MEW"+25. The mains will be located within a proposed 15' MG&E permanent easement from Station 3"MNS"+60 to Station 12"MEW"+25 Left.
    - The mains will then turn west within a 15' permanent MG&E easement on the north side of Wellness Way to Raymond Road. The mains will cross Raymond Road near Station 506"R"+75. MG&E will complete this crossing after completion of the storm sewer, sanitary sewer, and water main are completed through the Raymond Road and Wellness Way intersection. Provide MG&E with the schedule for completing this work at the preconstruction conference. Notify MG&E 10 calendar days in advance of allowing MG&E access to the work site for completion of the facility. Provide MG&E with 14 calendar days to complete the crossing of Raymond Road prior to completing concrete curb and gutter or HMA pavement on Raymond Road.
    - The mains will continue within an MG&E permanent easement to CTH M and connect with the existing main along the east right-of-way of CTH M near Station 121"NB"+75.

Madison Metropolitan Sewerage District

Madison Metropolitan Sewerage District owns and maintains sanitary sewer main within the project limits.

- 24-Inch sanitary sewer main crosses Mid Town Road near Station 402"EB"+35
- 24-Inch sanitary sewer main crosses CTH M near Station 145"NB"+50. This main will be in close proximity to the new pedestrian underpass C-13-2080 and cross below R-13-293 and R-13-295. The sewer is not in conflict with the wall.
- 30-Inch sanitary sewer main crosses Raymond Road near Station 528"R"+35. The sewer and manhole will be near construction for the Culvert C-13-2084.

Manhole adjustments for existing structures are required and included in the contract work.

The contract work includes constructing a new MMSD sanitary sewer main below Raymond Road, crossing CTH PD and CTH M and terminating in the southwest corner of the CTH M and CTH PD intersection. Refer to the plan details for more information.

Madison Water Utility

Madison Water Utility owns and maintains water main facilities with the project limits at the following locations:

- Flagstone Drive – Station 10”F”+85 to Station 12”F”+32
- Midtown Road – Station 400”WB’+00 to Station 430”WB”+00
- CTH M – Station 162”NB”+25 to Station 179”NB”+25
- Waterbend Drive – Station 8”W”+38 to Station 8”W”+95
- CTH M – Station 210”NB”+55 to Station 215”NB”+80

The contract includes work to adjust, relocate, and construct new water main facilities within the project limits. Refer to the plan details for more information.

Mount Horeb Telephone Company (MHTC) (Telecom)

Existing underground facilities (fiber optic):
(Projects 5992-09-83).

- Station 300”WB”+00 (West project limits) to Station 115”NB”+15 (CTH M intersection). Fiber optic facility is located along the north shoulder of CTH PD, 10-20 feet north of the pavement edge. The facility turns northeast and crosses CTH M near Station 115”SB”+15. This facility is in conflict with the construction work from Station 307”WB”+25 Left to Station 115”NB”+15 Right and will be discontinued in place.
- Station 115”NB”+15 Right (CTH M intersection) to Station 535”R”+00. Fiber optic facility continues northeasterly towards Raymond Road, then continues along the north or west shoulder of Raymond Road, 10-15 feet outside the paved shoulder edge.
    - This facility is in conflict with the construction work from Station 115”NB”+00 Right to Station 506”R”+75 Left and will be discontinued in place.
    - From Station 506”R”+75 to Station 535”R”+00, MHTC plans to replace this facility. The existing line will be discontinued in place during construction.

Proposed underground facilities (fiber optic):

MHTC will place new fiber optic cable in a 2” HDPE conduit as described below. The bury depth will be 36” minimum. The new facility will be in a joint trench with MG&E except for the relocation work on Raymond Road (possibly joint with TDS) and the crossing at the east end of CTH PD (joint with Alliant):

- Station 307”WB”+25 Left to Station 335”EB”+60 Right. MHTC will place new fiber optic facilities in a joint trench with MG&E.
    - The new fiber optic facility will cross CTH PD at Station 307”WB”+00. From Station 307”EB”+00 Right to Station 107”SB”+50 Left, the new facility will follow the south CTH PD and west CTH M right-of-way lines before crossing CTH M at Station 107”SB”+50.
    - From Station 107”NB”+50 to Station 323”EB”+50, the new fiber optic facility will be located on Alliant energy’s property in an easement south and east of the substation.
    - From Station 323”EB”+50 Right to Station 335”EB”+60 Right, the new fiber optic facility will be located near the CTH PD south right-of-way line.
- Station 335”EB”+60 Right to Station 1”MNS”+25 Right. MHTC will place new fiber optic facilities in a joint trench with Alliant, crossing CTH PD.
- Station 1”MNS”+25 to Station 121”NB”+75 Right. MHTC will construct a new fiber optic facility in a joint trench with MG&E.
    - From Station 1”MNS”+25 to Station 3”MNS”+50 Right, MHTC will construct a new fiber optic facility just inside the Meriter Way east right-of-way line.
    - From Station 3”MNS”+50 Right to Station 12”MEW”+30 Left, MHTC will construct a new fiber optic facility inside a 15’ easement owned by MG&E.
    - From Station 12”MEW”+30 Left to Station 121”NB”+75 Right, MHTC will construct a fiber optic facility inside a 15’ easement owned by MG&E, crossing Raymond Road near Station 506”R”+75.
- Station 506”R”+75 Left to Station 534”R”+60 Left. MHTC will place new fiber optic conduit, possibly in a joint trench with TDS.

TDS Telecom – ***also “Mount Vernon Telephone Company d/b/a TDS Telecom” and “Mid Plains Telephone d/b/a TDS Telecom”***

<u>Existing underground facilities (telecom and fiber optic):</u>
(Projects 5992-09-82, 83, and 85).
CTH M existing:

- Station 63”SB”+75 to Station 112”NB”+00 Right. Telecom and fiber optic facilities are located between the east shoulder and east right-of-way of CTH M.
    - Telecom facilities cross CTH M near Station 64”NB”30.
    - Telecom line crosses CTH M near Station 82”NB”+70.
    - These facilities are in conflict with the contract work. TDS will discontinue these facilities in place.
- South project limits to Station 75’SB”+50 Left. Fiber optic facilities are located along the west right-of-way of CTH M. This facility is not in conflict and will remain in place.
- Station 112”NB”+00 to Station 115”NB”+00 – CTH PD intersection.
    - Telecom lines cross CTH M near the following stations
        - 112”NB”+05
        - 114”NB”+70
        - 115”NB”+15

- These facilities are in conflict with the contract work. TDS will discontinue these in place.

- Station 115”NB”+00 Right (CTH PD intersection) to Station 152”NB”+25 Right (Flagstone Drive). Telecom and fiber optic facilities are located between the east shoulder and east right-of-way of CTH M between 15-45 feet from the edge of pavement.
  - These facilities are in conflict with the contract work. TDS will discontinue these facilities in place.
- Station 152”NB”+25 Right (Flagstone Drive intersection) to Station 170”SB”+50 Right. Telecom and fiber optic facilities are located along the west edge of the east sidewalk and the along east right-of-way of CTH M.
  - From Station 152”NB”+25 Right to Station 166”NB”+10 Right the existing facilities are not in conflict with construction and will remain in place except at the following location:
    - TDS will relocate the existing facilities around the storm sewer at Shale Drive.
  - From an existing manhole at Station 167”NB”+05, 48 feet right, fiber optic facilities continue as noted below. These facilities are in conflict with the contract work and will be discontinued in place:
    - North to a manhole at Station 170”NB”+40, 22’ Right (Northeast corner of CTH M and Mid Town Road).
    - West across CTH M at Station 167”NB”+08 to the west shoulder of CTH M. The fiber optic turns to the north and enters a manhole at Station 170”SB”+50 Left.
    - The utility vault at Station 167”NB”+05 Right and the telecom and fiber optic lines that exit this vault to the north and west, are in conflict with the contract work.
- Station 170”NB”+40 Right to north project limits. From the manhole at Station 170”NB”+40 Right, fiber optic lines run west across CTH M at Station 170”SB”+10 and turns north below the west curb line of CTH M. The fiber optic lines continue north between the west shoulder and west right-of-way of CTH M to Station 207”SB”+70 Left.
  - This facility is in conflict with the construction work and will be discontinued in place.
- From the pedestal at Station 207”SB”+70 Left, the TDS facilities continue as follows:
  - Fiber optic lines continue north between the west CTH M shoulder and west CTH M right-of-way to the north project limits. This facility is in conflict with the contract work. TDS will discontinue this facility in place.
  - Fiber optic lines cross CTH M at Station 207”SB”+70 to a pedestal on the east side of CTH M. Fiber optic and telecom lines continue north, between the east shoulder and east right-of-way of CTH M to the north project limits. This facility is in conflict with the contract work and will be discontinued to Station 213”NB”+00 Right.
  - From Station 213”NB”+00 Right to the north limits, facilities do not conflict with the construction work and will remain in place.

CTH PD existing:

- Station 300'EB"+00 to Station 316"EB"+00. Buried fiber optic and telecom lines are located below the south shoulder of CTH PD to a pedestal near Station 315"EB"+75, 12' Right. Facilities from Station 307"EB"+30 to Station 315"EB"+75 are in conflict with construction work and will be discontinued in place.
- From the pedestal at Station 315"EB"+75, fiber optic and telecom lines continue southeast to Station 112"SB"+15 Left and cross CTH M. These facilities are in conflict with the construction work and will be discontinued in place.
    - Fiber optic and telecom lines continue north and cross CTH PD at Station 315"WB"+92, continuing to a pedestal at Station 114"SB"+90 Left. Lines then continue across CTH M. These facilities are in conflict with the construction work and will be discontinued in place.
- Station 318"EB"+00 Right to east project limits. Fiber optic and telecom lines continue from the east side of CTH M along the south right-of-way of CTH PD. These facilities conflict with construction work and will be discontinued in place.
    - Telecom lines cross CTH PD near
        - Station 319"WB"+95
        - Station 320"WB"+65
        - Station 330"EB"+65

Midtown existing:

- Station 400"WB"+00 Left to Station 170"SB"+50 Left. Fiber optic and telecom line is located north of the sidewalk on the north side of Mid Town Road from the west project limits to CTH M.
    - Station 400"WB"+00 Left to Station 409"WB"+20 Left. This facility is not in conflict with the contract work and will remain in place.
    - Station 409"WB"+20 Left to Station 170"SB"+50 Left. This facility is in conflict with the contract work. TDS will relocate the fiber optic line to the west right-of-way of CTH M, where it will cross CTH M at the joint utility trench at Station 172"NB"+40. TDS will discontinue the existing fiber optic line in place.

Raymond existing:

- TDS has buried telephone facilities on both sides of Raymond Road for the entire length of the project. These facilities may be in conflict with the construction work. TDS plans to relocate these facilities as necessary during construction, perhaps in a joint trench with MHTC.

Proposed facilities:

TDS will construct a new telecom duct system at the following locations in. This work will be completed prior to construction.

- Station 62"NB"+75 Right to Station 107"NB"+50 Right. TDS will construct a new duct package with (3) 4-inch ducts along the east right-of-way of CTH M. The duct package will be set 3 feet inside the east right-of-way of CTH M at a minimum depth

of 2 feet below finished subgrade or finish utility elevations. This work will be in a joint trench with MG&E.

- The duct package will cross CTH M at Station 62”NB”+75 (this crossing will not be in a joint trench with MG&E.
- The duct package will include a crossing of CTH M at Station 74”NB”+50 for a future connection on the west side of CTH M.

- Station 121”NB”+25 Right to Station 213”NB”+00 Right. TDS will construct a new duct package with (3) 4-inch ducts along the right-of-way of CTH M. The duct package will be set 3 feet inside the right-of-way of CTH M at a minimum depth of 2 feet below finished subgrade or finish utility elevations. This work will be in a joint trench with MG&E.
  - TDS will construct the new package just inside the east right-of-way of CTH M from Station 121”NB”+10 Right to Station 141”NB”+ Right, turning to cross CTH M at Station 141”NB”+00.
  - From Station 141”SB”+00 to Station 166”SB”+10, the new duct package will be located inside the west right-of-way of CTH M. At Station 166”SB”+10, the new duct package will cross CTH M.
  - From Station 166”NB”+00, the new duct package will turn north to follow the east right-of-way of CTH M then turn to follow the south right-of-way of Mid Town Road to Station 412”EB”+60 right. The duct package will turn north and cross Mid Town Road at Station 412”EB”+65 to the north side of Mid Town Road. The duct package will turn west and follow the north right-of-way of Mid Town Road, turning north along the east right-of-way of CTH M to Station 190”NB”+20 Right, crossing CTH M.
  - From 190”SB”+00 Left to Station 213”SB”+00, the new package will be located inside the west right-of-way line for CTH M. At Station 213”SB”+00, the new duct package will cross CTH M.
- Station 307”EB”+30 Right to Station 107”SB”+50 Left. TDS will construct a new duct package with (3) 4-inch ducts in the joint utility trench along the south right of CTH PD, turning to the west right-of-way of CTH M, crossing CTH M at Station 107”SB”+45. The duct package will be set at a minimum depth of 2 feet below finished subgrade or finish utility elevations. This work will be in a joint trench with MG&E.
- Station 323”EB”+50 Right to Station 335”EB”+50. TDS will construct a new duct package with (3) 4-inch ducts in the joint utility trench along the south right of CTH PD. The duct package will be set at a minimum depth of 2 feet below finished subgrade or finish utility elevations. This work will be in a joint trench with MG&E.
- Station 335”EB”+50 (CTH PD) to Station 121”NB”+25 Right (CTH M). TDS will construct a new duct package with (3) 4-inch ducts in the joint utility trench along the east right-of-way of Meriter Way and the north right-of-way of Wellness Way to CTH M. From Station 1”MNS”+30 Right to Station 121”NB”+25 Right, this work will be in a joint trench with MG&E.
- Station 409”WB”+60 Left to Station 425”WB”+50 Left. TDS will construct a new duct package (3) 4-inch ducts in a joint utility trench with MG&E.
  - From Station 409”WB”+60 Left, the new duct package will follow the west right-of-way of CTH M to Station 172”SB”+25, crossing CTH M.

- From Station 172”NB”+25 Right, the new duct package will follow the right-of-way of CTH M (east side) and Mid Town Road (north side) to Station 425”WB”+50 Left.

Unity Point Health – Meriter

Existing underground facilities (sanitary sewer, watermain, fiber optic):
(Project IDs 5992-09-83)

Meriter Way Existing:

- Station 5”MNS”+25 Left to Station 12”MEW”+34 Left. Fiber optic line is located from the north side of the clinic and runs northeast to diagonally cross Meriter Way at Station 7”MNS”+75.
  - Station 5”MNS”+25 Left to Station 7”MS”+00 Left. This facility is not in conflict with the contract work and will remain in place.
  - Station 7”MNS”+00 to Station 12”MEW”+34 Left. This facility is in conflict with the contract work. Unity Point Health will relocate this facility prior to construction.
- Station 5”MNS”+25 Left to Station 7”MNS”+15 Right. A 1 ¼” sanitary force main is located from the north side of the clinic and runs northeast to diagonally cross Meriter Way at Station 7”MNS”+00.
  - Station 6”MNS”+80 Left to Station 7”MNS”+10 RT. This facility is in conflict with the construction work. Per the Sanitary Sewer section of the plans, discontinue this force main after a new sanitary sewer lateral has been connected to the existing force main.
- Station 4”MNS”+50 Left to Station 6”MNS”+90 Right. A 6” water main lateral is located from the east side of the clinic and crosses Meriter Way at Station 6”MNS”+75.
  - Station 4”MNS”+50 Left to Station 6”MNS”+65 Left. This facility is not in conflict with the contract work and will remain in place.
  - Station 6”MNS”+65 Left to Station 6”MNS”+90 Right. This facility may be in conflict with the contract work. Per the Water Main section of the plans, lower the water main if it is in conflict.

Raymond Road Existing:

- Station 531”R”+00, 87’ Right to Station 532”R”+24, 44’ Right. East of Raymond Road, an 8” sanitary lateral runs from a private manhole in a private easement to an MMSD manhole in an MMSD utility easement. This facility is not in conflict with the contract work and will remain in place.

Proposed Facilities:

Meriter Way new facilities:

- Unity Point Health will relocate the fiber optic line in conflict with a directional bore underneath Wellness Way prior to construction.

- Extend a 6” sanitary sewer lateral and connect into the existing force main per the Sanitary Sewer Plans.
- Verify the location of the existing 6” water main with Mike Brasser. Lower the existing main as necessary to avoid conflicts.

8. Other Contracts.

The following projects are scheduled to be constructed concurrently with this project:

WisDOT ID – 5992-09-31
City of Madison, McKee Road
Meriter Way to Maple Grove Drive
CTH PD
Dane County

Anticipated construction start: May 2017
Anticipated construction completion: October 27, 2017
Work type: Reconstruct (Expansion)

Work description: Reconstruct CTH PD from Meriter Way to Maple Grove Road from the existing two-lane rural highway to a four-lane divided urban arterial with municipal utilities, storm sewer, and street lighting. A new overpass structure for the Ice Age Junction Path over CTH PD is also included.

The project maintains a single lane of traffic on CTH PD at all times. Traffic control for project 5992-09-31 will extend into the project limits until it is completed. The traffic control is not expected to interfere with any traffic control required for this project.

WisDOT ID – Varies
Mt Horeb to Madison
CTH PD to Raymond Road
USH 18
Dane County

Anticipated construction start: In progress
Anticipated construction completion: 2020
Work type: Reconstruct

Work description: Construct a highway interchange at Verona Road (USH 18) and CTH PD

This project is approximately 2.5 miles east of the project limits. The detour route for the closure of the east leg of the CTH M and CTH PD intersection utilizes this intersection and new interchange area. Do not close the east leg of the CTH PD intersection during movement closures planned at Verona Road (USH 18) and CTH PD that conflict with the detour routing. Coordinate the schedule for installation of detour signs with the contractor and engineer for this project.

WisDOT ID – N/A - City of Verona Project
Woods Road to CTH M
CTH PD
Dane County

Anticipated construction start: Spring 2019
Anticipated construction completion: Fall 2019
Work type: Reconstruct

Work description: Reconstruct CTH PD from the west project limits of the CTH M/CTH PD intersection (5992-09-83) to Woods Road to a 4-lane divided urban arterial. Traffic control coordination with this project is required.

9. Hauling Restrictions.

At all times, conduct operations in a manner that will cause a minimum of inconvenience to the free flow of traffic on roadways carrying CTH M, CTH PD, and Mid Town Road traffic. Hauling vehicles shall only use engineer-approved ingress and egress locations.

Use only City of Madison and City of Verona designated truck routes for material haul roads as detailed in standard spec 618.

Equip all vehicles traveling on public roads that are hauling materials or removals and are subject to spillage, by either wind or vibration, with tailgates and adequate sideboards. Use canvas covers and any other protective devices to prevent spillage as determined necessary by the engineer. Comply with all local ordinances.

10. Information to Bidders, U.S. Army Corps of Engineers Section 404 Permit.

The department has obtained a U.S. Army Corps of Engineers Section 404 permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit is available from the regional office by contacting Mike Novey at (608) 334-5215.
stp-107-054 (20080901)

11. Environmental Protection, Dewatering.

Supplement standard spec 107.18 as follows:

If dewatering is required, treat the water to remove suspended solids before allowing it to enter any waterway or wetland. Provide a sedimentation basin with sufficient capacity and size to provide an efficient means to filter the water from the dewatering operation before it is discharged back into the waterway or wetland as provided in the standard specifications and these special provisions. As part of the Erosion Control Implementation Plan (ECIP)

submittal, supply all pertinent information and calculations used to determine the best management practice for dewatering at each location.

Refer to the dewatering guidelines of WisDNR Storm Water Management Technical Standards, Code #1061, "Dewatering". This document can be found at the WisDNR website: http://dnr.wi.gov/topic/stormwater/documents/Dewatering_1061.pdf

The cost of all work and materials associated with water treatment and/or dewatering is incidental to other bid items.

12. Dust Abatement.

Supplement standard spec 104.6.1 with the following;

Dry brooming of the pavement will not be allowed.

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

13. Erosion Control.

Supplement standard spec 107.20 with the following:

Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial topsoil removal operation through the subsequent grading and re-topsoiling to minimize the period of exposure to possible erosion. Utilize temporary and permanent erosion control measures as noted in the plans or as directed by the engineer.

Re-topsoil graded areas, as designated by the engineer, immediately after grading is completed within those areas. Seed, fertilize, mulch and place erosion mat within 10 calendar days after placement of topsoil in all areas.

Implement best management practices for both temporary and permanent erosion control measures outlined in the plans or as directed by the engineer.

Construct sediment basins, ditch checks, rip rap, silt fence, and erosion mat, as shown on the plans, to store run off flows, limit runoff, and limit the discharge of pollutants.

Limit the amount of erodible surface area exposed to construction operations to less than one third of the individual work areas at all times.

Interim completion dates include completion of all permanent erosion control measures such as seed, fertilizer, mulch, erosion mat and rip rap.

Store material stockpiles upland and away from any drainage way. Protect these stockpiles with silt fence. Temporary seed any soil pile if the pile remains undisturbed for 14 calendar days or more. Temporary seed and silt fence required to protect stored material are included in other items of work.

Prior to initial construction operations, place temporary erosion control measures as shown on the plans, and remove them after the permanent erosion control devices are in place unless directed otherwise by the engineer.

Unless otherwise directed by the engineer, drive a tracked vehicle along untracked or newly graded slopes roughly perpendicular to the direction of stormwater runoff flow down the slopes, to reduce the erosive potential, at the end of each day. Tracking is incidental to the cost of grading.
Restoration of Dane County Park

14. Public Convenience and Safety.

Revise standard spec 107.8(6) as follows:

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

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

The department, City of Madison, City of Verona, and Madison Metropolitan Sewer District (MMSD) personnel will inspect construction of sanitary sewer and water main under this contract. However, testing, and acceptance of the sanitary sewer and water main construction will be by the City of Madison, City of Verona, and MMSD. MMSD will provide staking for MMSD sanitary sewer items under project 5992-09-88.

16. Referenced Construction Specifications.

Construct the work enumerated below conforming to the City of Madison Standard Specification. If there is a discrepancy or conflict between the referenced specification and the standard specifications regarding contract administration, part 1 of the standard specifications governs.

Conform to the referenced construction specifications for the following:

- Sanitary Sewer (all work required in Project 5992-09-86)
- Water main (all work required in Project 5992-09-86)

stp-105-002 (20130615)

17. Referenced Construction Specifications.

Construct the work enumerated below conforming to the Standard Specification for Sewer and Water Construction in Wisconsin, 6th Edition, dated December 22, 2003. If there is a discrepancy or conflict between the referenced specification and the standard specifications regarding contract administration, part 1 of the standard specifications governs.

Conform to the referenced construction specifications for the following:

- Sanitary Sewer (all work required in Project 5992-09-87)
- Water main (all work required in Project 5992-09-87)
- Sanitary Sewer (all work required in Project 5992-09-88)

stp-105-002 (20130615)

18. Coordination with Businesses and Residents.

The contractor shall arrange and conduct a meeting between the contractor, the department, affected residents, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Hold the first meeting at least one week prior to the start of work under this contract and hold one meeting per month thereafter. The contractor shall arrange for a suitable location for the meeting(s) that provides reasonable accommodation for public involvement. The department will prepare and coordinate publication of the meeting notices and mailings for the meeting(s). The contractor shall schedule the meeting(s) with at least 2 weeks' prior notice to the engineer to allow for these notifications.
stp-108-060 (20141107)

19. General Provisions for Storm Sewer.

Construct all round and elliptical shape storm sewers according to the pertinent provisions of standard spec 608, 610, and 611, as shown on the plans, and as follows.

Prior to ordering drainage pipes and structures, verify related drainage information in the plan with the engineer. This shall include all information obtained from the bid item Utility Line Opening" (ULO).

Seal the joints for reinforced concrete pipe with either mastic or internal rubber gaskets as described in standard spec 607.2.3 and 607.2.4. The use of mortar as a pipe joint method is prohibited.

Lay all round and elliptical shape storm sewers on a 6-inch minimum thick bed of Base Aggregate Dense Graded 1 1/4-Inch according to standard spec 305.2.1 or when water is encountered, No. 1 coarse concrete aggregate according to standard spec 501.2.5.4. Bedding for round and elliptical pipe shall be incidental to the installation costs of the round or elliptical pipe.

Construct catch basins, manholes and inlets using only precast or cast in place concrete masonry options. All structures shall be reinforced concrete. Concrete brick and block options are prohibited.

Construct all structures (manholes and inlets) on a 12-inch minimum thick bed of Base Aggregate Dense Graded 1 1/4-Inch according to standard spec 305.2.1 or when water is encountered, No. 1 coarse concrete aggregate according to standard spec 501.3.6.4.5, and as shown on the plans. Bedding for structures shall be incidental to the installation cost of the structure.

Bid all structures (manholes and inlets) as field poured, and construct all structures as fieldpoured unless the contractor receives approval of the engineer to precast the structures. This approval will not be given until it can be confirmed that the proposed design will fit existing conditions including possible utility conflicts. No precast approval shall be authorized for any structure until such time as all ULO's that could affect the structure/structures in question have been completed and the City of Madison design engineer has had a minimum of three working days to review all the relevant information.

Submit shop drawings for all precast structures to the engineer. The engineer will coordinate with the City of Madison design engineer and shall have three days to approve or reject the shop drawings. Under no circumstance shall a precast structure be brought to or used on the construction site without a written approval of the shop drawing for that structure prior to its use on site.

Do not use station and offset for inlet structures, as given on the storm plans, for final layout of the structure. Determine the curb line in the area of the inlet prior to pouring the inlet structure to assure proper location of the inlet relative to the curb line.

The costs to connect storm sewer to existing structures or pipes and the costs to plug pipes for future use including tapping the hole, placing the pipe and sealing the joint, furnishing and installing a plugging device as specified above, will be included in the unit price bid for the pipe of the type, class and diameter used. The cost includes installing a concrete plug in the portion of the abandon pipe that remains in place after completion of storm sewer trench.

Reconnection of existing pipes at new structures, or new pipes at new structures, shall be considered to be part of the work required to construct the new structure or to construct the new sewer pipe. However, if the structure being removed is larger than the new structure, thus requiring additional pipe, the new pipe shall be paid under the appropriate bid item and the connection of the old pipe to the new pipe shall be accomplished with a concrete collar.

Where a new structure is to be constructed at an existing pipe, saw cut the existing pipe in the required location to accommodate the placement of the new structure. If the contractor for his or her convenience deems it more suitable to remove the existing pipe to a full joint, the additional pipe and concrete collar required to reconnect to the new structure shall be the contractor’s responsibility and shall not be compensated.

Carefully remove and stockpile all existing inlet, manhole, and catch basin covers that are not being adjusted and reused on the project at a location on the right-of-way outside the construction limits for pickup by City of Madison or City of Verona personnel. Contact Jim Martinson, City of Madison Department of Public Works at (608) 267-1973 to schedule pickup for any covers removed under project 5992-09-83 or 5992-09-85 and Theran Jacobson, City of Verona Director of Public Works at (608) 848-6801 for any covers removed under project 5992-09-82.

Remove from the right-of-way and dispose of all frames or grates and all other material that either city does not want.

The construction staging plans requires staged completion of the storm sewer system. Construct the storm sewer as shown in the traffic control staging plans and extend storm sewer laterals a sufficient distance to preclude undermining the finished pavement structure when hooking on to the storm sewer pipe in the next stage. Temporary shoring is anticipated and is considered incidental to the storm sewer pipe and structure bid items. Furnish and install temporary pipe plugs for partially completed storm sewer pipe sections prior to backfilling the pipe. Furnish and install temporary cover plates and temporary inlet castings according to those bid items.

Mark pipe ends for locating in the following stage with an engineer approved method. The marker should be located outside the roadway clear zone for the current or subsequent traffic stages or be determined to be non-hazardous by the engineer.

Clean storm sewer pipe and storm sewer structures prior to final acceptance.

Furnishing and installing pipe plugs and pipe markers, and cleaning pipes prior to final acceptance is incidental to the storm sewer pipe and structure bid items.

20. General Provisions for City of Madison Sanitary Sewer Construction.

This article contains the general provisions for construction and adjustment of the City of Madison's sanitary sewer system within the project limits. Work items are included under Project 5992-09-86.

Utility Standard Specifications
Perform work according to these provisions and the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction and the City of Madison Standard Specifications for Public Works Construction-Latest Edition, hereinafter referred to as the City Standard Specifications. In the event of a conflict the Wisconsin Department of Transportation Standard Specifications will take precedence.

Work Sequence
Contact Mark Moder, City of Madison Engineering at (608) 261-9250 ten working days prior to starting work on the sanitary sewer and provide a schedule of operations. Construct sanitary sewer main and laterals in stages according to the traffic control plan and in proper coordination with construction for activities adjacent to the sanitary sewer main.

Provide bypass pumping of sanitary sewage to maintain sanitary sewer service when new sewer access structures are being constructed over the existing mains.

Shop Drawings and Samples
Submit shop drawings and samples to the engineer and City of Madison Engineering Department as required in these Special Provisions and for the following:

- Sanitary Sewer Pipe Material
- Sanitary Sewer Access Structure Casting and Manhole Covers Type MAD (Madison logo lid)
- Sanitary Sewer Internal Chimney Seal
- Sanitary Sewer Access Structure (4-Foot Diameter)
- Sanitary Sewer Access Structure (4-Foot Diameter)
- Select Fill for Sanitary Sewer

Contractor's responsibilities include:

- Review shop drawings and samples prior to submittal;
- Determine and verify field measurements, field construction criteria, catalog numbers and similar data, and conformance with specifications;
- Coordinate each submittal with requirements of work and of Special Provisions.

Notify City Engineer or City Engineer's Representative, in writing, at time of submittal of deviations in submittals from requirements of Special Provisions.

NOTE: Do not begin any fabrication or work listed above as requiring shop drawings or samples until return of submittals with City Engineer's or City Engineer Representative's approval.

Provide shop drawings containing the following:

A. Date of submittal and dates of previous submittals.
B. Project title and number.
C. Contract identification.
D. Names of contractor, supplier, and manufacturer.
E. Identification of product, with identification numbers, and drawing and specification section numbers.
F. Field dimensions clearly identified.
G. Identification of details required on drawings and in specifications.
H. Manufacturer and model number (give dimensions and provide clearances).
I. Relation to adjacent or critical features or work or materials.
J. Applicable standards, such as ASTM, and identification of deviations from contract documents.
K. Source of samples and material properties.
L. Identification of revisions on re-submittals.

M. Eight-inch and three-inch blank space for contractor and City Engineer stamps.
N. Contractor's stamp, signed, certifying to review of submittal, verification of products, field measurement, field construction criteria, and coordination of information with submittal with requirements of work and Special Provisions.

If required by the City Engineer or City Engineer's Representative, resubmit shop drawings that include the following:

A. Corrections or changes from previous submittals as indicated by City Engineer or City Engineer's Representative. Re-submittals are required until approved.
B. Shop Drawings and Product Data: Review initial drawings or data and resubmit as specified for initial submittal. Indicate changes, which have been made other than those requested by City Engineer.

Testing and Acceptance: Submit materials production and field placement testing results as required by the City of Madison Standard Specifications for Public Works Construction-Latest Edition or as required by the City Engineer or City Engineer's Representative. Final acceptance of sanitary sewer and related materials such as backfill, concrete, slurry, etc. will come from the City Engineer or City Engineer's Representative.

Allow the City of Madison to sample/test materials as requested. Provide complete copies of required submittals as follows:

Shop Drawings:	Six copies
Sampling/Testing Results:	Three copies

Deliver required copies of submittals and testing results to Mark Moder, City of Madison, Department of Public Works, City-County Building, Room 115, 210 Martin Luther King Jr. Boulevard, Madison, Wisconsin 53710.

The City Engineer or City Engineer's Representative will review and return shop drawings to the contractor within one week of date of receipt.

Protection of Sewers: Take adequate measures to prevent impairment of operation of existing sanitary sewer and storm sewer systems. Prevent construction material, concrete, earth, or other debris from entering sewer or sewer structure.

Divert sewage flow interfering with construction to sanitary sewers leading away from construction area. Prior to commencing excavation and construction of work impacting existing city sewer, submit to City Engineer for review, detailed plans, including routing and connections, required to handle and dispose of sanitary wastes. By reviewing the plan, the City Engineer neither accepts responsibility for adequacy thereof nor for damages to public or private property resulting there from, such responsibilities remain with the contractor.

Sanitary sewer damaged or removed during construction, which is to remain in service, will be restored or replaced to original material and workmanship used for original construction.

All City of Madison manhole castings removed from sewer access structures (removed, abandoned, or swapped out with a casting elevation adjustment) will be delivered to City Engineering's Service Building, 1600 Emil Street, Madison, WI 53713.

The costs to remove all abandoned utility pipes within the sanitary sewer pipe trench or sewer access structure excavation will be included in the unit price bid for the pipe of the type, class and diameter used. The cost includes installing a concrete plug in the portion of the abandon pipe that remains in place after completion of sanitary sewer trench.

According to the City of Madison Standard Specifications for Public Works Construction – Latest Addition, "Pipe to be removed that is in the same trench as a new pipe will not be compensated as remove pipe and will be considered to be incidental to the new pipe installation." Same trench will be considered to be any pipe located with 3' horizontally of the pipe being installed.

City of Madison (sanitary sewer) has underground facilities located within the project area. Replacement and Installation of new underground facilities will be accomplished as part of contract 5992-09-86 by the contractor. Existing facilities and anticipated proposed relocations are as follows:

- Flagstone Drive- Station 145'NB'+31 RT 66.9' to 11'F'+63.9 RT 1.3' Remove and Replace sewer (10").
- Proposed New Road (Raymond Road to Meriter Way) 506'R'+31.5 LT 5.5' to 5'MNS'+00 RT 0' (8" new).
- Proposed new sewer crossing of CTH 'M' Pleasant View Road 205'NB'+00
- Mid Town Road- Proposed new sewer crossing at Mica Road Station 421'WB'+77.0 (8").
- Mid Town Road- Proposed new main 421'WB'+77 LT 38' to 423'WB'53 LT 37' (8").

Meriter Hospital (3102 Meriter Way) has expressed interest in replacing their sanitary sewer lateral up to their building in order to eliminate their private sewer pumping system. Contractor may contact Meriter; Mike Brasser; mike.brasser@unitypoint.org; (608) 417-6229 Work / (608)224-9191 Cell. All lateral work would be paid for by Meriter separately and is not included in the contract work.

Sanitary Sewer removals, replacements, new installations and adjustments are included as part of the project as shown on the plans. Complete all work within the existing right-of-way. Coordinate operations with the City of Madison. Contact Mark Moder, (608) 261-9250.

Site Dewatering
All Groundwater Dewatering for the installation of the City of Madison sanitary sewer will be incidental to the sewer main, lateral, and sewer access structure being installed.

Dewater the site during construction or working with the water on-site in a manner that allows the project to be constructed according to the plans and specifications. This item includes removal of any water entering a trench or excavation including but not limited to groundwater, surface water runoff and/or trench dewatering.

Groundwater is expected to be encountered during excavation for the sanitary sewer. Provide and maintain ample means and devices with which to promptly remove all water entering excavations, trenches, and other parts of the work and keep said excavations dry until the structures to be built therein are completed.

Installation of concrete or masonry structures will not be acceptable if placed in water or if water is allowed to rise over masonry or concrete and there is danger of flotation or of setting up unequal pressures in the concrete until the concrete has set at least 24 hours and any danger of flotation has been removed.

The contractor is responsible for all work, materials and equipment required to comply with permit conditions to dewater the site. At a minimum, pump water into a settling tank, or alternate method approved by the engineer, to settle solids prior to discharge into the storm sewer for clean water and into the designated sanitary sewer for potentially contaminated water.

Provide all equipment and personnel necessary to conduct dewatering operations as required for the proper completion of the work. Prepare a dewatering plan and submit it to the engineer for review and approval prior to starting dewatering operations. The plan shall include a description of the proposed dewatering methods and maps or drawings indicating the location of the dewatering facilities and points of surface discharge of the water.

The contractor is solely responsible for choosing a method of water control that is compatible with the constraints defined. The contractor is responsible for the adequacy of the water control system and will take all necessary measures to ensure that the water control operation will not endanger or damage any existing adjacent utility or structure.

Design, install and operate the method or methods of water control in such a manner as to provide satisfactory working conditions and to maintain the progress of work. Design the methods and systems so as to avoid settlement or damage to adjacent property according to the applicable legislative statutes and judicial decisions of the State of Wisconsin. All required pumping, drainage and disposal of water will be done without damage to adjacent property or structures, or to the operations of other contractors and without interference with the access rights of public or private parties.

Review and approval of the dewatering plan does not relieve the contractor of the dewatering requirements stated in these specifications. The engineer assumes no liability for the performance or safety of the dewatering system.

Obtain all applicable State of Wisconsin permits for all groundwater control wells including, if necessary, the Wisconsin Department of Natural Resources (WDNR). Drill and seal all wells according to requirements of the WDNR for installing and abandoning

wells. According to Paragraph 144.025(2)(e), Wisconsin Statutes, permits are required for all groundwater control wells that singly or in aggregate produce 70 or more gallons per minute. Drill and seal all wells according to requirements of the WDNR for installing and abandoning well.

If necessary, the WDNR address for obtaining well permits is:

Wisconsin Department of Natural Resources
Private Water Supply Section
Box 7921
Madison, Wisconsin 53707

File a copy of the permit with the City of Madison 48 hours prior to commencement of dewatering.

The contractor shall be solely responsible for choosing a method of groundwater control which is compatible with the constraints defined. The contractor shall be responsible for the adequacy of the groundwater control system and shall take all necessary measures to ensure that the groundwater control operation will not endanger or damage any existing adjacent utility or structure.

Water shall not be allowed in trenches while pipe is being laid.

The method or methods shall be designed, installed and operated in such a manner to provide satisfactory working conditions and to maintain the progress of work. Design the methods and systems so as to avoid settlement or damage to adjacent property according to the applicable legislative statutes and judicial decisions of the State of Wisconsin. Perform all required pumping, drainage and disposal of groundwater without damaging adjacent property or structures, or the operations of other contractors and without interfering with the access rights of public or private parties.

No masonry shall be installed in water nor shall water be allowed to rise over masonry or concrete if there is danger of flotation or of setting up unequal pressures in the concrete until the concrete has set at least 24 hours and any danger of flotation has been removed.

Dewater in such a manner that assures safe working conditions and provides stable trench side slopes and trench bottom for adequate support of the pipe and appurtenances. Dewater sufficiently to minimize or eliminate groundwater pressures below the proposed trench bottom which otherwise may tend to cause boiling or a “quick” condition at the trench bottom. Where silty sands or other impervious soils are encountered at and/or below the pipe zone, the dewatering equipment must be adequate to relieve the groundwater pressure below the impervious soil layer and accomplish sufficient drainage of the impervious soils to provide a stable trench bottom.

Pump water from dewatering operations directly to a minimum 1,500 gallon holding tank to allow for settlement of large solids. Periodically pump water from the top of the settling tank into the storm sewer system.

Notify the engineer at least three days in advance of any proposed changes to the dewatering plan.

Properly remove and/or abandon dewatering wells. Remove and/ or abandon wells according to all state and local regulations.

Obtain permission to use any storm sewers, or drains, for groundwater disposal purposes from the City of Madison. It shall be the contractors' responsibility to identify and obtain any permits required for the discharge of groundwater to the surface or to a sewerage system. Do not cause flooding by over-loading or blocking up the flow in the drainage facilities, and leave the facilities unrestricted and as clean as originally found. Repair all damage to facilities or restore as directed by the City of Madison Engineering Department, at no cost to the department.

Any flooding or erosion damage caused by dewatering operations is the responsibility of the contractor. If flooding or erosion damage occurs, take immediate steps to eliminate those conditions and to correct any damage. The control of all surface and subsurface water, ice, and snow are considered part of the dewatering. Erosion control shall be exercised at all times, including the placement of silt fences, sedimentation basins and any other devices necessary for proper control.

Provide stand-by equipment to maintain continuous dewatering in the event of mechanical breakdown to part of the system.

The contractor is responsible for removal and/or abandonment of dewatering wells. Removal and/or abandonment shall conform to all state and local regulations.

No disposal fees are required by the City of Madison for discharge to the storm sewer system. The contractor shall pay all other permit fees.

21. General Provisions for City of Madison Water Main Construction.

Contact Information:

Madison Water Utility
Adam, Wiederhoeft, P.E.
Phone: (608) 266-9121
E-mail: awiederhoeft@madisonwater.org

Madison Water Utility
Jeff Belshaw, Construction Supervisor
Phone: (608) 261-9835
E-mail: jbelshaw@madisonwater.org

Utility Standard Specifications: Perform work according to these provisions and the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction and the City of Madison Standard Specifications for Public Works Construction-Latest Edition, hereinafter referred to as the City Standard Specifications. In the event of a conflict the Wisconsin Department of Transportation Standard Specifications will take precedence.

Work Sequence: Contact the identified persons above ten working days prior to starting water main work and provide a schedule of operations.

Note that many portions of the existing water system along these project limits are located at or near the extent of the Madison Water Utility service area and are often supplied from only one direction, rather than multi-feed/looped water supply systems. Subsequently, inadvertent valve operations could result in unanticipated customer service interruptions. Consult with the Water Utility Engineer and/or Water Utility Construction Inspector prior to installation of new water main segments to establish and confirm pressure zone adjustments, valve sequencing, and notification requirements prior to each water system connection. Provide at least two business days' notice to Madison Water Utility ahead of any anticipated valve operation.

Construct water main and water service laterals in stages according to the traffic control plans and in proper coordination with construction activities adjacent to the water main.

As construction staging and sequence allows, disinfect the new water mains. Madison Water Utility will flush and test all newly installed water mains. Coordinate as necessary with Madison Water Utility for these operations. After the water main has passed bacteriological and pressure testing, as applicable, install replacement water services and make connections to the existing water system. If required, abandon existing water main only after the new water main has passed all required testing, new main has been properly brought online into the system and all service laterals, except those called to be abandoned, have been relocated to the new main.

Keep valves at connection points between the new water main and the existing water main closed until the new water main has passed all testing. Where new valves need to be opened to fill the new water main for testing and flushing, sequencing shall be so arranged to preclude backflow of any water from the new water main to the existing water main.

Hydrants: Determine the location of the curb line, sidewalk limits, and existing utilities in the area prior to hydrant installation to assure the proper location of the hydrant relative to the curb line. This work is considered incidental to the new water main installation.

Where needed, use offsets and/or bends on the hydrant lead such that the hydrant is installed at a minimum bury depth of 6 feet and required clearances with storm sewer, sanitary sewer and other pipes are maintained. In no case may a hydrant be set at a depth greater than 9 feet from grade. Assess the need for hydrant extensions. All hydrant extensions and fittings on the lead are incidental to the installation of the hydrant.

Either permanently abandon or securely bag any installed hydrant, either existing or new, that is not supplied by an in-service main overnight or for longer than twelve hours until the hydrant is permanently abandoned or back in service.

Temporary Flushing Hydrants: The installation of temporary flushing hydrants may be desired as part of the phasing and sequencing of water main installation. The furnishing, installation, use and abandonment of temporary flushing hydrants is considered incidental to water main installation.

Temporary Air Bleed: Where any installation of proposed water main does not have an adjacent hydrant or other means of bleeding air from the main, install a temporary 2-inch corporation stop at the high point of the main. Remove the stop and plug the opening after successful completion of water main testing. Installation, use, maintenance, removal and plugging of corporation stops for use as air bleeding devices are considered incidental to the installation of water main.

Abandoned Facilities: Abandoned facilities may exist within the project limits and utility companies will be abandoning some additional facilities in place after relocating facilities to avoid conflicts with the proposed work. Removal by the contractor of any abandoned facilities necessary to complete the proposed work, including plugging the remaining ends of the facility, is considered incidental to the contract. Contact each utility company individually to verify if any can be expected and to possibly obtain facility maps for approximate locations. The costs to remove all abandoned utility pipes within the water main trench or related excavation will be included in the unit price bid for the respective bid item. The cost includes installing a concrete plug in the portion of the abandoned pipe that remains in place after completion of the trench or excavation.

Location of Existing Water Service Laterals: The horizontal location and size of all water laterals indicated on the plans is taken from surveys, approximate measurements, and the city's available records. These records are not guaranteed to be accurate in all cases and do not indicate at what depths these laterals are located. As such, determine the location and size of the existing laterals before making a tap into the new water main. Follow the plans to determine which services are to be abandoned, reconnected, extended, or replaced to the property line.

Location of Existing Water Facilities: The horizontal and vertical location and size of all existing water mains indicated on the plans is taken partially from surveys, approximate measurements, and the city's available records. These records are not guaranteed to be accurate in all cases. Due to the unverified depth and location of existing pipelines, alteration of the lines and grades shown on the plans for new pipelines where connections are to be made to existing pipelines may be necessary. Notify the engineer of locations where alterations of the lines and grades shown are necessary so that an acceptable solution can be determined.

22. General Provisions for City of Verona Sanitary Sewer and Water Main Construction.

This article contains the general provisions for construction and adjustment of the City of Verona's sanitary sewer and water main system within the project limits. Work items are included under Project 5992-09-87.

A Sewer and Water Specifications
Perform work according to these special provisions and the "Standard Specification for Sewer and Water Construction in Wisconsin," 6th Edition, dated December 22, 2003 and Addendum thereto, herein referred to as "Sewer/Water Specifications," except Part I which is deleted.

B Work by Others
Only the City of Verona Water and Sewer personnel shall operate valves within the existing water distribution system to fill or flush new water mains. Coordinate with the Water Department at least 24 hours prior to the need for water valve operation. Contact John Bublitz at the City of Verona at (608) 333-6365.

C Public Notice
Where existing water service is to be shut down, provide residents and businesses with at least 24 hour prior notification of time and duration of water service shut down.

D Shop Drawings and Samples
Provide shop drawings for all sanitary sewer and water main materials to be incorporated into the work to the engineer.

Prime Contractor's Responsibilities include: reviewing shop drawings and submittals; determination and verification of field measurements, catalog numbers and similar data, and conformance with specifications and special provisions; coordination of each submittal with requirements of special provisions; and notification to City of Verona representative, in writing, at time of submittal, of deviation in submittals from requirements of special provisions. The City of Verona Representative for this project is Theran Jacobson, City of Verona Director of Public Works, telephone (608) 848-6801.

Note: Begin no fabrication or work which requires submittals until return of submittals with approval of the engineer.

Submittals shall contain:
Date of submittal and dates of previous submittals.

1. Project title and number.
2. Names of contractor, supplier, and manufacturer.
3. Identification of product, with identification number, and drawing and special provision number.
4. Manufacturer's model number.
5. Relation to adjacent or critical features of work or materials.

6. Applicable standards, such as ASTM and identification of deviations from special provisions.
7. Provide 8 inch by 3 inch blank space on submittal for contractor and engineer stamps.
8. Contractor's stamp, signed, certified to review of submittal, verification of products and coordination of information within submittal with requirements of the work and special provisions.

Resubmittal requirements shall include:

1. Corrections or changes in submittals required by the engineer. Resubmittals are required until approved.
2. Shop drawings and product data. Revise initial drawings or data and resubmit as specified for initial submittal. Indicate changes which have been made other than those requested by the City of Verona.

Provide complete copies of required submittals as follows:
1. Shop Drawings: 1 electronic copy.
2. Test Results: 1 electronic copy.

Deliver required copies of submittals to the engineer for disbursement to the City of Verona Department of Public Works for final review:

E Protection of Sanitary Sewers
Take adequate measures to prevent impairment of operation of existing sanitary sewer systems. Prevent construction materials, earth, concrete, or other debris from entering sanitary sewer or sanitary sewer structure.

F Cleaning of Sanitary Sewers and Water Mains
Free interior of sanitary sewers, water mains and appurtenances from dirt and debris as work progresses. Leave interior of sanitary sewers, water main and appurtenances affected by work clean at completion of the work.

G Sanitary Sewer and Water Main Trench Sheathing and Bracing
Provide all sheathing and bracing required to protect work, existing utilities, property, and buildings and to provide safe working conditions in the trench.

Comply with all OSHA and Wisconsin Administrative Code requirements for sheathing and bracing.

If wood sheeting is driven below spring line of pipe, cut off sheathing a maximum of 3 feet above pipe with the lower section left in place. Steel sheeting that can be pulled without disturbing the trench wall, pipe bedding, or pipe does not have to be cut off. Fill void left after pulling sheathing with sand.

A portable trench box or trench shield, according to section 2.3.6 of the "Sewer/Water Specifications" is allowed. Fill the void between the trench wall and pipe cover material left after pulling the trench box with bedding stone and compact.

H Erosion Control

Provide silt fence, riprap, sedimentation basins, dewatering bags, or other approved means to minimize erosion, collect particulates, and dissipate energy from discharge point of pumped water according to requirements of WDNR "Technical Standard No. 1061 Dewatering."

I Backfill

Backfill all sanitary sewer and water main trenches beneath pavements, curb and gutter, sidewalks and parking lots with granular backfill conforming to the gradation requirements of standard spec 209. Compact backfill mechanically to a minimum of 95% maximum density as determined by ASTM D1557, Method D (Modified Proctor Test) from the top of the pipe cover material to the surface of the trench. Special Compaction equipment and measures are required at manholes, valve boxes and other vertical appurtenances where standard compaction equipment cannot be utilized. Flooding of backfill will not be allowed. Backfill not under pavements, curb and gutter, sidewalks and parking lots may be native backfill material from the trench excavation. Compact native backfill mechanically to a minimum of 90% maximum density as determined by ASTM D1557 (Modified Proctor Test) from top of pipe cover material to trench surface.

The City of Verona, or selected representative, will perform compaction testing of installed backfill. Testing will be a minimum of four tests per day or one test for every 100 feet of water main constructed with an additional test at each valve box installed. Testing will be a minimum of six tests per day for every 150 feet of sanitary sewer constructed and an additional test at each manhole installed.

J Pipe Bedding and material

Conform to the requirements of Chapter 8.43.0 of the "Sewer/Water Specifications," except as modified herein:

1. Under Subsection 8.43.2, bedding material shall be crushed limestone or crushed gravel. Pea gravel is not acceptable.
2. Crushed limestone for sanitary sewer construction shall conform to the gradation requirements of Table 33 or Table 33A of section 8.43.2 of the "Sewer/Water Specifications." Where groundwater conditions exists, bedding and cover material shall be well graded and conform to requirements of Article XI.8.1.1 and Article XI.8.1.2 of the Appendix of ASTM D2321.
3. Crushed gravel shall conform to the gradation requirements of the following table:

Sieve Size	Percentage Passing by Weight
1 inch	100%
3/4 inch	90-100%
3/8 inch	20-80%

No. 4	0-20%
No. 8	0-10%
No. 30	0-5%

At least 60%, by count, of the number of particles of aggregate retained on the No. 4 sieve shall have at least 1 machine fractured face.

4. Water main bedding shall be compacted crushed limestone fines. Limestone screenings shall conform to Table 34 of section 8.43.2 of the "Sewer/Water Specifications," except where bottom of trench is below normal groundwater elevation; crushed limestone shall conform to gradation requirements of Table 32 of section 8.43.2 of the "Sewer/Water Specifications".

K Pipe Cover Material

Pipe cover material shall be the same material as pipe bedding material specified above. Cover material shall extend to one foot above the top of sanitary sewer or water main pipe.

L Disinfection of Water Mains

Disinfect all new and existing water mains that have been contaminated by construction operations accordance with the requirements of section 4.16.0 of the Sewer/Water Specifications and according to AWWA C651 procedures.

1. Chlorine
    a. Use of high test calcium hypochlorite or tablet method of disinfection according to AWWA procedures shall be approved by the engineer.
    b. Segment water main under disinfection by tablet form calcium hypochloride into sections 2,500 feet or less in length.
    c. The method of disinfection for water containment devices and piping systems shall conform to AWW C651.
2. Chloride preparation
    a. Prepare granular calcium hypochloride as water mixture before introduction into unit. Make dry powder into paste and thin to approximately 1% chlorine solution.
    b. To prepare chlorine solution add 1 lb. of calcium hypochlorite (65%-70% available Cl2 to 7-1/2 gallons of water.
    c. Install tablets directly into water main according to AWWA C651.
3. Pipeline preparation
    a. Release entrapped air at high points and fill units with water to allow disinfecting agent to come in contact with interior surfaces.
    b. If complete venting cannot be accomplished through available outlets, provide necessary corporation valve and vent piping.
    c. Allow disinfection agent to remain in contact with pipe for a period of time not less than 24 hours.
    d. Obtain a passing bacteriological sample(s) prior to performing pressure and leakage testing and then obtain additional passing bacteriological sample(s).

4. Application of disinfectant
    a. At the point of application, place tablets according to AWWA C651.
    b. Introduce water at a controlled rate in order to regulate chlorine dosage.
    c. Keep chlorine water disinfecting solution and contaminated water from flowing into units previously chlorinated and flushed.
    d. Retain chlorinated water in unit long enough to destroy nonspore-forming bacteria.
    e. Minimum retention period shall be 24 hrs. with chlorine residual at the end of this period not less than 25 mg/L (ppm).
    f. Operate valves and appurtenances while line or unit is being disinfected to ensure surfaces of valves are disinfected.
    g. Flush and swab pipe, fittings, or valves that must be placed in service immediately with 5% solution of calcium hypochlorite immediately prior to assembly.
    h. Secure approval from the City of Verona Water Department before using this method of disinfection.
    i. Valve operation shall be performed by City of Verona Water and Sewer personnel only. Provide Water Department with a minimum of 24 hours advance notice of need to valve operation.
5. Flushing and Testing
    a. Following the chlorination waiting period, flush water main to bring water in pipe to City of Verona normal chlorine residual. Verona Water Department will perform chlorine residual testing. Once chlorine residual is reached take samples for bacteriological testing and deliver to laboratory for testing. Testing will be invoiced directly to the contractor. Upon receipt of safe test results, water services may be tapped into the new water main.
    b. Discharge from pipe line flushing shall be dechlorinated according to WDNR WPDES General Permit No. WI-0057681 prior to release to surface waters.
    c. Following installation of water services, perform pressure and leakage testing. Upon completion of satisfactory pressure and leakage testing, re-flush water main and take samples for bacteriological testing. Upon receipt of safe test results, water main may be placed into service.
    d. Above acceptable condition of water delivered by each unit or system shall continue for a minimum of 2 days, as demonstrated by laboratory examination of samples. Laboratory tests shall show chlorine residual, after final flushing, of less than 1 mg/L (ppm).
    e. If initial treatment results in unsatisfactory bacterial tests, repeat disinfection until satisfactory results are obtained.
    f. Prevent entry of contaminated water into previously disinfected units or systems.
6. All flushing of new mains shall be done in the presence of a City of Verona representative and will be coordinated to serve the best interests of the City of Verona Water Department. The Verona Water Department will supply reasonable amounts of water for flushing and testing at no cost. Record location and amount of time hydrant is flushed and provide information to the City of Verona Water Department upon completion of flushing operations.

M Water Main Hydrostatic Testing

Following installation of all water main, hydrants, valves and appurtenances, perform hydrostatic test according to requirements of section 4.15.0 of the Sewer/Water Specifications.

N Electrical Conductivity Testing

1. Test ductile iron pipe water main including fittings, hydrants, and valves for electrical continuity according to the following: Method of testing approved by engineer.
2. Make electrical test after hydrostatic pressure test, and while main is at normal operating pressure.
3. Test sytem for electrical continuity. Provide continuity through use of trademarked method.
4. Furnish, at no additional cost to owner, equipment necessary to perform electrical test in presence of engineer.
5. Test section consists of continuous run between 2 fire hydrants. Test total length of water main installed.
6. Make connections for test at fire hydrants. In areas where fire hydrants not available, convenient connection may be made, subject to approval of engineer.

O Sanitary Sewer Testing

Following installation of sanitary sewer, deflection test the pipeline with go-no-go mandrel according to requirements of section 3.2.6 (i) 4 of the "Sewer/Water Specifications" for 5% deflection of the base inside diameter. All mainline sanitary sewers shall be low pressure air tested according to the requirements of Chapter 3.7.0 of the "Sewer/Water Specifications."

1. Provide piping connections between section of line being tested and air supply, together with test pressure equipment, meters, pressure gauge, and other equipment, materials and facilities necessary to make specified tests.
2. Provide bulkheads, blocking, bracing or other temporary sectionalizing devices that may be required.
3. Remove temporary sectionalizing devices after test complete.
4. Plug pipe outlets with test plugs. Brace each plug securely to prevent blowouts during air test.
5. Add air slowly.
6. Pressurizing equipment shall include regulator set to avoid over-pressurizing and damaging line.
7. Make air tests from manhole to manhole unless approved by City of Verona Sewer Department.

Following deflection and leakage testing, televise all sanitary sewer installed as visual record of installation.

1. Furnish television camera, adjustable skids, lamp for lighting, winch, cable-metering device, and mobile studio, and other materials to perform television leakage test.
2. Television equipment shall conform to following:
    a. Use television camera specifically designed and constructed for such inspection. Mount camera on adjustable skids to keep it in center of pipe.
    b. Supply lighting by lamp on camera, capable of being dimmed or brightened remotely from control panel. Lighting system shall be capable of lighting entire periphery of pipe.
    c. Camera shall be operative in 100% humidity conditions and have minimum of 650 lines of resolution and tested to 400 psi.
    d. Camera shall be moved through line at uniform slow rate by means of cable winch at downstream manhole.
3. Measurement for location of defects shall be at ground level by means of metering device. Markings on cable or line which would require interpolation for depth of manhole are not allowed. Measurement meters shall be accurate to +1 foot/300 feet.
4. Provide video in DVD format for runs of sewer televised.
    a. Footage readings shall appear in DVD format.
    b. DVDs become property of the City of Verona.
    c. Mobile studio shall be large enough to accommodate up to three people for purpose of viewing monitor while sewer lines are being tested.
    d. Engineer shall have access to view monitor.
5. City Representative will analyze DVDs to determine whether sewers constructed under this contract meet requirements of specifications. If defects are found, correct and televise sewer at no additional cost to the City of Verona.
6. Payment for providing the video, correcting defects, and providing additional video to confirm correction of the defects is incidental to the sanitary sewer item installed.

23. General Provisions for Conduit Installation.

Supplement standard spec 652 as follows:

Use Schedule 80 conduit under all traffic areas.

Install all conduit at a minimum depth of 30 inches, unless otherwise approved by the engineer. Solvent weld all joints. Mark the location of each conduit, where conduit crosses traffic areas, by a permanent chiseled arrow or other appropriate permanent stamp in top of the curb head.

Install and connect all conduit to the concrete bases, manholes, handholes (pull boxes), existing conduit, or conduit elbows so as to provide a continuous network, unless otherwise indicated on the plan. All connections shall be watertight. Do not install drainage holes in conduit. Uncover the ends or mid-sections of all existing conduit that is being extended by or incorporated into this project work.

When connections are to be made to an existing conduit, first verify that the existing conduit is fully clear and useable for its entire cross-section and length. When the existing conduit is found to be defective, notify the engineer and do not proceed until the engineer so directs. If the contractor connects to an existing defective conduit without the express direction from the engineer, make any and all necessary repairs and replacements to all conduits, including conduit that was "existing" prior to the contractor starting work and to the satisfaction of the engineer. All costs of this work shall be at the expense of the contractor.

Turn up conduits terminating in a non-paved location and not in a structure, and end at terrace finish grade with a PVC cap securely attached, per duct termination detail. Where conduit runs parallel to curb and gutter, place the conduit within 12 inches of the back of the curb, except as directed by the engineer. The engineer will determine termination points not within pull boxes or concrete bases.

Unless the contract provides for installation of cable, cap the ends of each run of conduit with standard conduit caps or otherwise appropriately plug the ends to preclude infiltration of water and soil. Install a pull wire in each conduit, except those with only streetlight wire. A pull wire shall be approximately 4 feet longer than the conduit run, and shall be doubled back for at least 2 feet at each terminal. The pull wire shall be #10 AWG copper, stranded, with THHN insulation and green color coding. Install the pull wire within seven days of completing a conduit installation from structure-to-structure.

Use a 6-inch minimum sand padding below the conduit and a 6-inch minimum sand lift above the conduit. Do not backfill trench with any rocks larger than 4 inches in diameter or any foreign debris.

24. General Provisions for City Traffic Signals.

Perform all work on the lighting and conduit/pull box system according to the Wisconsin Electrical Code, the applicable provisions of the standard specifications, and these special provisions and plans.

Remove existing traffic signal and streetlight poles identified for removal, including those that also have traffic signal equipment on them Contact Michael Christoph at the City of Madison Traffic Engineering Shop, (608) 266-9031, to coordinate removal of existing signals and installation of new signals.

Each pedestrian push button installation shall include "Push Button for Walk Signal" signs. Single direction arrow signing shall also be used with all buttons except two direction arrow signing is needed for single buttons on median poles.

If existing conduits, handholes and bases designated as "save" cannot be saved, contact Jerry Schippa, (608) 267-2969, for further direction.

All new electric services shall be metered power, 100 amperes, 120 volt, CG-3 rate.

A minimum of 6 feet separation shall be maintained between any adjacent loop detectors.

25. General Provisions for City Electric Systems.

A General Requirements

Perform this work according to the Wisconsin Electrical Code, National Electrical Contractor's Association (NECA) electrical construction practices, OSHA and the standard specifications.

Perform all work on the lighting and conduit/pull box system according to the Wisconsin Electrical Code, and applicable provisions of standard spec 659, and these special provisions and plans.

Carefully remove and salvage the steel frames and covers from all pull boxes and manholes to be removed or abandoned, and all street light poles, arms, transformer bases, fixtures, concrete handholes, and associated equipment. Material designated by the city to be saved shall be stored onsite and kept clean from debris and protected from damage until items can be returned to City Traffic Engineering, 1120 Sayle St., Madison. Contact Michael Christoph at the City of Madison Traffic Engineering Shop, (608) 266-9031, to coordinate removal of existing signals and installation of new signals.

Complete electrical work by a journey-worker electrician or be completed by an electrical apprentice under the supervision of a journey-worker electrician. Legal status or standing as a journey-worker and apprentice electricians shall be certified or otherwise documented to the engineer before beginning any electrical work. Electrical work is hereby defined as electrical and related construction required to be performed under the contract by the contractor, according to the standard specifications, contract provisions, standard detail drawings and plan details applicable to electrical construction. At the pre-construction conference, supply the engineer with a list of names and qualifications of journey-workers and/or electrical apprentices who will or may be working on this contract.

Proof of qualification to do electrical journey-worker level work shall be the “Completion of Apprenticeship” certification card issued by an approved state agency, or a resume showing sufficient electrical education and a minimum of 14,000 hours of varied electrical work experience. All apprentices shall be indentured by an approved state agency.

The contractor is hereby advised that electrical apprentices must work under the terms of their indentures, which require an apprentice be under the direct supervision of a journey-worker with the exception of an apprentice in the final year as an apprentice. Any violation, or suspected violation, of these terms will be reported to the Bureau of Apprenticeship Standards.

On completion of the work, test the installation and ensure that it is entirely free of grounds and short circuits. This contract contemplates and intends a complete and operating installation of electrical work. Everything in the form of labor or material necessary for this result is in the intent of the contract.

It must be understood that electrical drawings and details are diagrammatic; they are not intended to be shop drawings. It is expected it may be necessary to move conduit, and/or equipment in some cases, to get a coordinated installation. Such changes are considered part of the contract obligation, without cost to the owner. Do not locate any equipment where its usefulness and/or operation may be affected by the work of other trades, door swing, counter, equipment, etc.

The contractor acknowledges his acquaintance with the plans and specifications and their respective requirements, and shall guarantee the electrical system has been installed strictly according to the electrical plans and specifications, using only the best of materials available and installed in a substantial manner by experienced labor. The contractor agrees to replace and/or repair items failing from causes of faulty workmanship, material or design, without extra cost, at any time within one year from the date of final acceptance.

Furnish the City of Madison with service manuals for all items furnished under this contract. Service manuals shall be complete with drawings, diagrams, operation and installation instructions, and parts lists.

New streetlight wire in conduits shall consist of 3#4 and 1#8 green wire. The color coding for the #4 wire shall be one black, one red, and one white.

Ground wires shall have green insulation or be marked with green tape at all junction or pull boxes and at all terminations. Equipment and enclosures shall be grounded, ground connection surfaces shall be cleaned, and connections shall be made so it is impossible to move them.

All maintenance of existing street light facilities within the project limits shall be the contractor's responsibility. Maintain the new street lights until project work is accepted. This work shall be considered incidental to installation of street light units, temporary lighting, structures and ducts, and no separate compensation will be paid.

Extend existing lighting circuits to feed the new and relocated lights as part of this project. Verify the existing loads of each lighting circuit before adding additional load to a lighting circuit. Loading on any circuit shall not exceed NEC requirements.

Submit one copy of as-built plans, including cable and conduit routing diagrams, wiring of fixtures and other pertinent details, to the engineer and the City of Madison.

Furnish equipment and appliances necessary to test the complete installation of electrical conductors. Test and demonstrate to the satisfaction of the engineer that the circuits are properly connected, continuous and free from short circuits and unspecified grounds, that the circuits are connected according to the manufacturer's wiring layout, and that each circuit is operational. The lighting system shall not be deemed complete until the electrical work has been completed and the electrical systems are found to be in proper working order, including operation for ten consecutive nights without failure.

B Materials

All materials furnished by the contractor for lighting installation under this contract are subject to approval by the engineer.

Manufacturers shall be responsible for providing materials listed by UL or other approved agencies and all governing codes and ordinances. Materials must bear a UL and/or other approved labels, where possible. Items specified by catalog number of brand name and shop drawing approval will not relieve the manufacturer of this responsibility. All electrical material for which a standard has been established by the Underwriters Laboratories, Inc. shall be furnished and installed under this contract. Material shall have the UL label firmly attached and be listed by UL Listing signifies that the material has passed the established standard testing. All electrical materials shall conform to the latest requirements of the Wisconsin Electrical Code.

All materials, not specified herein, used in the work shall conform to the requirements specified on the plan or the contract special provisions.

Furnish and install incidental items, such as wire nuts, grommets, tape, connectors, and electrical varnish that are obviously necessary to make the proposed system complete from the source of supply to the most remote unit.

Touch up mars and scratches on painted equipment with two coats of synthetic resin enamel or as directed by the engineer.

Furnish a complete list and cut sheets/shop drawings of materials to be furnished and used for lighting. Include the names and addresses of manufacturers, together with catalog numbers, certificates of compliance, specifications, and other product information requested by the engineer. Submit the list and cut sheets/shop drawings within 20 calendar days of the award of the contract. Do not incorporate any materials into the lighting system prior to obtaining the written approval of the engineer. Approval does not change the intent of the specifications. Do not substitute any materials. The contractor is allowed up to two submittals of material for approval. If more than two submittals are required, the contractor will be charged on a time-and-material basis for additional review time with payment made before submittals will be reviewed.

C Splices

Splices shall comply with standard spec 659.3.2. All splices within a junction box, handhole, etc. shall be of the same type. No splices are allowed in underground pull boxes, except for grounding conductors.

D Circuit Identification

Accomplish color coding by using cable jackets of the proper color. Code all tails of all splices. Color-code secondary distribution circuits as shown on the plans; the ground conductor shall be green. Each accessible location of underground cable in junction boxes, pull boxes and pole bases shall have a permanent white nylon tag with black lettering,

attached in a “flag” manner using a nylon tie, identifying the cabinet and conductor circuit number.

E Branch Circuit Tagouts
The contractor may at his option work on live circuits or he may disconnect and tag out circuits. Any branch circuit not disconnected and tagged out shall be considered live; restrict work force to those qualified to work on live circuits. Disconnection may be made by disconnecting branches at the overcurrent device. Make tagouts with contractor furnished manufactured electrical warning tags and endorse with the name of the contractor, the date, and the project. Clear all tagouts by the end of the workday.

F Threaded Fasteners
Liberally coat all threaded fasteners, i.e., screws, and bolts with an approved anti-seize compound. Excepting fasteners inside control cabinets, fasteners up to 1/2-inch in diameter shall be stainless steel.

Provide rust, corrosion and anti-seize protection at threaded assemblies by coating the mating surfaces with Markal (Hightemp E-Z Break), Never-Seez (marine grade), LPS 100, Lubriplate or approved equal.

G Bonding Wire
Install bonding wire in conduits for equipment grounding. Ground all equipment as required.

H Initial Failures
The contractor and the engineer shall agree on a time for test burning of completed installations, which is generally toward the end of the contract period. Replace failed lamps, along with any other non-functioning component, for no additional compensation. Only one test burn for the purpose of identifying initial failures will be required. Coordinate supply of replacement lamps with the city.

I Project Construction Staging
The construction of the new lighting system shall maintain the integrity of the existing lighting systems within and beyond the project limits at all times. Exceptions to this shall only be granted for just cause by the inspector.

Install transformer bases on all street light bases that are constructed, but not connected to the finished lighting circuit. Do not install poles, arms, or luminaires that cannot be energized and operational on the finish circuit prior to a winter work suspension.

J Items of the Same Classification
All items of the same classification shall be of the same manufacturer and series.

L Underground Installation
Ensure that the engineer has inspected all underground conduit and concrete base forms before backfilling any trench or pouring concrete. Any work completed without such inspection is subject to rejection as unacceptable work and shall be immediately removed

and acceptably replaced or otherwise satisfactorily corrected by and at the expense of the contractor. It is the contractor's responsibility to arrange for inspections. There will not be any additional compensation to the contractor for delays and inconvenience associated with arranging and waiting for inspections.

26. Turf Research Facility Coordination and Work Restrictions.

The University of Wisconsin OJ Noer Turf Research Facility manages turf grass and other agricultural research facilities along the west side of CTH M from Station 140"SB"+00 left to Mid Town Road and along the south side of Mid Town Road from the west project limits to CTH M.

The slope limits and TLE layout were developed to avoid and minimize disruption of turf grass research plots. Construction personnel, equipment, materials, and other work operations must remain within the TLE limits and clear of any turf research plots at all times. Install Fence Safety as shown in the plans, along and within the TLE boundary and work within these limits. Smaller grading equipment and paving equipment may be required.

Notify Bruce Scwheiger, Manager, at (608) 845-6895 prior to installing the Fence Safety and any erosion control. Staff at the research facility will be relocating irrigation equipment in advance of the project. Bruce will locate the remaining irrigation and confirm that it has been relocated.

The turf research facility will conduct a study of roadside turf development. Provide the engineer with the schedule for finish grading and final erosion control along the turf research property between Station 142"SB"+00 and 168"SB" +00 a minimum of 14 days prior to completing the work. Staff from the turf research facility will identify and locate research plot areas within the grading and restoration area. Place topsoil concurrently with adjacent topsoil areas but do not seed, fertilize, mulch, or install erosion mat in these areas. Turf research facility staff will complete the restoration work after topsoil is in place and adjacent areas of restoration and erosion control work are completed.

27. Clearing and Grubbing.

Clearing and grubbing individual tree and limits for clearing as measured by the station are indicated on the plans and are shown to the plan slope intercepts. Complete Construction Staking Slope Stakes and mark the clearing limits for approval by the engineer prior to beginning any clearing work.

Do not clear any trees outside the plan slope intercepts that are greater than 3-inches in diameter, measured as defined in the standard spec, without written approval of the engineer.

Do not clear any trees or brush greater than 10-feet outside the plan slope intercept without written approval of the engineer.

Replace standard spec 201.3 (9) as follows:

Dispose of stumps, roots, brush, waste logs and limbs, timber tops and debris resulting from clearing and grubbing or occurring within the clearing and grubbing limits by removing them from the right-of-way.

Replace standard spec 201.4.2 (1) with the following:

The department will measure Clearing and Grubbing by the full 100-foot station, acceptably completed, measured along the roadway centerline or reference line with each full 100-foot station starting and ending at a +00 station. If 2 or more roadways occur, the department will measure along a single centerline or reference line of the roadway shown in the miscellaneous quantities. For divided highways, the department will extend measurement units for each roadway, in width, from 5 feet outside the grading limit of that roadway to a line mid-way between the reference lines or centerlines for each roadway.

28. Stormwater Pond Construction

This special provision describes construction of the dry pond (north of Ineichen Drive) and the wet pond (north of Stony Ridge Circle).

Strip and salvage topsoil from the footprint of each pond according to standard spec 625 and as outlined in this special provision. Stockpile topsoil at an appropriate location within the project disturbance limits shown in the plans.

Excavate and grade the ponds according to the Contour Maps sections of the plans. Waste material deemed suitable fill by the engineer and that meets the requirements of standard spec 207 may be used as embankment material on the project. Dispose of unsuitable waste material at the appropriate offsite location. For the wet pond only, install a clay liner for the pond according to the Pond Clay Liner standard special provision. The liner should be 2-feet thick and installed from the pond bottom to elevation 1002.45.

Construct the storm sewer, culvert pipes, and outlet structures as shown in the Storm Sewer plans and Construction Details and corresponding standard specs and special provisions.

Restore all disturbed areas according to the Erosion Control plans and as outlined in this special provision. For the dry pond, place 6 inches of salvaged topsoil at all stripped locations. For the wet pond, place 6 inches of salvaged topsoil at all stripped locations except those below the normal water elevation of 1000.81. Refer to the Contour Maps sections of the plans for areas that do not require salvaged topsoil. Place Seeding Mixture No. 40 and Fertilizer Type A according to standard specs 630 and 629, respectively, at all disturbed locations. Place Erosion Control Mat Class I Type B at the locations shown in the Erosion Control Plan and according to standard spec 628. At disturbed areas that don't require erosion control mat, place Mulch according to standard spec 627.

Prior to seeding and placing erosion control mat, check final grading elevations to make sure elevations match the plans within an allowable tolerance as approved by the engineer.

29. Removing Old Structure Over Waterway Station 144NB+87, Item 203.0500.S.03; Station 179NB+20.50, Item 203.0500.S.04; Station 402WB+26.08, Item 203.0500.S.05; Station 532R+54, Item 203.0500.S.06.

Conform to standard spec 203 as modified in this special provision.

Add the following to standard spec 203:

203.3.6 Removals Over Waterways and Wetlands

203.3.6.1 Removing Old Structure Over Waterway

(1) Remove the existing structures over the Badger Mill Creek conforming to the contractor's approved structure removal and clean-up plan. Remove all reinforcing steel, all concrete, and all other debris that falls into the waterway or wetland. Remove large pieces of the structure within 36 hours. The contractor may leave limited amounts of small concrete pieces scattered over the waterway floor or wetland only if the engineer allows.

(2) Submit a structure removal and clean-up plan as part of the erosion control implementation plan required under standard spec 107.20. Do not start work under the structure removal and clean-up plan without the department's written approval of the plan. Include the following information in the structure removal and clean-up plan:

1. Methods and schedule to remove the structure.
2. Methods to control potentially harmful environmental impacts.
3. Methods for removing piers and abutments. If blasting in water, include restrictions that regulatory agencies and the contract require.
4. Methods for cleaning the waterway or wetlands.

(3) If stockpiling spoil material, place it on an upland site an adequate distance from the waterway, wetland, or any open water created by excavation. Install silt fence between the spoil pile and the waterway, wetland, or excavation site.

Add the following Removing Old Structure bid item to standard spec 203.5.1:

ITEM NUMBER	DESCRIPTION	UNIT
203.0500.S.03	Removing Old Structure Over Waterway Station 144NB+87	LS
203.0500.S.04	Removing Old Structure Over Waterway Station 179NB+20.50	LS
203.0500.S.05	Removing Old Structure Over Waterway Station 402WB+26.08	LS
203.0500.S.06	Removing Old Structure Over Waterway Station 532R+54	LS

stp-203-015 (20090105)

30. Removing Buildings, Parcel 34, Item 204.0235.01.

Buildings on the parcel were evaluated for hazardous materials on June 1, 2017. A summary report, including lab analysis of sampled materials, dated June 12, 2017 is available for review from the regional office by contacting Mike Novey at (608) 334-5215. The report includes the limitations of the asbestos inspection report and additional remarks about the asbestos inspection.

Prior to demolition, all Asbestos Containing Materials (ACM) identified in pre-demolition asbestos inspections shall be abated and legally disposed of to limit liability and allow for more economical disposal options for general demolition waste. Any disposal cost for ACM is incidental to the building removal bid item. It is recommended that the asbestos abatement contractor(s) review the report and visit the site prior to bidding the work. Contact Chris Petykowski at (608) 267-8628 to arrange a time to inspect the existing buildings prior to bidding.

A summary of the inspection report results is as follows:

Asbestos Inspection Results:

- The linoleum flooring in the west entryway contained 35% chrysotile asbestos. This material was not damaged, and measured approximately 70 square feet.

- Similar linoleum flooring under the wood laminate flooring in the kitchen also contained 35% chrysotile asbestos. This material did not appear damaged based on limited observation as it is under a newer wood laminate floor, and measures approximately 225 square feet.

- A pipe wrap on a short section of unattached piping adjacent to the chimney in the basement contained 100% chrysotile asbestos. This pipe section was approximately 3 feet long, with a 12 inch diameter. The asbestos wrap was very thin, measuring approximately 1/8 to 1/4 inch. The pipe was not attached at either end, and may be a remnant of older piping from a former heating system. No other wrapped pipe was noted during the inspection, however the demolition contractor should be alert to the potential to encounter asbestos wrapped piping in concealed areas of the building.

- The soffits of the house could not be inspected due to the height of the building and lack of access. The soffits appeared to be aluminum clad with vents, in good condition. If any material other than metal or wood is present under the soffits of the building, it should be assumed to be ACM unless laboratory testing proves otherwise.

Paint Sampling Results

The basement walls and floor are painted, with a predominantly white paint on the walls, and a gray and reddish brown paint on the floors. The white wall paint appears to cover an older light green paint. The condition of the wall paint is very good, and MSA was unable to collect a paint chip sample due to the degree that the paint is bonded to the concrete substrate and the irregular surface of the concrete substrate. A sample of the floor paint (mixture of the two colors) was collected and contained 0.93% by weight lead. Wisconsin Statue 254.11(8) defines lead-bearing paint as paint that contains more than 0.5% lead by weight in the dried film of applied paint. Based on the lab results for the basement floor paint, this paint meets the definition of lead-based paint. Note that some of this paint was also used on the walls in the basement.

A second paint sample was collected from the white painted exterior wood trim. No lead was detected in this sample.

Potential Hazardous Materials Inventory

The buildings were vacant at the time of the inspection. Remaining items to note include:

Basement:

- Natural gas furnace with an attached humidifier, metal ductwork.
- Water heater
- Pressure tank for water supply well

No fluorescent lights were noted.
No mercury containing thermostat was noted.

31. Removing Bollards, Item 204.9060.S.01.

A Description
This special provision describes removing 6-12-inch diameter steel post parking bollards.

B (Vacant)

C Construction
Remove the bollards according to standard spec 204.3.2.

D Measurement
The department will measure Removing Bollards by each item, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.01	Removing Bollards	EACH

Payment is full compensation according to standard spec 204.5

32. Settlement Gauges, Item 205.2000.S.

A Description
This special provision describes furnishing and installing the settlement gauges and extensions according to the details shown on the plans and as hereinafter provided.

B (Vacant)

C Construction
Compact embankment material in the immediate vicinity of the riser pipe to specification requirements, taking all precautions to keep alignment of the riser and the cover pipes vertical at all times. When the embankment reaches a level approximately 12 inches below the top of the riser, notify the engineer; the engineer may direct that an additional section of riser and cover be installed.

Take all necessary precautions to ensure that the settlement gauges are not damaged, displaced or misaligned. If a gauge is damaged, immediately repair or replace it at no expense to the department.

D Measurement
The department will measure Settlement Gauges completed according to the contract and accepted in units.

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

ITEM NUMBER	DESCRIPTION	UNIT
205.2000.S	Settlement Gauges	EACH

Payment is full compensation for furnishing and placing settlement gauges; protecting the gauges; and repairing or replacing gauges as necessary.
stp-205-007 (20080902)

33. Backfill Controlled Low Strength, Item 209.0200.S.

A Description
This special provision describes furnishing and placing a controlled low strength material designed for use as backfill in trenches for culverts, sewers, utilities, or similar structures, as backfill behind bridges abutments, or as fill for the abandonment of culverts, pipes, or tanks.

B Materials

Provide controlled low strength backfill that consists of a designed cementitious mixture of natural or processed materials. Allowable materials include natural sand, natural gravel, produced sand, foundry sand, produced gravel, fly ash, Portland cement, and other broken or fragmented mineral materials. The designed mixture shall be self-leveling and shall be free of shrinkage after hardening. Design the mixture to reach a state of hardening such that it can support foot traffic in no more than 24 hours. Provide a mixture that also meets the following requirements.

Test	Method	Value
Flow (inch)	ASTM D-6103	9 min
Compressive Strength (psi)	ASTM D-6024	20-40 @ 14 days 40-80 @ 28 days 80-120 @ 90 days

Chemical admixtures to control air content and setting time are allowable. Ten days prior to placement, furnish the engineer with a design mix detailing all components and their proportions in the mix. Also, provide documentation from the supplier of the industrial byproducts that the foundry sand and fly ash used in the mixture meet the requirements for Industrial Byproducts Categories 1, 2, 3, or 4 in NR 538 of the Wisconsin Administrative Code for use as a confined geotechnical fill.

C Construction

Place controlled low strength backfill at the locations and to the lines and grades as shown on the plan. Proportion and mix materials to produce a product of consistent texture and flow characteristics. The engineer may reject any materials exhibiting a substantial change in properties, appearance, or composition.

If the official Weather Bureau forecast for the construction site predicts temperatures at or below freezing within the next 24 hours after placement of controlled low strength backfill, protect the placed materials from freezing during that time period. If the temperature is not forecast to rise above 40º F for 72 hours after placement, the engineer may require protection from freezing for up to 72 hours.

No controlled low strength backfill shall be allowed to enter any stream, lake, or sewer system. The contractor shall be responsible for any clean up or remediation costs resulting from such occurrences.

D Measurement

The department will measure Backfill Controlled Low Strength in volume by the cubic yard of material placed and accepted. Such volume shall be computed from actual measurements of the dimensions of the area to be backfilled. In irregular or inaccessible areas, the engineer may allow volume to be determined by other appropriate methods.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
209.0200.S	Backfill Controlled Low Strength	CY

Payment is full compensation for designing the mix; supplying all materials; preparing the proportioned mix; hauling it to the construction site; placing the material; and protecting it from freezing.

stp-209-010 (20090901)

34. QMP Base Aggregate.

A Description

A.1 General

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

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

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

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

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

(5) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required sampling and testing procedures. The contractor may obtain the CMM from the department's web site at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/default.aspx

A.2 Small Quantities

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

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

A.2.1 Quality Control Plan

(1) Submit an abbreviated quality control plan consisting of the following:

1. Organizational chart including names, telephone numbers, current certification(s) with HTCP number(s) and expiration date(s), and roles and responsibilities of all persons involved in the quality control program for material under affected bid items.

A.2.2 Contractor Testing

1.

Contract Quantity	Minimum Required Testing per source
≤ 6000 tons	One stockpile test prior to placement, and two production or one loadout test.[1] [2]
> 6000 tons and ≤ 9000 tons	One stockpile and Three placement tests[3] [4] [5]

[1] Submit production test results to the engineer for review prior to incorporating the material into the work. Production test results are valid for a period of 3 years.

[2] If the actual quantity overruns 6,000 tons, on the next day of placement perform one randomly selected placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

[3] If the actual quantity overruns 9000 tons, on the next day of placement perform one randomly selected placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

[4] For 3-inch material or lift thickness of 3-inch or less, obtain samples at load-out.

[5] Divide the aggregate into uniformly sized sublots for testing

2. Stockpile testing for concrete pavement recycled in place will be sampled on the first day of production.

3. Until a four point running average is established, individual placement tests will be used for acceptance. Submit aggregate load-out and placement test results to the engineer within one business day of obtaining the sample. Assure that all properties are within the limits specified for each test.
4. Material represented by a sublot with any property outside the specification limits is nonconforming. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

A.2.3 Department Testing

(1) The department will perform testing as specified in B.8 except as follows:

- Department stockpile verification testing prior to placement is optional for contract quantities of 500 tons or less.

B Materials

B.1 Quality Control Plan

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

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

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

B.2 Personnel

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

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

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

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

B.3 Laboratory

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

Materials Management Section
3502 Kinsman Blvd.
Madison, WI 53704
Telephone: (608) 246-5388
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-labs.aspx

B.4 Quality Control Documentation

B.4.1 General

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

B.4.2 Records

(1) Document all placement observations, inspection records, and control adjustments daily in a permanent field record. Also include all test results in the project records. Provide test results to the engineer within one business day after obtaining a sample. Post or distribute tabulated results using a method mutually agreeable to the engineer and contractor.

B.4.3 Control Charts

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

(2) Provide control charts to the engineer within one business day after obtaining a sample. Post or distribute charts using a method mutually agreeable to the engineer and contractor. Update control charts daily to include the following:

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

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

B.5 Contractor Testing

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

(2) Perform one stockpile test from each source prior to placement.

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

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

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

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

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

B.6 Test Methods

B.6.1 Gradation

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

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

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

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

1. Control limits are at the upper and lower specification limits.
2. There are no upper warning limits for sieves allowing 100 percent passing and no lower control limits for sieves allowing 0 percent passing.
3. Dense graded warning limits, except for the No. 200 sieve, are 2 percent within the upper and lower control limits. Warning limits for the No. 200 sieve are set 0.5 percent within the upper and lower control limits.

4. Open graded warning limits for the 1-inch, 3/8-inch, and No. 4 sieves are 2 percent within the upper and lower control limits. Upper warning limits for the No. 10, No. 40, and No. 200 sieves are 1 percent inside the upper control limit.

B.6.2 Fracture

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

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

B.6.3 Liquid Limit and Plasticity

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

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

B.7 Corrective Action

B.7.1 General

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

B.7.2 Placement Corrective Action

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

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

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

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

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

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

B.8 Department Testing

B.8.1 General

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

B.8.2 Verification Testing

B.8.2.1 General

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

(2) The department will conduct QV tests of each base aggregate size, source or classification, and type during placement conforming to the following:

1. Perform one stockpile test from each source prior to placement.
2. At least one random test per 30,000 tons, or fraction of 30,000 tons, placed.

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

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

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

B.8.3 Independent Assurance

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

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

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

B.9 Dispute Resolution

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

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

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

C (Vacant)

D (Vacant)

E Payment

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

(2) For material represented by a running average exceeding a control limit, the department will reduce pay according to CMM 8-10.5.2 for the affected Base Aggregate bid items listed in subsection A. The department will administer pay reduction under the Nonconforming QMP Base Aggregate Gradation or Nonconforming QMP Base Aggregate Fracture Administrative items. The department will determine the quantity of nonconforming material as specified in B.7.2.

stp-301-010 (20161130)

35. Reheating HMA Pavement Longitudinal Joints, Item 460.4110.S.

A Description

This special provision describes reheating the abutting edge of the previously compacted layer in the adjacent lane while paving mainline asphalt pavements.

B (Vacant)

C Construction

C.1 Equipment

Provide a self-contained heating unit that heats by convection only. Do not use forced air to enhance the flame. Provide a fireproof barrier between the flame and the heater's fuel source. The heater must produce a uniform distribution of heat within the heat box. Provide automatic controls to regulate the heater output and shutoff the heater when the paver stops or the heater control system loses power.

Mount the heater on the paver inside the paver's automatic leveling device.

C.2 Reheating Joints

Evenly reheat at least an 8 inch (200 mm) wide strip of the previously compacted layer in the adjacent lane as follows:

- Reheat the joint to within 60 degrees F (15 degrees C) of the mix temperature at the paver auger. Measure joint temperature immediately behind the heater.

The engineer may allow the required joint reheat temperatures to be cooler than specified to adjust for weather, wind, and other field conditions. Coordinate the heater output and paver speed to achieve the required joint reheat temperature without visible smoke emission.

D Measurement

The department will measure Reheating HMA Pavement Longitudinal Joints by the linear foot, acceptably completed as measured along each joint for each layer of asphalt placed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF

Payment is full compensation for furnishing all the work required under this bid item.

stp-460-015 (20140630)

36. QMP HMA Pavement Nuclear Density.

A Description

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

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

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

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

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

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

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

http://www.atwoodsystems.com/mrs

B Materials

B.1 Personnel

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

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

B.2 Testing

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

B.3 Equipment

B.3.1 General

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

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

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

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

B.3.2 Comparison of Nuclear Gauges

B.3.2.1 Comparison of QC and QV Nuclear Gauges

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

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

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

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

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

B.3.2.2 Comparison Monitoring

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

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

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

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

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

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

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

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

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

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

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

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

Table 1

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

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

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

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

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

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

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

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

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

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

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

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

B.4.2.2.2 Width of 5 Feet or Less

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

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

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

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

B.4.2.4 Documentation

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

B.4.3 Corrective Action

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

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

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

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

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

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

B.5 Department Testing

B.5.1 Verification Testing

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

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

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

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

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

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

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

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

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

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

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

B.7 Acceptance

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

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

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

E.2 Disincentive for HMA Pavement Density

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

E.3 Incentive for HMA Pavement Density

(1) The department will administer density incentives according to standard spec 460.5.2.3.

stp-460-020 (20161130)

37. Precast Concrete Wingwalls C-13-2082, Item 504.1000.S.04; C-13-2083, Item 504.1000.S.05.

A Description

This special provision describes furnishing, transporting, and placing precast wingwalls and cutoff walls according to the pertinent parts of the standard specifications, the plan details, and as hereinafter provided.

B (Vacant)

C Construction
Alternate details for the precast wingwall units of equal strength and hydraulic capacity to the details shown on the plans may be submitted to the engineer for approval. The contractor may build department-approved cast-in-place wingwalls as an alternative to precast apron endwalls. Build these endwalls according to standard spec 504.2 and standard spec 504.3.

D Measurement
The department will measure Precast Concrete Wingwalls C-13-2082 and C-13-2083, completed according to the contract and accepted, as a single complete unit of work. Each unit shall consist of all precast wingwalls required for one box culvert.

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

ITEM NUMBER	DESCRIPTION	UNIT
504.1000.S.04	Precast Concrete Wingwalls C-13-2082	LS
504.1000.S.05	Precast Concrete Wingwalls C-13-2083	LS

Payment is full compensation for furnishing, transporting and placing the precast wingwalls and precast cutoff walls.
stp-504-010 (20080902)

38. Precast Concrete Box Culvert, 12 FT x 7 FT, Item 504.2000.S.04; 12 FT x 8 FT, Item 504.2000.S.05.

A Description
This special provision describes furnishing and installing precast concrete box culverts of the size and length shown on the plans, and according to the requirements of the standard specifications and as hereinafter provided.

B Materials
Provide materials and fabricate Precast Concrete Box Culvert according to ASTM C1577, except that the concrete mixture shall contain not less than 565 pounds of Portland cement, blended cement or Portland cement plus pozzolanic admixture per cubic yard. Slab thickness, areas of reinforcement, and other details shall be as shown on the plans.

C (Vacant)

D Measurement
The department will measure Precast Concrete Box Culvert, 12 FT x 7 FT and Precast Concrete Box Culvert, 12 FT x 8 FT completed according to the contract and accepted, in length by the linear foot in place. The box culvert will be measured on the centerline of the box along the flow line.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
504.2000.S.04	Precast Concrete Box Culvert, 12 FT x 7 FT	LF
504.2000.S.05	Precast Concrete Box Culvert, 12 FT x 8 FT	LF

Payment is full compensation for furnishing, hauling and placing the box, including joint ties, and mastic.

stp-504-015 (20160607)

39. Bar Steel Reinforcement HS Stainless Structures, Item 505.0800.S.

A Description

This special provision describes furnishing and placing stainless steel reinforcing bars and associated stainless steel bar couplers.

Conform to standard spec 505 as modified in this special provision.

B Materials

B.1 General

Furnish stainless steel reinforcing bars conforming to ASTM A955 and to one of the following Unified Numbering System (UNS) designations: S31653, S31803, S32205, or S32304. Supply grade 60 bars, all of the same UNS designation. Conform to the chemical composition specified for the given UNS designation in ASTM A276 table 1.

Supply bars that are free of dirt, mill scale, oil, and debris by pickling to a bright or uniform light finish. The department may reject bars displaying rust/oxidation, questionable blemishes, or lack of a bright or uniform pickled surface.

Furnish chairs or continuous supports made of stainless steel or recycled plastic to support high-strength stainless bar steel reinforcement subject to the plastic chair restriction stated in standard spec 505.3.4(1).

Furnish couplers made from one of the UNS alloys allowed for bar steel.

Furnish tie wire made from one of the UNS alloys allowed for bar steel or from an engineer-approved plastic or nonmetallic material. Ensure that stainless steel tie wire is dead soft annealed.

B.2 Fabrication

Before fabrication, supply test results from an independent testing agency certifying that the reinforcement meets the requirements of Annex A1 of ASTM A955.

Bend bars conforming to standard spec 505.3.2 and according to ASTM A955. Bend and cut bars using equipment thoroughly cleaned or otherwise modified to prevent contamination from carbon steel or other contaminants. Use tools dedicated solely to working with stainless steel.

B.3 Control of Material

Identify reinforcement bars delivered to the project site with tags bearing the identification symbols used in the plans. Include the UNS designation, heat treat condition, heat number, grade corresponding to minimum yield strength level, and sufficient documentation to track each bar bundle to a mill test report.

Provide samples for department testing and acceptance according to CMM 8-50 Exhibit 1 requirements for concrete masonry reinforcement for uncoated bar steel.

Provide mill test reports for the project that do the following:

1. Verify that sampling and testing procedures and test results conform to ASTM A955, ASTM A276 table 1, and these contract requirements.
2. Include a chemical analysis with the UNS designation, heat lot identification, and the source of the metal.
3. Include tensile strength, yield strength, and elongation tests results conforming to ASTM A955 for each size furnished.
4. Certify that the bars have been pickled to a bright or uniform light finish.

C Construction

C.1 General

Ship, handle, store, and place the stainless steel reinforcing as follows:

1. Separate from regular reinforcement during shipping. Pad points of contact with steel chains or banding, or secure with non-metallic straps.
2. Store on wooden cribbing separated from regular reinforcement. Cover with tarpaulins if stored outside.
3. Handle with non-metallic slings.
4. Do not flame cut or weld. Protect from contamination when cutting, grinding, or welding other steel products above or near the stainless steel during construction.
5. Place on plastic or stainless steel bar chairs. If placing stainless steel chairs on steel beams, use chairs with plastic-coated feet.
6. Tie with stainless steel wire or an engineer-approved plastic or nonmetallic material.

Do not tie stainless steel reinforcing bars to, or allow contact with, uncoated reinforcing bars or galvanized steel. Maintain at least 1-inch clearance between stainless steel bars or dowels and uncoated or galvanized steel. Where 1-inch clearance is not possible, sleeve bars with a continuous polyethylene or nylon tube at least 1/8-inch thick extending at least 1 inch in each direction and bind with nylon or polypropylene cable ties. Sleeves are not required between stainless steel bars and shear studs. Stainless steel bars can be in direct contact with undamaged epoxy-coated bars.

Cut flush with the top flange or remove uncoated fasteners, anchors, lifting loops, or other protrusions into a bridge deck before casting the deck on prestressed concrete beams.

C.2 Splices

Splice as the plans show. Provide stainless steel couplers conforming to the minimum capacity, certification, proof testing, and written approval requirements of standard spec 550.3.3.4. The contractor may substitute stainless steel couplers for lap slices the plans show if the engineer approves in writing.

If increasing or altering the number or type of bar splices the plans show, provide revised plan sheets to the engineer showing the reinforcement layout, type, length, and location of revised bar splices and revised bar lengths. Obtain engineer approval for the location of new lap splices or substitution of mechanical bar couplers before fabrication. Ensure that new lap splices are at least as long as those the plans show.

D Measurement

The department will measure Bar Steel Reinforcement HS Stainless Structures by the pound acceptably completed, computed from the nominal weights of corresponding sizes for carbon steel deformed bars in AASHTO M31 regardless of stainless steel alloy provided. The department will not measure extra material used if the contractor alters the reinforcement layout as allowed under C.2, extra material for splices or couplers the plans do not show, or the weight of devices used to support or fasten the steel in position.

The department will measure the Bar Couplers Stainless bid items as each individual coupler 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
505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB

Payment for Bar Steel Reinforcement HS Stainless Structures is full compensation for furnishing and placing stainless steel reinforcing bars, including supports. Where the plans specify bar couplers, the department will pay for the length of bars as detailed with no deduction or increase for installation of the coupler.

Payment for the Bar Couplers Stainless bid items is full compensation for providing couplers; including bar steel that is part of the coupler and not detailed in the plan; for threading reinforcing bars; for installing and coating the splice; and for supplying and testing 3 couplers.

stp-505-005 (20141107)

40. Concrete Staining B-13-845, Item 517.1010.S.01; C-13-2080, Item 517.1010.S.02; C-13-2084, Item 517.1010.S.06; C-13-2085, Item 517.1010.S.07; C-13-2086, Item 517.1010.S.08; R-13-292, Item 517.1010.S.09; R-13-293, Item 517.1010.S.10; R-13-294, Item 517.1010.S.11; R-13-295, Item 517.1010.S.12; R-13-296, Item 517.1010.S.13; R-13-297, Item 517.1010.S.14; R-13-298, Item 517.1010.S.15; R-13-299, Item 517.1010.S.16; R-13-300, Item 517.1010.S.17; R-13-301, Item 517.1010.S.18; R-13-302, Item 517.1010.S.19; R-13-303, Item 517.1010.S.20; R-13-304, Item 517.1010.S.21; R-13-305, Item 517.1010.S.22; R-13-307, Item 517.1010.S.23.

A Description

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

B Materials

B.1 Mortar

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

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

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

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

B.2 Concrete Stain

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

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

C Construction

C.1 General

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

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

C.2 Preparation of Concrete Surfaces

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

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

C.3 Staining Concrete Surfaces

Apply the concrete stain according to the manufacturer's recommendations.

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

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

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

C.4 Test Areas

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

C.5 Surfaces to be Coated.

Apply concrete stain to the surfaces according to the plan.

D Measurement
The department will measure Concrete Staining (Structure) in area by the square foot of surface, acceptably prepared and stained.

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

ITEM NUMBER	DESCRIPTION	UNIT
517.1010.S.01	Concrete Staining B-13-845	SF
517.1010.S.02	Concrete Staining C-13-2080	SF
517.1010.S.06	Concrete Staining C-13-2084	SF
517.1010.S.07	Concrete Staining C-13-2085	SF
517.1010.S.08	Concrete Staining C-13-2086	SF
517.1010.S.09	Concrete Staining R-13-292	SF
517.1010.S.10	Concrete Staining R-13-293	SF
517.1010.S.11	Concrete Staining R-13-294	SF
517.1010.S.12	Concrete Staining R-13-295	SF
517.1010.S.13	Concrete Staining R-13-296	SF
517.1010.S.14	Concrete Staining R-13-297	SF
517.1010.S.15	Concrete Staining R-13-298	SF
517.1010.S.16	Concrete Staining R-13-299	SF
517.1010.S.17	Concrete Staining R-13-300	SF
517.1010.S.18	Concrete Staining R-13-301	SF
517.1010.S.19	Concrete Staining R-13-302	SF
517.1010.S.20	Concrete Staining R-13-303	SF
517.1010.S.21	Concrete Staining R-13-304	SF
517.1010.S.22	Concrete Staining R-13-305	SF
517.1010.S.23	Concrete Staining R-13-307	SF

Payment is full compensation for furnishing and applying the two coat system; for preparing the concrete surface; and for preparing the sample panels.
stp-517-110 (20140630)

41. Concrete Staining Multi-Color B-13-845, Item 517.1015.S.01; C-13-2084, Item 517.1015.S.06; R-13-292, Item 517.1015.S.09; R-13-293, Item 517.1015.S.10; R-13-294, Item 517.1015.S.11; R-13-295, Item 517.1015.S.12; R-13-296, Item 517.1015.S.13.; R-13-297, Item 517.1015.S.14; R-13-298, Item 517.1015.S.15; R-13-299, Item 517.1015.S.16; R-13-300, Item 517.1015.S.17; R-13-301, Item 517.1015.S.18; R-13-302, Item 517.1015.S.19; R-13-303, Item 517.1015.S.20; R-13-304, Item 517.1015.S.21; R-13-305, Item 517.1015.S.22; R-13-307, Item 517.1015.S.23.

A Description

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

B Materials

B.1 Mortar

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

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

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

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

B.2 Concrete Stain

Use concrete stain manufactured for use on exterior concrete surfaces. Use the following products, or equal as approved by the department:

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

C Construction

C.1 General

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

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

C.2 Preparation of Concrete Surfaces

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

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

C.3 Staining Concrete Surfaces
Apply the concrete stain according to the manufacturer's recommendations.

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

The color of the staining shall produce a multi-color effect that consists of multiple colors replicating varying natural stone coloration. Stain the joints between stones produced by the form liner to create the appearance of grouted joints.

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

C.4 Test Areas
Prior to applying stain to the structure, apply the stain to sample panels measuring a minimum of 48-inches x 48-inches and constructed to demonstrate workmanship in the use of the form liner specified on the structure if applicable. Match or exceed the stain manufacturer's minimum recommended curing time of the concrete or 28 days, whichever is greater, prior to staining. Submit color samples to the department prior to staining the sample panels. Prepare the concrete surfaces of the sample panels and apply stain using the same materials and in the same manner as proposed for the structure, including staining of the joints between stones produced by the form liner. Do not apply stain to the structure until the department approves the test panels.

C.5 Surfaces to be Coated.
Apply concrete stain to the surfaces according to the plan.

D Measurement
The department will measure Concrete Staining Multi-Color (Structure) in area by the square foot of surface, acceptably prepared and stained.

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

ITEM NUMBER	DESCRIPTION	UNIT
517.1015.S.01	Concrete Staining Multi-Color B-13-845	SF
517.1015.S.06	Concrete Staining Multi-Color C-13-2084	SF
517.1015.S.09	Concrete Staining Multi-Color R-13-292	SF
517.1015.S.10	Concrete Staining Multi-Color R-13-293	SF
517.1015.S.11	Concrete Staining Multi-Color R-13-294	SF
517.1015.S.12	Concrete Staining Multi-Color R-13-295	SF
517.1015.S.13	Concrete Staining Multi-Color R-13-296	SF
517.1015.S.14	Concrete Staining Multi-Color R-13-297	SF
517.1015.S.15	Concrete Staining Multi-Color R-13-298	SF
517.1015.S.16	Concrete Staining Multi-Color R-13-299	SF
517.1015.S.17	Concrete Staining Multi-Color R-13-300	SF
517.1015.S.18	Concrete Staining Multi-Color R-13-301	SF
517.1015.S.19	Concrete Staining Multi-Color R-13-302	SF
517.1015.S.20	Concrete Staining Multi-Color R-13-303	SF
517.1015.S.21	Concrete Staining Multi-Color R-13-304	SF
517.1015.S.22	Concrete Staining Multi-Color R-13-305	SF
517.1015.S.23	Concrete Staining Multi-Color R-13-307	SF

Payment is full compensation for furnishing and applying the coloring system; for preparing the concrete surface; and for constructing and staining the sample panels.
stp-517-115 (20140630)

42. Architectural Surface Treatment B-13-845, Item 517.1050.S.01; C-13-2084, Item 517.1050.S.06; R-13-292, Item 517.1050.S.09; R-13-293, Item 517.1050.S.10; R-13-294, Item 517.1050.S.11; R-13-295, Item 517.1050.S.12; R-13-296, Item 517.1050.S.13; R-13-297, Item 517.1050.S.14; R-13-298, Item 517.1050.S.15; R-13-299, Item 517.1050.S.16; R-13-300, Item 517.1050.S.17; R-13-301, Item 517.1050.S.18; R-13-302, Item 517.1050.S.19; R-13-303, Item 517.1050.S.20; R-13-304, Item 517.1050.S.21; R-13-305, Item 517.1050.S.22; Traffic Face C-13-2084, Item 517.1050.S.26.

A Description

Construct a concrete masonry architectural surface treatment on the exposed concrete surfaces of the structure, as detailed in the plans and as hereinafter provided.

B Materials

Use form liners that attach easily to the forming system, and do not compress more than ¼-inch when poured at a rate of 10 vertical feet/hour.

Use a release agent that is compatible with the form liner and coloring materials.

Wall ties shall have set “break-backs” at a minimum of ¾-inches from the finished concrete surface.

C Construction

C.1 Equipment

Equipment and tools necessary for performing all parts of the work shall be satisfactory as to design, capacity, and mechanical condition for the purposes intended. Repair, improve, replace, or supplement all equipment that is not maintained in full working order, or which is proven inadequate to obtain the results prescribed.

C.2 Form Liner Preparation

Clean the form liner prior to each pour and ensure that it is free of any build-up. Visually inspect each liner for blemishes or tears, and repair if necessary per manufacturer's recommendations.

Apply form release per manufacturer's recommendations.

C.3 Form Liner Attachment

Place adjacent liners less than ¼-inch from each other, attach liner securely to forms according to the manufacturer's recommendations, and coordinate wall ties with form liner and form manufacturer, e.g., diameter, size, and frequency.

C.4 Surface Finishing

Ensure that the textured surface is free of laitance; sandblasting is not permitted.

Grind or fill pouring blemishes.

D Measurement

The department will measure Architectural Surface Treatment (Structure) in area by the square foot of architectural surface, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
517.1050.S.01	Architectural Surface Treatment B-13-845	SF
517.1050.S.06	Architectural Surface Treatment C-13-2084	SF
517.1050.S.09	Architectural Surface Treatment R-13-292	SF
517.1050.S.10	Architectural Surface Treatment R-13-293	SF
517.1050.S.11	Architectural Surface Treatment R-13-294	SF
517.1050.S.12	Architectural Surface Treatment R-13-295	SF
517.1050.S.13	Architectural Surface Treatment R-13-296	SF
517.1050.S.14	Architectural Surface Treatment R-13-297	SF
517.1050.S.15	Architectural Surface Treatment R-13-298	SF
517.1050.S.16	Architectural Surface Treatment R-13-299	SF
517.1050.S.17	Architectural Surface Treatment R-13-300	SF
517.1050.S.18	Architectural Surface Treatment R-13-301	SF
517.1050.S.19	Architectural Surface Treatment R-13-302	SF

517.1050.S.20	Architectural Surface Treatment R-13-303	SF
517.1050.S.21	Architectural Surface Treatment R-13-304	SF
517.1050.S.22	Architectural Surface Treatment R-13-305	SF
517.1050.S.26	Architectural Surface Treatment Traffic Face C-13-2084	SF

Payment is full compensation for producing the proposed architectural surface treatment including: preparing the foundation; finishing and protecting the surface treatment; and for properly disposing of surplus material.
stp-517-150 (20110615)

43. Adjusting Manhole Covers.

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

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

Revise standard spec 611.3.7 by deleting the last paragraph.

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

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

44. Concrete Sidewalk (inch).

The contract includes construction of a multi-use path network including connections between the path network and on-street bicycle lanes.

Concrete Sidewalk 6-Inch and Concrete Sidewalk 7-Inch bid items are included in the contract for construction of the multi-use path network and utilized at plan locations. Where a concrete sidewalk bid item is used for construction of the paved surface for a multi-use path, revise standard spec 602.3.5 as follows.

Delete paragraph (9) and paragraph (10) of standard spec 602.3.5

Replace paragraph (11) of standard spec 602.3.5 as follows:

Saw sidewalk contraction joints at least one-inch in depth and approximately 1/8 inch wide. Perform the sawing as soon as possible after the concrete sets sufficiently prevent raveling during sawing and before shrinkage cracking occurs.

45. Cover Plates Temporary, Item 611.8120.S.

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

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

C (Vacant)

D Measurement
The department will measure Cover Plates Temporary as 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
611.8120.S	Cover Plates Temporary	EACH

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

The steel plates shall become the property of the contractor when no longer needed in the contract work.
stp-611-006 (20151210)

46. Pipe Grates, Item 611.9800.S.

A Description
This special provision describes furnishing and installing pipe grates on the ends of pipes as shown in the plans, and as hereinafter provided.

B Materials
Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish steel pipe conforming to the requirements of standard spec 506.2.3.6.

Furnish pipe grates galvanized according to ASTM A123.

Furnish angles and brackets galvanized according to ASTM A123.

Furnish required hardware galvanized according to ASTM A153.

C Construction
Repair pipes, rods, angles and brackets on which the galvanized coating has been damaged according to the requirements of AASHTO M36M.

D Measurement
The department will measure Pipe Grates in units of work, where one unit is one grate, completed and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
611.9800.S	Pipe Grates	EACH

Payment is full compensation for furnishing and installing all materials; and for drilling and connecting grates to pipes.
stp-611-010 (20030820)

47. Insulation Board Polystyrene, 2-Inch, Item 612.0902.S.01.

A Description
This special provision describes furnishing and placing polystyrene insulation board as shown on the plans and as hereinafter provided.

B Materials
Provide polystyrene insulation board that conforms to the requirements for Extruded Insulation Board, AASHTO Designation M230, except as hereinafter revised.

Delete flammability requirement.

B.1 Certification
Before installation, obtain from the manufacturer a certification indicating compliance and furnish it to the engineer.

C (Vacant)

D Measurement
The department will measure Insulation Board Polystyrene (size) by area in square yards of work, completed and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
612.0902.S.01	Insulation Board Polystyrene 2-Inch	SY

Payment is full compensation for furnishing all excavation; and for furnishing and placing the insulation board.
stp-612-005 (20030820)

48. Fence Safety, Item 616.0700.S.

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

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

Furnish fence fabric meeting the following requirements.

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

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

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

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

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

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

stp-616-030 (20160607)

49. Stone or Rock Ditch Checks, Item 628.7515.S.

A Description

This special provision describes furnishing and installing stone or rock ditch checks as shown on the plans or as directed by the engineer, or both, and as hereinafter provided.

B Materials

Provide materials conforming to size requirements for size no. 2 coarse aggregate for concrete masonry or riprap according to the standard spec 501.2.5.4.4. Railroad ballast or breaker run stone conforming to the following applicable gradations may also be used:

Railroad Ballast

Sieve Size	Percent by Weight Passing
2 Inch	100
1 Inch	20 – 55
3/8 Inch	0 -5

Breaker Run Stone

Sieve Size	Percent by Weight Passing
5 Inch	100
1½ Inch	0 – 50
3/8 Inch	0 - 5

Incorporate stone or rock in the ditch checks that is hard, sound, and durable, and meets the approval of the engineer.

C Construction

Place stone or rock ditch checks immediately after shaping of the ditches or slopes is completed. Place stone or rock ditch checks at right angles to the direction of flow and construct to the dimensions and according to the details shown in the plans.

Remove sediment from behind the stone or rock ditch checks when it has accumulated to one half of the original height of the dam.

D Measurement
The department will measure Stone or Rock Ditch Checks in volume by the cubic yard of material incorporated in the work.

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

ITEM NUMBER	DESCRIPTION	UNIT
628.7515.S	Stone or Rock Ditch Checks	CY

Payment is full compensation for furnishing, producing, crushing, loading, hauling, placing, and shaping and maintaining Stone or Rock Ditch Check.

The quantity of sediment removed shall be multiplied by a factor of ten and paid for as Common Excavation.
stp-628-050 (20151210)

50. Landscape Planting Surveillance and Care Cycles.

If the care specialist fails to perform any of the required care cycles as specified in standard spec 632.3.19.1, the department will assess daily damages in the amount of $200 to cover the cost of performing the work with other forces. The department will assess these damages for each day the requirements of the care cycle remain incomplete, except when the engineer extends the required time period.
stp-632-005 (20070510)

The plant establishment period shall be one year, ending on October 15, 2019. Plant all trees in the contract prior to November 1, 2018.

51. Pond Liner Clay, Item 640.1303.S.

A Description
This special provision describes furnishing and installing low permeable clay in the areas shown on the plans.

B Materials
For each source, prior to excavating and hauling the low permeable clay to the project, submit the results of the laboratory tests described in Table 1. The laboratory testing shall document that the clay from the source meets or exceeds the requirements.

The sample for the hydraulic conductivity test shall be remolded clay at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test AASHTO T-99 and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test AASHTO T-99. Conduct the laboratory source testing at the frequency listed in Table 1. Submit the test results to the engineer for review, two weeks prior to construction.

C Construction

C.1 Low Permeable Clay Placement

C.1.1 Subgrade

Compact the subgrade to a minimum density as defined in standard spec 207.3.6.2, Standard Compaction, or as otherwise specified in the contract requirements.

C.1.2 Erosion Protection

Do not place the low permeable clay until after all adjacent site grading has been completed and only after silt fence has been installed completely around the area of low permeable clay placement.

C.1.3 Low Permeable Clay Placement

After the fine grading is complete, place and compact low permeable clay in completed 6-inch lifts. Place each lift of low permeable clay in one continuous lift. See plans for low permeable clay construction limits. Measure the thickness of the low permeable clay shown on the plans perpendicular to the surface.

Notify the engineer at least three days prior to starting construction of low permeable clay.

Table 1					
Reference	Number	Test Title	Requirements	Testing Frequency	
				Screening	QA/QC[12]
AASHTO[1]	T99-01	Moisture –Density Relationships of Soils Using a 2.5-kg (5.5 lb) Rammer a 305 mm (12-in.) Drop (Standard Proctor)	NA[11]	1/source	NA
AASHTO	T-88-00	Particle Size Analysis of Soils	P200[3] $\geq$ 50%	2/source	1/lift
AASHTO	T-89-02	Determining the Liquid Limit of Soils	LL[4] $\geq$ 22%	2/source	1/lift
AASHTO	T-90-00	Determining the Plastic Limit and Plasticity Index of Soils	PI[5] $\geq$ 12%	2/source	1/lift
AASHTO	T310-03	In-Place Density and Moisture Content of Soils and Soil-Aggregates by nuclear Methods (Shallow Depth)	DD[6] $\geq$ 95% of the MDD[7]	NA	100'x100' Grid/lift
ASTM[2]	D5084-03	Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter	K[8] $\leq 1 \times 10^{-7}$ cm/sec	1/source[9]	1/site[10]

Notes:

1. AASHTO = American Association of State Highway and Transportation Officials
2. ASTM = American Society of Testing and Materials
3. P200 = Percent by weight passing the #200 sieve (%)
4. LL = Liquid Limit (%)
5. PI = Plasticity Index (%)
6. DD = Dry Density (pcf)
7. MDD = Maximum Dry Density (pcf) as determined by the Standard Proctor Test
8. K = Hydraulic Conductivity (cm/sec)
9. The sample for the test shall be remolded at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test.

10. An undisturbed sample from a thinned walled sampler (Shelby tube)
11. NA = Not applicable
12. QA/QC = Quality Assurance / Quality Control

Compact the low permeable clay to a minimum of 95% Standard Proctor AASHTO T-99 Maximum Dry Density with a footed compaction equipment having feet at least as long as the loose lift height. As needed, clay shall be disked or otherwise mechanically processed prior to compaction to break up clods and allow moisture content adjustment. Clod size shall be no greater than 4-inches. All compaction equipment utilized shall have a minimum static weight of 30,000 pounds.

Provide all equipment necessary to adjust low permeable clay to the proper moisture content for compaction.

Make sufficient number of passes of the compaction equipment over each lift of clay to ensure complete remolding of the clay.

Do not proceed with placement of additional lifts until all required low permeable clay testing and documentation has been completed for the previous lift.

During placement of the low permeable clay the minimum moisture content shall be as defined by the testing performed in the source evaluation and with the following limits:

- No drier than the optimum moisture content as determined by the Standard Proctor test.

If the in-place low permeable clay fails to meet the requirements of Table 1, then remove and replace or rework any portion of the low permeable clay not meeting the project requirements until project specifications are met. There shall be no compensation for removing, replacing and reworking low permeable clay not meeting the requirements in Table 1.

C.1.4 QA/QC Testing of the Low Permeable Clay

The department will perform the QA/QC testing at the frequency shown in Table 1. The department will record the thickness of low permeable clay on a 100-foot x 100-foot grid pattern.

Provide the following:

- Access for on-site testing, inspection, and documentation.
- Machinery required to grade/blade density test locations.
- Machinery required to collect undisturbed clay samples (i.e., with Shelby tubes).
- Replace and recompact clay material removed for testing purposes.

D Measurement

The department will measure Pond Liner Clay in volume by the cubic yards, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
640.1303.S	Pond Liner Clay	CY

Payment is full compensation for dewatering areas of site where the low permeable clay is to be placed; for furnishing, placing and compacting the low permeable clay; and for performing all tests.

stp-640-016 (20130615)

52. Traffic Control Surveillance and Maintenance (Project 5992-09-82), Item 643.0200.S.01; (Project 5992-09-83), Item 643.0200.S.02; (Project 5992-09-85), Item 643.0200.S.03.

A Description

This special provision describes providing personnel to inspect and maintain the traffic control devices, furnished, and installed, in proper condition.

B Materials

Provide one person, called the traffic control specialist, all necessary vehicles, equipment, tools, and repair materials. Provide other personnel to accomplish the inspection and maintenance if needed.

C Construction

Inspection and maintenance includes all traffic control signs or devices included in the contract, including those on detour routes. Begin when the first traffic control sign or device is put into operation and end when the last traffic control sign or device is removed from operation.

1. Ensure that the traffic control specialist inspects the traffic control signs and devices at least twice each workday and once each non-workday with at least one of the daily inspections during daytime. Separate inspections done on workdays by at least 8 hours or the amount of time from the beginning to the end of that day's work operations, whichever is less. During each inspection, clean, repair, or replace each traffic control sign or device not performing as intended, as necessary.

2. Ensure that the traffic control specialist inspects each reflective traffic control sign or device at least once each week during hours of darkness. View the signs and devices using low beam vehicle headlights to ensure reflectorization is unimpaired. Clean, repair, or replace each reflectorized traffic control sign or device not performing as intended, as necessary, before sunset of the next calendar day, or as the engineer directs otherwise.

3. Ensure that the traffic control specialist meets once each workday with the department representative responsible for traffic control on the project to discuss possible problems with the traffic control.

4. Ensure that the traffic control specialist submits a written report weekly to the engineer documenting both daytime and nighttime inspections.

5. Make the control specialist, or other contractor-designated person, available 24 hours per day, 7 days per week to clean, repair, or replace traffic control devices not performing as intended throughout the period traffic control signs and devices are operating under this contract. Provide to the engineer, the County Sheriff, and the State Patrol Region Headquarters responsible for that county the telephone number to contact the control specialist or other contractor-designated person. Ensure that the control specialist, or other designated person, is able to reach any location within the contract limits, or on detour routes, within 2 hours of being contacted, and can promptly accomplish the necessary cleaning, repair, or replacement.

D Measurement

The department will measure the Traffic Control Surveillance and Maintenance bid items by the day, acceptably completed. The measured quantity will equal the number of calendar days from the date the first traffic control sign or device is placed into operation through the date the last traffic control sign or device is removed from operation.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
643.0200.S.01	Traffic Control Surveillance and Maintenance (Project 5992-09-82)	DAY
643.0200.S.02	Traffic Control Surveillance and Maintenance (Project 5992-09-83)	DAY
643.0200.S.03	Traffic Control Surveillance and Maintenance (Project 5992-09-85)	DAY

Payment is full compensation for Payment for the Traffic Control Surveillance and Maintenance bid items is full compensation for providing all labor, materials, tools, equipment, vehicles, and incidentals, including reports and telephone charges, necessary to complete the work; and for partially or fully covering or uncovering signs not paid separately under the Traffic Control Covering Signs bid items. The department will not pay for replaced traffic control signs or devices under this bid item; replacement is incidental to the respective contract bid item or items.

stp-643-016 (20160607)

53. Temporary Pedestrian Surface Asphalt, Item 644.1410.S; Temporary Pedestrian Surface Plywood, Item 644.1420.S; Temporary Pedestrian Surface Plate, Item 644.1430.S.

A Description

This special provision describes providing, maintaining, and removing temporary pedestrian surface.

B Materials

Furnish 1 1/4-inch dense graded aggregate conforming to standard spec 305.2. Furnish:

- Asphaltic surface conforming to standard spec 465.2.
- Pressure treated 2x4 framing lumber, pressure treated 3/4-inch plywood with skid resistant surface coating, and weather resistant deck screws 3-1/2-inch minimum for framing and 1-5/8-inch minimum for plywood.
- 1/4 inch minimum steel plate or commercially available prefabricated plates with skid resistant surface coating conforming to Americans with Disabilities Act Accessibility Guidelines. If placed in the roadway, must be able to handle a vehicle weight of 88,000 lbs.

C Construction

Place, compact, and level a dense graded aggregate foundation before placing the surface.

Provide a firm, stable, and slip-resistant surface layer with vertical joints no higher than ¼ inch and horizontal joints no wider than 1/2 inch. Sheet materials up to 1 inch thick may be lapped if the edge is beveled at 45 degrees or flatter. Asphalt may also be used to ramp up to materials up to 1 inch thick. Construct conforming to the following:

- Asphalt surface a minimum of 2 inches thick compacted with compactors, tampers, or rollers.
- Framed plywood panels 4 feet wide with a skid resistant surface coating.
- Steel or prefabricated plate with a skid resistant surface coating.

Align parallel to the existing roadway grade or, if outside of a street or highway right-of-way, do not exceed 5 percent longitudinal slope. Provide cross slope of 1 to 2 percent unless the engineer approves a steeper cross slope in writing.

Maintain the surface with a 4-foot minimum clear width and the specified joint and slope requirements. Repair or reconstruct installations disturbed during construction operations. Remove and dispose of as specified in standard spec 203.3.4 when no longer required.

D Measurement

The department will measure temporary pedestrian surface by the square foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
644.1410.S	Temporary Pedestrian Surface Asphalt	SF
644.1420.S	Temporary Pedestrian Surface Plywood	SF
644.1430.S	Temporary Pedestrian Surface Plate	SF

Payment is full compensation for providing, maintaining, and removing temporary pedestrian surface.
stp-644-010 (20150630)

54. Temporary Curb Ramp, Item 644.1601.S.

A Description
This special provision describes providing, maintaining, and removing temporary curb ramps.

B Materials
Furnish materials as follows:

- Asphaltic surface conforming to standard spec 465.2.
- Engineer-approved ready mixed concrete or ancillary concrete conforming to standard spec 602.2 except no QMP is required.
- Commercially available prefabricated curb ramps conforming to Americans with Disabilities Act Accessibility Guidelines.

Furnish yellow detectable warning fields conforming to Americans with Disabilities Act Accessibility Guidelines. Use either an engineer-approved surface-applied type or cast iron from the department's approved products list.

C Construction
Provide and maintain temporary curb ramps, including detectable warning fields, throughout the project duration. Place and compact a dense graded aggregate foundation before placing the curb ramp, unless the curb ramp is to be placed on existing roadway surface.

Remove and dispose temporary curb ramps and associated detectable warning fields when no longer required.

D Measurement
The department will measure temporary curb ramps by each individual ramp, 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
644.1601.S	Temporary Curb Ramp	EACH

Payment is full compensation for providing, maintaining, and removing temporary curb ramps.
stp-644-020 (20150630)

55. Temporary Pedestrian Safety Fence, Item 644.1616.S.

A Description

This special provision describes providing, maintaining, and removing the temporary pedestrian safety fence.

B Materials

Furnish notched metal "T" or "U" shaped fence posts weighing 1 1/3 pounds per foot or more.

Furnish select 2x4 dimensional lumber.

Furnish fence fabric meeting the following requirements.

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

The engineer may allow prefabricated fencing systems conforming to Americans with Disabilities Act Accessibility Guidelines.

C Construction

Provide a continuous safety fence with the top edge free of sharp or rough edges.

Repair or reconstruct installations disturbed during construction operations. Remove and dispose of as specified in standard spec 204.3 when no longer required.

D Measurement

The department will measure Temporary Pedestrian Safety Fence by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
644.1616.S	Temporary Pedestrian Safety Fence	LF

Payment is full compensation for providing, maintaining, and removing the temporary pedestrian safety fence.
stp-644-025 (20150630)

56. Removing Pavement Markings Water Blasting, Item 646.0690.S; Removing Special Pavement Markings Water Blasting, Item 647.0990.S.

A Description

This special provision describes removing pavement markings by water blasting. Conform to standard spec 646 and 647 as modified in this special provision.

B (Vacant)

C Construction

Use water blasting to remove the following:

- Markings in areas of temporary traffic shifts.
- Markings on bridge decks.
- Temporary markings on the final pavement surface.
- Where existing pavement is to remain and existing markings are in conflict with the final condition.
- Other locations as shown on the plan or directed by the engineer.

Completely remove pavement marking using a truck mounted ultra high pressure pump and water tank capable of delivering a minimum of 30,000 psi and up to 40,000 psi to waterjet nozzles. Use equipment with a vacuum recovery system that contains wastewater and debris to provide a clean, damp-dry surface, without a secondary cleanup operation. Do not scar or damage the pavement during the removal process. Limit water blasting to when the ambient temperature is at least 36 F and rising.

Properly dispose of the accumulated material off site.

D Measurement

The department will measure Removing Pavement Markings Water Blasting by the linear foot, up to a single 8-inch wide line, acceptably completed.

The department will measure Removing Special Pavement Markings Water Blasting as each individual arrow, symbol, or word, acceptably removed. The department will count removing an RXR symbol as three individual symbol removals.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0690.S	Removing Pavement Markings Water Blasting	LF
647.0990.S	Removing Special Pavement Markings Water Blasting	EACH

Payment is full compensation for removal and disposal of all materials.
stp-646-075 (20160607)

57. Sign Bridge Identification Plaques.

Supplement standard spec 657.5 with the following:

Payment for the Overhead Sign Support bid items is considered full compensation for providing and installing sign bridge identification plaques and mounting hardware as shown on the detail in the plans for each pole shown in the plans.

58. Rock Excavation, Sanitary Sewer and Water Main, Item SPV.0035.01.

A Description
This special provision describes excavating rock for sanitary sewer and water main construction according to standard spec 608 for storm sewer rock excavation and as hereinafter provided.

B (Vacant)

C Construction
Add the following the second paragraph in standard spec 608.3.1.2:

(2) Excavate rock by rock drilling, breaking, chipping, pneumatic or hammering. Ripping will be considered incidental to the cost of trench excavation. Blasting is not allowed.
(3) Weathered bedrock that is ripable by conventional earthmoving equipment is not considered rock excavation and will be considered incidental to the cost of trench excavation.
(4) Conventional earth moving equipment is classified as standard equipment capable of performing the work as indicated in the plans and specifications.

D Measurement
The department will measure Rock Excavation, Sanitary Sewer and Water Main by the cubic yard acceptably completed and as specified in standard spec 608.4.2.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.01	Rock Excavation, Sanitary Sewer and Water Main	LF

Payment is full compensation for excavating rock including rock drilling, breaking, chipping, and pneumatic hammering, or other approved means; for hauling waste material; and for site protection.

59. Outlet Boxes 4x4x4-Inch, Item SPV.0060.01; Outlet Boxes 4x4x6-Inch, Item SPV.0060.05.

A Description
This work shall be according to the requirements of standard spec 653, the plans, standard detail drawings, and as hereinafter provided.

B Materials
Furnish electrical outlet boxes conforming to the plans and standard spec 653.2.2. Outlet boxes shall be suitable for casting into concrete masonry walls and have the appropriate hardware fastening design for the Luminaires Underpass LED.

C Construction
Cast the outlet boxes into the structure walls at the plan locations and according to standard spec 653.3.

D Measurement
The department will measure Outlet Boxes (size) as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.01	Outlet Boxes 4x4x4-Inch	EACH
SPV.0060.05	Outlet Boxes 4x4x6-Inch	EACH

Payment is full compensation according to standard spec 653.5.

60. Junction Boxes 8x8x4-Inch, Item SPV.0060.02.

A Description
This work shall be according to the requirements of standard spec 653, the plans, standard detail drawings, and as hereinafter provided.

B Materials
Furnish junction boxes conforming to the plans and standard spec 653.2.2.

C Construction
According to the plans and standard spec 653.3.

D Measurement
The department will measure Junction Boxes 8x8x4-Inch as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.02	Outlet Boxes 8x8x4-Inch	EACH

Payment is full compensation according to standard spec 653.5.

61. Pedestrian Underpass Cabinet, Item SPV.0060.03.

A Description
This special provision describes furnishing, assembling, and installing a pedestrian underpass cabinet for future use.

B Materials
Provide a cabinet body, door, and latch cast from aluminum alloy 319 or equivalent, free of voids, pits, dents, molding sand and excessive foundry grinding marks. Provide smooth and intact design radii. Provide a smooth and cosmetically acceptable exterior and interior surface, free of molding fins, cracks and other exterior blemishes.

Provide cabinets(s) meeting the following minimum requirements:

- Approved by NEMA.
- 5” x 9” x 14” minimum inside dimensions.
- 5” maximum depth.
- 3/16” minimum wall thickness of aluminum castings.
- Cast iron hood over top of door opening of cabinet body.
- Neatly machined keyhole so as not to interfere with key being inserted into the lock.
- Door that will accept machining for Police Lock.
- Hinge door with two each 3/16” diameter pins in cast hinge bosses that allow door to swing no less than 180 degrees when open.
- The door flange which is in full contact with, and compressing, a water resistant neoprene.
- Alodine conversion coating on cabinet assemble to provide corrosion resistance.

All necessary hardware for proper mounting is included in this bid item.

C Construction
Cast the cabinet into the concrete wall.

D Measurement
The department will measure Pedestrian Underpass Cabinet by each 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.0060.03	Pedestrian Underpass Cabinet	EACH

Payment is full compensation for furnishing and installing the cabinet.

62. Luminaires Underpass LED, Item SPV.0060.04.

A Description
This special provision describes furnishing and installing lighting systems through pedestrian underpasses together with hardware and fittings as shown in the plans.

B Materials
Provide luminaires constructed of marine grade, heat treated extruded aluminum with a polyester powder coat. Provide luminaires having vandal-resistant polycarbonate lens and include a lifetime warranty on any fixture damaged due to vandalism. Provide luminaires with the following minimum requirements:

- Provide luminaires having 120-277V 50/60 Hz, 350 mA drive current, and 4000K color temperature.
- Provide luminaires that are new, unused, and the latest model being produced.
- Provide luminaires manufactured by Luminaire Lighting, Vision 12 HP LED (Order No. VPF124-158W HP-4000K-120-CP-BRZ-WET-SD-TX/SD).

Provide stainless steel hardware and fittings.

C Construction
Furnish and install luminaires underpass LED through pedestrian underpass with stainless steel hardware and fittings according to standard spec 659.3.4 and as shown on the plans.

D Measurement
The department will measure Luminaires Underpass LED as each individual luminaire underpass LED, 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.0060.04	Luminaires Underpass LED	EACH

Payment is full compensation for furnishing and installing luminaires; for luminaire mounting; for stainless steel hardware and fittings; and for coordination with installation of the outlet boxes during construction of the underpass walls.

63. Reset Property Corners, Item SPV.0060.06.

A Description

This special provision describes setting property corners that have been damaged or destroyed during construction operations which were unavoidable. Note that this item does not apply to items damaged due to negligence or relieve the contractor of other responsibilities as outlined in standard spec 107.11.

B Materials

Match the original monumentation requirements for Reset Property

(1) Block corners of recorded subdivisions shall be monumented according to Section 236.15 (1), Wisconsin Statutes, which states: "…monuments of concrete, containing a ferrous rod one-fourth inch (6.4 mm) in diameter or greater imbedded its full length, not less than 30 inches (760 mm) in length, not less than 4 inches (100 mm) square or 5 inches (130 mm) in diameter, and marked on the top with a cross, brass plug, iron rod, or durable material securely embedded; or by iron rods or pipes at least 30 inches (760 mm) long and 2 inches (50 mm) in diameter weighing not less than 3.65 pounds per linear foot (5.43 kg/m). Solid round or square iron bars of equal or greater length or weight per meter may be used in lieu of pipes wherever pipes are specified in this section."

(2) Exterior corners of a certified survey map and lot corners shall be monumented according to Section 236.15 (1), Wisconsin Statutes, which states: "…iron pipes at least 24 inches (610 mm) long and one inch (25 mm) in diameter, weighing not less than 1.13 pounds per linear foot (1.68 kg/m), or by round or square iron bars at least 24 inches (610 mm) long and weighing not less than 1.13 pounds per linear foot (1.68 kg/m)."

C Construction

When drive-in monuments are to be used, drive them into the ground with the top flush with the surface. In unstable soils the increase the depth as directed by the engineer to obtain a suitable foundation for the monument. No additional compensation will be made for the increased depth of monument.

D Measurement

The department will measure Reset Property Corners as each individual corner reset, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.06	Reset Property Corners	EACH

Payment is full compensation for furnishing, placing, and adjusting property corners.

64. Remove and Replace Mailboxes, Item SPV.0060.07.

A Description
This special provision describes protecting, removing, and replacing private mailboxes at the direction of the engineer.

B (Vacant)

C Construction
Maintain access to existing mailboxes for postal deliveries and residential pick up where possible. Where geometric changes to the roadway require that the mailboxes be removed, each affected place the mailbox at a temporary location during construction. The temporary placement location will be determined by the engineer. Provide access to the temporary placement location area at all times. At the end of the project, re-install the mailboxes to their original location or a location determined by the engineer. Re-install mailboxes in compliance with placement procedures of the U. S. Postal Service. Replace the original post and mailbox if any damage occurs.

D Measurement
The department will measure Remove and Replace Mailboxes by each 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.0060.07	Remove and Replace Mailboxes	EACH

Payment is full compensation for removing and temporarily relocating the mailbox, and for replacing the mailbox in the final position.

65. Landmark Reference Monuments Special, Item SPV.0060.08.

A Description
This special provision describes preserving the location and constructing new reference monuments for existing Public Land Survey System (PLSS) section corner monuments within the proposed construction limits.

B Materials
Furnish monuments that satisfy Wisconsin Administrative Code Chapter AE-7.

C Construction
Complete the work according to the pertinent requirements of standard spec 621.3 and as follows:

Obtain existing tie sheets from the Dane County Surveyor. Locate and verify existing PLSS monuments and ties. Furnish, and install if necessary, temporary and/or permanent ties. Provide a temporary tie sheet to the department and the Dane County Surveyor, for use by the public during the construction phase of the project and before the final monumentation is complete.

Perpetuate and/or reset all PLSS monuments and witnesses under the direction of a State of Wisconsin Licensed Professional Land Surveyor. Prepare the temporary and final PLSS monument records according to the Wisconsin Administrative Code Chapter AE-7. Prepare and file new monument records with the Dane County Surveyor according to AE-7 and provide a copy of the same to the Wis-DOT SW Region-Madison Survey Coordinator. This work shall be overseen and completed by a State of Wisconsin Licensed Professional Land Surveyor.

The approximate location of the section corners that will likely be disturbed due to the proposed construction:

- 87"NB"+49.57, 15.30' LT
- 113"NB"+87.78, 4.97' RT
- 140"NB"+33.86, 9.57' LT
- 169"NB"+52.09, 23.84' LT
- 169"SB"+53.14, 33.78' LT
- 196"SB"+05.61, 4.00' LT

Notify the Dane County Surveyor and Wis-DOT/SW Region-Madison Survey Coordinator five (5) working days prior to construction operations that may disturb existing monuments, with pertinent questions or for department provided monument caps.

D Measurement

The department will measure Landmark Reference Monuments Special by each 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.0060.08	Landmark Reference Monuments Special	EACH

Payment is full compensation for obtaining existing PLSS monument record tie sheet(s); preparing, providing and filing temporary/final PLSS monument record tie sheet(s) from a Professional Land Surveyor; all survey work related to the perpetuation process; the furnishing and placing of all PLSS survey monuments; the furnishing and placement of any necessary witness ties; the removal of the existing monument(s) if necessary; and excavating for the placement of the new monument(s) if necessary.

66. Locate and Reference Property Corners, Item SPV.0060.09.

A Description
This special provision describes locating and referencing existing property corners within or adjacent to temporary limited easements. Locate and provide adequate reference ties for existing property corners which may be disturbed during construction such that the landmark may be re-established upon completion of construction.

B (Vacant)

C Construction
Approve the methods of with the engineer prior to beginning the work. Use a degree of accuracy for the survey work consistent with third order, Class II.

D Measurement
The department will measure Locate and Reference Property Corners as each individual locate, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.09	Locate and Reference Property Corner	EACH

Payment is full compensation for or furnishing all survey work necessary to locate and reference the landmark, and for resetting damaged monumentation.

All survey notes and computations used in referencing property corners shall be given to the engineer within 21 days of completing work under the above item and must be received before final payment for the work will be made.

67. Manhole Covers Type VER, Item SPV.0060.10.

A Description
Furnish and install metal frames, grates, and lids according to standard spec 611, as shown on the plans, and as hereinafter provided.

B Materials
Furnish Neenah Foundry manhole casting Catalog No. 1540. Furnish the frame and non-rocking Type B lid, with concealed pick holes and self-sealing Type T gasket.

C Construction
Install castings according to standard spec 611.

D Measurement
The department will measure Manhole Covers Type VER as each manhole cover, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.10	Manhole Covers Type VER	EACH

Payment is full compensation for providing new covers, including frames, lids, and all other required materials; and for installing and adjusting each cover.

68. Inlet Cover Type Driveway Special, Item SPV.0060.11.

Perform this work according to standard spec 611 and as shown in the plan details.

69. Manhole Cover Type MAD, Item SPV.0060.12.

A Description

Furnish and install metal frames, grates, and lids according to standard spec 611, as shown on the plans, and as hereinafter provided.

B Materials

Furnish castings according to standard spec 611 and Article 507 of the City of Madison Standard Specifications for Public Works Construction-Latest Edition and the details shown on the plans. Lids furnished with logo per Madison Standard Specifications for Public Works Construction-Latest Edition Standard Detail Drawing 5.7.16.

C Construction

Install castings according to standard spec 611.

D Measurement

The department will measure Manhole Covers Type MAD as each manhole cover, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.12	Manhole Covers Type MAD	EACH

Payment is full compensation for providing new covers, including frames, lids, and all other required materials; and for installing and adjusting each cover. Old covers removed remain the property of the municipality.

70. Sidewalk Trench Drain, Item SPV.0060.13.

A Description
This special provision describes furnishing and installing trench drains and grates in concrete sidewalk.

B Materials
Furnish Neenah R-4990-CX with Type Q grate or East Jordan Iron Works (EJ) 12-inch trench drain assemblies 6954 with Type C cross drain openings, or approved equal.

Furnish concrete for cast in place concrete structures according to standard spec 611.

C Construction
Construct sidewalk trench drain according to standard spec 611, the plan details, and the manufacturer's recommend installation procedure.

D Measurement
The department will measure Sidewalk Trench Drain by each drain, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.13	Sidewalk Trench Drain	EACH

Payment is full compensation according to standard spec 611.5.

71. SSPRCHE 68x106-Inch Bend, Item SPV.0060.14.

A Description
This special provision describes furnishing and installing pipe bends for storm sewer pipe reinforced concrete horizontal elliptical 68x106-Inch. Furnish Class IV pipe.

B Materials
Furnish Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical 68x106-Inch at the bend dimensions in the plans and conforming to standard spec 610.2.

C Construction
Construct the pipe according to standard spec 610.3 at the plan locations.

D Measurement
The department will measure SSPRCHE 68x106-Inch Bend by each bend, acceptably completed. The pipe on either side of the bend will be measured and paid through the center of the bend.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.14	SSPRCHE 68x106-Inch Bend	EACH

Payment is full compensation according to standard spec 610.5.

72. Pond Outlet Structure, Item SPV.0060.15.

A Description
This special provision describes furnishing and constructing concrete structures for pond outlets.

B Materials
Furnish materials conforming to standard spec 611.2.

C Construction
Construct the pond outlet structure according to the plan details and conforming to standard spec 611.3

D Measurement
The department will measure Pond Outlet Structure by each item, acceptably completed. Castings and covers will not be measured separately.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.15	Pond Outlet Structure	EACH

Payment is full compensation according to standard spec 611.5.

73. Manholes Special 10-FT Diameter, Item SPV.0060.16.

The work under this item shall be according to standard spec 611 and as detailed in the plans.

Construct Manholes10-FT Diameter in the same fashion as a Manhole 8-FT Diameter with an interior diameter of 10 feet.

74. Manholes Special 12x12-FT, Item SPV.0060.17.

The work under this item shall be according to standard spec 611 and as detailed in the plans.

Construct Manholes Special 12x12-FT in the same fashion as a Manhole 6x6-FT with an interior dimension of 12 feet.

75. Utility Line Opening (ULO), Item SPV.0060.18.

A Description

Excavate and uncover utilities for the purposes of determining elevation and potential conflicts, as shown on the plans or as directed by the engineer, and as hereinafter provided.

B (Vacant)

C Construction

The excavation will be done in such a manner that the utility in question is not damaged and the safety of the workers is not compromised.

Perform the ULO as soon as possible and at least 10 days in advance of proposed utility construction to allow any conflicts to be resolved with minimal disruption. Where utilities are within 6 feet of each other at a potential conflict location, only one utility line opening will be called for. In these cases, a single utility line opening will be considered full payment to locate multiple utilities. Utility line openings will include a trench up to 5 feet long as measured at the trench bottom, and of any depth required to locate the intended utility.

All utility line openings will be approved and coordinated with the engineer. The utility engineers or their agents will be notified of this work a minimum of 3 days prior to the work so they may be present when the work is completed. The need for performing ULO's as shown on the plans will be verified since some of the utilities may have been relocated prior to the start of construction.

Replace pavement open to traffic within 24 hours of the excavation.

D Measurement

The department will measure Utility Line Opening (ULO) by each unit, acceptably completed. Where utilities are within 5' of each other at a potential conflict location, only one utility line opening will be measured.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.18	Utility Line Opening (ULO)	EACH

Payment is full compensation for the excavation required to expose the utility line, backfilling with existing material removed from the excavation, compacting the backfill material, restoring the site, and for cleanup.

Existing pavement, concrete curb, gutter, and sidewalk removals necessary to facilitate utility line openings will not be considered part of or paid for under Utility Line Openings, but will be considered separate and measured and paid for separately as removal items.

Replacement pavement, concrete curb, gutter, and sidewalk items will also be considered separate from Utility Line Openings and will be measured and paid for separately.

76. Sewer Electronic Markers, Item SPV.0060.19.

A Description
Work under this item includes installing Sewer Electronic Markers according to Article 503.2 of the City of Madison Standard Specification for Public Works Construction- Latest Addition. These sewer electronic markers will be installed where called for on the plan set above sanitary sewer and storm sewer facilities.

B Materials
All materials are described in Article 503.2(f) of the City of Madison Standard Specification for Public Works Construction- Latest Addition. Markers will be provided by the City of Madison.

C Construction
For sanitary sewers, install Sewer Electronic Markers according to Article 503.2(f) of the City of Madison Standard Specifications for Public Works Construction– Latest Edition.

For storm sewer, place a marker for each storm tap located above the connection on the storm sewer main, as shown on plans. Place the marker ball so the marker ball will be no deeper that 4.5-feet below finished grade and directly above the storm lateral. If the location of the lateral is below 4.5 feet from finished grade, partially backfill trenches prior to placement of the marker ball at the desired locations.

Notify the engineer when marker balls are installed. Each marker ball will be tested by the city after completion of final pavement surface to confirm that it is installed and functioning properly. If it is not installed or functioning, excavate to expose the existing marker ball or lateral and place a new marker ball. No additional compensation will be provided for this work.

D Measurement
The department will measure Sewer Electronic Markers as each individual sewer electronic marker, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.19	Sewer Electronic Markers	EACH

Payment for Sewer Electronic Markers is full compensation for furnishing all work, materials, labor and incidentals required to complete the installation and all associated work to provide a complete functioning system. The department will not pay for replacing those marker balls that are non-functional. Marker balls will be furnished by the City of Madison.

77. Traffic Signal Removal, Item SPV.0060.20; Street Light Removal, Item SPV.0060.60.

A Description
This special provision describes removing and salvaging a base mounted light pole and traffic signal pole, direct bury light pole, transformer base, arm, signal head and luminaire.

B (Vacant)

C Construction
Contact Michael Christoph, (608) 266-9031, at least seven days prior to removing any street lights on the City of Madison lighting system or traffic signals maintained by the City of Madison. Arrange a meeting to document the existing condition of all street lighting materials that will be affected by construction activities.

The City of Madison will provide the following information.

1. Identify all items to be salvaged or disposed.
2. Identify existing feed-point locations and circuit breaks.

When removing existing street lights and traffic signals, carefully remove and stockpile all equipment at a location approved by the engineer. Place all equipment on blocks so as not to be in direct contact with the ground. Protect luminaires and signal heads from moisture. Either reinstall lights as the plans show or make available for City of Madison to pick up and salvage. Properly dispose of any equipment that the city does not salvage.

Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged piece.

D Measurement
The department will measure Traffic Signal Removal and Street Light Removal as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.20	Traffic Signal Removal	EACH
SPV.0060.60	Street Light Removal	EACH

Payment is full compensation for removals, salvaging and disposal as required above.

78. Concrete Base Type P, Item SPV.0060.21; Type M, Item SPV.0060.22; Type LB-2, Item SPV.0060.23; Type LB-3, Item SPV.0060.24; Type LB-8, Item SPV.0060.25; Type G, Item SPV.0060.26.

A Description
Construct concrete foundations, including furnishing and installing necessary hardware, as shown on the plans, according to the pertinent provisions of standard spec 654, and as hereinafter provided.

B Materials
Furnish Grade A, A-WR, A-FA, or A-IP concrete masonry conforming to the requirements of standard spec 501. Conduit cast within the bases shall be Schedule 40 polyvinyl chloride (PVC) electrical conduit and shall conform to the requirements of standard spec 652.

Furnish anchor bolts for Type G bases made from high-strength steel (50 ksi minimum yield strength), ASTM A36, and fit each with two hard washers and two heavy hex nuts. Each bolt shall have approximately 3 inches or more of thread at the top end. The bolts, washers and nuts shall be galvanized

Furnish anchor bolts for LB-2, LB-3, LB-8 and Offset bases made from high-strength steel (50 ksi minimum yield strength), ASTM A36, and fit each with two hard washers and two heavy hex nuts. Each bolt shall have approximately 6 inches or more of thread at the top end. The bolts, washers, and nuts shall be galvanized.

Furnish ¾-Inch x 19-Inch bolts for the LB-2 bases. Furnish 1 ¼-inch x 48-inch bolts for the LB-8 bases, including a 4-inch L-bend at the bottom. Furnish 1-inch x 40-inch bolts for the LB-3 bases, including a 4-Inch L-bend at the bottom. Furnish ¾ inch x 19 inch bolts for the Type G bases.

Include a concrete maintenance platform on the Type M and Type P bases. Generally construct the Type M and Type P bases according to the standard detail drawing Concrete Control Cabinet Bases. Confirm the location of the conduits in the base with the City of Madison. Anchor bolts, nuts, and washers for Concrete Controller Base, Type P, will be provided and installed by the City of Madison when installing signal control cabinets. Conform bar steel reinforcement to the requirements of standard spec 505.

C Construction
Place the bases with one side parallel to the centerline of the street.

Forms shall be of sufficient depth to provide a minimum of 12 inches of formed base below the finished grade on the low side of the base. The top surface of the base shall be level with a ¾-inch bevel on the edges and shall be given a rubbed finish.

Cast anchor bolts into the base as shown on the plans. Verify the bolt circle diameters before constructing the bases.

Furnish and install manufactured elbows in all bases, except as noted on the details. Install elbows to permit installation of conduit in as nearly straight-line runs as possible without unnecessary bends. Bases not installed to this standard will not be accepted.

Extend existing conduit into the bases. Elbows shall conform to the requirements of the type of conduit entering the base. Install an extra elbow in each base at the end of a run as directed by the engineer. Install extra elbows in any base as directed by the engineer.

Do not erect poles on the concrete bases until the bases have cured for at least seven days. All concrete bases require a rubbed finish down to finished grade.

D Measurement
The department will measure Concrete Base (Type) by each unit, completed according to the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.21	Concrete Base Type P	EACH
SPV.0060.22	Concrete Base Type M	EACH
SPV.0060.23	Concrete Base Type LB-2	EACH
SPV.0060.24	Concrete Base Type LB-3	EACH
SPV.0060.25	Concrete Base Type LB-8	EACH
SPV.0060.26	Concrete Base Type G	EACH

Payment is full compensation for furnishing and installing all materials including conduit, bushings, caps and/or plugs, ground rod, anchor bolts, cadwelding, copper grounding wire; bar steel reinforcement, and concrete masonry; for providing openings through existing pavement where required; for excavation, including hand-digging as required, backfill, and disposal of surplus materials.

79. Electrical Utility Access Structure, Item SPV.0060.27.

A Description
Perform the work according to the applicable provisions of standard spec 611 and as detailed in the plans

B (Vacant)

C (Vacant)

D Measurement
The department will measure Electrical Utility Access Structure as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.27	Electrical Utility Access Structure	EACH

Payment for the Electrical Utility Access Structure is full compensation for providing and installing all materials, including all masonry, reinforcement, conduit connections, steps, and other fittings; frame and casting; for furnishing all excavating, backfilling, disposing of surplus material, and for cleaning out and restoring the work site.

80. Electrical Pullbox, Type I, Item SPV.0060.28; Type III, Item SPV.0060.29; Type V, Item SPV.0060.30; Type VII, Item SPV.0060.31.

A Description

Furnish and install electrical pull boxes according to standard spec 653, the plan details, and as hereinafter provided.

B Materials

Electrical Pullbox, Type I shall be gray-colored polymer-concrete construction. Box dimensions for Type I shall be 19" wide X 32" long X 24" deep. The Type I box and cover shall be rated to withstand 15,000 lbs over a 10" square with a minimum test load of 22,568 lbs.

Electrical Pullbox, Type III shall be high-density polyethylene box and concrete polymer lid or concrete polymer construction for box and lid. Box dimensions for Type III shall be 12" wide X 12" long X 12" deep. The Type III box and polymer cover shall be rated to withstand 20,000 lbs.

Electrical Pullbox, Type V shall be high-density polyethylene box and concrete polymer lid or concrete polymer construction for box and lid. Box dimensions for Type V shall be 24" wide X 36" long X 24" deep. The Type V box and polymer cover shall be rated to withstand 20,000 lbs.

Electrical Pullbox, Type VII shall be high-density polyethylene box and concrete polymer lid or concrete polymer construction for box and lid. Box dimensions for Type VII shall be 30" wide X 50" long X 36" deep. The Type VII box and polymer cover shall be rated to withstand 20,000 lbs.

Each cover shall have the logo "TRAFFIC SIGNAL" imprinted from the manufacturer.

C Construction

Install Electrical Pullbox (Type) according to the pertinent provisions of standard spec 653.3 and the plan details.

D Measurement

The department will measure Electrical Pullbox (Type), completed according to the contract and accepted, as a unit for each pullbox.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.28	Electrical Pullbox Type I	EACH
SPV.0060.29	Electrical Pullbox Type III	EACH
SPV.0060.30	Electrical Pullbox Type V	EACH
SPV.0060.31	Electrical Pullbox Type VII	EACH

Payment is full compensation for furnishing and installing all materials, including crushed aggregate; and for excavation, backfill, and disposal of surplus materials.

81. Transformer Base 16-Inch Steel, Item SPV.0060.32.

A Description

This special provision describes furnishing and installing steel transformer bases as shown on the plans and as follows.

B Materials

Provide hot-dipped galvanized steel transformer bases according to ASTM designation A123. Provide bases with slotted bolt openings. Furnish steel connecting bolts, size 1.00 inches by 4 inches, hold down lugs for 1.00 or 1.25 inch bolts and nuts and washers. Verify the bolt diameter projection and bolt circle dimension required for each application. Ensure the concrete bases and pole bases are compatible with the transformer bases and bolts. Hot-dip galvanize all material and verify they are of sufficient size and strength to exceed the capacity of the bases. Construct 16-Inch bases to conform to the detail in the plan.

Furnish to the engineer at the time of delivery of the bases, a manufacturer's certificate of compliance that the base and hardware as furnished meets the above requirements.

C Construction

Install transformer bases according to the manufacturer's instructions, and as shown on the plans.

D Measurement

The department will measure Transformer Base 16-Inch Steel as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.32	Transformer Base 16-Inch Steel	EACH

Payment is full compensation for furnishing and installing transformer bases, streetlight pole wire, mechanical grounding connector and related hardware; for leveling shims when required.

82. Monotube Pole, Type 9, Item SPV.0060.33; Monotube Arm, 20-Foot, Item SPV.0060.34; 25-Foot, Item SPV.0060.35; 30-Foot, Item SPV.0060.36; 35-Foot, Item SPV.0060.37; 40-Foot, Item SPV.0060.38; 50-Foot, Item SPV.0060.39.

A Description

This section describes furnishing and installing poles and monotube arms for traffic signals.

B Materials

Design support structures, consisting of poles and arms, conforming to the completed maximum loading configurations and to AASHTO design and fabrication standards for structural supports for highway signs, luminaires, and traffic signals. Use a design life of 50 years. Design to withstand a 3 second gust wind speed of 90 mph. Do not use the method of appendix C of those AASHTO standards.

Design support structures to the AASHTO fatigue category criteria III.

Along with the material list, submit a certificate of compliance certifying that poles as furnished, conform to the above structural performance requirements. Ensure that the certificate of compliance is on the manufacturer's letterhead, signed by an authorized company officer, and notarized. Send a copy of the certificate and a copy of the pole shop drawings to the engineer. Furnish poles from an approved manufacturer.

Furnish shop drawings as specified in standard spec 506.3.2, except submit five copies with the material list. Ensure the drawings contain sufficient detail to allow satisfactory review and show the outside diameter of the pole at the butt, top, and splice locations the plans show. Show the width, depth, length, and thickness of all material, and list all pertinent ASTM specification designations and metal allow designations together with the tensile strength of all metallic members.

After completing the manufacturing process, ensure that all shafts a nominal 40 feet or less in length for lighting poles only, are round, of one-piece construction, and of the specified length.

Construct poles of materials having sufficient rigidity that, with all material installed and in place as the plans show, the centerline of the shaft is vertical. Include dampers for poles as needed. If the engineer determines that vibration is a problem after a pole has been installed, install dampeners as the engineer directs.

Thoroughly clean all exterior surfaces of the pole, arm, and hardware to free them of all loose rust, mill scale, dirt, oil, grease, and other foreign substances after all welding has been completed. Hot-dip galvanize the poles and arms according to the requirements of ASTM

Designation A123. Hot-dip galvanize the hardware according to ASTM Designation A153. Provide poles with a bright, shiny, and uniform galvanized finish. Matted or dull pole sections will not be accepted.

For monotube pole, provide anchor rods, nuts and washers for the contract base (Type 10 and Type 13).

Provide a reinforced hand hole measuring 5 inches by 8 inches. Locate the hand hole approximately 18 inches from the bottom of the pole base plate to the center of the door. For the hand hole, include an access cover mounted to the pole by two 1/4" -20 x 3/4" hex-head stainless steel bolts.

Provide a grounding lug complete with mounting hardware as required, inside the pole, 180-degrees from the handhole side of the pole.

Provide access to the grounding L-clip from the hand hole. Before galvanizing the pole, weld the grounding L-clip directly opposite the hand hole on the inside wall of the pole. Equip the top of the pole shaft with a removable, ventilated cap held securely in place by at least one 1/4" -20 x 3/4" hex-head stainless steel set screw.

Ensure that all castings are clean, smooth, and with all details well defined and true to pattern.

Attach base plates firmly to the pole shaft by welding or other approved method. Provide and install a permanent imprinted metal label attached with rivets midway between the base plate and the handhole on each steel pole. State the shaft length, manufacturer's name, and year of manufacture on each label. Conform the label to the curvature of the pole and so that it will not have any sharp edges or corners. Make all rivets smooth inside and outside of the pole.

Provide monotube arms with the folowing:

1. A mounting device welded to the pole end of the monotube arm that allows the attachment of the arm to a pole.
2. Stiffeners or gussets if required between the arm tube and the arm mounting device to provide adequate strength to resist side loads.
3. A wiring raceway.

C Construction

Under each bid item, furnish and install poles, ventilated pole caps, arms, and all necessary miscellaneous hardware needed to complete the installation of the poles and arms.

Install dampeners as the plans show and for poles and arms used in configurations susceptible to vibration. If the engineer determines that vibration is a problem after a pole and arm has been installed, install dampeners as the engineer directs.

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

D Measurement
The department will measure Monotube Pole, Type 9, and Monotube Arm (20-FT, 25-FT, 20-FT, 35-FT, 40-FT and 50-FT) 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.0060.33	Monotube Pole Type 9	EACH
SPV.0060.34	Monotube Arm 20-FT	EACH
SPV.0060.35	Monotube Arm 25-FT	EACH
SPV.0060.36	Monotube Arm 30-FT	EACH
SPV.0060.37	Monotube Arm 35-FT	EACH
SPV.0060.38	Monotube Arm 40-FT	EACH
SPV.0060.39	Monotube Arm 50-FT	EACH

Payment is full compensation for furnishing and installing all materials.

Payment for Monotube Pole, Type 9 also includes anchor rods, nuts and washers for the concrete base Type 10; and installing all materials including all hardware, fittings, mounting clamps, shims and attachments necessary to completely install the mast arms.

83. Traffic Signal Heads 12-Inch, 3-Section Vertical, Item SPV.0060.41; 12-Inch, 5-Section Vertical, Item SPV.0060.42; 16-Inch Pedestrian with Countdown, Item SPV.SPV.0060.43.

A Description
This special provision describes furnishing and installing vehicle and pedestrian signals with LED indications according to the standard specifications and these special provisions.

B Materials
Furnish circular and arrow LED modules from the department's approved product list and conforming to ITE VTCSH-LED.

Furnish state approved 16-Inch Pedestrian LED Full Hand/Full Man Overlay Module with Countdown conforming to ITE VTCSH-LED.

Provide all pedestrian signals with tunnel visors in place of z-grate specified by the department.

Provide all vehicle signals with cutaway visors.

Provide snow-shedding shield on each signal indication on all signals mounted on monotube arms or trombone arms. The shield shall be impact resistant polycarbonate, designed and installed specifically to reduce snow accumulation, while not allowing water to enter or reside in the signal unit. If there are not any far side signals on monotube arms or trombone arms, then install snow-shedding shields on each signal indication of the far right signal.

Pedestrian countdown timers shall have a control wire so that when 120V AC current is applied, the timer will immediately go dark. This control wire shall be wired back to the signal control cabinet.

Make all vehicle and pedestrian signal heads with polycarbonate material, UV stabilized, with color impregnated in the material. All features and performance shall meet the requirements outlined in the latest revision of the Institute of Transportation Engineers' publication, "Adjustable Face Vehicular Traffic Control Signal Heads" The front face and all visors (inside and outside) shall be flat or semi-gloss black. All other exterior parts shall be Federal Highway yellow. Use only exterior hardware made of stainless steel.

C Construction
Construct according to standard spec 658.

D Measurement
The department will measure Traffic Signal Heads 12-Inch (Description) 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.0060.41	Traffic Signal Heads 12-Inch, 3-Section Vertical	EACH
SPV.0060.42	Traffic Signal Heads 12-Inch, 5-Section Vertical	EACH
SPV.0060.43	Traffic Signal Heads 16-Inch, Pedestrian with Countdown	EACH

Payment is full compensation for furnishing and installing all materials.

84. Backplates Signal Face, 3-Section 12-Inch, Item SPV.0060.44; Backplates Signal Face, 5-Section 12-Inch, Item SPV.0060.45.

A Description
This special provision describes furnishing and installing backplates for signal faces.

B Materials
Furnish Backplates Signal Face (Size) that are according to the pertinent requirements of standard spec 658 and these special provisions.

Provide a 5” wide black band around the signal head backplates for 12” signal heads. Make the backplates with an approved black rigid material, such as vacuum formed ABS plastic. Match the backplates to the signal heads being furnished under this bid, equipped with all necessary holes, mounting devices. Use only stainless steel mounting hardware.

C Construction
Install the backplates according to standard spec 658.3, the manufacturer’s instructions, and as shown on the plans.

D Measurement
The department will measure Backplates Signal Face (Description) 12-Inch 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.0060.44	Backplates Signal Face 3-Section 12-Inch	EACH
SPV.0060.45	Backplates Signal Face 5-Section 12-Inch	EACH

Payment is full compensation for furnishing and installing all materials.

85. Traffic Signal Control Cabinet, Item SPV.0060.46.

A Description
This specification describes furnishing an equipped NEMA TS2 Type 1 traffic signal control cabinet. The traffic signal controller and malfunction management unit (MMU) are to be furnished under separate bid items.

Furnish and install equipment and assemble the cabinet conforming to the latest revision of NEMA Standards Publication TS 2-2003, Traffic Controller Assemblies with NTCIP Requirements, National Electrical Manufacturers Association, hereinafter called NEMA TS2 Standard, except where modified in this specification. Conform all work to the Wisconsin State Electrical Code (WSEC).

Provide cabinets designed for TS2 Type 1 operation. Pre-wire cabinets for a minimum of sixteen phases as specified herein.

Furnish and install at no extra cost any equipment and materials not specifically described but required in order to perform the intended functions in the cabinet.

The City of Madison will install this item as part of the construction of this project.

B Materials

B.1 Cabinet

Furnish a door-in-door ground mounted (without anchor bolts) aluminum cabinet of clean-cut design and appearance. Provide a cabinet of minimum size 44 inches wide, minimum 24 inches deep, and minimum 52 inches to maximum 60 inches high. The size of the cabinet shall provide ample space for housing the controller, all of the associated devices which are to be furnished with the controller, all other auxiliary devices herein specified, and all equipment to be furnished under separate bid items.

The cabinet shall comply with the environmental and operating standards outlined in the NEMA TS2 Standard. The cabinet shall provide reasonable vandalism protection. The cabinet shall have a NEMA 3R rating.

Construct the cabinet from type 5052-H32 aluminum with a minimum thickness of 0.125 inches. Furnish the cabinet with a natural, uncoated, aluminum finish inside and outside. Continuously weld all seams. The surface shall be smooth, free of marks and scratches. Use stainless steel for all external hardware.

On the top of the cabinet, incorporate a 1-inch slope toward the rear to prevent rain accumulation. Incorporate a rain channel into the design of the main door opening to prevent liquids from entering the enclosure.

Include an exhaust plenum with a vent screen into the roof of the cabinet. Perforations in the vent screen shall not exceed 0.125 inches in diameter.

Equip the lower section of the cabinet door with a louvered air entrance. The air inlet shall be large enough to allow sufficient air flow per the rated fan capacity. Louvers must satisfy the NEMA rod entry test for Type 3R ventilated enclosures. Secure a washable, fiberglass, removable air filter to the air entrance. The filter shall fit snugly against the cabinet door wall. Attach an aluminum, easily removable, gasketed cover over the air filter and louver.

B.2 Doors

The cabinet door opening shall be a minimum of 80 percent of the front surface of the cabinet. The main door and police door-in-door shall each close against a weatherproof and dust-proof, closed-cell neoprene gasket seal. The gasket material for the main door shall be a minimum of 0.188 inches thick by 1.00 inch wide. The gasket material for the police door shall be a minimum of 0.188 inches thick by 0.500 inches wide. Permanently bond the gaskets to the cabinet.

Equip the main door with a three-point latching mechanism. The upper and lower locking points of the latching mechanism shall each have a pair of nylon rollers. The handle on the main door shall utilize a shank of stainless steel 3/4 inches minimum diameter. The handle shall include a hasp for the attachment of an optional padlock. The cabinet door handle may turn either clockwise or counterclockwise to open, and shall not extend outwards past the edge of the door at any time. Position the lock assembly so the key will not cause any

interference with the handle, or a person's hand on the handle, when opening the cabinet door.

Include on the main door a solid stainless steel rod stop and catch mechanism capable of rigidly holding the door open at approximately 90, 120, and 180 degrees under windy conditions. The operator must be able to engage and disengage the catch with a shoed or booted foot.

The main door hinge shall be a one-piece, continuous piano hinge with a minimum 0.25 inch stainless steel pin running the entire length of the right side of the door (righthanded).

Attach the hinge in such a manner that no rivets or bolts are exposed. Equip the main door with a brass Corbin tumbler lock No. 2, swing away dust cap, and provide two keys No. 2. Equip the police door-in-door with a standard police lock and provide one key.

Electrically bond the door to the rest of the cabinet with a braided copper grounding conductor. The length of the grounding conductor shall allow the door to swing fully open, without using the stop bar, without stretching or breaking the grounding conductor. The grounding conductor shall not interfere with normal door operation. Provide a door switch for the main cabinet door. When the door is opened the switch shall send a signal to the controller sufficient for the controller to log an alarm.

B.3 Shelves and Mountings

Mount a minimum of three vertical "C" channels, compatible with Unistrut channel nuts, on each interior side wall of the cabinet for the purpose of mounting the cabinet components. The channels shall accommodate spring mounted nuts or studs. Install three vertical "C" channels or three slotted rails on the interior back wall of the cabinet. All mounting channels and rails shall extend to within 7 inches of the top and bottom of the cabinets and shall be of sufficient strength to rigidly hold specified shelves and equipment.

Provide two full-width, 11-inch deep, fully adjustable, aluminum shelves to support the controller and other equipment. Mount the lower shelf at a height above the bottom of the cabinet such that the shelf and attached drawer does not interfere with the ability to tilt the terminal facility forward on its hinges for maintenance purposes. Mount the top shelf at least 13 inches above the surface of the lower shelf.

Locate the controller and MMU on the top shelf. Locate the loop detector racks and other auxiliary equipment on the lower shelf. The power supply may be mounted on either shelf.

Provide an under-shelf drawer under the lower shelf. The drawer shall be approximately 20 inches wide and the full depth of the shelf. The drawer shall operate easily and smoothly, and shall have a stop to prevent inadvertently pulling the drawer out of its support. Design the stop to allow purposeful complete removal of the drawer without the use of tools.

B.4 Auxiliary Cabinet Equipment

Ventilate the cabinet by means of a 120 VAC, 60HZ, tube axial compact type fan located in the top of the cabinet plenum. The fan's free delivery airflow shall be equal to or greater than 100 cubic feet per minute. The magnetic field of the fan motor shall not affect the performance of control equipment. The fan bearings shall operate freely. The fan unit shall not crack, creep, warp, or have bearing failure within a seven-year duty cycle. The maximum noise level shall be less than 40 decibels. The fan unit shall be corrosion resistant. The thermostat's turn on setting shall be adjustable from 90 to 120 degrees F. The fan shall run until the cabinet temperature decreases below the turn-on temperature setting by approximately 30 degrees F. The fan shall be fused.

Mount an incandescent lamp and socket in the cabinet to sufficiently illuminate the field terminals. Wire the lamp to a 15-amp ON/OFF toggle switch mounted on the rear cover of the police panel as specified in the Cabinet Switches section of this specification. Provide a 250-watt element heater. Install the heater on the face of the aluminum, louvered air filter cover such that feed air is supplied through the cover. Provide a protective, ventilated cover over the heater. Provide a cord and twist-off plug to an electrical receptacle on the cabinet door. Provide a thermostat with an adjustable setting from 0 to 100 degrees F. Install the thermostat on the interior ceiling of the cabinet well away from the cabinet light or any heat source. Provide a thermal limit switch to prevent the heater's protective cover from exceeding 170 degrees F.

B.5 Terminal Facility

The terminal facility panel shall be constructed from 5052-H32 brushed aluminum of 0.125 inches minimum thickness and formed so as to eliminate any flexing when plug-in components are installed.

Mount the bottom of the terminal facility a minimum of nine inches from the bottom of the cabinet. Hinge the terminal facility at the bottom to allow easy access with simple tools to all wiring on the rear of the panel. It shall not be necessary to remove the lower shelf, the shelf drawer, or any shelf-mounted equipment to hinge down the terminal facility. Provide sufficient slack in the load bay wiring to allow for dropping the load bay.

Fully wire the terminal facility with sixteen load switch sockets: eight phases of vehicular, four phases of pedestrian, and four phases of overlap operation; eight flash transfer relay sockets; one flasher socket; and two terminal facility BIU rack slots. The use of printed circuit boards is not acceptable on the terminal facility, except printed circuit boards are acceptable for the BIU interface with the load bay. Position the 16 load switch sockets in two horizontal rows of eight sockets each. Support the load switches and flasher by a bracket or shelf extending at least three inches from the terminal facility. Label all terminals, load switches, and flash transfer relay sockets. Label reference designators by silk-screening on the front and rear of the terminal facility to match drawing designations.

Provide rack mounted BIU's. Provide a dual-row, 64-pin female DIN 41612 Type B connector for each BIU rack position. Provide card guides for both edges of the BIU. Terminal and facilities BIU mounting shall be an integral part of the terminal facility.

Provide two each 16-channel, 8-position, TS2 detector racks, each with an integrally mounted BIU mounting. Racks shall be addressable. Power each detector rack by the cabinet power supply. Fasten the loop detector racks towards the left side of the lower shelf.

For BIU rack connectors, provide pre-wired address pins or jumper plugs corresponding to the requirements of the NEMA TS2 Standard. The address pins or jumper plugs shall control the BIU mode of operation. BIUs shall be capable of being interchanged with no additional programming.

For the terminal facility, contain all field wires within one or two rows of horizontally-mounted Marathon heavy duty terminal blocks. Terminate all field output circuits on an unfused terminal block with a minimum rating of 10 amps. Use mechanical connector lugs rated for copper wire. Angle the lower section of the terminal block out from the back of the cabinet at approximately a 45 degree angle.

Identify all field input/output (I/O) terminals by permanent alphanumeric labels. All labels shall use standard nomenclature per the NEMA TS2 Standard.

All field flash sequence programming at the field terminals shall be able to be accomplished with the use of only a screwdriver.

Wire field terminal blocks to use three positions per vehicle or overlap phase (green, yellow, red).

Wire one RC network in parallel with each flash transfer relay coil.

Permanently label all logic-level, NEMA-controller and MMU input and output terminations on the terminal facility. Identify the function of each terminal position on the cabinet drawings.

Terminal blocks for DC signal interfacing shall have a number 6-32 x 7/32-inch screw as minimum. Functions to be terminated shall be as specified in the listing of Input/ Output Terminals in Section 5 of the NEMA TS2 Standard.

Conform all terminal facility and cabinet wiring to the WSEC. The green/ walk, yellow, and red/ don't walk load switch outputs shall be minimum 16 gauge wire. The MMU (other than AC power), controller I/O, and logic ground shall be minimum 22 gauge wire. All wire colors shall be consistent in all cabinets furnished in one order.

B.6 Vehicle Detection Interface Panel

Provide a 32-position interface panel or two 16-position panels. Each interface panel shall allow for the connection of 32 or 16 independent field loops, respectively. The panels shall have barrier strip type terminals using 8-32 screws and be rated for 20 inch pounds of torque. Provide a ground bus terminal between each loop pair terminal to provide a termination for the loop lead-in cable ground wire. Secure the interface panels to a mounting plate attached to the left interior side wall of the cabinet.

Provide a cable consisting of 20 AWG twisted pair wires to enable connection to and from the interface panel to a detector rack. The twisted pair wires shall be color-coded wires. Provide a cable of sufficient length to allow the detector rack to be placed on either shelf.

Identify all termination points by a unique number silk screened on the panel.

B.7 Lighting Control Panel

Provide an intersection lighting control panel as described. The intersection lighting control panel shall consist of an aluminum panel 0.125 inches thick and approximately 5 inches by 10 inches. Determine the actual panel size by the cabinet's mounting rail placement. Attach to the panel a 2 pole-30 amp contactor-120vac coil (Square D #8910DPA32V02 or equal), and a heavy duty six position terminal block (Marathon DJ1606 or equal). Use wire sizes 10AWG for power and load wiring, and 16AWG for control wires. Wire the terminal strip as follows:

1. Control coil
2. L1 in
3. L2 in
4. Neutral in and control coil
5. L1 out
6. L2 out

Protect each output by a MOV (V150LA20A) wired between the output and neutral. Include a photo control (Intermatic #K4021C or equal). Mount the photo control just above the cabinet door and approximately 12 inches from the right side of the cabinet. Wire the photo control to a 3 position terminal switch using 16AWG wire color coded to match the photo control wiring connected to the intersection lighting control panel.

B.8 Conductors and Cabling

All conductors in the cabinet shall be copper 22 AWG or larger. All 14 AWG and smaller wire shall conform to MIL-W-16878/1, Type B, 600V, 19-strand tinned copper. The wire shall have a minimum of 0.010 inches thick PVC insulation without clear nylon jacket and rated to 105 degrees Celsius. All 12 AWG and larger wire shall be UL listed THHN/THWN 90 degrees Celsius, 600V, 0.020 inches thick PVC insulation, and clear nylon jacketed.

Provide controller and MMU cables of sufficient length to allow the units to be placed on either cabinet shelf in the operating mode. Connecting cables shall be sleeved in a braided nylon mesh. Exposed tie-wraps and interwoven cables are unacceptable.

Provide the cabinet configuration with enough SDLC RS-485 Port 1 communication cables to allow full capabilities of that cabinet. Each communication cable connector shall be a 15-pin metal shell D subminiature type. The cable shall be a shielded cable suitable for RS-485 communications. Secure all connecting cables and wire runs by mechanical clamps. Stick-on type clamps are not acceptable.

Pre-wire the terminal facility for a Type 16 MMU.

All wiring shall be neat in appearance. Stow excess cable behind the terminal facility or below the shelves in order to allow easy access to the terminal facility and cabinet components. All cabinet wiring shall be continuous from its point of origin to its termination point. Butt type connections/splices are not acceptable.

Wire the grounding system in the cabinet into three separate circuits: AC Neutral, Earth Ground, and Logic Ground.

Opto-isolate all pedestrian pushbutton inputs from the field to the controller through the BIU and operate at 12 VAC.

Hook or loop all wire, size 16 AWG or smaller, at solder joints around the eyelet or terminal block post prior to soldering to ensure circuit integrity. Lap joint soldering is not acceptable.

B.9 Cabinet Switches

Locate the following switches on a maintenance panel on the inside of the cabinet door:

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

Position	Switch Label	Function
Upper	Stop Time	Place stop time on the controller
Center	Run	Remove the stop time input to the controller
Lower	Normal	Connects the MMU to the controller stop time input

Locate the following switches behind the police access door:

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

The above switches shall function as follows:

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

Auto	Hand
Flash:	Signals Flash Signals Flash
Normal:	Signals Normal Signals Advance by use of hand control

Provide manual detector switches. Provide a minimum of 16 vehicle detector switches, and four pedestrian detector switches. The switches shall be spring loaded and automatically return to the center position. Wire the vehicle detector switches to detector BIU slot 1. Wire the pedestrian switches to the T&F BIU slot 1. The switches shall operate as follows:

Position	Function
Up	Detector Disabled
Center	Detector Enabled
Down	Detector Called

B.10 Power Panel

B.10.1 Design

The power panel shall consist of a separate module, securely fastened to the interior right side wall of the cabinet. Wire the power panel to provide the necessary power to the cabinet, controller, MMU, cabinet power supply, and all auxiliary equipment.

Manufacture the power panel from 0.090-inch, 5052-H32 aluminum. Panel layout shall facilitate field inspection and maintenance accessibility without excessive disassembly or special tools.

Provide a light, tough, transparent, weather-resistant, non-yellowing, thermoplastic cover, rigidly mounted over the full power panel, with access holes for circuit breakers and other equipment, and open on the sides for ventilation.

B.10.2 Bus Bar

Provide a minimum 20-position neutral bus bar capable of connecting three #12 AWG wires per position.

B.10.3 Circuit Breakers

House in the power panel the following vertically mounted, single pole, 120 volts AC, 60 Hertz, circuit breakers, with the ON position being up:

- One 30-amp signal breaker. This breaker shall supply power for all cabinet functions not powered through one of the other breakers or fuses listed below. Streetlights will be powered from outside the cabinet in the meter breaker pedestal. This breaker shall feed a signal bus supplied through a solid state bus relay and a radio interference line filter. The bus relay, in all cases, shall be a solid state contactor and shall not be jack mounted. Breakers shall be thermal magnetic type, UL listed, with a minimum of 22,000 amp interrupting capacity.
- One 15-amp auxiliary breaker. This breaker shall supply power to the fan and heater.
- One 10-amp breaker. This breaker shall supply power for control equipment: controller, MMU, and cabinet power supply.
- One 20-amp circuit breaker for future use.

Power the cabinet light through the GFI fuse, not a circuit breaker.

B.10.4 Radio Interference Suppressor

Equip each control cabinet with a single radio interference suppressor (RIS) of sufficient ampere rating to handle the load requirements. Install the RIS at the input power point. The RIS shall minimize interference in both the broadcast and the aircraft frequencies, and shall provide a maximum attenuation of 50 DB over a frequency range from 200 KHZ to 75 MHZ,

when used in connection with normal installations. The RIS shall be hermetically sealed in a substantial metal case filled with a suitable insulating compound. The terminals shall be nickel-plated brass studs of sufficient external length to provide space to connect two #8 AWG wires and shall be so mounted that they cannot be turned in the case. Ungrounded terminals shall be properly insulated from each other, and shall maintain a surface leakage distance of not less than 6.35 mm between any exposed current conductor and any other metallic parts. The terminals shall have an insulation factor of 100-200 mega ohms dependent upon external conditions. The RIS shall be rated at minimum 50 amperes. Design the RIS for operation on 115 VAC +/- 10%, 60HZ, single- phase circuits, and to meet the standards of UL and Radio Manufacturer's Association.

B.10.5 Bus Relay
Provide a normally-open, 60 amp, solid state relay.

B.10.6 Surge Protector
Install a plug-in type EDCO SHA-1250, or Atlantic/Pacific approved equal, surge protector across the load terminal of the 10-amp circuit breaker. Install a General Electric Varistor, catalog #V130PA20A, at the load terminals of the circuit breaker from the hot line to the grounded current carrying neutral conductor. Provide one additional uninstalled surge protector for every 20 cabinets delivered.

B.10.7 Power receptacles
Mount a 120 VAC 20 amp, NEMA 5-20R GFCl convenience duplex outlet at each of these two locations:

- On the interior right side wall above the power panel. The outlet shall be fully operational and fuse protected.
- Near the power panel where it will not interfere with power panel maintenance.

This outlet is to be wired by field installation personnel.

B.10.8 Suppressors and RC Network
Provide a suppressor for each 120 VAC circuit that serves an inductive device, such as a fan motor or a mechanical relay, to protect the controller's solid state devices from excessive voltage surges. Such suppressors shall be in addition to the surge protector at the input power point. Wire one RC network in parallel with each inductive device.

B.11 Load Switches
Provide 16 solid state load switches conforming to the requirements of Section 6.2 of the NEMA TS2 Standard.

B.12 Flashers
Provide one solid state flasher conforming to the requirements of section 6.3 of the NEMA TS2 Standard.

B.13 Flash Transfer Relays
Provide four flash transfer relays conforming to the requirements of section 6.4 of the NEMA TS2 Standard.

B.14 Cabinet Power Supply
Supply one cabinet power supply, meeting the requirements of Section 5.3.5 of the NEMA TS2 Standard. Provide LED indicators for the 12 VDC, 12 VAC, and 24 VDC outputs. Provide jack plugs on the front panel for access to the +24 VDC for test purposes.

B.15 Bus Interface Units (BIU)
Provide three BIUs conforming to the requirements of section 8 of the NEMA TS2 Standard. Provide two BIUs with the main panel and one BIU with one of the detector racks.

B.16 Shop Drawings
Submit two sets of 22X34-inch detailed printed shop/drawings of the control cabinet, equipment layout drawings, and wiring diagrams of all equipment installed in the controller cabinet to the city for review and approval before manufacturing the cabinet. Also provide all drawings as .dgn or dwg files. Revise the files and drawings according to city's comments and resubmit, both printed and .dgn/.dwg files. The city will complete its review within five work days from receipt of the cabinet design.

B.17 Manuals
At the time of the cabinet delivery, furnish the following:

- One set of installation, operations, and maintenance manuals per cabinet for each type of equipment and their replacement parts. The manuals shall as a minimum include the following information: a) table of contents, b) operating procedure, c) step-by-step maintenance and trouble-shooting information for the entire assembly, d) part numbers, and e) maintenance checklists.
- Two sets of cabinet wiring diagrams per cabinet.

B.18 Cabinet Delivery
Deliver the fully wired and equipped cabinets and manuals to the City of Madison Traffic Engineering Electrical Shop, 1120 Sayle Street, Madison, WI, 53704. Delivery shall be on a business day between 8:00 AM and 2:00 PM. Call the City of Madison Traffic Engineering Electrical Shop (Dennis Rowe, (608) 266-9034) a minimum of one 24-hour business day ahead of the desired delivery time to schedule the delivery and confirm the City of Madison's business days.

B.19 Vendor Warranty
The vendor shall warrant the performance and construction of the fully-wired cabinet to meet the requirements of this specification, and shall warrant all wiring parts, components, and appurtenances against defects in design, material and workmanship for a period of one year from the date of installation. In the event defects and failures become apparent during this time, the vendor shall repair and/or replace all defective parts or appurtenances at no

additional expense to the city. This specification is to construe that any part, or parts, that fail to function properly shall be replaced at no charge to the city.

C (Vacant)

D Measurement
The department will measure Traffic Signal Control Cabinet by each unit, acceptably completed and delivered to the City of Madison.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.46	Traffic Signal Controller Cabinet	EACH

Payment is full compensation for furnishing and delivering all materials to the City of Madison, 1120 Sayle Street.

86. Traffic Signal Controller, Item SPV.0060.47.

A Description
This special provision describes furnishing a traffic signal controller with auxiliary equipment to the City of Madison.

The City of Madison will install this item as part of the construction of this project.

B Materials
Furnish the following:

1. Econolite Cobalt controller with HTR, data key, and Ethernet.
2. FSK TLM 25 pin for this controller.
3. Econolite TIO board with harness.
4. D connector interface harness and board.

C (Vacant)

D Measurement
The department will measure Traffic Signal Controller by each unit, acceptably completed and delivered to the City of Madison.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.47	Traffic Signal Controller	EACH

Payment is full compensation for furnishing and delivering the signal controller, and all auxiliary equipment, to the City of Madison, 1120 Sayle Street.

87. Optical Signal Preempt, Item SPV.0060.48.

A Description

This special provision describes furnishing and installing optical signal preempt equipment for the 2 signalized intersections. The acceptability of alternate equipment rests solely with the City of Madison Traffic Engineering Division.

B Materials

Provide the following material:

1. Two channel discriminator for each of two intersections.
2. Optical detectors, eight total.
3. Card rack for each intersection, three total.
4. Detector cable as necessary.
5. Cables and auxiliary equipment as necessary for a complete operating system.

C Construction

Install detectors on the top horizontal member of monotube arms, between the first and second traffic signal head, and as otherwise shown on the plan or directed by Madison Traffic Engineering.

The detectors will generally be on the far side of the intersection, and aimed at approaching traffic, as further directed by Madison Traffic Engineering staff. Install detector cable from the detector to the control cabinet at each intersection, using the shortest path.

All installation methods to be consistent with the manufacturer's instructions. Card rack and discriminator installation, as well as cabinet connections, will be made by City of Madison Traffic Engineering staff.

D Measurement

The department will measure Optical Signal Preempt as a single lump sum unit of work for optical signal preempt, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.48	Optical Signal Preempt	EACH

Payment is full compensation for furnishing and installing detectors and cable; for furnishing and delivering discriminators, card racks, cables and miscellaneous materials to the city Traffic Engineering Field Office, 1120 Sayle Street.

88. Traffic Signal Ethernet Switch, Item SPV.0060.49.

A Description

This special provision describes furnishing and installing an ethernet switch in an existing traffic signal cabinet, as specified in standard spec 651, 655, 670, 674, and 675, as shown on the plans, and as provided hereinafter.

B Materials

Furnish Cisco IE-2000-8TC-G-L Ethernet switches as shown in the plans. Provide all necessary cables between the ethernet switch and device or devices as shown in the plans.

C Construction

Install the traffic signal ethernet switch in an existing traffic signal cabinet. Connect it to devices as shown on the plans, according to the manufacturer's recommendation, and as directed by the engineer.

Contact Mike Christoph at the City of Madison Traffic Engineering shop at (608) 266-9031 a minimum of 7 working days in advance to coordinate installing equipment in existing traffic signal cabinet.

D Measurement

The department will measure Traffic Signal Ethernet Switch as each individual traffic signal ethernet switch, 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.0060.49	Traffic Signal Ethernet Switch	EACH

Payment is full compensation for furnishing and installing an ethernet switch, all necessary incidental wiring and hardware, making all necessary connections.

89. Malfunction Management Unit (MMU), Item SPV.0060.50.

A Description

This special provision describes furnishing a shelf-mountable, 16-Channel, solid-state MMU with Ethernet capability to the City of Madison.

The City of Madison will install this item as part of the construction of this project.

B Materials

Provide one shelf-mountable, 16 channel, solid-state MMU with Ethernet capability. The MMU shall meet the requirements of Section 4 of the NEMA TS2 Standard. The MMU shall be capable of the following:

- Detecting simultaneously active inputs of Green (Walk), Yellow, or Red (Don't Walk) on the same channel.
- Determining if the field signal input states detected as active or inactive by the MMU correspond with the data provided by the Controller Unit.
- Monitoring an optional external watchdog output from a Controller Unit or other external cabinet device.
- Monitoring an intersection with up to four approaches using the Flashing Yellow Arrow (for protected/permissive left and right turn movements).
- Event logging for the following; AC Line log, Prior/Previous Faults log, and Monitor Reset Log. All log entries shall include a date and time stamp.
- All monitor functions shall be capable of being programmed through the front panel, without the need for computers or special programs cards.
- A built-in Diagnostic Wizard shall be provided that displays detailed diagnostic information regarding the fault being analyzed. This mode shall provide a concise view of the signal states involved in the fault, pinpoint faulty signal inputs, and provide guidance on how the technician should isolate the cause of the malfunction.

The MMU shall have an LCD display that allows for viewing of log files and field indications, as well as the viewing and setting of date and time and configuration parameters.

C (Vacant)

D Measurement
The department will measure Malfunction Management Unit (MMU) by each unit, acceptably completed and delivered to the City of Madison.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.50	Malfunction Management Unit (MMU)	EACH

Payment is full compensation for furnishing and delivering the Malfunction Management Unit to the City of Madison, 1120 Sayle Street.

90. Erecting City Owned Signs, Item SPV.0060.51.

A Description
This special provision describes installing municipality owned signs.

B Materials
Furnish signing materials conforming to standard spec 637.

C Construction
Remove existing special message type II signs per the plan details and in conformance with standard spec 638.3.2. Store the signs at a location approved by the engineer and in a manner to prevent damage to the sign. Reinstall the signs according to standard spec 637 at the plan locations.

D Measurement
The department will measure Erecting City Owned Signs as each individual sign, 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.0060.51	Erecting City Owned Signs	EACH

Payment is full compensation for removing, handling and hauling, storing, and reinstalling signs as required, including all fastener materials. The department will pay for sign supports separately.

91. Sign Post Base for Concrete Installation, Item SPV.0060.52.

A Description
This special provision describes constructing and installing the sign post bases in concrete sidewalk or pavement at locations shown on the plans and as hereinafter provided.

B Materials
The 2-inch x 16-inch sign post base shall be an ASTMA Designation 120 A53 Fed Spec P404, Schedule 40 untreated black pipe 2-inch diameter, with a galvanized rigid conduit coupling installed.

Waterproof anchoring cement for concrete shall be Unitex, Thorogrip 29/64 or equivalent.

C Construction
The sign post base shall consist of a 2-inch x 16-inch schedule 40 pipe with attached 2” rigid conduit galvanized coupling according to the details in the plan. Weld the coupling and pipe over 100 percent of the circumference.

Set the signpost bases at the locations shown on the plans. The center of the finished installation shall be 5'0" (2’6” for Advanced Street Name Sign Special installations) from the face of the adjacent curb or from the edge of paved shoulder. Upon request and reasonable notice from the contractor, the engineer will establish and stake the location for the sign post bases. The City of Madison Traffic Engineering Division Staff will verify all signpost base locations.

Box out all installations in hard surfaced areas (concrete) with a round PVC pipe with a minimum diameter of 3-inches or installed by drilling or coredrilling a 3-inch hole all the way through the concrete to the base material. If drilling in architectural concrete pavement, cover the surface prior to drilling to protect the surface from drilling slurry. Coordinate all box out locations. With a temporary pipe 4 to 5 feet long, hand-tighten it into the insert. Drive the insert into the base material at a level/plumb position until the insert is flush with the top of the concrete. Shim insert to a level/plumb position with lag bolts or p.k. nails. All shims must be set below the concrete/insert. Remove temporary pipe, replace with permanent pipe, and tighten into insert with large pipe wrench until insert turns. Reset shims or add shims until pipe no longer turns. Retighten pipe and recheck level/plumb/top of concrete with insert. Patch concrete with a waterproof anchoring cement for concrete. Mix patch to a liquid consistency, not a paste. Pour patch until it is flush with the top of the insert. Recheck level/plumb/top of concrete with insert immediately due to fast setting time of cement. Additional cement may be required as it settles. Completed installation shall be level/plumb, solid, and able to support required sign post and signs. Patch shall be flush with adjacent concrete without exposed shims.

Coat the threads of the pipe and coupling in the base with graphite grease prior to assembly. Install the base such that the installed sign post will be plumb. Provide a one- year warranty that the signpost base installation shall remain plumb.

Remove and dispose of all excess excavation, surplus material and debris resulting from operations and satisfactorily repair and restore other work damaged by operations.

D Measurement

The department will measure Sign Post Base for Concrete Installation by each individual unit, installed and accepted 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.0060.51	Sign Post Base for Concrete Installation	EACH

Payment is full compensation for furnishing all materials; for the manufacture of the sign post base; for hauling, handling and installing the sign post base, including drilling holes in concrete; and for anchoring cement.

92. Precast Sign Post Base, Item SPV.0060.53.

A Description

This special provision describes constructing and installing precast sign post bases at locations shown on the plans and as hereinafter provided.

B Materials

All materials furnished for the work shall meet the requirements for the class of materials amed.

Specific reference is made to the following sections of the standard specifications:

Concrete Masonry	standard spec 501
Steel Reinforcement	standard spec 505

Concrete Masonry shall be of a 3,200-psi minimum strength in 28 days. The 2-inch x 24-inch +1/3-inch insert shall be an ASTMA Designation 120 A53 Fed Spec P404, Schedule 40 untreated black pipe 2-inch diameter, with a galvanized rigid conduit coupling installed.

C Construction

Form the 24-inch x 11-inch precast base according to the details in the plan. Weld the coupling and pipe over 50 percent of the circumference. Center the insert in the base and plumb with the vertical axis of the base, and place so that the coupling is flush 1/8-inch with the top of the troweled surface of the base. The bottom of the insert extends a minimum of 1/8-inch below the base and shall remain open to permit drainage. Weld 3/8-inch by 8-inch reinforcing bar to the insert 8 inches from the top of the base and 8 inches from the bottom of the base to prevent the insert from rotating within the concrete base.

Set the sign post bases at the locations shown on the plans. The center of the finished installation shall be 5'0" + inches from the face of the adjacent curb or from the edge of paved shoulder.

Upon request and reasonable notice from the contractor, the engineer will establish and stake the location for the sign post bases. The City of Madison Traffic Engineering Division Staff will verify all signpost base locations.

Coat the threads of the pipe and coupling in the base with graphite grease prior to assembly.

Install the base and pipe as a unit, level with the finished grade of the surrounding surface with the pipe plumb. Tamp the material used for backfilling around the base in 6-inch layers to ensure the installation will remain plumb. Provide a one- year warranty that the signpost base installation shall remain plumb.

Remove and dispose of all excess excavation, surplus material and debris resulting from operations and satisfactorily repair and restore other work damaged by operations.

D Measurement

The department will measure Precast Sign Post Base as each individual unit, installed and accepted 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.0060.53	Precast Sign Post Base	EACH

Payment is full compensation for furnishing all materials; for the manufacturing of the sign post base; for hauling, handling and installing the sign post base, including backfill.

93. Lighting Control Cabinet, Item SPV.0060.61.

A Description

This special provision describes furnishing and installing a lighting control cabinet with all electrical components and wiring assembled.

B Materials

B.1 Contactors

Furnish 8-pole, 30-amp, 600-V electrically held contactors with 120-V control coil in NEMA 1 enclosure as required for the proposed circuits. Engrave "ALL NIGHT" or "MIDNIGHT" identification on cover of respective enclosures.

B.2 Photocell

Furnish a button type photocell and install as shown on the detail. Apply silicone caulk to maintain the watertight integrity of the enclosure. The photocell shall be rated for 120V, 1500W with 30-60 second delay between "on-off" operations.

B.3 Panel

Furnish a 120/240-volt, 100A main circuit breaker, single-phase, 20-circuit panel board in a NEMA 1 enclosure. Provide copper ground and split neutral bus bars in addition to copper bus bars. Provide bolt-on, thermal-magnetic circuit breakers that clearly indicate ON, OFF, or TRIPPED position in the panel. Provide double pole breakers as required for all multiwire branch circuits.

B.4 Time Clock

Furnish a time clock with an 8-year lithium battery time backup, -40° F to 120° F operating range, 40-year program schedule retention, LCD type, daylight saving time, and leap year correction. Program as required by the City of Madison.

B.5 Selector Switches

Furnish "Hand-Off-Auto" switches to control each circuit separately. Provide a "Hand-Off-Auto" legend plate for each switch. Engrave "ALL NIGHT" and "MIDNIGHT" above each appropriate operator. Mount the switches in a horizontal manner in a NEMA 1 enclosure.

B.6 Cabinet Enclosure

Provide a NEMA 4X enclosure made from .125-inch Type 5052-H32 aluminum. The doorframe shall be double flanged and all exterior seams shall be ground smooth. Door handle shall be 3/4-inch diameter stainless steel with three point latching system and hasp. Main door shall be sealed with a closed-cell neoprene gasket. Main door hinge shall be continuous 0.075-inch thick stainless steel with a 0.25-inch stainless steel hinge pin. Provide an aluminum-mounting panel at back (interior) of enclosure. Provide a weatherproof pad lock with 2-3/8-inch wide body, repinnable/replacable cylinder, and five keys. There shall

be no louvers or Corbin main door lock. Applicable code working clearances shall be maintained between equipment mounted within the enclosure.

B.7 Surge Arrester
Furnish a surge suppressor to protect the panel board. The surge suppressor shall provide 6 modes of surge protection, meet UL1449 Second Edition with 32Ka per phase and 48KA system peak surge current, contain LED line indicators, and approximate dimensions of 4.54-inch X 2.58-inch X 0.22-inch. Connect the surge suppressor to the branch circuit breaker as indicated on the plans.

B.8 Field Wiring Termination Blocks
All connections from the field wiring to equipment in the lighting control cabinet shall be made through termination blocks. Provide quantity of channel mount, NEMA type single terminal blocks as indicated on plans that are capable of holding #12 to #1/0 wire with solderless box lugs, for power, neutral and grounding connections. Mount the terminal blocks on a mounting channel of appropriate length with end anchors and an end barrier. Each terminal block shall have a label indicating the appropriate circuit number, neutral ('N') or ground ('G') wire connected to block; handwritten numbers and letters are not acceptable means of identification. Make connections from the underground field wiring to the equipment in the lighting control cabinet through distribution blocks.

B.9 Convenience GFI Receptacle and Cabinet Light Fixture
Furnish a 20 ampere, 120 commercial grade GFI duplex receptacle within a galvanized steel outlet box with cover. 150 watt, 250 volt commercial grade lamp holder with galvanized steel box and 60 watt incandescent bulb. Furnish switch to turn on cabinet light by opening the cabinet door.

B.10 Incidental Materials
Secure all wiring using screw attachment type straps; adhesive type shall not be allowed.

C Construction
Assemble the control cabinet as shown on the plans. Pretest the cabinet prior to shipment to the site. Mount all equipment to panel in enclosure. Train the cables in straight horizontal and vertical directions and be parallel next to and adjacent to other cables whenever possible. Mount the cabinet to the concrete base per the manufacturer's requirements. The work under this bid item includes connection and termination to the feeder system wiring.

D Measurement
The department will measure Lighting Control Cabinet as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.61	Lighting Control Cabinet	EACH

Payment is full compensation for furnishing and installing photo control, contactors, panel, distribution blocks, surge arrestor, enclosure, grounding, wiring and electrical components; mounting to the concrete base.

94. Pole 30-Foot, 11 Gauge, Item SPV.0060.62.

A Description

This special provision describes furnishing and installing poles and arms according to standard spec 657, the details shown on the plans, and these special provisions.

B Materials

Provide round poles, with a base plate welded to the bottom end of the pole. All 30 foot poles are to be a single section, with an eight-inch diameter shaft at the base and 0.14 inches per foot taper.

Provide base plates that have a slotted opening for anchor bolts.

Certify that all 30-foot poles have been designated to withstand a 90 mile per hour sustained wind velocity and 117 mile per hour gust velocity with the bracket arm and luminaires in place.

Provide a 4" x 6 ½" galvanized handhole with contoured or flat cover plate joined to the reinforced handhole frame with two bolts. Locate the handhole at 90 degrees clockwise from the bracket arm side of poles as viewed when looking down from the top of the pole. The center of the handhole should be 14 inches from the bottom of the pole. Provide a solid metal bracket, with a drilled and tapped hole for securing cover plate bolts. Clips for holding these bolts are not acceptable. The machine bolts shall be a slotted hex-head style.

Fabricate the pole shaft from the herein specified manufacturer's best grade, hot rolled basic option hearth, or basic oxygen process steel. Provide a shaft with only one longitudinal, electrically welded joint, with the strength rated at not less than 100 percent of the yield strength of the steel and shall have no intermediate horizontal joints or welds. Only one length of steel shall be used, and form it into a continuously tapered shaft, having a taper of approximately 0.14 inches per foot. Provide smooth welds allowing the specified taper to be constant. Provide a pole that is within ¼" in 10 feet of being straight and centered on its longitudinal axis.

Provide a grounding nut or nut holder for accommodating a ½ inch x 13 UNC threaded bolt or stud on the inside of the shaft immediately opposite the center of the handhole. Make the nut completely free of any metal residue that would prevent a bolt from easily screwing entirely into the nut.

Provide all poles holding LED fixtures with mounting and wire raceway holes placed before being hot-dipped galvanized. Coordinate mounting needs with the LED luminaires selected for the project prior to ordering poles.

Furnish and install a pole-top cover and four nut covers for each pole. Adjust the size of the pole top cover to account for poles cut to shorter lengths.

Provide each steel pole with a permanent imprinted metal label attached with rivets midway between the base plate and the handhole. State the overall pole height, shaft gauge, and year of manufacture on the label. Provide a label that will conform to the curvature of the pole and not have any sharp edges or corners. Install rivets so they are smooth inside and outside of the pole.

Thoroughly clean the exterior surface of the pole, arm, and hardware to make them free of all loose rust, mill scale, dirt, oil, grease, and other foreign substances after all welding has been completed. Hot-dip galvanized the poles and arms according to the requirements of ASTM Designation A123. Hot-dip galvanize the hardware according to ASTM designation A153. Provide a bright, shiny, and uniform galvanized finish. Matted or dull pole sections will not be accepted.

Furnish non-shrink commercial grout from approval products list.

C Construction

Set and plumb metal poles with the use of leveling nuts furnished with the anchor bolts. Level luminaires after erecting and leveling the metal standards with bracket arms. The proper leveling method may be obtained from the manufacturer's instruction manual. Torque nuts on anchor and transformer bolts to 175-200 foot pounds or as directed by the engineer. Provide rust, corrosion, and snit-seize protection at all threaded assemblies by coating and mating surfaces with Markal (hightemp – E-Z Break), Never-Seez (Marine Grade), LPS 100, Lubriplate, or approved equal.

Attach the stranded copper ground wire that is installed as a part of the base construction with an approved connector (Fargo GC 202 or approved equal) to a ground nut locate inside the pole opposite the handhole.

When transformer bases are not installed, trowel grout between the pole and concrete base and finished at an angle from the edge of the pole base to the outer edge of the foundation. Leave a ½ inch slot for drainage through the grouting on the street side at the top of the concrete base.

Cut the poles to modified lengths at the plan locations to meet OSHA clearance requirements at overhead transmission lines.

D Measurement

The department will measure Pole 30-Foot, 11 Gauge as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.62	Pole 30-Foot, 11 Gauge	EACH

Payment is full compensation according to standard spec 657.5. and for cutting poles to lengths less than 30 feet.

95. Pole Aluminum 20-Foot Street Light, Item SPV.0060.63.

A Description

This special provision describes Poles Aluminum 20-Foot Street Light according to the plans and as hereinafter provided. It is the intent to describe in these specifications minimum functional and design requirements for aluminum light poles for the City of Madison, Wisconsin.

B Materials

Furnish poles that conform to the electrical detail drawing in the plans; the manufacturer's approved shop drawing; and these specifications. Submit exceptions to these specifications and city drawings to the engineer for review prior to manufacturing.

Coordinate mounting needs with the LED luminaires selected for the project prior to ordering poles to ensure mounting and wire raceway holes are compatible with the selected LED luminaires.

Furnish poles that have round aluminum shafts with a base welded to the lower end of each.

Certify that all poles have been designed to withstand a 90-mile-per-hour sustained wind velocity and a 117-mile-per-hour gust velocity, with one light fixture attached.

B.1 Shaft

Provide a grounding nut or nut holder for accommodating a 1/2 inch 13 UNC threaded bolt or stud on the inside of the shaft immediately opposite the center of the handhole.

Provide poles that after fabrication and assembly, will have no sharp edges, corners or points on both the interior and exterior surfaces, except at the base plate.

Restore to the design alloy by heat treating after fabrication.

B.2 Pole Coatings

Confer with Brian Smith of City Traffic Engineering, (608) 261-9625, as to the specifications for a black anodized finish in order to assure the city that the city's desires are being fulfilled. Spin the poles using a fine (120) grit. Provide a uniform finish appearance free from any streaking during the pole extrusion, spinning and anodizing.

Use a two-step matte black anodizing finish (AA-C22-A44-Black) or an alternate process which produces a dark black finish. A light black finish is not acceptable.

B.3 City Approval of Shop Drawings
Submit shop drawings to the City of Madison Traffic Engineering Division, PO Box 2986, Madison, WI 53701-2986, Attn: Brian Smith. Manufacture no poles until the city has approved the shop drawings. City review and approval of shop drawings will be done within three work days of their receipt unless revisions to shop drawings are necessary as determined by the city.

C Construction
Construct according to standard spec 657.

D Measurement
The department will measure Poles Aluminum 20-Foot Street Light as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.63	Pole Aluminum 20-Foot Street Light	EACH

Payment is full compensation for furnishing and installing poles, all hardware and fittings necessary to completely install the pole; for corrosion prevention where required; for installing identification required plaques.

96. LED Luminaire and Mounting Bracket Type 1, Item SPV.0064; Type 2, Item SPV.0060.65; Type 3, Item SPV.0060.66.

A Description
This item number includes furnishing and installing Cooper fixture luminaires.

B Materials
B.1 Material Qualifications
Provide an integral LED lighting unit. All parts not specifically mentioned, which are necessary and are regularly furnished in order to provide a complete unit, shall be furnished by the successful bidder at the bid price and shall conform in quality of material and workmanship to that usually provided by the engineering practice indicated in this specification.

Furnish luminaires of the "cutoff" type conforming to all general aspects for luminaires as specified under standard spec 659 except as modified herein. All equipment to be furnished shall be new, unused, and the latest model being produced. The LED Luminaire Type 1 shall be a Cooper Lighting grey LED Talon luminaire (part number "TLM-E02-LED-E1-SL2-8030-AP." The LED Luminaire Type 2 shall be a Cooper Lighting grey LED Talon

luminaire (part number "TLM-E04-LED-E1-SL2-8030-AP"). The LED Luminaire Type 3 shall be a Cooper Lighting grey LED Talon luminaire (part number "TLM-E05-LED-E1-SL3-8030-AP").

B.2 Manufacturer's Warranty
The manufacturer shall warrant that goods provided for this project will conform to applicable specifications, drawings, designs, samples, descriptions and will be free from defects in material and workmanship and will be fit for the particular purpose intended by the city.

This warranty shall remain in effect for one year. The warranty period commences on the date the luminaires are installed.

Under this warranty, the manufacturer agrees to replace within a reasonable time, any part, feature or product found to be defective during the warranty period at no cost to the City of Madison.

New lighting units will not be accepted before luminaires and lamps have operated without failure for a period of at least ten consecutive nights.

C Construction
Install LED Luminaires and Mounting Bracket (Type) according to the pertinent provisions of standard spec 659 and as the manufacturer directs.

D Measurement
The department will measure LED Luminaire and Mounting Bracket (Type) as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.64	LED Luminaire and Mounting Bracket Type 1	EACH
SPV.0060.65	LED Luminaire and Mounting Bracket Type 2	EACH
SPV.0060.66	LED Luminaire and Mounting Bracket Type 3	EACH

Payment is full compensation for furnishing all materials, including all luminaires and side of pole mounting hardware.

97. SSPRC 36-Inch Bend, Item SPV.0060.67.

A Description
This special provision describes furnishing and installing pipe bends for Storm Sewer Pipe Reinforced Concrete 36-Inch. Furnish Class IV pipe.

B Materials
Furnish Storm Sewer Pipe Reinforced Concrete 36-Inch at the bend dimensions in the plans and conforming to standard spec 610.2.

C Construction
Construct the pipe in accordance to standard spec 610.3 at the plan locations.

D Measurement
The department will measure SSPRC 36-Inch Bend by each bend acceptably completed. The pipe on either side of the bend will be measured and paid through the center of the bend.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.67	SSPRC 36-Inch Bend	EACH

Payment is full compensation in accordance to standard spec 610.5.

98. Temporary Drainage Structures, Item SPV.0060.68.

A Description
This special provision describes providing or constructing concrete structures, installing or adjusting covers, and removing temporary concrete drainage structures and covers to maintain drainage and allow for the installation of temporary pavement around the structure, according to the pertinent provisions of standard spec 204 and 611, as shown on the plans, and as hereinafter provided.

B Materials
Furnish temporary drainage structures and covers conforming to standard spec 611.2.

C Construction
Conform to standard spec 204.3 and 611.3.

Construct, install, and remove all elements of the temporary drainage structure in a manner to prevent damage to finished pipes and structures.

D Measurement
The department will measure Temporary Drainage Structures as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.68	Temporary Drainage Structures	EACH

Payment is full compensation for providing and installing all materials, including all masonry, pipe connections, adjusting rings, steps, and other structure fittings; for providing temporary covers including frames and grates; for installing and adjusting each cover; for excavating, backfilling, and disposing of surplus material; for removing the inlet or manhole and covers; and for cleaning out and restoring the work site after construction and removal.

99. Concrete Pipe Support, Item SPV.0060.69.

A Description
This special provision describes constructing a concrete masonry support between storm sewer and local utilities as detailed in the plans and as hereinafter specified.

B Materials
Furnish concrete materials conforming to standard spec 611.2.

Furnish backfill materials conforming to standard spec 209.2.

C Construction
Construct according to the plans and standard spec 209.2 and 611.3.

D Measurement
The department will measure Concrete Pipe Support as each individual concrete support, 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.0060.69	Concrete Pipe Support	EACH

Payment is full compensation for providing all materials, including all masonry; for furnishing all excavating, backfilling, disposing of surplus material, insulation, concrete masonry, curing, protecting and for cleaning out and restoring the work site.

100. Connect to Existing Water Main VER, 10-Inch, Item SPV.0060.70; 8-Inch, Item SPV0060.71.

A Description
Furnish and install bends and fittings as necessary along with select bedding and cover material to proposed line and grade including backfilling and compaction, according to the plans, standard specifications, "Sewer/Water Specifications", and these special provisions.

B Materials
Water main fittings shall conform to the requirements of Chapter 8.22.0 of the "Sewer/Water Specifications". Compact fittings conforming to AWWA C153 may be used in lieu of full body fittings that conform to AWWA C110. Provide push-on or mechanical joint, with

cement mortar lining or 6-8 mil nominal thickness epoxy lining per AWWA C550. Fittings shall be provided with styrene butadiene copolymer (SBC) rubber or neoprene gaskets and be from a USA manufacturer. All bolts, nuts, and washers for fittings shall be Cor-blue. Fittings shall be of USA manufacturer. Mechanical joint fittings used with ductile iron pipe shall be restrained with Meg-a-Lug, Series 1100 restraint and push-on joint fittings used with ductile iron pipe shall be restrained with Meg-a-Lug Series 1700 Harness as manufactured by EBBA Iron Sales, Inc., or approved equal.

Pipe bedding and cover material shall conform to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Polyethylene wrap shall conform to the requirements of AWWA C105, with minimum nominal thickness of 0.008-inches (8mils). Thermoplastic tape shall be 1-inch wide and 8mils thick with pressure sensitive adhesive face capable of bonding to metal, bituminous coating and polyethylene.

C Construction

Make the connection of new water main to existing water main according to the requirements of Chapter 4.14.0 of “Sewer/Water Specifications” by cutting and removing existing water main and installing new water main. Make connection of new water main to existing water main through use of solid mechanical joint sleeve. Prior to any water service interruption, give written or verbal notification to all local residences and businesses affected at least 24 hours in advance of service interruption. Verbal notifications shall be documented to the designated city representative. After connection of the new water main to the existing water main, the valve shall remain closed until the new water main has passed all testing and safe bacteriological samples received. The valve used for filling and flushing of the new water main shall be so operated as to preclude backflow into the existing water system. Only City of Verona Water Department personnel shall operate valves.

Provide all materials, equipment, fitting, plugs, taps, piping, valves, and labor required to flush and test new water main and water main services.

Backfill the pipe trench with granular backfill material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions and provide compaction and compaction testing according to the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Blocking shall conform to the requirements of section 4.3.4 of "Sewer/Water Specifications," except, support valves, hydrants, and special fittings in vertical position on solid concrete block or concrete support. Concrete block shall be solid concrete with nominal dimensions of 4-in. by 8-in. by 16-in. or greater.

Measure and record distance from plugged cross or tee to adjacent valve and provide the information to a designated City of Verona representative.

V-bio Polyethylene Encasement is required for all ductile pipe, fittings, valves, valve boxes and hydrant barrels. Encase top and mid-section of valve box with polyethylene wrap.

Concrete thrust blocks are required for all bends, caps, tees, and plugs according to section 4.3.13 of the "Sewer/Water Specifications." In lieu of concrete thrust blocks, Meg-a-Lugs, as specified in this special provision, may be used. Where Meg-a-Lugs are employed, bends, tees, caps and plugs shall also be blocked with solid concrete blocks from trench wall to fitting. Concrete blocks shall have nominal dimensions of 4-in. by 8-in. by 16-in. or greater.

Install all water main to provide minimum of 6.5 feet of cover from top of pipe to finish grade or to depth indicated on drawings

D Measurement
The department will measure Connect to Existing Water Main VER 8-Inch and 10-Inch by each connection 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.0060.70	Connect to Existing Water Main VER, 10-Inch	EACH
SPV.0060.71	Connect to Existing Water Main VER, 8-Inch	EACH

Payment is full compensation furnishing all materials including bedding material, cover material, for furnishing all excavation, dewatering, and sheathing and shoring; for forming foundation and for making all connections; for polyethylene wrap of fittings, valves and valve boxes; for backfilling and mechanical compaction; for bring valve box and lid to finish grade; for removing sheeting and shoring; for hydrostatic and leakage testing of valve installation; for disposal of all surplus or waste material; and for site cleanup.

101. Fire Hydrant VER, Item SPV.0060.72.

A Description
Furnish and install fire hydrants at the locations indicated on the construction plans.

B Materials
Fire hydrants shall be dry-barrel break-away type, meeting AWWA C502 requirements with cast-iron body, 250 psig working pressure, compression type valve, provided with 5 1/4 inch bottom valve opening; shall be traffic type hydrant with break off coupling on standpipe and rod; and shall be equipped with 6 in. inlet with mechanical joint connection, three-way outlet style with one 4 1/2 inch pump nozzle and two, 2 1/2 inch hose nozzles with National Standard threads and pentagonal operating nut, 1 inch on each side, opening counterclockwise. Nozzle caps shall be attached with heavy chains. Hydrants shall be painted red with white nozzle caps by the manufacturer. Hydrant shall be identified in the field using a Hydrant marker.

Hydrant marker shall be:

1. RoDon Corporation Hydra-Finder
   - Red and White Fiberglass shaft, 5 feet in length
   - Mount with L-Bracket and spring

Provide hydrant with O ring packing, bronze seating ring, painted red and bury depth of 6.5 feet from top of inlet pipe to ground flange. All bolts, nuts, and washers on hydrant inlet connection shall be Cor-blue. Install zinc anode cap inlet connector bolts after installation of bolt nut.

Hydrant manufacturers shall be:

1. Mueller: Super Centurion A 423
2. American Flow Control, Waterous "Pacer" Model WB-67

Polyethylene wrap shall conform to the requirements of AWWA C105, with minimum nominal thickness of 0.008-inches (8mils). Thermoplastic tape shall be 1inch wide and 8mils thick with pressure sensitive adhesive face capable of bonding to metal, bituminous coating and polyethylene.

C Construction

Install fire hydrants according to the details of the plans. Set all hydrants on a solid concrete block. The concrete block shall have nominal dimensions of 4-inch by 8-inch by 16-inch or greater.

Provide a drain pocket, where groundwater is not present, at the base of the hydrant of 1 cubic yard of clear stone or rock conforming to requirements of ASTM C33, Gradation No. 2, and constructed as shown on detail of plans.

Plug weep hole or provide hydrant without weep hole in locations where groundwater is present.

Backfill and compact as specified for adjacent water main.

Install hydrant valve on hydrant lead at location shown on the plans.

Encase hydrant barrel from inlet to ground flange with V-Bio Enhanced Polyethylene encasement, consisting of three layers of co-extruded linear low density polyethylene fused into a single thickness of not less than 0.008-inches (8 mils) conforming to the requirements of AWWA C105. Inner layer shall be infused with antimicrobial biocide and corrosion inhibitor. Provide 1-inch wide 8 mils thick thermoplastic tape with pressure sensitive adhesive face capable of bonding to metal, bituminous coating and polyethylene.

Repaint all fire hydrants following installation with manufacturer supplied paint.

D Measurement

The department will measure Fire Hydrant VER by each 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.0060.72	Fire Hydrant VER	EACH

Payment is full compensation for furnishing all materials including bedding material, cover material; for furnishing all excavation, dewatering, and sheathing and shoring; for forming foundation; for making all connections; for polyethylene wrap; for backfilling and mechanical compaction; for removing sheeting and shoring; for hydrostatic and leakage testing of the hydrant; for disposal of all surplus or waste material; and for site cleanup.

102. Removing Fire Hydrant and Valve VER, Item SPV.0060.73.

A Description

Work shall consist of removing existing fire hydrants and associated valves where indicated on the plans, salvaging all fire hydrants removed that conform to the requirements for Fire Hydrants under these special provisions and disposing of those fire hydrants that do not meet the requirements, salvaging auxiliary valves, transporting fire hydrants and auxiliary valves to City of Verona Water Department storage yard, and abandoning hydrant leads.

B Materials

Furnish granular backfill conforming to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Concrete for plugs on dead water mains shall be Grade B conforming to standard spec 501.

Ductile iron plugs or caps for live water mains shall conform to AWWA C110.

C Construction

Conform to the pertinent requirements of Part IV, Chapter 4.14.0 of the "Sewer/Water Specifications" for removing and salvaging of fire hydrants and auxiliary valves.

Excavate to expose entire fire hydrant and associated valve, disassemble fire hydrant and valve from hydrant lead, and salvage for City of Verona Water Department where fire hydrant conforms to current fire hydrant specifications. Transport salvaged fire hydrant and auxiliary valve to City of Verona Water Department storage yard. Where hydrant does not conform to current fire hydrant specifications, cut hydrant lead and remove fire hydrant and valve and dispose of off-site.

Where fire hydrant is located on water main to be abandoned, drain and bulkhead end of hydrant lead with concrete bulkhead. Where the water main will remain in service, remove hydrant lead to hydrant tee and install restrained plug at the tee.

Pump all drainage from trench prior to backfilling.

Only remove existing fire hydrants after replacement water main and associated fire hydrants are in place and in service.

Backfill excavation with granular material conforming to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

D Measurement
The department will measure Removing Fire Hydrant and Valve VER by each as a single 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.0060.73	Removing Fire Hydrant and Valve VER	EACH

Payment is full compensation for furnishing all excavation, backfilling and compaction, cutting hydrant lead, draining and dewatering, disassembly of fire hydrant and valve from hydrant lead, salvage and transport of materials to City of Verona Water Department storage yard, concrete bulkheads, plugs, mechanical restraint, sheathing, shoring and bracing, removing and disposing of materials not salvaged or incorporated into the work, and for site cleanup.

103. Water Valve and Valve Box VER 12-Inch, Item SPV.0060.74; 10-Inch, Item SPV.0060.75; 8-Inch, Item SPV.0060.76; 6-Inch, Item SPV.0060.77.

A Description
Furnish and install water valves and valve boxes, including valve box lid and required valve box extensions at the locations indicated on the construction plans. The work also includes adjustment of new valve boxes to ¼ inch below finish grade.

B Materials
Gate valves shall be resilient wedge gate valves in conformance with AWWA C515, cast iron or ductile iron body, bronze-mounted with bronze non-rising stems, and O-ring seals, stainless steel hardware, 2-inch square operating nut, open left (counter clockwise), with rubber encapsulated wedge, with 250 psi maximum working pressure and minimum test pressure of 500 psi, and be as manufactured by the following:

1. Mueller: Resilient Seat A-2362-20
2. American Flow Control: Series 2500
3. US Pipe: A-USP2 Resilient Wedge Gate Valve

Valves shall be epoxy lined according to AWWA C550, and shall be supplied with mechanical joints. All bolts, nuts, washers for mechanical joint connection shall be Cor-blue. Provide gate valve adaptor by Adaptor, Inc., http://www.adaptorinc.com, or pre-approved equal to align bottom section of valve box over top of valve.

Valve boxes shall be three-piece cast iron, screw type box with 5 1/4 in. shaft and no tilt drop cover marked "Water" and #6 bottom section. Provide valve box length as required for depth of cover shown on plans. Valve boxes shall be Model 6860 series as manufactured by Tyler/Union or equal.

Polyethylene wrap shall conform to the requirements of AWWA C105, with minimum nominal thickness of 0.008-inches (8mils). Thermoplastic tape shall be 1-inch wide and 8mils thick with pressure sensitive adhesive face capable of bonding to metal, bituminous coating and polyethylene.

C Construction

Install water valves according to the details of the plans. Set all valves on a solid concrete block. The concrete block shall have nominal dimensions of 4-inch by 8-inch by 16-inch or greater.

Backfill and compact as specified for adjacent water main.

Encase valves with V-Bio Enhanced Polyethylene encasement, consisting of three layers of co-extruded linear low density polyethylene fused into a single thickness of not less than 0.008-inches (8 mils) conforming to the requirements of AWWA C105. Inner layer shall be infused with antimicrobial biocide and corrosion inhibitor. Provide 1-inch wide 8 mils thick thermoplastic tape with pressure sensitive adhesive face capable of bonding to metal, bituminous coating and polyethylene.

Encase top and mid-section of valve box with V-Bio Enhanced polyethylene wrap. Do not tape Polyethylene wrap to top section of water main box.

D Measurement

The department will measure Water Valve and Valve Box VER, (Size) by each 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.0060.74	Water Valve and Valve Box VER, 12-Inch	EACH
SPV.0060.75	Water Valve and Valve Box VER, 10-Inch	EACH
SPV.0060.76	Water Valve and Valve Box VER, 8-Inch	EACH
SPV.0060.77	Water Valve and Valve Box VER, 6-Inch	EACH

Payment is full compensation for furnishing all materials including bedding material, cover material, for furnishing all excavation, dewatering, and sheathing and shoring; for forming foundation and install of valve and valve box; valve disinfection; for making all connections; for polyethylene wrap of valve and valve box; for backfilling and mechanical compaction; for bringing valve box and lid to finish grade; for removing sheeting and shoring; for hydrostatic and leakage testing of valve installation; for disposal of all surplus or waste material; and for site cleanup.

104. Sanitary Manhole Cover VER, Item SPV.0060.78.

A Description

Furnish and install the manhole frame, cover, and internal/external chimney seal.

B Materials

Provide cast iron manhole frame and cover meeting the standards of ASTM A48. Provide Neenah Foundry Company R-1540 frame with non-rocking Type B solid cover, with concealed pick holes and self-sealing Type T gasket seal or Neenah R-1916-C frame with bolt down Type B solid cover with concealed pick holes and self-sealing Type T gasket seal for manholes outside pavement areas, or pre-approved equal.

Provide internal manhole rubber frame/chimney seal for all sanitary manholes. Rubber sleeve and extension shall be high-grade rubber compound conforming to requirements of ASTM C923 with minimum 1,500 psi tensile strength. Ring shall be double or triple pleated with integrally formed expansion band recess on top and bottom with multiple sealing fins. Expansion bands shall be 16-gauge stainless steel conforming to ASTM A240, Type 304. Locking mechanism of band and associated studs and nuts shall be stainless steel conforming to ASTM F593 and F594, Type 304. Seal shall be Cretex Specialty Products or approved equal.

C Construction

Furnish and install manhole frame and cover on manhole chimney adjustment section. Outside edge of frame shall align with outside edge of manhole chimney adjustment section.

Extend chimney seal a minimum of three inches below top of manhole cone section to two inches above bottom of cover frame.

D Measurement

The department will measure Sanitary Manhole Cover VER by each as a single 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.0060.78	Sanitary Manhole Cover VER	EACH

Payment is full compensation for furnishing and installing all materials, including cover with frame, internal chimney seal, and all other required materials; for work to set frame and cover; for installation of chimney seal; for backfilling to established sub-grade elevation including mechanical compaction; for disposal of all surplus or waste material; and for site cleanup.

105. Adjust Sewer Access Structure Special (MMSD), Item SPV.0060.79.

A Description

This article describes adjusting Sanitary Sewer Access Structure (SAS) castings, as called for in the plans, to the final proposed grades. The casting adjustment for this bid item is greater than 9 vertical inches to set the casting to the final grade. Manhole adjustments less than 9 inches are paid for separately under Bid Item 611.8110 Adjusting Manhole Covers. Installation of offset cone and casting as called for on the plan will be considered incidental to this bid item. Rotation of an existing cone sections will be considered incidental to this bid item.

B Materials

Furnish 6-foot diameter precast concrete barrel sections and manhole adjustment rings according to the requirements of Article 507.3, as well as SDD 5.7.2 and 5.7.15 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

C Construction

Complete Adjust Sewer Access Structure Special according to Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Remove existing casting frame, lid and adjustment rings and install new concrete barrel sections. The maximum allowed adjustment on the Sewer Access Structure shall not exceed 9 inches and the final configuration of the structure will be in accordance of SDD 5.7.2 and 5.7.15 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure Adjust Sewer Access Structure Special (MMSD) as each individual sewer access structure adjustment, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.79	Adjust Sewer Access Structure Special (MMSD)	EACH

Payment is full compensation for completing the work according to Article 507 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

106. Sanitary Sewer Internal Chimney Seal, Item SPV.0060.80.

A Description

Furnish and install an internal chimney seal on all sanitary sewer access structures located within 100 feet of a street low point, in greenways, and where indicated on the plan.

B Materials

Provide an internal chimney seal consisting of either rubber with metal bands or a low density polyethylene insert conforming to the City of Madison Standard Detail Drawing 5.7.17 – SAS Internal Chimney Seal or other equivalent chimney seal products as approved by the engineer.

C Construction

Install internal chimney seals according to the manufacturer's instructions.

D Measurement

The department will measure Sanitary Sewer Internal Chimney Seal as each individual sanitary sewer internal chimney seal, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.080	Sanitary Sewer Internal Chimney Seal	EACH

Payment is full compensation for furnishing all labor, tools, materials, and all other work incidental to the installation of the sanitary internal chimney seal.

107. Sanitary Lateral Connect, Item SPV.0060.81.

A Description

This special provision describes proposed sanitary sewer lateral connections connecting to the proposed sanitary sewer main.

B Materials

Furnish sanitary sewer pipe and fittings that are solid-wall Poly Vinyl Chloride (PVC) and that conform to the requirements of the Specification for PVC Sewer Pipe and Fittings, ASTM D 3034. All laterals shall be a minimum of 6-inches in diameter.

Provide sanitary sewer pipe and fittings having a standard dimension ratio of 26 or 35 depending on the depth of the pipe. Sewer lateral pipe and fittings deeper than 12' will have ASTM D3034 SDR 26 pipe.

Furnish elastomeric or solvent cement joints made as recommended by the manufacturer.

C Construction
The PVC pipe for the connection of laterals shall not exceed a length of 5 feet. If the lateral exceeds a length of 5 feet, the quantity of pipe in excess of 5 feet shall be paid for under bid item SPV.0090.65, 6″ Sanitary Sewer Lateral. All new laterals shall be a minimum of 6 inches in diameter.

Install risers, where necessary, according to Standard Detail Drawing 5.3.1 of the City of Madison Standard Specifications for Public Works Construction- Latest Edition. Risers five feet in length are included in the bid item Sanitary Lateral Connect. Backfill and compaction according to Article 202.3(b) of the City of Madison Standard Specifications for Public Works Construction-Latest Edition utilizing select fill.

D Measurement
The department will measure Sanitary Lateral Connect as each individual sanitary sewer connect, acceptably completed.

Sanitary sewer lateral pipe exceeding 5 feet in length will be paid under bid item Sanitary Sewer Lateral (Bid Item SPV.0090.65, 6" Sanitary Sewer Lateral)

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.81	Sanitary Lateral Connect	EACH

Payment is full compensation for furnishing all materials, including fill material; plugging the ends of all sewer mains and sewer laterals; excavation; trimming and chipping; cutting, protecting or removing reinforcing steel; disposal of surplus materials from the structure or excavation; excavation and compaction of the backfill material; and for restoring the site.

108. Abandon Sanitary Sewer - Pipe Plug, Item SPV.0060.82.

A Description
This work consists of plugging pipes as shown in the plans and hereinafter provided.

B Material
Furnish concrete conforming to Article 301 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition

C Construction
Abandon sanitary sewer pipe with a plug according to Article 203 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

Provide replacement sanitary sewers and laterals or appropriate bypass pumping prior to abandoning sanitary sewer pipe.

Saw cut end of existing pipe and clean interior of pipe to create a good bonding surface. Form and pour a minimum 1-FT deep concrete plug completely filling the opening of the pipe.

Where structures are called out for removal or abandonment, plug pipes at the structure will be considered incidental to removal or abandonment of the manhole

D Measurement
The department will measure Abandon Sanitary Sewer - Pipe Plug as each individual pipe plug, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.82	Abandon Sanitary Sewer Pipe Plug	EACH

Payment is full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to complete this item of work.

109. Sanitary Sewer Tap, Item SPV.0060.83.

A Description
Work under this item includes the connection of a new lateral or main to an existing structure and the connection of an existing lateral or main to a new structure.

B Materials
Provide Kor-n-Seal flexible connector, or approved equal, in the tapped hole, according to Standard Detail Drawing 5.7.31 of the City of Madison Standard Specifications for Public Works Construction- Latest Edition.

C Construction
C.1 New Pipe to Existing Structure
Use a portable coring drill to produce a pipe opening that is round, clean and free of any pitting of the concrete.

Make a watertight connection of the pipe to the sewer access structure with a Kor-n-Seal-flexible connector, or approved equal, according to Standard Detail Drawing 5.7.31 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

C2. Existing Pipe to New Structure
Provide a flexible connector to connect the existing pipe to any new pipe which is required to make the connection to the structure.

Provide PVC (SDR-26, SDR-35, AWWA C900 Class 150, DR 18) that matches the existing pipe's diameter, or the next larger diameter, to connect the existing sewer main or lateral.

The PVC (SDR-26, SDR-35, AWWA C900 Class 150, DR 18) sanitary sewer pipe is considered incidental to this bid item.

The pouring and construction of concrete benches and flowlines in new sewer access structures for the inlet or outlet pipes is not included in this bid item and is considered incidental to the bid item Sanitary Sewer Access Structure (4-Foot Diameter or 5- Foot Diameter).

The downstream pipe connection to a Sewer Access Structure (4-Foot Diameter or 5- Foot Diameter) is considered incidental to the Sewer Access Structure (4-Foot Diameter or 5- Foot Diameter).

D Measurement

The department will measure Sanitary Sewer Tap as each individual sanitary sewer tap, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.83	Sanitary Sewer Tap	EACH

Payment is full compensation for providing all connectors; and for coring.

110. Adjust Sewer Access Structure Special, Item SPV.0060.84.

A Description

Work under this item will include adjusting Sanitary Sewer Access Structure (SAS) castings as called for on the plan set to the final proposed grades. This bid item is required because the casting adjustment is greater than 9" of vertical adjustment to set the casting to the final grade or the chimney was determined to be in poor condition. Manhole adjustments less than 9" will be paid for separately under Bid Item 611.8110 Adjusting Manhole Covers. Installation of offset cone and casting as called for on the plan will be considered incidental to this bid item. Rotation of an existing cone sections will be considered incidental to this bid item.

B Materials

Precast concrete barrel sections and manhole adjustment rings will meet the requirements of Article 507.3, as well as SDD 5.7.2 and 5.7.15 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

C Construction

Complete Adjust SAS Special according to Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition. This bid item will require adjustment rings to be removed and concrete barrel sections to be installed. The maximum allowed adjustment on the Sewer Access Structure will not exceed 9 inches and the final

configuration of the structure will be in accordance of SDD 5.7.2 and 5.7.15 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

D Measurement
The department will measure Adjust Sewer Access Structure Special as each individual sewer access structure adjustment, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.84	Adjust Sewer Access Structure Special	EACH

Payment is full compensation for completing the work according to Article 507 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

111. Sanitary Sewer Access Structure (4-Foot Diameter), Item SPV.0060.85.

A Description
Work under this item includes installing Sewer Access Structures at the depths and locations shown on the plan.

B Materials
Provide precast concrete Sanitary Sewer Access Structure (4-Foot Diameter) meeting the requirements of Standard Detail Drawing 5.7.2, 5.7.15, and Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Furnishing and installing Sewer Access Structure Frames and Covers, according to Standard Detail Drawing 5.7.16 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition, will be paid for separately under the Manhole Covers Type MAD, Bid Item SPV.0060.12.

C Construction
Install Sanitary Sewer Access Structure (4-Foot Diameter) according to Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition. Maintain the normal flow of wastewater at all times during installation of the new sanitary sewer access structure and when connecting pipes to the new structure. All bypass pumping, temporary piping, and/or temporary connections, which are required to maintain the normal flow of wastewater throughout construction, is incidental to this bid item. Lateral connections in proposed sewer access structures to serve lands that do not already have sanitary sewer shall be considered incidental to the Sewer Access Structure and not paid for as a sanitary tap (SPV.0060.83).

Construct concrete benches and flow lines as directed by the City of Madison or as directed by the engineer.

D Measurement
The department will measure Sanitary Sewer Access Structure (4-Foot Diameter) as each individual sanitary sewer access structure, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.85	Sanitary Sewer Access Structure (4-Foot Diameter)	EACH

Payment is full compensation for completing the work according to Article 507 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

112. Sanitary Sewer Access Structure (5-Foot Diameter), Item SPV.0060.86.

A Description
Work under this item includes installing Sewer Access Structures at the depths and locations shown on the plan.

B Materials
Provide precast concrete Sanitary Sewer Access Structure (5-Foot Diameter) meeting the requirements of Standard Detail Drawing 5.7.2, 5.7.15, and Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Furnishing and installing Sewer Access Structure Frames and Covers, according to Standard Detail Drawing 5.7.16 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition, will be paid for separately under the Manhole Covers Type MAD, Bid Item SPV.0060.12.

C Construction
Install Sanitary Sewer Access Structure (5-Foot Diameter) according to Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition. Maintain the normal flow of wastewater at all times during installation of the new sanitary sewer access structure and when connecting pipes to the new structure. All bypass pumping, temporary piping, and/or temporary connections, which are required to maintain the normal flow of wastewater throughout construction, is incidental to this bid item. Lateral connections in proposed sewer access structures to serve lands that do not already have sanitary sewer shall be considered incidental to the Sewer Access Structure and not paid for as a sanitary tap(SPV.0060.83).

Construct concrete benches and flow lines as directed by the City of Madison or as directed by the engineer.

D Measurement
The department will measure Sanitary Sewer Access Structure (5-Foot Diameter) as each individual sanitary sewer access structure, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.86	Sanitary Sewer Access Structure (5-Foot Diameter)	EACH

Payment is full compensation for completing the work according to Article 507 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

113. Slurry Backfill, Item SPV.0060.87.

A Description

Work under this item will include all work, materials, equipment, and incidentals required to install dig-able slurry backfill where proposed sewer mains or laterals cross an existing duct packages (electrical or telephone). This bid item will only be utilized if the vertical separation between the top of the proposed lateral or main and bottom of the duct being crossed is less than 12" and where pipe supports are not called out on the plan set (SPV.0060.69 Concrete Pipe Supports). This bid item is intended for locations where the existing duct packages or conduit are larger diameter (24" or larger) where hand digging (tunneling) is utilized to install the proposed utility.

B Materials

The slurry will conform to the following one cubic yard mix:

25 lb	Type I Portland Cement
300 lb	Class C Fly Ash
2700 lb	Sand
50 gallons	Water

C Construction

Slurry backfill will be installed from the bottom of trench to the bottom the existing duct package being crossed. Select backfill (Bid item SPV.0090.61 Select Fill For Sanitary Sewer) will be used to backfill from the top of the slurry to the finished grade on both sides of the duct being crossed. Slurry backfill will be allowed to completely dry before select backfill is placed.

D Measurement

The department will measure Slurry Backfill by each completed unit for each existing duct package being crossed that has less 12" of vertical clearance where tunneling is required to install the proposed utility. The amount of slurry backfill is estimated to be one cubic yard per crossing. Any additional Slurry Backfill used will be considered incidental to the contract unit bid price. No extra compensation will be granted for alternate dig-able flowable mix design. Select Fill sewer lateral or main (Bid item SPV.0090.61 Select Fill For Sanitary Sewer) will still be paid for the full length of the pipe being installed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.87	Slurry Backfill	EACH

Payment is full compensation for furnishing all excavation; disposing of excess material; and for furnishing and placing backfill.

114. Connection to Existing Manhole (MMSD), Item SPV.0060.88.

A Description

This special provision describes furnishing and installing sanitary sewer appurtenances as shown in the plans and as hereinafter provided.

B Materials

B.1 Applicable Specifications

Provide all sanitary sewer materials in conformance to the plans and specifications and the Standard Specifications for Sewer and Water Construction in Wisconsin.

The products listed are intended to establish a basis for comparison of products of other manufacturers. Substitutions will be permitted but only with the prior written approval of the engineer.

Furnish backfill material composed of mechanically compacted granular material conforming to the requirements of SWS 8.43.4.

B.2 Shop Drawings

Prior to incorporating any materials or products into the work, submit to the engineer product literature and catalog cuts of the materials to be supplied. Submit information in sufficient detail to readily determine if these materials are in conformance with the specifications.

C Construction

C.1 Applicable Specifications

Provide all sanitary sewer construction in conformance to the Standard Specifications for Sewer and Water Construction in Wisconsin.

C.2 Methods

Excavate around the existing sanitary manhole to provide access to the invert elevation required. Core through the existing manhole wall and bench at the elevation required for the new invert elevation. The existing bench shall be reconstructed as required to allow for a smooth flow from the new sanitary pipe to the existing flow line. Invert channels shall be troweled to a smooth, dense surface and a semicircular shape conforming to the inside of the adjacent sewer sections.

The existing manhole shall not be damaged during construction. If damage of the manhole exists prior to construction and determined during excavation, it should be immediately reported to the engineer to discuss any corrections necessary. If damage occurs, the contractor shall discuss with MMSD and determine what sections of the manhole need to be replaced or corrections necessary. Damage caused by the contractor will be the responsibility of the contractor to correct.

Complete the coring and bench work of the existing manhole under live conditions or minimal bypass pumping within the manhole. If the contractor desires to plug the existing flows to the manhole, they shall contact MMSD and determine the appropriate times allowed for any plugging.

Connection to Existing Manhole

Make connections to the existing manhole utilizing resilient connectors meeting the requirements of ASTM C923 as manufactured by A-Lok Products Inc., NPC Inc., Kor-N-Seal, or equal.flexible and watertight manhole sleeves.

Backfill

Mechanically compact granular material conforming to the requirements of SWS 8.43.4.

D Measurement

The department will measure Connection to Existing Manhole (MMSD) by each connection, acceptably completed, and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.88	Connection to Existing Manhole (MMSD)	EACH

Payment is full compensation for providing all labor and materials, including all required fittings; for furnishing all excavating, except rock excavation; for coring the existing manhole; constructing a new bench in the existing manhole in conformance with the existing flow lines; for sheeting and shoring; for dewatering; for backfilling and compacting; for providing granular backfill material, including bedding material; for removing sheeting and shoring; for cleaning out the manhole and adjoining pipes and restoring the worksite; for completing a watertight manhole connection to the proposed final grades and cleaning out the manhole and adjoining pipes and restoring the worksite.

115. Reconstruct Bench and Flowlines, Item SPV.0060.89.

A Description

Work under this item includes the removal and replacement of the existing sewer access structure bench and flowline(s) as indicated in the drawings, or as required by the City of Madison, to restore the bench and flow line after completion of a tap connection as described under Sanitary Sewer Tap bid item.

B Materials
Furnish concrete materials according to the applicable provisions of standard spec 611.

C Construction
Notify the city of Madison of any potential restoration work and provide a minimum of three working days for completion of a field assessment of the structure in question.

Unless shown on the drawings, do not reconstruct bench and flowlines unless directed by the City of Madison.

Complete all work associated with this item according to Article 503 of the City of Madison Standard Specifications for Public Works Construction - Latest Addition. Provide a smooth trowel finish to all completed flowlines. Brushed flowlines will not be accepted.

D Measurement
The department will measure Reconstruct Bench and Flowlines as each individual reconstruct bench and flowline, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.89	Reconstruct Bench and Flowlines	EACH

Payment is full compensation for disposing of surplus materials; and for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.

116. Abandon Water Valve Box MAD, Item SPV.0060.90.

A Description
This special provision describes abandoning all water valve boxes within the project limits that serve valves no longer in service, indicated in the plans, or directed by the engineer according to section 704.15 of the City Standard Specifications. This item includes placing the valve in the closed position prior to abandoning the box and completely removing the valve box whenever possible. This item also includes, but is not necessarily limited to all materials, equipment, labor, select fill and incidentals necessary to complete the work.

B Materials
Conform all materials used for this work with section 702 of the City Standard Specifications.

C Construction
Conform all associated work to the requirements of section 703 of the City Standard Specifications. All work shall take place after the existing water main has been abandoned. Remove the top casting to a point 3 feet below the existing elevation, then backfill the opening with select fill and compact.

D Measurement
The department will measure Abandon Water Valve Box MAD as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.90	Abandon Existing Water Valve Box MAD	EACH

Payment is full compensation for furnishing all work in abandoning the water valve box as specified herein.

117. Relocate Existing Hydrant MAD, Item SPV.0060.91.

A Description
This work consists of removing and relocating existing hydrants according to Article 704.8 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

B Materials
Furnish associated materials according to Article 702.4 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

C Construction
Install hydrants according to Article 703.8 and Standard Detail Drawing 7.04 of the City of Madison Standard Specification for Public Works Construction – Latest Edition, unless otherwise shown or specified.

D Measurement
The department will measure Relocate Existing Hydrant MAD as each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.91	Relocate Exsiting Hydrant MAD	EACH

Payment is full compensation for excavating, backfilling, making connections, and for removing and relocating existing hydrants.

118. Furnish Excavation and Ditch for Live Tap, Item SPV.0060.92.

A Description

This work shall consist of furnishing of all means and methods, equipment, tools, labor, and incidentals necessary for preparing a ditch for the city to perform a live-tap connection on an existing water main, as shown on the plans according to section 704.13 of the City Standard Specifications. Upon completion of tap, cut-off and cap the existing water main, if applicable.

B Materials

The city will furnish the tapping sleeve and tapping valve required for the connection. Furnish any additionally required materials according to Article 702 of the City Standard Specifications.

C Construction

Furnish the live-tap ditch according to Article 703 and Section 704.12 of the City of Madison City Standard Specifications, unless otherwise shown or specified.

D Measurement

The department will measure Furnish Excavation and Ditch for Live Tap by each live-tap that is acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.72	Furnish Excavation and Ditch for Live Tap	EACH

Payment is full compensation for each live-tap ditch as described above including all material, excavation, backfilling, equipment, tools, and labor necessary for the connection.

119. Adjust Existing Water Valve Box MAD, Item SPV.0060.93.

A Description

Adjust Water Valve Box consists of adjusting all existing water valve boxes within the project limits to between¼ inch to ½ inch below finished grade. Adjustment of new valve boxes is incidental to water main construction, and will not be paid under this item. This item includes all materials, equipment, labor, and incidentals necessary to complete this work, and shall be conducted according to section 704.18 of the City Standard Specifications.

B Materials

All materials conform to the requirements of section 702 of the City Standard Specifications.

C Construction
All work associated with adjust water valve box conforms to the requirements of section 703 of the City Standard Specifications. Excavate and expose the existing water valve boxes to the depth needed to adjust the valve boxes to finished grade. Extensions may be required. Backfill and compaction shall be according to the City Standard Specifications. Leave all valve boxes centered over the valve operating nut and free of dirt and debris.

D Measurement
The department will measure Adjust Existing Water Valve Box MAD 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.0060.93	Adjust Existing Water Valve Box MAD	EACH

Payment is full compensation for furnishing all work in adjusting the water valve box as specified herein.

120. Connect to Existing Water Main MAD, SPV.0060.94.

A Description
This work shall consist of furnishing of all means and methods, equipment, tools, labor, and incidentals necessary for making a plug-removal connection or a cut-in connection to existing water mains, as shown on the plans according to section 704.12 of the City Standard Specifications.

B Materials
Furnish materials according to Article 702 of the City Standard Specifications.

C Construction
Perform water main connections according to Article 703 and Section 704.12 of the City of Madison City Standard Specifications, unless otherwise shown or specified.

D Measurement
The department will measure Connect to Existing Water Main MAD by each connection that is acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.94	Connect to Existing Water Main MAD	EACH

Payment is full compensation for installing water hydrant completed in place as described above including all material, excavation, backfilling, equipment, tools, and labor necessary for the connection.

121. Furnish and Install 6-Inch Valve MAD, SPV.0060.95; 8-Inch Valve MAD, Item SPV.0060.96; 12-Inch Valve MAD, Item SPV.0060.97; 16-Inch Valve MAD, Item SPV.0060.98.

A Description

This work shall consist of furnishing and installing all valves as identified on the plan and as required to complete the installation of the proposed water main according to section 704.27 of the City Standard Specifications and as hereinafter provided.

Proposed valves associated with pressure taps, as indicated on the plans, are not to be included in these items.

B Materials

Furnish materials according to section 702 of the City Standard Specifications. These items include furnishing all materials and fittings; bedding the valves; excavating, dewatering and compacting the trenches; installing valves, valve boxes and any necessary extensions; adjustments of valve boxes; installing and removing sheeting and bracing; all tools, labor, equipment, restraint, polyethylene encasement, thrust restraint and any other appurtenances required to furnish and install valves as required.

C Construction

Install valves according to section 703 of the City Standard Specifications.

D Measurement

The department will measure Furnish and Install (Size) Valve per each individual completed unit, accordance with section 704.27 of the City Standard Specifications.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.95	Furnish and Install 6-Inch Valve MAD	EACH
SPV.0060.96	Furnish and Install 8-Inch Valve MAD	EACH
SPV.0060.97	Furnish and Install 12-Inch Valve MAD	EACH
SPV.0060.98	Furnish and Install 16-Inch Valve MAD	EACH

Payment is full compensation for excavation; for furnishing and installing valves; for backfill and compaction; and for disposing of excess materials.

122. Hydrants MAD, Item SPV.0060.99.

A Description

This work shall consist of furnishing and installing new fire hydrants as shown on the plans according to section 704.7 of the City Standard Specifications. This work also includes salvaging existing hydrants identified on the plan for removal.

B Materials

Furnish materials according to section 702.4 of the City Standard Specifications.

C Construction

Install all hydrants according to Section 703.8 and Standard Detail Drawing 7.04 of the City of Madison City Standard Specifications, unless otherwise shown or specified.

D Measurement

The department will measure Hydrants MAD by each individual hydrant that is acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.99	Hydrants MAD	EACH

Payment is full compensation for installing water hydrant completed in place as described above including all material, excavation, backfilling, equipment, tools, and labor necessary for the installation.

123. Parapet Concrete Type 'TX', Item SPV.0090.01.

A Description

This special provision describes construction of a decorative concrete parapet according to standard spec 501, 502, and 505, as shown on the plans, and as hereinafter provided. This item includes all concrete and reinforcement within the parapet, including stirrups that are embedded into other elements and extend into the parapets, and forming for recessed wheat patterns in the column pilasters and parapet pilasters as shown on the plans. The concrete mix used for this parapet shall include polypropylene fibers.

B Materials

The polypropylene fibers shall be engineered synthetic reinforcing fibers of 100% polypropylene collated fibers.

The physical properties of the fibers shall be as follows:

Specific Gravity:	0.91
Denier:	Less than 100
Modulus of Elasticity:	$0.5x10^6$ to $0.7x10^6$ psi
Tensile Strength:	70 to 110 ksi
Length:	1/2 to 2-1/2 inches

The polypropylene fiber manufacturer shall certify in writing that all polypropylene fibers are specifically manufactured for use in concrete from virgin polypropylene and the physical properties are within the limits specified above.

If the fiber manufacturer is other than the brand name listed on the literature and/or packaging, the certification must be from the original manufacturer of the polypropylene fibers.

The fiber length shall be determined by the manufacturer to be compatible with the concrete mix design.

C Construction

The polypropylene fiber manufacturer or authorized distributor shall provide the services of a qualified engineer or employee for a pre-construction meeting and initial job start up.

Use polypropylene fibers at the rate of one bag weighing 1.5 to 1.6 pounds per cubic yard of concrete. The fibers may be added with the fine and coarse aggregates or in the mixer after all ingredients have been blended and mixed according to manufacturer's recommendations.

D Measurement

The department will measure Parapet Concrete Type 'TX' by the linear foot of parapet, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.01	Parapet Concrete Type 'TX'	LF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

124. Railing Steel Type Ornamental B-13-845, Item SPV.0090.02; C-13-2082, Item SPV.0090.03; C-13-2083, Item SPV.0090.04; R-13-296, Item SPV.0090.05; R-13-304, Item SPV.0090.06; R-13-305, Item SPV.0090.07; R-13-307, Item SPV.0090.08.

A Description

This special provision describes fabricating, galvanizing, painting and installing railing according to standard spec 506, 513 and 517 and the plan details, as directed by the engineer, and as hereinafter provided.

B Materials

Provide materials for railing that are new stock, free from defects impairing strength, durability and appearance. Galvanize railing assemblies and then apply a two-coat paint system. Bubbles, blisters and flaking in the coating will be a basis for rejection.

B.1 Coating System

B.1.1 Galvanizing

After fabrication, blast clean steel railing assemblies per SSPC-SP6 and galvanize according to ASTM A123. Drill vent holes in members as required to facilitate galvanizing and drainage. Location and size of vent holes are to be shown on the shop drawings. Remove all burrs at component edges, corners and at holes and sharp edges chamfered before galvanizing. Condition any thermal cut edges before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed according to AASHTO M 160 prior to blast cleaning. Lumps, projections, globules, or heavy deposits of galvanizing, which will provide surface conditions that when painted, will produce unacceptable aesthetic and/or visual qualities, will not be permitted.

B.1.2 Two-Coat Paint System

After galvanizing, paint all exterior surfaces of steel railing assemblies and inside of rail elements at field erection and expansion joints as hereinafter provided. Clean all galvanized surfaces to be painted per SSPC-SP1 to remove chlorides, sulfates, zinc salts, oil, dirt, organic matter and other contaminants. Brush blast cleaned surface per SSPCSP16 to create a slight angular surface profile per manufacturer's recommendation for adhesion of the tie coat. Do not fracture the galvanized finish or remove any dry film thickness during installation. After cleaning, apply a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface, per manufacturer's recommendations. Etch the galvanized rail and prepare the surface for the top coat using the tie coat. Apply a top coat per manufacturer's recommendations, matching the specified color shown on the plans. Use a preapproved top coat that is resistant to the effects of the sun and is suitable for a marine environment. The tie and top coats should be of contrasting colors, and come from the same manufacturer.

Ensure that the paint manufacturer reviews the process to be used for surface preparation and application of the paint coating system with the paint applier. The review includes a visit to the facility performing the work if requested by the paint manufacturer. Provide written confirmation, from the paint manufacturer to the engineer, that the review has taken place and that issues raised have been addressed before beginning coating work under the contract.

Use one of the qualified paint manufacturers and products given below. An equivalent system may be used with the written approval of the engineer.

Manufacturer	Coat	Products	Dry Film Minimum Thickness (mils)	Min. Time[1] Between Coats (hours)
Sherwin Williams 1051 Perimeter Drive Suite 710 Schaumburg, IL 60173 (847) 330-1562	Tie	Recoatable Epoxy Primer B67-5 Series / B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carboline 350 Hanley Industrial St. Louis, MO 63144 (314) 644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Tie	Carboguard 60	4.0 to 6.0	10
	Tie	Carboguard 635	4.0 to 6.0	1
	Top	Carbothane 133 LH(satin)	4	NA
Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001 (253) 850-2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

[1] Time is dependent on temperature and humidity. Contact manufacturer for more specific information.

B.2 Shop Drawings

Submit shop drawings showing the details of railing construction. Show the railing height post spacing, rail location, weld sizes and locations and all dimensions necessary for the construction of the railing. Show location of shop rail splices, field erection joints and expansion joints. State the name of the paint manufacturer and the product name of the tie coat and top coat used along with the color. State the size and material type used for all components. Also show the size and location of any vent or drainage holes provided.

C Construction

C.1 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Upon receipt at the job site, thoroughly inspect all materials to ensure that no damage occurred during shipping or handling and conditions of materials is in conformance with these specifications. If coating is damaged, repair or replace railing assemblies to the approval of the engineer at no additional cost to the owner. Carefully store the material off the ground to ensure proper

ventilation and drainage. Exercise care so as not to damage the coated surface during railing installation. No field welding, field cutting or drilling will be permitted without the approval of the engineer.

C.2 Touch-up and Repair
For minor damage caused by shipping, handling or installation to coated surfaces, touchup the surface in conformance with the manufacturer's recommendations. If damage is excessive, replace the railing assembly at no additional cost to the owner. Provide the engineer with a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings.

D Measurement
The department will measure Railing Steel Type Ornamental (structure) by the linear foot of railing, 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.0090.02	Railing Steel Type Ornamental B-13-845	LF
SPV.0090.03	Railing Steel Type Ornamental C-13-2082	LF
SPV.0090.04	Railing Steel Type Ornamental C-13-2083	LF
SPV.0090.05	Railing Steel Type Ornamental R-13-296	LF
SPV.0090.06	Railing Steel Type Ornamental R-13-304	LF
SPV.0090.07	Railing Steel Type Ornamental R-13-305	LF
SPV.0090.08	Railing Steel Type Ornamental R-13-307	LF

Payment is full compensation for fabricating, galvanizing, painting, transporting, and installing the railing, including any touch-up and repairs.

125. Three-Sided Precast Concrete Structure C-13-2084, Item SPV.0090.09.

A Description
This special provision describes furnishing and installing a three-sided precast concrete structure (precast arch units, headwalls and wingwalls), in conformity with the lines, grades, dimensions, locations, and sections shown on the accepted drawings.

B Materials
Furnish materials conforming to the following sections of the standard specifications:

Steel Reinforcement	standard spec 505
Mortar	standard spec 519

Non-shrink grout shall be portland cement and water or cement mortar composed of one part portland cement, three parts sand, by volume, and water. Grout shall be a minimum of 4000 psi at 28 days.

Use galvanized or epoxy-coated steel, stainless steel, or non-metallic materials for all hardware incorporated into the finished structure.

Butyl rope shall conform to ASTM C 990.

Install nameplates on three-sided precast concrete structures conforming to standard spec 506.2.4 at the locations the plans show. Embed in concrete as specified in standard spec 502.3.11.

B.1 Concrete

Furnish concrete as specified in standard spec 501.

Ensure concrete attains a minimum 28-day compressive strength of 5000 pounds per square inch. Base all tests on 6-inch by 12-inch cylinders, or 4-inch by 8-inch cylinders, provided the engineer develops and approves a correlation factor. Mold concrete cylinders in steel or plastic molds. Cure concrete cylinders according to AASHTO T 23, except cure the cylinders with the member until release strength is obtained, then cure the cylinders according to AASHTO T 23. Maintain all laboratory facilities and equipment according to AASHTO M 201. Make 3 cylinders for precast unit poured and test each cylinder according to AASHTO T 22. Calibrate cylinder-testing equipment at least annually according to AASHTO T 67. Average the strengths of the 2 cylinders with the highest test results for each precast unit and use the average to determine compliance with the 28-day strength requirement. Ensure that neither of the 2 cylinders with the highest test results has a strength less than 10 percent below the required strength.

Instead of the above acceptance procedure, the engineer will allow early acceptance of the precast units, before the 28-day test, if 2 successive laboratory tests on standard test specimens, cured continuously with and in the same manner as the units, indicate compressive strength in excess of the required 28-day strength. Test the 28-day strength cylinders and record the results to maintain continuity of the contractor's quality control records.

Have an HTCP certified PCC Technician I sample concrete, perform fresh concrete testing, and fabricate and cure cylinders. Have an HTCP certified Concrete Strength Tester, working in a department-qualified laboratory, perform cylinder and core compression tests. Determine the compressive strength in psi for each cylinder according to AASHTO T22. Test each cylinder to failure. Use a compression machine that automatically records the date, time, rate of loading on a load vs. time plot, and maximum load for each cylinder. Include a printout of this information with the strength documentation for each cylinder tested. Notify the engineer immediately if concrete cylinder compressive strengths are less than the required 28day strength. Keep neatly documented records of all cylinder testing on the day of the test and make them available to the engineer.

Furnish precast concrete members cast from air-entrained concrete. Use type I, IS, IP, II, or III cement. The contractor may replace up to 30 percent of type I, II, or III portland cement with an equal weight of fly ash, slag, or a combination of fly ash and slag. Ensure that fly

ash conforms to standard spec 501.2.6 and slag conforms to standard spec 501.2.7. Use only one source and replacement rate for work under a single bid item.

Use a department-approved air-entraining admixture conforming to standard spec 501.2.2 for air-entrained concrete. Use only size No. 1 coarse aggregate conforming to standard spec 501.2.5.4.

The contractor shall determine proportions for the mix within the following limitations:

Water cementitious material ratio, w/cm	0.45 or less[1]
Cementitious material content	610-800 pounds per cubic yard
Air content	4.5 - 7.5 percent
Slump	8 inches maximum[2]

[1] The water cementitious material ratio is the weight of the total added water plus the aggregate free water, divided by the combined weight of the cement, fly ash, and slag.

[2] Proportion the mix to provide a concrete of uniform quality and consistency with a slump no greater than necessary for proper placement and consolidation.

Incorporate a department-approved high range water reducing admixture conforming to ASTM C-494, type G. Instead of a type G admixture, the contractor may use type F and type D admixtures in combination to achieve equivalent results.

The contractor shall not add more admixtures or water after mixing is complete.

Use admixtures that do not have significant chlorides or chlorides added during manufacture.

Use admixtures compatible with all ingredients of the concrete mixture.

B.2 Plant Certification

Obtain all precast concrete members from fabrication plants listed in the department's list of precast concrete certified producers and have a minimum of five years' experience fabricating three sided bridge/culvert units, or from fabrication plants that comply with the department's plant certification program for fabrication of prestressed concrete members, unless the engineer agrees to accept these items according to the alternate procedures set forth in the department's plant certification program.

B.3 Placing and Fastening Steel

Place all steel units in the position the plans show and hold firmly during concrete placing and setting conforming to standard spec 505.3.

Maintain distances from the forms by using stays, ties, hangers, or other engineer-approved supports. Separate layers of units by suitable devices. The contractor shall not leave wood blocks in the concrete.

B.4 Placing Concrete

Handle and place the concrete conforming to standard spec 502, except as specified otherwise below.

Place and consolidate concrete in lifts in a way that prevents segregation, provides uniform consolidation throughout the member, and minimizes visible lift lines and dried concrete deposits along formed surfaces. Ensure not more than one hour elapses between placing successive lifts.

Consolidate the concrete in units by internal, external, or both internal and external vibration. Avoid displacing reinforcing. Ensure that concrete is free from honeycombing throughout the member, free from voids around reinforcement and inserts, and free from excessive bug holing along formed surfaces.

B.5 Tolerances

Cast concrete members to plan dimensions within the following applicable tolerances:

1. The internal dimension does not vary more than 1% nor more than 1" from the design dimensions, whichever is less.
2. The slab and wall thickness do not vary 1/4" less than that shown in the design. A thickness more than required in the design will not cause rejection.
3. The maximum variation in position of the reinforcement in any direction will be 1/2". In no case may the cover over the reinforcement vary by more than 1/4" from the position shown on the contract drawings. The cover at the end of the reinforcement will be a minimum of 1" at the mating surfaces.
4. The underrun in length of a section will not be more than 1/2" in any precast arch unit.
5. The outside diagonal dimensions shall not vary more than 1% nor more than 1" from the design dimensions, whichever is less.

B.6 Rejection of Precast Concrete

Reject individual precast concrete components for any of the following:

1. Fractures or cracks passing through the wall. A single end crack whose length does not exceed one half the thickness of the wall is acceptable.
2. Defects that indicate proportioning, mixing and molding not in compliance with the specification as specified or indicated.
3. Honeycombed or open texture that exposes the outer layer bar reinforcement.
4. Test core strength is less than design concrete strength.
5. Damaged ends where such damage would prevent making a satisfactory joint.
6. Dimensions not conforming to the allowable tolerances as specified.
7. Extreme color variation on surfaces that will be exposed to air in the final condition.

Mark the rejected precast concrete components "rejected for WisDOT use" with waterproof paint.

B.7 Curing

Steam cure concrete members as specified below or cure by other methods identified by the contractor's fabrication quality control plan. Protect the surfaces of members exposed during curing from moisture loss until release strength is obtained. The contractor shall not use curing compound for this purpose.

B.7.1 Steam Curing

If steam curing, enclose the concrete member in a chamber or enclosure, with at least 12 inches between the member and the enclosure. If using tarpaulins for enclosures, use at least 2 layers and arrange them to form a tight enclosure that leaks as little steam as possible. Use low-pressure steam and do not allow steam jets to spray directly on the concrete or on the forms. Maintain the relative humidity at approximately 100 percent within the enclosure.

Maintain the concrete temperature at or near the pouring temperature until the initial set, according to AASHTO T 197, before allowing the temperature to rise. The rate of temperature rise of the concrete shall not exceed 40 ^{o}F per hour.

During curing, maintain the internal concrete temperature between 50 ^{o}F and 160 ^{o}F. Ensure that the temperature of the concrete in different locations within the housing does not vary more than 20 F at any time.

Place a minimum of 3 engineer-approved continuous recording thermometers in each line. Provide the engineer with complete temperature record charts for the curing period, including the heat-up and cool-down times. If the temperature records indicate that steam control produces rates or temperatures that do not conform to those specified, modify procedures to obtain specified results.

Continue steam curing for 24 hours. The contractor may then discontinue steaming and uncover the precast unit. Cure the test specimens used to determine the above strength conforming to standard spec 503.3.2.3.

If the contractor wants to remove the forms before completing the steaming, the contractor may uncover the unit one side at a time and for as much length as required to remove the form sections. Immediately replace the covering after removing each form section. During this operation, the contractor shall not expose the forms and unit surface for more than 30 minutes.

B.8 Surface Finish

The manufacturer of precast members shall notify the engineer of the following:

- -All honeycomb deep enough to expose the reinforcing steel.
- -Any area that the manufacturer believes to be detrimental.

The personnel responsible for inspection at the precast concrete manufacturing plant will consult with the engineer for approval of the corrective action required to repair the member. The precast manufacturing plant is responsible for rejecting precast members that cannot be effectively repaired. The engineer is responsible for final acceptance.

The surface of the structure sections shall be a smooth steel form or steel toweled surface.

Fillet the forms with triangular molding chamfer strips at all exposed, sharp corners and at the edges of the concrete. Unless specified otherwise, use triangular molding that measures 3/4 inch on the sides.

Provide a sack rubbed surface finish on the surfaces of precast units that will be exposed to air in the final condition conforming to standard spec 502.3.7.5 before shipping from the plant.

After the sack rubbed finish adequately cures, apply engineer-approved concrete sealer for non-trafficked surfaces uniformly to the following surfaces using the manufacturer's recommended rate and procedures:

- Top (arched) surface of the precast arch units.
- 5 feet vertically down the back face (the surface in contact with soil) of each vertical leg.
- All surfaces (top and both faces) of each headwall.
- All surfaces (top and both faces) of each wingwall.
- The exposed end face of the exterior precast arch unit (below the headwall, as seen in the end elevation).
- A 12" strip at the outside edge of the exterior precast arch unit, on the underside face (exposed to air in the final condition) of the top (arch) and the front face (exposed to air in the final condition) of the vertical legs.

Apply the sealer to the full length of the structure. Apply sealer and allow adequate time for sealer to dry before shipping precast concrete units from the plant.

Do not apply sealer to faces receiving concrete staining.

Do not apply sealer in keyway joints, if present.

Do not apply sealer where rubberized membrane waterproofing will be installed:

- Within 12" of the edges of precast arch units (at joints).
- Within 6" of lift holes.
- Within 12" of joints between headers and precast arch units.
- Within 12" of joints between precast arch units and wingwalls.

B.9 Markings

Mark each precast arch unit with waterproof paint to show the following information on the inside surface of the vertical leg of the unit:

- Size: Span x Rise (in feet).
- Earth Cover (in feet).
- Date of Manufacture
- Name or Trademark of the Manufacturer.
- Date of Installation.

C Construction

Precast structure system (including three-sided box, wing walls, and headwalls) will be designed by the contractor. Submit drawings to Wisconsin Department of Transportation for approval.

Submit construction procedures and permissible variations other than those contained herein, for acceptance. Submit shop drawings electronically using the WisDOT Extranet ESubmit Application. No construction of the precast concrete bridge will be permitted without the submittal of shop drawings.

C.1 Excavation, Grading and Foundation Preparation

Complete work for excavation, grading, and foundation preparation conforming with the plan details, bid items and following sections of the standard specifications:

Excavation for Structures Culverts	standard spec 206
Backfill Structure	standard spec 210
Concrete Masonry Culverts	standard spec 504
Bar Steel Reinforcement HS Culverts	standard spec 505

Furnish, install, operate and maintain satisfactory dewatering systems as required to maintain the site in a dry and workable condition. Include all equipment and materials, and continue as long as necessary.

C.2 Transportation, Storage, and Erection of Precast Units

Transport, handle and store the precast units in an upright position or on their sides. Ensure that points of support and direction of the reactions with respect to the unit are approximately the same during transportation, storage, and erection as when the unit is in its final position.

Handle, store and erect all precast units in a way that prevents cracking or other damage to the unit. Discard and replace units damaged by improper handling or storing.

Clean and recoat surfaces where sealer is damaged from transport or erection.

Do not transport or erect precast units before they attain a minimum 28-day compressive strength, determined from test cylinders made, cured, and tested conforming to standard spec 503.2.2. The engineer may allow delivery and erection of units before their acceptance, pending strength tests, if the contractor provides in writing that it accepts responsibility for their removal and replacement in the event of rejection due to deficient strength.

The contractor shall not place backfill or other loading on units until the specified tests made on representative test cylinders indicate they achieved their minimum 28-day strength.

Install precast arch units according to the manufacturer's recommendations as shown on the accepted shop drawings.

Provide shipping and placement cables in precast arch units with spans greater than 24'-0", to prevent the legs from spreading during handling and transportation. These handling cables should not be removed until after the precast arch unit is placed and grouted. If these cables must be removed prior to placement, manufacturer must be consulted for alternate recommended procedure.

Take special care in setting the precast arch units to the true line and grade. Place precast arch units on 5" x 5" masonite shims. Provide a minimum of a 1/2" gap and a maximum of 2" between the footing and the bottom of the precast arch unit's vertical legs. Fill gap with approved non-shrink cement grout.

Do not exceed 3/4" joint width between adjacent precast arch units.

Clean dirt and deleterious substances from the surfaces and joints. In the recess formed by the chamfer on the edges of the precast arch units, place a 7/8" x 1-3/8" strip of butyl rope along the entire length of the joint exterior. Cover the arch unit's joint exterior with a minimum of an 18" wide rubberized membrane waterproofing. Cover the entire precast arch unit exterior joint with one continuous roll of rubberized membrane waterproofing to the bottom of the legs. Exercise extra care during backfilling to keep the rubberized membrane waterproofing in its proper location over the joint.

Cover the rear face of the joint between the precast arch units and wingwalls with a minimum 2'-0" wide strip of geotextile fabric, type DF, grade A.

C.3 Backfilling and Compaction

Do not place backfill against any installed structural components until they have been approved by the engineer.

Place structure backfill for a minimum thickness of 4'-0" on each side of the precast arch units and as indicated in the backfill diagrams for the precast arch units and wingwalls, and according to the requirement of standard spec 210. The difference in height of the compacted backfill on each side of the arch must not exceed 2'-0".

Place structure backfill a minimum of 1'-0" behind the back of the precast wingwall anchors. Place the structure backfill to a height that provides a minimum cover of 6" over the top of the precast arch unit. Accomplish backfill compaction without disturbance or distortion of the precast concrete components.

C.4 Technical Assistance

Have a company representative present at the project site to assist the fabricator, contractor and engineer. Provide a technical representative to assist in the event unusual problems or special circumstance.

D Measurement

The department will measure Three-Sided Precast Concrete Structure by the linear foot for each structure, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.09	Three-Sided Precast Concrete Structure C-13-2084	LF

Payment for the Three-Sided Precast Concrete Structure bid items is full compensation for providing precast units, including all concrete, grout, mortar, reinforcement steel, tie bars, anchor plates, and other embedded metal; for casting and curing concrete; for all handling, hauling and erecting; and for discarding and replacing units damaged by improper handling or storage.

The department will accept precast concrete members with 28-day concrete cylinder strengths below the required 28-day compressive strength, conforming to standard spec 503.2.2, based on a pay reduction, if the 28-day concrete cylinder strength provided is greater than the engineer-determined design strength of the individual precast concrete unit. The department will reduce payment for an accepted precast unit with 28-day concrete cylinder strength less than the required 28-day compressive strength by the greater of $500, or 20 percent of the contract unit price applied to the measured length of the precast unit.

If the 28-day concrete cylinder strength for the precast concrete unit falls below the engineer-determined design strength of the individual precast unit, obtain cores from each precast unit according to AASHTO T 24, test according to AASHTO T 22, and evaluate for strength comparison. Obtain the engineer's approval for the core sample locations. If the average of 3 core strengths per precast unit satisfies the design strength, and if none of the core strengths are less than 10 percent below the design strength, the engineer will accept the precast unit based on the pay reduction defined above for deficient 28-day concrete cylinder strengths. The contractor may perform coring and testing, or an independent testing agency that the engineer approves may perform coring and testing. The engineer will observe coring and testing done by the contractor. All costs associated with taking, analyzing, and testing cores are the contractor’s responsibility.

When precast concrete headwalls and wingwalls are specified, the contractor may choose to substitute cast-in-place elements unless otherwise specified on the plans. No additional compensation for these substitutions will be allowed and the contractor shall submit complete design calculations and shop drawings, prepared and sealed by a Wisconsin Licensed Professional Engineer, for acceptance by the engineer.

When cast-in-place concrete headwalls and wingwalls are specified, the contractor may choose to substitute precast units unless otherwise specified on the plans. No additional compensation for these substitutions will be allowed and the contractor/supplier shall submit complete design calculations and shop, drawings prepared and sealed by a Wisconsin Licensed Professional Engineer, for acceptance by the engineer.

Furnishing, designing, providing shop drawings, and placing headwalls and wingwalls is incidental to the bid item Three-Sided Precast Concrete Structure.

The cost of specified cast-in-place footings will not be included in this item but will be paid for separately.

126. Reinforced Alley Curb, Item SPV.0090.14; Concrete Curb 24-Inch Type A Special, Item SPV.0090.15; 24-Inch Type D Special, Item SPV.0090.16; 30-Inch Type A Special, Item SPV.0090.17; 30-Inch Type D Special, Item SPV.0090.18.

Construct concrete curb and gutter as detailed in the plan and according to standard spec 601. Type A curb and gutter requires epoxy coated reinforcing steel connection to adjacent concrete pavements. Type D curb and gutter does not require reinforcing steel.

127. Fence Special Split Rail, Item SPV.0090.19.

A Description

This special provision describes furnishing and installing three rail, cedar wood split rail fencing, with three rails, at the locations shown on the plans and as hereinafter provided.

B Materials

Furnish western red cedar split rail line, corner, and end posts and western red cedar split rails as commonly available from landscape suppliers. Posts shall be 3-rail posts with 12-inch rail spacing.

Furnish granular backfill Grade 2 according to standard spec 209.2.

C Construction

Set posts at the plan locations and at 10 foot spacing. Excavate post holes to a diameter of twice the nominal post size and to a minimum depth of 30 inches below finished grade. Set the post plumb and backfill and compact around the posts at 6-inch maximum intervals.

Set the rails using 12 inches as the spacing between the rails and 12 inches minimum and 18 inches maximum between the finished ground and lowest rail. Set the top rail height at 42-inches from finished ground.

D Measurement

The department will measure Fence Special Split Rail by the linear foot, measured from center of post to center of post, in place and acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.19	Fence Special Split Rail	LF

Payment is full compensation for furnishing and installing all materials including rails, posts and hardware; for excavating post holes and disposing of excess material off the right-of-way; for furnishing and placing backfill; and for restoring the worksite.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

128. Reflective Sign Post, Item SPV.0090.20.

A Description
This special provision describes furnishing and installing sign posts according to the applicable provisions of standard spec 634, as shown in the plans, and as hereinafter provided.

B Materials
Furnish sign posts conforming to the standard specification for hot rolled carbon sheet steel, commercial quality, ASTM A-570-GR-33 for zinc coating tubing to resist corrosion. Furnish 2-inch, schedule-40 sign post at the length shown on the plans, with threading on the bottom end, as detailed in the plans, and a water tight end cap on the top end.

For reflective sign posts provide two sheets of engineer grade yellow sheeting completely around pipe as shown in the plans.

C Construction
Install sign posts at the locations shown on the plans and approved by the engineer. If the finished grade cannot be determined, ask the engineer to identify the finished grade. Install all signs in a true vertical position conforming to the latest edition of the Manual on Uniform Traffic Control Devices. Band signs to the sign posts according to the details in the plans. lso, locate all underground utilities prior to placing sign posts. Cut off excess sign post length in the field to provide the desired sign clearance.

Notify the City of Madison within three working days of placing the sign post for signs the city will install. Contact Phil Nehmer, City of Madison Traffic Engineering at (608) 267-1960.

D Measurement
The department will measure Reflective Sign Posts by the linear foot, measured from the top of the thread to the end of the sign post rounded up to the nearest foot.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.20	Reflective Sign Post	LF

Payment is full compensation for furnishing, hauling, and installing the posts; threading; treating cut post ends; providing and installing a water tight top end cap; providing hardware and anchors; and for reflective sheeting. Replace all materials damaged during construction with new items at no cost to the department.

129. Loop Detector Lead-In Cable Special, Item, SPV.0090.21.

A Description

This special provision describes furnishing and installing loop detector lead in cable according to standard spec 655.

B Materials

Furnish 0.25 inch diameter, 4-conductor, #18 AWG, waterproof, shielded, polypropylene insulation cable, with HDPE outer jacket. Meeting IMSA specifications. Provide loop detector lead in cable to be smooth on the outside without any ripples or ribbing from cable wires.

C Construction

Furnish and install one cable for every two loops from each loop handhole to the intersection control cabinet via the most direct route, without intermediate splicing. Most of the loops will be new and are shown on the plan. Install cable for some existing loops. Verify cable needs with the City of Madison Traffic Engineering staff before completing intersection wiring.

D Measurement

The department will measure Loop Detector Lead In Cable by the linear foot, acceptably completed, measured from the splice with the loop lead in wire along the centerline of the conduit to its connection with terminals in the control cabinet.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.21	Loop Detector Lead-In Cable Special	LF

Payment is full compensation for furnishing and installing all materials, and for furnishing all equipment and incidentals necessary to complete the work.

130. Fiber Optic Cable 72-Count, Item SPV.0090.22.

A Description

This special provision describes furnishing and installing 72-count as specified in standard spec 651, 655, 670, and 678, as shown on the plans, and as provided hereinafter.

B Materials

Furnish single mode (SM), lt armored, loose-tube 72 count fiber optic cable rated for outdoor use.

All fiber optic cable glass shall be supplied by the same manufacturer and shall be part of a fiber optic cable utilizing loose tube construction with the following properties:

Parameters	Single Mode
Type	Step Index
Code Diameter	8.3µm (nominal)
Cladding Diameter	125 ± 1.0µm
Core to Cladding Offset	≤0.8 µm
Coating Diameter	245 ± 10µm
Cladding Non-Circularity	≤1.0%
Proof Tensile Test	0.7 GPa
Attenuation	@1310nm ≤ 0.4 dB/km @1550nm ≤ 0.3 dB/km
Chromatic Dispersion Zero Dispersion	1310 ± nm (centered on a nominal operating wavelength of 1310)
Zero Dispersion Slope	≤0.092 ps/nm^2/km
Maximum Dispersion	≤ 2.8 ps/nm/km at 1285 - 1330 nm
Cut-Off Wavelength	1260 nm

C Construction

Follow all manufacturer's recommended installation procedures. Contact Mike Christoph at the City of Madison Traffic Engineering shop at (608) 266-9031 a minimum of seven working days in advance to coordinate installing equipment in existing traffic signal cabinet.

D Measurement

The department will measure Fiber-Optic Cable-72-Count by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.22	Fiber Optic Cable 72-Count	LF

Payment is full compensation for furnishing and installing the fiber optic cable.

131. Milling and Removing Longitudinal Joint, Item SPV.0090.23.

A Description
This special provision describes milling and removing HMA pavement, including sweeping and cleaning, to provide a clean butt joint for paving additional final pavement lanes during later stages.

B (Vacant)

C Construction
Immediately prior to placement of the adjoining lane, mill the surface layer of the additional pavement width of pavement placed during the preceding stage to a true line with a perpendicular face to the asphaltic pavement.

Clean the resulting to be free of millings, dirt and debris to the requirements for tack coat and HMA paving. Haul the removed pavement material from the right-of-way and dispose of according to standard spec 204.3.1.3.

D Measurement
The department will measure Milling and Removing Longitudinal Joint by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.23	Milling and Removing Longitudinal Joint	LF

Payment is full compensation for milling, removing, sweeping, cleaning, and disposing of materials.

132. Electrical Wire Lighting, 14-3 Grounded, Item, SPV.0090.30.

A Description
This special provision describes furnishing and installing electrical wire lighting, 14-3 type UF cable according to standard spec 655 and these specifications.

B Material
Furnish type UF cable with ground including the number and size of conductors as the plans show. Use cable conforming to ANSI/UL 493.

C Construction
Furnish and install one cable to each LED luminaire from base of pole to the luminaire.

D Measurement
The department will measure Electrical Wire Lighting, 14-3 Grounded by the linear foot, acceptably completed, measured from the splice with the system lighting circuit in the pole base to the connection terminals in the luminaire.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.30	Electrical Wire Lighting, 14-3 Grounded	LF

Payment is full compensation for furnishing and installing all materials, and for furnishing all equipment and incidentals necessary to complete the work.

133. Abandon Water Main VER, Item SPV.0090.40.

A Description
Work shall consist of abandoning existing water main in place, where indicated on the drawings, and plugging live open ends with mechanically restrained plug and dead ends of water main with concrete plug.

B Materials
Plug for live ends shall be ductile or cast iron according to AWWA C110 and Chapter 8.22.0 of the "Sewer/Water Specifications."

Concrete for plugs on dead water mains shall be Grade B of standard spec 501.

C Construction
Completely drain the existing water main pipe to be abandoned and plug dead ends with concrete. Plug live ends with mechanically restrained plug.

Pump all drainage from trench prior to backfilling.

Abandonment of water main shall be according to the pertinent requirements of Part IV, Chapter 4.14.0 of the "Sewer/Water Specifications."

Only abandon existing water main after replacement water services are in place and in service. Abandon existing water main in segments as installation of replacement water services permits.

Abandon existing valves in place, unless noted for removal on the plans. Close valve, remove top section of valve box and fill remaining section with granular backfill conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Where existing water main needs to be cut to facilitate installation of new water main, but existing water main must remain in service and not abandoned until new water main is in service; cut, plug and restrain plugs on existing water main as required. After new water main is in service and replacement services are installed, abandon existing water main.

D Measurement
The department will measure Abandon Water Main VER by the linear foot of pipe, abandoned in place as measured in a horizontal line along top of water main abandoned.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.40	Abandon Water Main VER	LF

Payment is full compensation all excavation, backfilling and compaction, cutting water main, draining and dewatering, concrete bulkheads, plugs, mechanical restraint, sheathing, shoring and bracing, removing and disposing of materials not incorporated into the work, and for site cleanup.

Abandonment of existing water gate valves and valve boxes shall not be measured and paid for separately, but shall be considered part of, and incidental to Abandoning Water Main.

134. Hydrant Lead VER, 6-Inch Ductile Iron, Item SPV.0090.43.

A Description
Furnish and install new water main for hydrant leads along with select bedding and cover material to proposed line and grade including backfilling and compaction, according to the plans, standard specifications, “Sewer/Water Specifications”, and these special provisions.

B Materials
Hydrant leads shall be ductile iron pipe conforming to the requirements of AWWA C150 and AWWA C151. Ductile iron pipe shall be Class 52 for 350 psi working pressure with cement mortar lining conforming to AWWA C104 and exterior 1 mil thick bituminous coating. Provide pipe with joints conforming to the requirements of AWWA C111. Gaskets shall be styrene butadiene copolymer (SBC) rubber or neoprene conforming to the requirements of AWWA C111. Provide joint with electrical conductivity straps/cables.

V-Bio Enhanced Polyethylene Encasement, consisting of three layers of co-extruded linear low density polyethylene fused into a single thickness of not less than 0.008-inches (8 mils) conforming to the requirements of AWWA C105. Inner layer shall be infused with antimicrobial biocide and corrosion inhibitor. Provide 1-inch wide 8 mils thick thermoplastic tape with pressure sensitive adhesive face capable of bonding to metal, bituminous coating and polyethylene.

Mechanical joint pipe shall be restrained with ductile iron restraint ring and wedges with twist off-nuts, rated for 350 psi working pressure, Meg-a-Lug Series 1100 as manufactured by EBBA Iron Sales, Inc., or approved equal.

Pipe bedding and cover material shall conform to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

C Construction

Excavate the trench to provide a smooth, compacted flat bottom. The width of the trench shall accommodate the pipe and the use of compaction equipment between the pipe OD and trench wall. Place and compact pipe bedding material prior to setting the pipe. Minimum depth of bedding material beneath pipe bells shall be 4 inches.

Once the pipe is set, cover the pipe with specified pipe cover material to a point 12 inches above top of pipe. Cover material shall be placed and compacted in lifts.

Install ductile iron pipe according to sections 4.4.2 and 4.4.3 of "Sewer/Water Specifications," except delete section 4.4.2(a)5, 4.4.2(b)5, and replace with following

1. Lay ductile iron pipe to line and grade so horizontal and vertical deflections not more than 50% of maximum deflection as recommended by manufacturer. Where greater deflections are necessary, use proper fittings.

Delete section 4.4.2(c) of the "Sewer/Water Specifications" in its entirety.

Pipe laying shall conform to the requirements of sections 4.3.7 through 4.3.10 of the “Sewer/Water Specifications.”

Blocking shall conform to the requirements of section 4.3.4 of "Sewer/Water Specifications" except, support valves, hydrants, and special fittings in vertical position on solid concrete block or concrete support. Concrete block shall be solid concrete with nominal dimensions of 4-inch by 8-inch by 16-inch or greater.

V-Bio Enhanced Polyethylene Encasement required for the entire hydrant lead where ductile iron pipe utilized.

Concrete thrust blocks are required for all bends, caps, tees, and plugs according to section 4.3.13 of the “Sewer/Water Specifications”. In lieu of concrete thrust blocks, Meg-a-lugs, as specified in this special provision, may be used. Where Meg-a-lugs are employed, bends, tees, caps and plugs shall also be blocked with solid concrete blocks from trench wall to fitting. Concrete blocks shall have nominal dimensions of 4-inch by 8-inch by 16-inch or greater.

Hydrant leads shall be restrained between tee and valve with mega-lug gaskets. Hydrant side of valve may be restrained with mega-lug gasket. Hydrant shall be restrained to lead with mega-lug gasket only.

Hydrant leads shall be installed to provide minimum of 6 feet of cover from top of pipe to finish grade.

Provide all materials, equipment, fitting, plugs, taps, piping, valves, and labor required to flush and test new hydrant lead.

Backfill pipe trench with granular backfill material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions and provide compaction and compaction testing according to the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Test hydrant lead in the presence of the designated city representative, prior to placing the hydrant lead into service. Testing shall conform to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

D Measurement

The department will measure Hydrant Lead VER, 6-Inch Ductile Iron by the linear foot of pipe in place, measured along the top centerline of the hydrant lead from the centerline of the mainline water main to the centerline of the fire hydrant, including distance through the valve, 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.0090.43	Hydrant Lead VER, 6-Inch Ductile Iron	LF

Payment is full compensation for furnishing all materials, including pipes, gaskets, and lubricant, polyethylene encasement on ductile iron pipe, bedding material and cover material, for furnishing all excavation, dewatering, and sheathing and shoring; for forming foundation and pipe laying; for making all connections; for backfilling, mechanical compaction, and compaction testing; for removing sheeting and shoring; for hydrostatic and leakage testing of the pipe; for disposal of all surplus or waste material; and for site cleanup.

135. Sanitary Sewer VER, 8-Inch PVC, Item SPV.0090.44; 12-Inch PVC, Item SPV.0090.45; 15-Inch PVC, Item SPV.0090.46.

A Description

Furnish and install sanitary sewer 8-, 12- and 15-inch PVC along with select bedding and cover material, to proposed line and grade, including backfilling and compaction, according to the plans, standard specifications, “Sewer/Water Specifications”, and these special provisions.

B Materials

Sanitary sewer pipe shall be polyvinyl chloride (PVC) meeting the requirements of standard specifications for Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings of the ASTM D3034 for pipe sizes 4-inch through 15-inch. PVC sewer pipe shall have a standard dimension ratio (SDR) of 26 as noted on the plans. Provide PVC material with a cell classification 12454-B or 12454-C as defined in ASTM D1784 with minimum modules of elasticity of 400,000 psi in tension. Provide a minimum pipe stiffness of 46 psi for SDR 35 pipe and minimum pipe stiffness of 115 psi for SDR 26 pipe when tested according to ASTM D2412.

Provide pipe with elastomeric gasket bell and spigot joint conforming to ASTM D3212 sealed by a rubber gasket conforming to ASTM F477. Bells shall be formed integrally with the pipe.

Provide fittings such as tees, wyes, saddles, elbows and plugs of material and construction corresponding to and having a joint design compatible with the adjacent pipe. Provide FERNCO style connectors and adapters for transitions to other types of pipe.

Pipe bedding and cover material shall conform to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

C Construction

Excavate the trench to provide a smooth, compacted flat bottom. Width of trench shall accommodate the pipe and the use of compaction equipment between the pipe OD and trench wall. Place and compact pipe bedding material prior to setting pipe. Minimum depth of bedding material beneath pipe bells shall be 4 inches.

Connect new sanitary sewer to existing sanitary sewer of different pipe material through use of FERNCO type connection or adaptor.

Install all gravity sewers to line and grade with automatic grade and line laser of the “in the pipe” type beam with appropriate size pipe target. Blowers shall be provided to prevent laser beam distortion in the pipe.

Once the pipe is set, cover pipe with specified pipe cover material to a point 12 inches above top of pipe. Cover material shall be placed and compacted in lifts.

Backfill pipe trench with granular backfill material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions and provide compaction and compaction testing according to the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Provide low pressure air and go-no-go testing of all sanitary sewer and televise all mainline sanitary sewer in presence of designated city representative. Testing and televising shall conform to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

D Measurement
The department will measure Sanitary Sewer VER, (size) PVC by the linear foot of pipe in place measured from the centerline of manhole to the centerline of manhole, or from point of connection to downstream pipe line not at centerline of manhole to centerline of upstream manhole or from centerline of manhole to the end of pipeline not ending at a manhole, 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.0090.44	Sanitary Sewer VER 8-Inch PVC	LF
SPV.0090.45	Sanitary Sewer VER, 12-Inch PVC	LF
SPV.0090.46	Sanitary Sewer VER, 15-Inch PVC	LF

Payment is full compensation for furnishing and installing all materials, including pipes, gaskets and lubricant, bedding material, cover material; for furnishing all excavation, dewatering, sheathing and shoring, forming foundation, and pipe laying; for making all connections, including temporary connections; for backfilling and mechanical compaction; for removing sheathing and shoring; for performing go-no go and pressure testing and televising sanitary sewer; for disposal of all surplus or waste material; and for site cleanup.

136. Sanitary Sewer Lateral VER, 6-inch PVC, Item SPV.0090.47.

A Description
Furnish and install sanitary sewer lateral 6-inch PVC, including factory wye connection on main line sanitary sewer, to proposed line and grade from main line sanitary sewer to location identified on the plans. Furnish and install select bedding and cover material including backfilling and compaction, according to the plans, standard specifications, "Sewer/Water Specifications", and these special provisions.

B Materials
Sanitary sewer lateral 6-inch diameter shall be polyvinyl chloride (PVC) meeting the requirements of "Sewer/Water Specifications" for Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings of the ASTM D3034 for pipe sizes 4-inch through 15-inch. PVC sewer lateral shall have a standard dimension ratio (SDR) of 35. Provide PVC material with a cell classification 12454-B or 12454-C as defined in ASTM D1784 with minimum modules of elasticity of 400,000 psi in tension. Provide a minimum pipe stiffness of 46 psi when tested according to ASTM D2412.

Provide sewer lateral with elastomeric gasket bell and spigot joint conforming to ASTM D3212 sealed by a rubber gasket conforming to ASTM F477. Bells shall be formed integrally with the pipe.

Provide fittings such as elbows and plugs of material and construction corresponding to and having a joint design compatible with the adjacent sewer lateral pipe. Provide FERNCO style connectors and adapters for transitions to other types of pipe.

Provide sanitary sewer lateral with trace wire. Tracer wire shall be solid copper wire No. 10 AWG with type THWN insulation in green color. Materials to make and protect wire splices shall be according to File No 24B, Part IX of the "Sewer/Water Specifications."

Provide trace wire access box consisting of cast iron top section and lid with ABS plastic bottom section. Lid shall be tamper-proof and provided with standard AWWA size cast-in pentagonal bolt, opened with standard pentagonal head key wrench. Trace wire access box shall be Valvco, Inc., TWAB or pre-approved equal.

Pipe bedding and cover material shall conform to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

C Construction

Excavate the trench to provide a smooth, compacted flat bottom. Width of trench shall accommodate the lateral and the use of compaction equipment between the lateral OD and trench wall. Place and compact pipe bedding material prior to setting pipe. Minimum depth of bedding material beneath lateral bells shall be 4 inches.

Install all gravity sewer laterals to line and grade of ¼-inch per foot except where noted otherwise on construction plans to install at ⅛-inch per foot. Lateral shall be connected to mainline sanitary sewer through the use of a manufactured tee or wye fitting. Rotate wyes so that the branch is at an angle of 30° to 45° with the horizontal. Extend lateral to location identified on the plans. Install watertight plug or cap on end of sewer lateral and install 4" by 4" wood post, painted green, at end of lateral. Post shall extend 2 feet above finish ground surface.

Install trace wire along the top center of each length of lateral pipe from the mainline sanitary sewer its end cap. Tape the trace wire to the lateral at 10 foot intervals. Provide sufficient length of trace wire to extend trace wire to ground surface. Conductivity of wires shall be tested prior to backfilling of sanitary sewer lateral. At completion of trench backfilling, install trace wire access box above end point of lateral and connect trace wire to access box.

Install sewer laterals according to State of Wisconsin Department of Safety and Professional Services Plumbing Code requirements.

Once pipe is set, cover pipe with specified pipe cover material to a point 12 inches above top of pipe. Cover material shall be placed and compacted in lifts.

Backfill lateral trench with granular backfill material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions and provide compaction and compaction testing according to the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

D Measurement
The department will measure Sanitary Sewer Lateral VER, 6-Inch PVC by the linear foot of pipe in place, measured horizontally along the top of the lateral from the centerline of mainline sanitary sewer to the point of ending. Distance will be measured through lateral fittings.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.47	Sanitary Sewer Lateral VER, 6-Inch PVC	LF

Payment is full compensation for furnishing and installing all materials, including pipes, wye connection, gaskets and lubricant, fittings, FERNCO adaptors, trace wire and trace wire access box, bedding material, cover material; for furnishing all excavation, dewatering, sheathing and shoring, forming foundation, and pipe laying, for making all connections; installation of trace wire and trace wire access box and wire conductivity testing, for backfilling, mechanical compaction, and compaction testing; removing sheeting and shoring; for disposal of all surplus or waste material; for site cleanup; and for low pressure air and leakage testing and incidentals necessary to complete the work.

137. Steel Casing Pipe, 24-Inch, Item SPV0090.48.

A Description
Furnish and install 24-inch outside diameter steel casing pipe with 0.25 inch minimum wall thickness, carrier pipe supports, annual space fill, strapping, pipe spacers, casing end seals, select bedding and compaction to the proposed line and grade, including backfill and compaction, according to the plans and specifications.

B Materials
Casing pipe shall be 24-inch outside diameter steel with a minimum wall thickness of 0.25 inches, having a minimum yield strength of 36,000 psi, conform to ASTM A36, and ASTM A139.

Casing pipe and joints shall be of leak-proof construction designed for earth and ground water present. It will also be able to handle HS-20 vehicle loads.

The connection between casing pipe segments shall be capable of transmitting 100 percent of the allowable compression loading in the sleeve and shall be designed to prevent the flow of groundwater into the casing. The details of the connection design shall be the responsibility of the contractor.

Casing Spacers for support and isolation of carrier pipe within the encasement pipe: 14 gage bands and 10 gage risers shall be of Type 304 Stainless Steel or approved equal; all fasteners and exposed metal shall be stainless steel; bands shall have insulating liners; runners shall be reinforced plastic. For pipe up to 12 inch diameter, spacers shall be 8-inch long with

1-inch width runners; for pipe larger than 12-inch, spacers shall be 12-inch long with 2-inch minimum width runners. Maximum height of the runner above metal band or riser shall be 1.5-inches. Spacing along the carrier pipe between casing spacers shall be according to the manufacturer's product specifications, however, a minimum of 3 spacer per pipe joint of pipe or one spacer per every 6 to 7 feet.

The annular space between the drain pipe and casing shall be filled with a lean grout mix 1,500 psi (10,342 kPa). The lean grout mix shall be a uniform mixture of 1 to 6 (cement to sand).(NTS: the following two options may be used in lieu of the above as required by the client, or the annular space may be left unfilled for future access, again if required by client).

Cellular Concrete Backfill: Concrete backfill shall have minimum 7- and 28-day compressive strengths of 300 and 500 psi (2.1 to 3.5 MPa) respectively. Foaming agent shall meet the requirements of ASTM C869.

Annular Sand Backfill: Sand shall be clean and 100 percent shall pass a Standard No. 30 sieve (0.6 mm).

Brick used for ends of casing shall be sound, uniformly burned and shall comply with ASTM C32, Grade SM.

Casing End Seals shall be standard wrap around end seals, made of synthetic rubber, with self-curing rubber sealing strips and provided type 316 stainless steel bands and clamps.

Mortar shall consist of one part cement, 1/4-part lime, and 2-parts sand. Sand shall comply with ASTM C144; lime shall comply with ASTM C150, Type II.

C Construction

Excavate the trench to provide a smooth, compacted flat bottom. The width of trench shall accommodate the pipe and the use of compaction equipment between the pipe OD and trench wall. Place and compact pipe bedding material prior to setting the casing pipe. Minimum depth of bedding material beneath pipe be shall be 4 inches.

Once casing pipe is set, cover the pipe with specified pipe cover material to a point 12 inches above top of pipe. Cover material shall be placed and compacted in lifts.

Tolerances: Casing pipe alignment shall not vary from that shown on the drawings by more than 2 inches vertically or 6 inches horizontally. Local slope of the pipe shall not vary more than 1/2 percent from that shown on the drawings.

The carrier pipe shall be installed in the casing upon supports and permanently blocked to prevent floatation or movement.

After the pipe has been successfully installed in the casing pipe, the space between the outside of the sanitary sewer pipe and the inside of the casing pipe shall be filled with a lean mortar mix.

The contractor shall take all precautions necessary to ensure that sanitary sewer pipe does not move and that the annular space between the carrier pipe and casing is evenly and completely filled with the specified annular fill.

D Measurement

The department will measure Steel Casing Pipe, 24-Inch by the linear foot of pipe in place measured along the top centerline of the casing pipe from end to end, 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.0090.48	Steel Casing Pipe, 24-Inch	LF

Payment is full compensation for furnishing all materials including pipes, spacers, annular space fill material, bedding material, cover material; for furnishing all excavation, dewatering, and sheathing and shoring; for forming foundation and pipe laying; for making all welds as necessary; for backfilling and mechanical compaction; for removing sheeting and shoring; for hydrostatic and leakage testing of the pipe; for disposal of all surplus or waste material; and for site cleanup.

138. Water Main VER, 6 Inch Ductile Iron, Item SPV.0090.49; 8 Inch Ductile Iron, Item SPV.0090.50; 10-Inch Ductile Iron, Item SPV.0090.51; 12-Inch Ductile Iron, Item SPV.0090.52.

A Description

Furnish and install water main 6-, 8-, 10-, and 12-inch diameter along with select bedding and cover material, to proposed line and grade, including backfilling and compaction, according to the plans, standard specifications, "Sewer/Water Specifications", and these special provisions.

B Materials

Water main shall be ductile iron pipe conforming to the requirements of AWWA C150 and AWWA C151. Ductile iron pipe shall be Class 52 for 350 psi working pressure with cement mortar lining conforming to AWWA C104 and exterior 1 mil thick bituminous coating. Provide pipe with push-on or mechanical joints conforming to the requirements of AWWA C111. Gaskets shall be styrene butadiene copolymer (SBC) rubber or neoprene conforming to the requirements of AWWA C111. Provide joint with electrical conductivity straps/cables.

V-Bio Enhanced Polyethylene Encasement, consisting of three layers of co-extruded linear low density polyethylene fused into a single thickness of not less than 0.008-inches (8 mils) conforming to the requirements of AWWA C105. Inner layer shall be infused with antimicrobial biocide and corrosion inhibitor. Provide 1-inch wide 8 mils thick

thermoplastic tape with pressure sensitive adhesive face capable of bonding to metal, bituminous coating and polyethylene.

Mechanical joint pipe shall be restrained with ductile iron restraint ring and wedges with twist off-nuts, rated for 350 psi working pressure, Meg-a-Lug Series 1100 as manufactured by EBBA Iron Sales, Inc., or approved equal. Push-on joint pipe shall be restrained with Meg-a-Lug Series 1700 Harness as manufactured by EBBA Iron Sales, or approved equal. In lieu of above referenced pipe restraint harness, Field-LoK 350 gaskets may be used. Restraint rings, glands, and harnesses shall be of USA manufacturer.

Water main fittings shall conform to the requirements of Chapter 8.22.0 of the "Sewer/Water Specifications". Compact fittings conforming to AWWA C153 may be used in lieu of full body fittings that conform to AWWA C110. Provide push-on or mechanical joint, with cement mortar lining or 6-8 mil nominal thickness epoxy lining per AWWA C550. Fittings shall be provided with styrene butadiene copolymer (SBC) rubber or neoprene gaskets and be from a USA manufacturer. All bolts, nuts, and washers for fittings shall be Cor-blue. Fittings shall be of USA manufacturer. Mechanical joint fittings used with ductile iron pipe shall be restrained with Meg-a-Lug, Series 1100 restraint and push-on joint fittings used with ductile iron pipe shall be restrained with Meg-a-Lug Series 1700 Harness as manufactured by EBBA Iron Sales, Inc., or approved equal.

Pipe bedding and cover material shall conform to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

C Construction

Excavate the trench to provide a smooth, compacted flat bottom. The width of trench shall accommodate the pipe and the use of compaction equipment between the pipe OD and trench wall. Place and compact pipe bedding material prior to setting the pipe. Minimum depth of bedding material beneath pipe bells shall be 4 inches.

Once pipe is set, cover the pipe with specified pipe cover material to a point 12 inches above top of pipe. Cover material shall be placed and compacted in lifts.

Install ductile iron pipe according to sections 4.4.2 and 4.4.3 of the "Sewer/Water Specifications", except delete section 4.4.2(a)5, 4.4.2(b)5, and replace with following:

1. Lay ductile iron pipe to line and grade so horizontal and vertical deflections are not more than 50% of maximum deflection as recommended by manufacturer. Where greater deflections are necessary, use proper fittings.

Delete section 4.4.2(c) of the "Sewer/Water Specifications" in its entirety.

Pipe laying shall conform to the requirements of sections 4.3.7 through 4.3.10 of the "Sewer/Water Specifications."

Direction changes shall conform to the requirements of Chapter 4.10.0 of "Sewer/Water Specifications."

Blocking shall conform to the requirements of section 4.3.4 of "Sewer/Water Specifications," except, support valves, hydrants, and special fittings in vertical position on solid concrete block or concrete support. Concrete block shall be solid concrete with nominal dimensions of 4-in. by 8-in. by 16-in. or greater.

Measure and record distance from plugged cross or tee to adjacent valve and provide the information to a designated City of Verona representative.

V-bio Polyethylene Encasement is required for all ductile pipe, fittings, valves, valve boxes and hydrant barrels. Encase top and mid-section of valve box with polyethylene wrap.

Concrete thrust blocks are required for all bends, caps, tees, and plugs according to section 4.3.13 of the "Sewer/Water Specifications." In lieu of concrete thrust blocks, Meg-a-Lugs, as specified in this special provision, may be used. Where Meg-a-Lugs are employed, bends, tees, caps and plugs shall also be blocked with solid concrete blocks from trench wall to fitting. Concrete blocks shall have nominal dimensions of 4-in. by 8-in. by 16-in. or greater.

Install all water main to provide minimum of 6.5 feet of cover from top of pipe to finish grade or to depth indicated on drawings

Make the connection of new water main to existing water main according to the requirements of Chapter 4.14.0 of "Sewer/Water Specifications" by cutting and removing existing water main and installing new water main. Make connection of new water main to existing water main through use of solid mechanical joint sleeve. Prior to any water service interruption, give written or verbal notification to all local residences and businesses affected at least 24 hours in advance of service interruption. Verbal notifications shall be documented to the designated city representative. After connection of the new water main to the existing water main, the valve shall remain closed until the new water main has passed all testing and safe bacteriological samples received. The valve used for filling and flushing of the new water main shall be so operated as to preclude backflow into the existing water system. Only City of Verona Water Department personnel shall operate valves.

Provide all materials, equipment, fitting, plugs, taps, piping, valves, and labor required to flush and test new water main and water main services.

Backfill the pipe trench with granular backfill material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions and provide compaction and compaction testing according to the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Test all new water main and appurtenances in the presence of the designated City of Verona representative, prior to placing the water main into service. Testing shall conform to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Water main shall be constructed and tested in two to three block segments to accommodate roadway and other utility construction.

D Measurement

The department will measure Water Main VER, (size) Ductile Iron by the linear foot of pipe in place, measured along the top centerline of the pipe including fittings and valves, 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.0090.49	Water Main VER, 6-Inch Ductile Iron	LF
SPV.0090.50	Water Main VER, 8-Inch Ductile Iron	LF
SPV.0090.51	Water Main VER, 10-Inch Ductile Iron	LF
SPV.0090.52	Water Main VER, 12-Inch Ductile Iron	LF

Payment is full compensation for furnishing all materials including pipes, gaskets and lubricant; tees, bends, crosses, sleeves and reducers of size indicated on plans; polyethylene wrap on ductile iron pipe and fittings, bedding material, cover material; for furnishing all excavation, dewatering, and sheathing and shoring; for forming foundation and pipe laying; for making all connections to existing water main; for furnishing all pipe and fitting restraint and thrust blocking; for backfilling and mechanical compaction; for removing sheeting and shoring; for hydrostatic and leakage testing of the pipe; for disposal of all surplus or waste material; and for site cleanup.

139. Water Service VER, 2-Inch Copper, Item SPV.0090.53.

A Description

Furnish and install 2-inch water service, including all fittings, curb stop and box, along with select bedding and cover material, including backfilling and compaction, according to the plans, standard specifications, “Sewer/Water Specifications” and these special provisions.

B Materials

Water service pipe shall be Type K annealed seamless copper tubing conforming to the requirements of ASTM B-88 and Chapter 8.24.0 of “Standard Specifications”. All brass components in contact with water shall be made from either CDS/UNS Brass Alloy C89520 or C89833 with maximum lead content of 0.25 percent by weight. Brass alloys not listed in ANSI/AWWA C800 Paragraph 4.1.2 are not approved. All fittings shall be individually and clearly marked that the product is manufacturer from the alloys specified.

Service Clamp
Manufacturer – Mueller BR 2 B Series

Curb Stop
Manufacturer – Mueller 300 Ball Valve, B25209N

1. Conform to AWWA C800 and ASTM B62.
2. Provide curb stop with compression connections.
3. Provide curb stop with quarter check.

Curb Box
Manufacturer – Tyler Model 6860

1. 3-piece cast iron, screw type valve box.
2. 5-1/4-in shaft.
3. No tilt drop cover marked "Water".

Pipe bedding and cover material shall conform to the requirements contained in the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions for water main construction.

C Construction

Excavate the trench to provide a smooth, compacted flat bottom. The width of the trench shall accommodate the pipe and the use of compaction equipment between the trench walls. Place and compact pipe bedding material prior to setting the pipe.

Provide water service Type K annealed Copper tubing conforming to the requirements of ASTM B-88 and Chapter 8.24.0 of the "Standard Specifications".

Extend water service to 5 feet beyond back of sidewalk and/or path or to property line, whichever is further distance from main line water main. Install tapped, restrained plug or cap on end of water service and install 4" by 4" wood post, painted blue, at end of lateral. Post shall extend 2 feet above finish ground surface.

Once the pipe is set, cover the pipe with specified pipe cover material to a point 12 inches above top of pipe. Cover material shall be placed and compacted in lifts.

Install water services with minimum of 6 feet of cover. Extend water services beneath other utilities as necessary to maintain 6 feet of cover and a minimum of 1.5 feet of separation between service and utility.

Backfill water service trench with granular backfill material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions and provide compaction and compaction testing according to the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions.

Provide necessary fittings, tubing, piping, and valves to test water service. Test water service and appurtenances in the presence of the designated city representative. Testing shall conform to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction of these special provisions for water main piping. Following testing, remove fittings, piping, tubing, and valves used for testing and install disinfected threaded plug in tapped water service end cap.

D Measurement

The department will measure Water Service VER, 2-Inch Copper by the linear foot of water service in place, measured along the top centerline of the water service, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.53	Water Service VER, 2-Inch Copper	LF

Payment is full compensation for furnishing all materials including pipe, bedding material, cover material; for furnishing all excavation, dewatering, and sheathing and shoring; for forming foundation, and pipe laying; for making all connections; for backfilling and mechanical compaction; for removing sheeting and shoring; for hydrostatic and leakage testing of the pipe; for disposal of all surplus or waste material; and for site cleanup.

140. Utility Trench Patch Type III, Item SPV.0090.60.

A Description

The work under this item will meet the requirements of Article 502 and Standard Detail Drawing 5.2.4 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition for Type III Trench Patch.

B Material

The new crushed stone will meet the requirements of standard spec 305, Base Aggregate Dense, 1 ¼-Inch.

C Construction

Utility Trench patch will be installed according to all applicable provisions of Article 502.1(f) and SDD 5.2.4 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition for Type III Patch.

D Measurement

The department will measure Utility Trench Patch by the linear foot, acceptably completed, measured along the centerline of the patch regardless of the type of patch.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.60	Utility Trench Patch Type III	LF

Payment is full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to complete this item of work. Payment includes placing, consolidating and compacting the materials used to restore the pavement and all other work incidental the installation of utility trench patches. Payment will not include the Select Fill material required to backfill the trench.

141. Select fill for Sanitary Sewer, Item SPV.0090.61.

A Description

This special provisions describes furnishing and placing select fill over the sanitary sewer main and laterals along the entire length of the pipe.

B Materials

Provide select fill meeting the requirements of Article 202.2(b) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition for select fill for sanitary sewer mains and laterals.

C Construction

Install select fill for sanitary sewer according to all applicable provisions of Article 502.1(e) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure Select Fill for Sanitary Sewer in length by the linear foot, acceptably completed. Measurement will be completed along the centerline of the installed sanitary sewer pipe and includes the length through Sewer Access Structures.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.61	Select Fill For Sanitary Sewer	LF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.

142. Sanitary Sewer Pipe PVC, 8-Inch, Item SPV.0090.62.

A Description

This special provision describes installing Sanitary Sewer Pipe PVC (size) at the alignment and grades shown on the plan. All sections of the sewer mainline are required to pass a low pressure air test, mandrel test, and a visual inspection via televising as specified in Article 501.3(b) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition. Costs associated with the testing of the gravity main are included in the contract unit price bid for this item.

B Materials

Provide solid-wall Poly (Vinyl Chloride) (PVC) sanitary sewer pipe and fittings meeting the requirements for Poly (Vinyl Chloride) (PVC Sewer Pipe and Fittings, ASTM D 3034.

Provide pipe and fittings having a standard dimension ratio of 26 or 35 as called out on the plan set.

Assemble solvent cement joints using solvent cement obtained from the pipe manufacturer, which conforms to the requirements of ASTM D2564.

The assembled joint will be required to pass the performance tests as required in ASTM D3212. Sewer mains deeper than 12' will be required to meet the standards or ASTM D3034 SDR-26.

C Construction

Install the sanitary sewer pipe according to all applicable provisions of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Remove all abandoned or existing material located in the new sanitary sewer alignment. Removal of material (including existing sanitary sewer/water main/etc) is incidental to this bid item.

Use manufactured wye fittings to install new laterals to the new main as called for on the plans; provide and place according to standard spec 503 for Public Works Construction – Latest Edition. Do not install saddle type wyes without prior approval from the city of Madison.

Complete testing and televising of new sewer lines according to Article 501 of the City Standard Specifications for Public Works Construction - Latest Edition.

For the installation of the sewer from the proposed SAS #10 to SAS#11 (Station 203'NB'+00), the contractor will not be required to build the sewer starting at the downstream manhole (SAS#10). Because of the traffic control phasing, it is anticipated that the contractor will start laying sewer in the middle of the future road during Stage 2 (Station

203’NB’+00 RT 0’) and install sewer heading to the east. During Stage 3, contactor will build the remaining sewer from SAS10 to the stub.

D Measurement

The department will measure Sanitary Sewer Pipe PVC, (Size) in length by the linear foot, acceptably completed.

Sanitary Sewer Pipe PVC, (Size) will be measured through sanitary sewer structures, from the center of sanitary sewer casting to center of sanitary sewer casting. Sanitary Sewer Pipe PVC (Size) not terminating at a sanitary sewer structure will be measured to the end of pipe. Deductions from the measure length will not be made for wye installations.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.62	Sanitary Sewer Pipe PVC, 8-Inch	LF

Payment is full compensation for furnishing all materials, necessary to perform the work; excavation of the trench, except tunneling and jacking; installation and removal of sheeting and bracing; removal of water from the trench; disposal of surplus material from the trench; backfilling the trench and compaction of the backfill material; embankment over the sewer using surplus material from the excavation of the trench; bedding the pipe; laying the pipe and installing the fittings and accessories; jointing and sealing of joints in pipe, fittings and accessories; encasement, where specified; connections to existing structures; cleaning out the sewer; restoring the site; and all other work incidental to the installation of sanitary sewers.

143. Sanitary Sewer Pressure Pipe (C900), 10-Inch, Item SPV.0090.63.

A Description

Work under this item will include installing Pressure sewer pipe (10”) at the alignment and grades shown on the plan set.

Conduct a low pressure air test as specified in Article 501.3(b) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition on all sections of the sewer mainline. A passing test is required in order to be acceptable. Include all costs associated with the testing of the gravity main in the contract unit price bid for this item.

Maintain the normal flow of wastewater at all times during replacement of the existing sanitary sewer main with the new sanitary sewer main. Payment for furnishing all bypass pumping, temporary piping, and/or temporary connections, which are required to maintain the normal flow of wastewater throughout the sewer construction, is under SPV.0105.33 Wastewater Control.

B Materials

Provide all sewer pipe and fittings of solid-wall Poly (Vinyl Chloride) (PVC) conforming to the requirements of the Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings, AWWA C900 Class 150, DR-18.

Provide fittings conforming to the requirements of the American National Standard for Ductile- Iron and Gray-Iron fittings for Water and other liquids, ASA A21.10 (AWWA C110) payable separately under Sanitary Lateral Connect, Item SPV.0060.81.

Provide joints with integral bell with elastomeric gaskets, or couplings with elastomeric gaskets. Make solvent cement as recommended by the manufacturer.

C Construction

Install sewer pipe according to all applicable provisions of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Remove all abandon or existing material located within 3' of the new sanitary sewer alignment. Removal of material (including existing sanitary sewer/water main/etc) is incidental to this bid item.

Use Ductile Iron Wye pressure rated fittings to install new laterals to the new main as called for on the plans; provide and place according to Article 503 of Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure Sanitary Sewer Pressure Pipe (C900), 10-Inch by the linear foot, acceptably completed, to the nearest whole foot of each of the various types, classes and sizes of pipe installed at the various depths, measured along the centerline of the pipe center to center of junctions and fittings. The quantity to be paid for includes construction through Sewer Access Structures, from center of Sewer Access Structure casting to center of Sewer Access Structure casting. Main extensions continuing through Sewer Access Structures will be measured from center of Sewer Access Structure casting to the end of pipe. The depths of installation will be measured in feet from the invert of the sewer pipe to the elevation of the existing ground. There will be no deductions from the measured lengths for wye installations.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.63	Sanitary Sewer Pressure Pipe (C900), 10-Inch	LF

Payment is full compensation for furnishing all materials, except wyes, necessary to perform the work; excavation of the trench, except tunneling and jacking; installation and removal of sheeting and bracing; removal of water from the trench; disposal of surplus material from the trench; backfilling the trench and compaction of the backfill material;

embankment over the sewer using surplus material from the excavation of the trench; bedding the pipe; laying the pipe and installing the fittings and accessories; jointing and sealing of joints in pipe, fittings and accessories; encasement, where specified; connections to existing structures; cleaning out the sewer; restoring the site; and all other work incidental to the installation of sanitary sewers.

144. 6-inch Sanitary Sewer Lateral, Item SPV.0090.65.

A Description

This work consists of excavating required trenches, connecting the lateral to the mainline pipe, placing bedding material, connecting the new lateral to the existing lateral, all required fittings, couplings, and bends, backfilling and compacting the trenches and restoring the work site as provided by the plans, specifications and contract.

Connection of laterals to the proposed sewer main and the first 5 feet of lateral pipe associated with such connection shall be paid for separately under bid item SPV.0090.81 Sanitary Lateral Connect. The use of 45-degree bends shall not be permitted except when connecting to a wye at the sewer main. Bends of 22.5 degrees or less may be used, provided they are separated by at least two feet of straight pipe. All new lateral pipe shall be a minimum of 6 inches in diameter. Select fill for sanitary lateral shall be paid for separately using bid item SPV.0090.61, Select Fill for Sanitary Sewer.

B Materials

Furnish sanitary sewer pipe and fittings that are solid-wall Poly Vinyl Chloride (PVC) and that conform to the requirements of the Specification for PVC Sewer Pipe and Fittings, ASTM D 3034.

Provide sanitary sewer pipe and fittings having a standard dimension ratio of 26 and 35.

Furnish elastomeric or solvent cement joints made as recommended by the manufacturer.

Sewer laterals deeper than 12’ will be required to be ASTM D3034 SDR-26.

Compression coupling connections to the existing sewer laterals in conformance to Standard Detail Drawing 5.3.3, Coupling detail, from the City of Madison Standard Specifications for Public Works Construction- Latest Edition.

C Construction

Install laterals according to Article 503.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure (Size) Sanitary Sewer Lateral, by the linear foot, acceptably completed. Five feet of lateral piping is included with bid item SPV.0060.82 Sanitary Lateral Connect. Payment for sanitary sewer lateral shall begin after the initial 5 feet.

The quantity to be paid will be measured from the connection of the mainline sewer pipe to the connection of the existing sanitary lateral along the centerline of the pipe.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.65	6-Inch Sanitary Sewer Lateral	LF

Payment is full compensation for furnishing all work, labor, materials, wye fittings, bends, excavation, pipe laying, compaction, connection to the existing lateral and all incidentals necessary to complete the work.

Connection of lateral to the proposed sewer main and the first 5 feet of lateral pipe associated with the connection is paid under bid item Sanitary Lateral Connect.

Select fill for sanitary sewer later is paid under bid item Select Fill For Sanitary Sewer. The quantity for this item may be increased or decreased beyond the limits set forth in Article 104 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

145. Remove Sanitary Sewer Pipe, Item SPV.0090.66.

A Description

Remove sanitary sewer pipe within the Right of Way as called for on the plan set according to Article 203 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition. "Pipe to be removed that is in the same trench as a new pipe will not be compensated as remove pipe and will be considered to be incidental to the new pipe installation." The same trench will be considered to be any pipe located with 3' horizontally of the pipe being installed. This includes unidentified pipe that is smaller than 10 inches in diameter. If the pipe to be removed ends along a pipe run, as opposed to ending at a structure, the contractor will end the removal with a saw cut of the existing pipe and plug the remaining end as directed by the engineer. Plugging the structure or pipe to which the pipe being removed was connected will be compensated for under a separate bid item (Abandon Sanitary Sewer - Pipe Plug, Item SPV.0060.82). If the contractor, for his convenience, decides to remove a section of pipe to a full section, the additional removal will not be given consideration for additional compensation.

B (Vacant)

C Construction

Sawcut the pipe ends at the pipe removal limits if the pipe as a whole is not called for removal. Dispose of all pipe removed, backfill all trenches, holes and pits resulting from the removal or abandoning of pipe and other miscellaneous structures with satisfactory soil or select fill, placed in layers not more than 12 inches in thickness. Select backfill will be required for any structure or pipe within the roadway that will not be filled with another

structure or pipe. All fill material required will be considered incidental to the removal or abandonment. Each layer will be thoroughly compacted by means of approved tampers, rollers or vibrators. Water will not be used to expedite settlement of backfill except with the approval of the engineer; this provision shall not be construed to require an excavation to be dewatered before placing backfill, if backfilling can be performed in such manner as to displace the water or prevent its entrapment in the backfill.

D Measurement
The department will measure Remove Sanitary Sewer Pipe by the linear foot, acceptably completed, measured along the centerline of the sanitary sewer pipe, removed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.66	Remove Sanitary Sewer Pipe	LF

Payment is full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to complete this item of work. Payment will include the Select Fill material required to backfill the trench created by pipe being removed.

146. Furnish and Install 6-Inch Pipe & Fittings MAD; Item SPV.0090.67; 8-Inch Pipe & Fittings MAD, Item SPV.0090.68; 12-Inch Pipe & Fittings MAD, Item SPV.0090.69; 16-Inch Pipe & Fittings MAD, Item SPV.0090.70.

A Description
This special provision describes furnishing and installing water main (size) according to Article 704.6 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

B Materials
Furnish materials according to Article 702.2 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

C Construction
Install water main according to section 703 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

D Measurement
The department will measure Furnish and Install (size) Pipe and Fittings MAD in length by the linear foot of water main, 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.0090.67	Furnish & Install 6-Inch Pipe & Fittings MAD	LF
SPV.0090.68	Furnish & Install 8-Inch Pipe & Fittings MAD	LF
SPV.0090.69	Furnish & Install 12-Inch Pipe & Fittings MAD	LF
SPV.0090.70	Furnish & Install 16-Inch Pipe & Fittings MAD	LF

Payment is full compensation for furnishing all materials, excavation, dewatering, bedding, laying, jointing, backfilling, and maintenance of surface; and for furnishing all special connections to existing mains, fittings, bends, tees, and appurtenances.

147. 24-Inch Steel Casing Pipe MAD, Item SPV.0090.71.

A Description
This work shall consist of furnishing and installing 24-inch diameter steel casing pipe for water main as shown on the plans according to section 704.5 of the City Standard Specifications.

B Materials
Furnish materials according to section 704.5 and Article 702 of the City Standard Specifications.

C Construction
Install all insulation according to section 704.5 and Article 703 of the City of Madison City Standard Specifications, unless otherwise shown or specified.

D Measurement
The department will measure 24-Inch Steel Casing Pipe MAD by the linear foot of 24-inch diameter steel casing pipe, 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.0090.71	24-Inch Steel Casing Pipe MAD	LF

Payment is full compensation for installing 24-inch diameter steel water main casing as described above including all material, excavation, backfilling, equipment, tools, and labor necessary for the installation.

148. Insulation MAD, Item SPV.0090.72.

A Description
This work shall consist of furnishing and installing rigid board insulation as shown on the plans according to section 704.17 of the City Standard Specifications.

B Materials
Furnish materials according to section 704.17 and Article 702 of the City Standard Specifications.

C Construction
Install all insulation according to section 704.17 and Standard Detail Drawing 7.03 of the City of Madison City Standard Specifications, unless otherwise shown or specified.

D Measurement
The department will measure Insulation MAD by the linear foot of insulation, 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.0090.72	Insulation MAD	LF

Payment is full compensation for providing insulation as described above including all material, excavation, backfilling.

149. Sanitary Sewer Pipe 20" Furnishing, Item SPV.0090.80; Sanitary Sewer Pipe 20" Installing, Item SPV.0090.81.

A Description
Furnish and install sanitary sewer and appurtenances as shown in the plans and hereinafter provided.

B Material
B.1 Applicable Specifications
Provide wastewater system materials that are in conformance to the Standard Specifications for Sewer and Water Construction in Wisconsin.

Sanitary sewer pipe shall consist of heavy duty fiberglass pipe being Hobas Pipe or Flowtite (SN72), Protecto-401 lined ductile iron pipe (Thickness Class 52), C905 solid wall PVC (DR 18), or approved equal.

Fiberglass pipe shall meet the requirements of ASTM D3262 (with joints per ASTM 4161). PVC pipe shall meet the requirements of AWWA C905/ASTM F679 (with joints per ASTM D3139 and gaskets conforming to ASTM F477). Ductile Iron pipe shall conform to the requirements of ANSI 21.51/AWWA C151 (with joints per AWWA C110 and gaskets conforming to AWWA C111). All ductile iron pipe shall be wrapped with 8-mil (minimum) thick polyethylene wrap.

Due to varying depths, the contractor may propose alternate pipe stiffnesses and wall thicknesses for the different manhole-to-manhole sewer sections. The contractor shall provide sufficient information with the proposed alternate to show that the depths and loadings meet the acceptable standards for the pipe. The contractor shall also provide cost savings to MMSD associated with the alternate pipe. The alternate pipe stiffnesses/thicknesses will be considered on a case-by-case basis by the engineer and will only be allowed if approved by the engineer. All bids submitted shall use the specified materials and stiffnesses/thicknesses noted in this section, with alternate materials and stiffnesses/thicknesses only considered after contract award.

Follow manufacturer's instructions for making joints specific for the pipe being used. PVC pipe joints shall be elastomeric seals (rubber gaskets) conforming to ASTM F477 and joint assembly conforming to ASTM D3212. Ductile iron pipe joints and fittings shall be push-on type conforming to ANSI 21.11 (AWWA C111). Other pipe materials shall use sufficient joints specific to pipe material.

B.2 Shop Drawings

Prior to incorporating any materials or products into the work, submit to engineer product literature and catalog cuts of the materials to be supplied. Submit information in sufficient detail to readily determine if these materials are in conformance with the specifications.

Furnish submittals and details required for the construction and installation of the materials to the engineer. Submittals and details shall indicate the intended materials arrangement, dimensions, major support requirements, plot area and intricate or detailed construction requirements.

B.3 Stablization Stone

Stabilization stone shall be crushed stone from crushing sound limestone or dolomite ledge rock or other rock materials of regional availability shall be hard, tough, durable and conform to following gradation:

Gradation (ASTM C33 - Size No. 2):

Sieve Size	% Passing by Weight
3 in.	100
2-1/2 in.	90 - 100
2 in.	35 - 70
1 1/2 in.	0 - 15
3/4 in.	0 - 5

B.4 Bedding and Cover Material

Bedding and cover material for sanitary sewer, regardless of pipe material, shall be crushed stone chips from crushing sound limestone or dolomite ledge rock or other rock materials of regional availability, shall be hard, tough, and durable and conform to following gradation:

Gradation No. 2 (ASTM C33 - Size No. 67):

Sieve Size %	Passing by Weight
1 in.	100
3/4 in.	90 - 100
3/8 in.	20 - 55
No. 4	0 - 10
No. 8	0 - 5

Cover materials shall be same materials as bedding material specified above.

C Construction

C.1 Applicable Specifications

Perform all sanitary sewer system construction in conformance to the Standard Specifications for Sewer and Water Construction in Wisconsin.

C.2 Sanitary Sewer

The contractor is responsible to see that manholes and sewer lines are free of dirt, gravel and debris, from the construction operations, at all times.

All lines and grades will be given on the contract drawings. The contractor shall be responsible for the preservation of line and grade stakes when set. Inform the engineer reasonably in advance of the times and places that stakes will be required in order that the work may be done without inconvenience to the engineer or delay to the contractor.

Furnish and place in position, as directed by the engineer, all necessary equipment and material for locating the work from the line and grade stakes consisting of either a laser or batter boards. When batter boards are used, a minimum of three adjacent boards with two string lines shall be used to determine grade. It shall be the contractor's responsibility to check grade stakes in advance of the excavation reporting any discrepancies to the engineer.

The contractor assumes responsibility for pipe laid to non-conforming grade and shall relay the same at his expense if ordered by the engineer.

Installation

Provide sufficient and adequate equipment on the site of the work for unloading and lowering pipe into the trench. Extreme care shall be exercised in handling all pipe so as to prevent breakage. Under no circumstances shall they be dropped into the trench or so handled as to receive hard blows or jolts when being moved.

Before lowering and while suspended, the pipe or fittings shall be inspected for defects. All materials used in the work must pass field inspection.

Unless otherwise ordered, pipe shall be laid with the bell ends facing upgrade.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line.

Joints shall be lubricated, cemented, or otherwise made in strict conformance with these specifications and manufacturer's instructions.

C.3 Stabilization, Bedding, Backfilling, and Compaction

Stabilization

The engineer reserves right to order additional excavation below pipe bedding zone where unsuitable foundation conditions exist. When this condition arises, excavation shall be carried to such depth as directed by the engineer. Maximum width of extra trench shall be outside diameter of pipe or proposed structure plus 4 feet. Stabilization (foundation) stone shall be installed and compacted to replace excavated material to elevation of bottom of bedding.

Trenches shall be hand backfilled to the top of the cover material. The equivalent of hand backfill may be accomplished by machine providing the bucket is lowered to approximately 1 foot above top of pipe and material is slowly released to avoid impact on pipe and to avoid uneven pressures on either side of pipe.

Bedding and Cover Material

1. Bedding material for sanitary sewer shall extend from the stabilization stone or undisturbed trench bottom to a plane 12 inches above top of pipe for PVC and Fiberglass pipe and to a plane 6 inches above the top of the pipe for DI pipe.
2. A minimum bedding depth of 6 inches shall be provided below bottom of all pipe and manholes.
3. Bedding material shall extend across full width of trench.
4. Bedding material shall be deposited, spread and leveled, as hereinbefore provided in layers generally not exceeding 12-inch in thickness before compaction. The stone for each layer shall be placed consistently against the pipe and trench sidewall such that appreciable voids (including significant multiple overlapping of geo-textile) are not present. Each stone layer shall be compacted to the degree that no further appreciable consolidation is evidenced under the action of the compaction equipment. The required compaction shall be attained for each layer before any material for a succeeding layer is placed thereon.

Perform compaction by specialized compaction equipment involving a jumping-jack compactor (or equivalent) that weighs a minimum of 150 pounds. A minimum of 4 passes are required (2 each way). More passes could be necessary until no further appreciable consolidation is evidenced. The required results are subject to the approval of engineer.

C.4 Testing

Infiltration Test

The sanitary sewer shall be measured for infiltration throughout. Infiltration tests shall be conducted using the water test or the Low Pressure Air Test. The sanitary sewer shall have a rate of infiltration less than 200 gallons per inch of pipe diameter per mile per day.

1. Water Test. The test shall be performed using a minimum positive head of 2 feet of water.
2. Low Pressure Air Test. Sewer lines shall be tested according to ASTM F1417, entitled "Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air". The air test shall be made in the presence of the engineer. All equipment necessary for said air test shall be provided by the contractor and approved by the engineer.

Deflection Test

All polyvinyl chloride and fiberglass pipe installations shall be tested for deflection by using a rigid ball or mandrel and shall be performed according to ASTM D2321 and without the use of mechanical pulling devices. Deflection may not exceed 5 percent if tested within 30 days of placement of final backfill or 7.5 percent if tested more than 30 days after final backfill is placed. Final backfill must be in place prior to testing.

Alignment

Sewer pipe will be inspected for alignment by the use of mirrors, flashlights or lamps. Sewer lines shall permit a through view of at least half the pipe diameter between manholes.

Televising

The Madison Metropolitan Sewerage District will televise all sanitary sewer pipe prior to final acceptance. Defects found shall be repaired by the contractor at no additional cost.

Acceptance

If any of the tests are not met, the contractor shall, at his own expense, determine the source of the problem and repair or replace all defective materials. Collapsed, fractured or pipe whose structural integrity is questionable as determined by the engineer shall be replaced in a manner suitable to the engineer. The sewer line shall be considered acceptable when all of the above provisions are complied with.

D Measurement

The department will measure Sanitary Sewer Pipe 20" Furnishing and Sanitary Sewer Pipe 20" Installing by the linear foot along the centerline of pipe from center of manhole to center of manhole, 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.0090.80	Sanitary Sewer Pipe 20" Furnishing	LF
SPV.0090.81	Sanitary Sewer Pipe 20" Installing	LF

Payment is full compensation for furnishing and installing all materials, including pipe, bedding, cover material and backfill along with compaction; performing all excavation; for forming foundation; for replacing unstable material in the trench bottom; for sheeting and shoring; for dewatering; for installing clay dams; bypass pumping, televising and testing;

removing and properly disposing of existing sanitary sewer pipe sections; plugging and buttressing existing outlets in manholes; for removing sheeting and shoring; properly disposing of excess materials; for cleaning out pipes; for restoring the worksite; and furnishing all labor, tools, equipment, and incidentals to perform the contract work.

150. Temporary Water Diversion, Culvert C-13-2081, Item SPV.0105.01; Culvert C-13-2082, Item SPV.0105.02; Culvert C-13-2083, Item SPV.0105.03; Culvert C-13-2084, Item SPV.0105.04.

A Description

This special provision describes providing temporary water diversion for the flow of Badger Mill Creek during the installation of Structures C-13-2081, C-13-2082, C-13-2083, and C-13-2084 as hereinafter described.

B Materials

Follow the applicable sections of the WisDOT Standard Specifications for all materials utilized under this item, as directed by the engineer. Provide evidence that items meet specifications and/or certifications prior to use of such items if requested by the engineer.

C Construction

Alterations to the suggested methodologies of water diversion as noted below may be acceptable. Such alterations should be clearly spelled out in the Erosion Control Implementation Plan (ECIP) for approval by WisDOT and the Wisconsin Department of Natural Resources prior to construction.

Method #1: Divert the existing flow through a temporary open channel lined with polyethylene sheeting or other approved plastic. The bottom of the channel shall have a 6 inch depth of course aggregate #2 stone. Divert flow into the temporary open channel utilizing barriers made of non-erodible materials, such as rock bags and polyethylene sheets, so as to prevent siltation into the live stream. Details of the temporary open channel and the non-erodible barrier system shall be detailed in the contractor's ECIP, for approval by the engineer.

Method #2: Divert the existing flow through a temporary culvert pipe utilizing barriers made of non-erodible materials, such as rock bags and polyethylene sheets, and a channel comprised of plastic and #2 stone as described under Method #1. Details of the temporary culvert pipe, the temporary channel, and the non-erodible barrier system shall be detailed in the contractor's ECIP, for approval by the engineer.

The following values are provided for the contractor's use in sizing a temporary culvert pipe:

Structure C-13-2081
Q2 = 153 cfs
Q5 = 308 cfs

Structure C-13-2082
Q2 = 98 cfs
Q5 = 169 cfs

Structure C-13-2083
Q2 = 160 cfs
Q5 = 298 cfs

Structure C-13-2084
Q2 = 180 cfs
Q5 = 316 cfs

Method #3: Dam the flow using non-erodible materials, such as rock bags and polyethylene sheets, and pump the water across the roadway. Details of the damming and pumping system shall be detailed in the contractor's ECIP, for approval by the engineer. The water must be treated to remove suspended solids before it is allowed to enter any waterway or wetland. Provide a settling basin, or other suitable means approved by the engineer, with sufficient capacity and size to provide an efficient means to filter the water from the dewatering operation before it is discharged back into the stream as provided in the Standard Specifications and these special provisions. Direct discharge into the stream will not be permitted. Saturated sediment shall be dewatered in an upland location within a dewatering device. Treatment practices may include the use of a polymer in conjunction with the dewatering mechanism, as approved by the engineer.

Remove the temporary open channel, temporary culvert pipe, or temporary barriers after flow through the new box culvert structure is established. Restore the area outside of the proposed roadbed and slopes to natural surrounding conditions and elevations.

D Measurement
The department will measure Temporary Water Diversion, Culvert (structure) as a single complete lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.01	Temporary Water Diversion, Culvert C-13-2081	LS
SPV.0105.02	Temporary Water Diversion, Culvert C-13-2082	LS
SPV.0105.03	Temporary Water Diversion, Culvert C-13-2083	LS
SPV.0105.04	Temporary Water Diversion, Culvert C-13-2084	LS

Payment is full compensation for providing, installing, removing, and disposing of all materials used to divert flow, maintaining such materials during use, all excavation required, and for restoration of the area to original conditions (unless shown otherwise in the project plans).

151. Remove and Replace Weir Screen, Item SPV.0105.05.

A Description
This special provision describes removing and replacing the steel wire screen on top of the existing weir structure.

B Materials
Furnish adhesive anchors, tie wire, weir screen, and hardware conforming to standard spec 502, 506, and 616.

C Construction
Remove the existing wire screen and associated fastening devices over the existing weir prior to weir or culvert improvements.

Replace the screen on top of the entire weir opening, including the cast in place weir extension, with a new continuous screen with similar opening sizes, gauge wire, and method used for securing the wire together as the existing weir screen. Secure in place with adhesive anchors, tie wire, eye bolts, hardware, or other means that firmly secures the screen in place and prevents its removal or displacement.

D Measurement
The department will measure Remove and Replace Weir Screen as a single complete lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.05	Remove and Replace Weir Screen	LS

Payment is full compensation for removing and disposing of the existing weir screen; for providing a new continuous screen to fit the overall opening size; for securing the screen with mechanical devices and hardware, and for furnishing all labor and materials required to complete the work.

152. Construction Site Maintenance – Mowing (Project ID 5992-09-82) , Item SPV.0105.10; (Project ID 5992-09-83), Item SPV.0105.11; (Project ID 5992-09-85), Item SPV.0105.12.

A Description
This special provision describes keeping the project site clean and kept up by mowing all turf areas within the project limits for the duration of the project.

B (Vacant)

C Construction
Mow all turf areas within the project limit, whether existing turf or established by temporary seed, permanent seed, or sod, for the duration of the project.

Set the mower equipment height to cut turf to a 3-inch height. Mow turf areas when height of turf growth is at 6 inches, maximum.

Furnish and install traffic control signage for advance notice of mowing operations adjacent to live lanes of traffic.

D Measurement
The department will measure Construction Site Maintenance - Mowing (project) as a single complete lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.10	Construction Site Maintenance – Mowing (Project ID 5992-09-82)	LS
SPV.0105.11	Construction Site Maintenance – Mowing (Project ID 5992-09-83)	LS
SPV.0105.12	Construction Site Maintenance – Mowing (Project ID 5992-09-85)	LS

Payment is full compensation for monitoring turf height within the project limits; for furnishing labor, tools, materials, equipment and incidentals to complete the work; for furnishing traffic control and traffic signing; and for hauling excess material from the project site.

153. Construction Staking Stormwater Management Ponds, Item SPV.0105.15.

A Description
Perform the work according to the applicable provisions of standard spec 650.3.2 and 650.3.3.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Construction Staking Stormwater Management Ponds as a single lump sum unit of work for construction staking, 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.0105.15	Construction Staking Stormwater Management Ponds	LS

Payment is full compensation for locating and setting all construction stakes; and for relocating and resetting damaged or missing construction stakes.

154. Temporary Traffic Signals CTH PD-CTH M, Item SPV.0105.20; CTH M-Mid Town Road, Item SPV.0105.21.

A Description

This special provision describes installing temporary traffic signals for intersections, using overhead electrical wiring to temporary traffic signal poles and temporary supports, and providing non-intrusive vehicle detection according to standard spec 661 and as amended herein.

B Materials

Furnish and use materials that are according to standard spec 661.2 and as amended herein.

B.1 Signal Poles and Signal Faces

Furnish new or used poles and traffic signal standards for use in temporary signals conforming to the pertinent requirements of standard spec 657 and 661. Furnish signal faces according to standard spec 661.2.2.2.

B.2 Signal Cabinet

Furnish new or equivalent to new materials as specified in standard spec 661.2 and as follows:

B.2.1 Controller

Furnish a new or equivalent to new Econolite ASC3-2100 controller with Telemetry Module. The controller shall be compatible with the City of Madison closed loop system (CLS).

B.2.2 Conflict Monitor

Furnish a new or equivalent to new NEMA+ 12-Channel Signal Conflict Monitor, with LCD display, and an Ejector Tab card release on side of card.

Provide keys to the temporary signal control cabinet to the City of Madison in addition to other required keys according to standard spec 661.2.1.

B.3 Luminaires

Furnish luminaire arms and luminaries conforming to the pertinent requirements of standard spec 657 and 659. The luminaries shall be 250-watt, full cutoff, LED and shall be furnished with photo electric cells to turn the luminaire on and off.

B.4 Pre-emption Hardware, Cable, and Equipment
Furnish and install Optical signal preempt for the temporary signals. All approach directions each need to be detected and brought back individually to the signal control cabinet.

B.5 Vehicle Detection Hardware, Cable and Equipment
The contractor, with prior approval of the engineer and the City of Madison, shall select the vehicle detection technology best suited for the site conditions and the anticipated construction work zones and activities. The engineer reserves the right to request a demonstration of any or all temporary vehicle detection technologies prior to said approval. Vehicle detection technologies considered shall include; but are not limited to, temporary inductive loops, microwave detection, or video detection. Detection technology shall provide for true presence detection.

Damage to new pavement for temporary detection loops will not be allowed. Any pavement damaged during installation shall be replaced at the contractor's expense.

C Construction
C.1 General
Revise standard spec 661.3.1(2) as follows.

Request a signal inspection of the complete temporary traffic signal installation. Make this request to the engineer at least 5 working days before the requested inspection. The City of Madison traffic signal personnel will perform the traffic signal inspection.

The City of Madison will load the timing programs into the controller. Do not use new permanent signal conduit for temporary signal wiring. Provide horizontal and vertical clearance between sidewalks and guy wires.

Arrange for all required electrical service modifications with the utility. Pay all utility company installation costs for modifications required to maintain the Temporary Traffic Signal.

Locate and avoid all underground and aboveground utilities and structures. Install temporary supports as required to avoid conflicts with proposed curb and gutter, sidewalk, and traffic signal poles. The engineer will approve the final location of wood poles prior to installation.

Use of self-supporting poles will likely be required due to limited right-of-way limitations and depending on contractor operations.

Maintain temporary signals throughout the construction of the project, until such time that the new signals are operational and have been accepted by, and turned over to the city.

C.2 Signal Heads
Install signal heads for the same vehicle travel direction at a minimum of 11 feet from each other. Move signal heads as necessary or as directed by the engineer.

C.3 Cabinet
Require a representative from the cabinet supplier on-site at the time of the turn on. Install equipment in the cabinet as follows:

C.3.1 Controller
Install the controller and ensure that it is operational as part of the City of Madison closed loop system.

C.4 Luminaires
Install luminaire arms and luminaries conforming to the pertinent requirements of standard spec 657 and 659.

C.5 Pre-emption Hardware, Cable, and Equipment
Install detector cards, sensors, cables, and all required ancillary equipment, appurtenances and mounting hardware at the temporary signals to provide a fully functioning pre-emption system. Arrange testing of the pre-emption system with Mike Christoph, (608) 395-1975, before turn-on of the temporary signal.

C.6 Vehicle Detection Hardware, Cable and Equipment
Install detector cards, sensors, cables and all required ancillary equipment, appurtenances and mounting hardware at the temporary signals to provide a fully functioning vehicle detection system for all approaches. The desired vehicle detection zones and temporary signal phasing are shown on the plans.

Arrange testing of the temporary detection system with Mike Christoph (608) 395-1975, before turn-on of the temporary signal.

Adjust, relocate, add, or remove temporary vehicle detection equipment for each traffic control stage or sub stage as shown in the plans, requested by the engineer, or as modified by the contractor's operations to maintain the required traffic and complete the proposed work. Damage to new pavement for temporary detection loops will not be allowed. Any pavement damaged during installation shall be replaced at the contractor's expense.

C.7 Maintenance
When a signal installation or signal head is not in operation, hood, turn, or take down the signal head(s) to clearly indicate that the signal is not in operation. (See MUTCD 4D-1).

Provide immediate response, 24-hour/7-days per week, to maintain any aspect of the temporary vehicle detection that is defective, completing repairs or adjustment the same day as notification.

C.8 Contractor Qualifications
Demonstrate the ability to operate all required traffic signal equipment listed in this special provision for the engineer and the City of Madison prior to starting work. Provide proof of

the ability to obtain all required traffic signal equipment listed in this special provision to the engineer and the City of Madison prior to starting work.

D Measurement

The department will measure Temporary Traffic Signals (Location), completed according to the contract and accepted, as a single complete lump sum unit of work, and according to standard spec 661.4.

If repairs or adjustments to restore vehicle detection to full function are not made the same day as notification, the associated pay item shall be reduced by the following amounts:

a) First instance: No deduct if repaired within 24 hours
b) Each subsequent instance: 5% deduct for each day or partial day of non-compliance.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.20	Temporary Traffic Signals CTH PD – CTH M	LS
SPV.0105.21	Temporary Traffic Signals Mid Town Road – CTH M	LS

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

1. Providing replacement equipment.
2. All utility charges for installation and disconnection. The City of Madison will pay for energy costs.
3. The cost of delivery and pick-up of the cabinet assemblies for department testing.

155. Radar Presence Detection System, Item SPV.0105.22.

A Description

This special provision describes furnishing and installing a Radar Presence Detection system that tracks vehicles on a roadway and provides presence detection outputs to a traffic controller or similar device.

A configuration for a single intersection will consist of one Radar Presence Detector (RPD) corner rader, traffic cabinet preassembled backplate, contact closure input file cards, mounting hardware, software, and all associated equipment required to setup and operate in a field environment.

B Materials

B.1 Functional Capabilities.

Sensor Outputs

- The RPD shall present real-time presence data in 10 lanes.
- The RPD shall support a maximum of sixteen zones.

- The RPD shall support 16 channels per sensor and have user-selectable channel assignments.
- The RPD shall use OR logic to combine multiple zones to a channel output, and shall have channel output extend and delay functionality.
- The RPD algorithms shall mitigate detections from wrong way or cross traffic.
- The RPD system shall have fail-safe mode capabilities for contact closure outputs if communication is lost.
- The RPD system shall support connection and configuration of all sensors via a single communication interface. (i.e. a single RJ45 Ethernet port). Additional Ethernet switches or ports required for remote communication will not be acceptable.
-

Detectable Area

- Detection Range. The RPD shall be able to detect and report presence in lanes with boundaries as close as 6 feet (1.8 m) from the base of the pole on which the RPD is mounted. The RPD shall be able to detect and report presence in lanes located within the 140 feet (30.5 m) arc from the base of the pole on which the RPD is mounted.
- Field of View**.** The RPD shall be able to detect and report presence for vehicles within a 90-degree field of view.
- Lane Configuration. The RPD shall be able to detect and report true presence in up to 10 lanes. The RPD shall be able to detect and report presence in curved lanes and areas with islands and medians.

B.2 Vehicle Detection

Detection Zone Placement. The radar presence detection system must provide flexible detection zone placement anywhere within the field of view of the radar sensors. Preferred presence detector configurations must be 4-sided shapes placed across lanes of traffic or placed in line with lanes of traffic. A single detector must be able to replace one or more conventional detector loops. Detection zones must be able to be fully overlapped. In addition, detection channels must have the capability of implementing "OR" logical functions including presence, extension and delay timing. These logical functions may be excluded if provisions are made to bring each detector separately into the controller and the controller can provide these functions.

Detection Zone Programming. Placement of detection zones must be by means of a graphical interface using the radar image of the roadway. The GUI must show live representation of vehicle movement while the RPD is running.

The detection zones must be created by using the mouse or handheld installation device to draw detection zones on the monitor. The detection zones must be capable of being sized, shaped and overlapped to provide optimal road coverage and detection. It must be possible to upload detector configurations to the RPD unit and to retrieve the detector configuration that is currently running in the RPD unit.

The mouse or handheld installation device must be used to edit previously defined detector configurations so as to fine tune the detection zone placement size and shape. Once a detection configuration has been created, the system must provide a graphic display of the new configuration on its monitor. While this fine-tuning is being done, the detection must continue to operate from the detector configuration that is currently called.

When a vehicle occupies a detection zone, the detection zone on the verification screen of the GUI must indicate the presence of a vehicle, thereby verifying proper operation of the detection system. In addition, the contact closure card must have an LED that will indicate proper operation of the detection zones.

Detection zones must be provided that are sensitive to the direction of vehicle travel. The direction to be detected by each detection zone must be user programmable. The vehicle detection zone should not activate if a vehicle traveling any direction other than the one specified for detection occupies the detection zone. Cross-street and wrong way traffic should not cause a detection.

Design Field of View. The radar presence detection system must reliably detect vehicle presence in the design field of view. The design field of view must be defined as the sensor view when the image sensor is mounted 17 feet or higher above the roadway. Within this design field of view, the RPD unit must be capable of setting up a single detection zone for point detection (equivalent to the operation of a 6 feet by 6 feet inductive loop). A single sensor, placed at the proper mounting height, must be able to monitor up to and including 10 traffic lanes simultaneously within the required detectable area.

Detection Performance. Detection accuracy of the RPD system must be comparable to properly operating inductive loops. Detection accuracy must include the presence of any vehicle in the defined detection zone regardless of the lane, which the vehicle is occupying. Occlusion produced by vehicles in the same or adjacent lanes must not be considered a failure of the RPD unit, but a limitation of the sensor placement. Detection accuracy (a minimum of 95%) must be enforced for the entire design field of view on a lane by lane and on a time period basis.

Equipment failure of the RPD system must result in constant vehicle detection on affected detection zones.

B.3 RPD Corner Radar Unit

Physical Properties.

The RPD shall not exceed 4.2 lbs. (1.9 kg) in weight. The RPD shall not exceed 13.2 inch by 10.6 inch by 3.3 inch (33.5 cm x 26.9 cm x 8.4 cm) in its physical dimensions. All external parts of the RPD shall be ultraviolet-resistant, corrosion-resistant, and protected from fungus growth and moisture deterioration.

Enclosure

The RPD shall be enclosed in a Lexan EXL polycarbonate. The enclosure shall be classified "f1" outdoor weatherability according to UL 746C.

The RPD shall be classified as watertight according to the NEMA 250 Standard.

The RPD enclosure shall conform to test criteria set forth in the NEMA 250 standard for type 4X enclosures. Test results shall be provided for each of the following type 4X criteria:

- External Icing (NEMA 250 clause 5.6)
- Hose-down (NEMA 250 clause 5.7)
- 4X Corrosion Protection (NEMA 250 clause 5.10)
- Gasket (NEMA 250 clause 5.14)

The RPD shall be able to withstand a drop of up to 5 feet (1.5 m) without compromising its functional and structural integrity.

The RPD enclosure shall include a connector that meets the MIL-C-26482 specification. The MIL-C-26482 connector shall provide contacts for all data and power connections.

Environmental Requirements

The RPD shall maintain accurate performance in all weather conditions, including rain, freezing rain, snow, wind, dust, fog and changes in temperature and light, including direct light on sensor at dawn and dusk.

The RPD shall be capable of continuous operation over an ambient temperature range of -40°F to 165.2°F (-40°C to 74°C).

The RPD shall be capable of continuous operation over a relative humidity range of 5% to 95% (noncondensing).

Electrical

The RPD shall consume less than 10 W. The RPD shall operate with a DC input between 9 VDC and 28 VDC.

Communication Ports

The RPD shall have two communication ports, and both ports shall communicate independently and simultaneously.

The RPD shall support the upload of new firmware into the RPD's non-volatile memory over either communication port.

The RPD shall support the user configuration of the following:

- Response delay
- Push port

The communication ports shall support a 9600 bps baud rate.

Radar Design

Frequency Stability

The circuitry shall be void of any manual tuning elements that could lead to human error and degraded performance over time.

All transmit modulated signals shall be generated by means of digital circuitry, such as a direct digital synthesizer, that is referenced to a frequency source that is at least 50 parts per million (ppm) stable over the specified temperature range, and ages less than 6 ppm per year.

Any upconversion of a digitally generated modulated signal shall preserve the phase stability and frequency stability inherent in the digitally generated signal.

The RPD shall not rely on temperature compensation circuitry to maintain transmit frequency stability.

The bandwidth of the transmit signal of the RPD shall not vary by more than 1% under all specified operating conditions and over the expected life of the RPD.

Antenna Design

The RPD antennas shall be designed on printed circuit boards.

The vertical beam width of the RPD at the 6dB points of the two-way pattern shall be 65 degrees or greater.

The antennas shall cover a 90-degree horizontal field of view.

The sidelobes in the RPD two-way antenna pattern shall be -40dB or less.

Resolution

The RPD shall transmit a signal with a bandwidth of at least 245 MHz.

RF Channels

The RPD shall provide at least 8 RF channels so that multiple units can be mounted in the same vicinity without causing interference between them.

Verification

The RPD shall have a self-test that is used to verify correct hardware functionality.

The RPD shall have a diagnostics mode to verify correct system functionality.

Testing

FCC

Each RPD shall be Federal Communications Commission (FCC) certified under CFR 47, Part 15, section 15.249 as an intentional radiator.

The FCC certification shall be displayed on an external label on each RPD according to the rules set forth by the FCC.

The RPD shall comply with FCC regulations under all specified operating conditions and over the expected life of the RPD.

NEMA TS2-2003 Testing

The RPD shall comply with the applicable standards stated in the NEMA TS2-2003 Standard. Third party test results shall be made available for each of the following tests:

- Shock pulses of 10g, 10 ms half sine wave
- Vibration of 0.5 Grms up to 30 Hz
- 300 V positive/negative pulses applied at one pulse per second at minimum and maximum DC supply voltage
- Cold temperature storage at -49°F (-45°C) for 24 hours
- High temperature storage at 185°F (85°C) for 24 hours
- Low temp, low DC supply voltage at -29.2°F (-34°C) and 10.8 VDC
- Low temp, high DC supply voltage at -29.2°F (-34°C) and 26.5 VDC
- High temp, high DC supply voltage at 165.2°F (74°C) and 26.5 VDC
- High temp, low DC supply voltage at 165.2°F (74°C) and 10.8 VDC

Manufacturing

The internal electronics of the RPD shall utilize automation for surface mount assembly, and shall comply with the requirements set forth in IPC-A-610C Class 2, Acceptability of Electronic Assemblies.

The RPD shall undergo a rigorous sequence of operational testing to ensure product functionality and reliability. Testing shall include the following:

- Functionality testing of all internal sub-assemblies
- Unit level burn-in testing of duration 48 hours or greater
- Final unit functionality testing prior to shipment

Test results and all associated data for the above testing shall be provided for each purchased RPD by serial number, upon request.

Documentation

RPD documentation shall include an instructional training guide and a comprehensive user guide as well as an installer quick-reference guide and a user quick-reference guide.

The RPD manufacturer shall supply the following documentation and test results at the time of the bid submittal:

- FCC CFR 47 certification (frequency compliance)
- IED 6100-4-5 class 4 test report (surge)

B.4 Traffic Cabinet Preassembled Backplate.

Each RPD shall have a traffic cabinet preassembled backplate with the following:

- AC/DC power conversion
- Surge protection
- Terminal blocks for cable landing
- Communication connection points

The preassembled backplate for the RPD shall be a cabinet side mount or rack mount. The RPD shall also have a shelf mounted SDLC interface option with the following:

- SDLC port for direct connection to traffic controller
- Surge protection
- Terminal blocks for cable landing
- DB9 port for RS232 communication
- 2 RJ11 ports for RS485 communication
- USB mini-B connector
- T-bus port
- OLED panel with keypad for device configuration
- Web interface for device configuration
- Configuration shall support up to 64 channel outputs

Contact Closure Input File Cards

When the SDLC interface is not utilized, the RPD shall use contact closure input file cards with 2 or 4 channel capabilities.

The contact closure input file cards for the RPD shall be compatible with industry standard detector racks.

B.5 Cabling

The cable end connector shall meet the MIL-C-26482 specification and shall be designed to interface with the appropriate MIL-C-26482 connector. The connector backshell shall be an environmentally sealed shell that offers excellent immersion capability. All conductors that interface with the connector shall be encased in a single jacket, and the outer diameter of this jacket shall be within the backshell's cable O.D. range to ensure proper sealing. The backshell shall have a strain relief with enough strength to support the cable slack under extreme weather conditions. The cable shall conform to the following specifications:

- The RS-485 conductors shall be a twisted pair 22AWG.
- The RS-485 conductors shall have nominal capacitance conductor to conductor of less than 71pF/Ft at 1 Khz.
- The RS-485 conductors shall have nominal conductor DC resistance of less than 16.5 ohms/(304.8 m) at 68°F (20°C).
- The power conductors shall be one twisted pair 18AWG with nominal conductor DC resistance of less than 11.5 ohms/(304.8 m) at 68°F (20°C).
- Each wire bundle or the entire cable shall be shielded with an aluminum/mylar shield with a drain wire.

The cable O.D. shall not exceed 0.4 inches.

The cable length shall not exceed 2000 feet (609.6 m) for the operational baud rate of RS-485 communications (9.6 Kbps).

If 12 VDC is being supplied for the RPD then the cable length shall not exceed 110 feet (33.5 m).

If 24 VDC is being supplied for the RPD then the cable length shall not exceed 1000 feet (182.9 m).

Both communication and power conductors can be bundled together in the same cable as long as the above-mentioned conditions are met.

B.6 RPD Configuration Software.

Auto-configuration. The RPD shall have a method for automatically defining traffic lanes, stop bars and zones without requiring user intervention. This auto-configuration process shall execute on a processor internal to the RPD and shall not require an external PC or other processor.

The auto-configuration process shall work under normal intersection operation and may require several cycles to complete.

Manual Configuration. The auto-configuration method shall not prohibit the ability of the user to manually adjust the RPD configuration.

The RPD shall support the configuring of lanes, stop bars and detection zones in 1-feet (0.3-m) increments.

Windows Mobile®-based Software. The RPD shall include graphical user interface software that displays all configured lanes and the current traffic pattern using a graphical traffic representation.

The graphical interface shall operate on Windows Mobile, Windows XP and Windows Vista in the .NET framework.

The software shall support the following functionality:

1. Operate over a TCP/IP connection
2. Give the operator the ability to save/back up the RPD configuration to a file or load/restore the RPD configuration from a file
3. Allow the backed-up sensor configurations to be viewed and edited
4. Provide zone and channel actuation display
5. Provide a virtual connection option so that the software can be used without connecting to an actual sensor
6. Local or remote sensor firmware upgradability

B.7 Operation from Central Control

When required by general notes in the plan set, the central control must transmit and receive all information needed for detector setup, monitor the vehicle detection, view the vehicle traffic flow via tracker movement, and interrogate all required stored data. The remote communications link between the RPD unit and central control may be dial-up (telephone or ISDN lines) or dedicated twisted wire pair communications cable which may be accompanied with coaxial cable or fiber-optic cable, as shown on the plans. Communications with the central control must not interfere with the on-street detection of the RPD system.

Installation and Training. The RPD manufacturer shall provide training.

The manufacturer-provided training shall be sufficient to fully train installers and operators in the installation, configuration, and use of the RPD to ensure accurate RPD performance.

The manufacturer-provided training shall consist of comprehensive classroom labs and hands-on, in-the-field, installation and configuration training.

Classroom lab training shall involve presentations outlining and defining the RPD, its functions, and the procedures for proper operation. These presentations shall be followed by hands-on labs in which trainees shall practice using the equipment to calibrate and configure a virtual RPD. To facilitate the classroom presentation and hands-on labs, the manufacturer-provided training shall include the following items:

- Knowledgeable trainer or trainers thoroughly familiar with the RPD and its processes.
- Presentation materials, including visual aids, printed manuals and other handout materials for each student.
- Computer files, including raw data, to facilitate the virtual configuration of the RPD.
- Laptop computers or Windows CE handheld devices with the necessary software, and all necessary cables, connectors, etc.
- All other equipment necessary to facilitate the virtual configuration of the RPD.

Field training shall provide each trainee with the hands-on opportunity to install and configure the RPD at roadside. Training shall be such that each trainee will mount and align the RPD correctly.

B.8 Manufacturer Warranty, Maintenance and Support

The RPD shall be warranted free from material and workmanship defects for a period of two years from date of shipment.

The RPD shall not require cleaning or adjustment to maintain performance. The RPD shall not rely on battery backup to store configuration information, thus eliminating any need for battery replacement. Once the RPD is calibrated, it shall not require recalibration to maintain performance unless the roadway configuration changes.

The RPD manufacturer shall provide technical support services.

Manufacturer-provided technical support shall be available according to contractual agreements, and a technical representative shall be available to assist with the physical installation, alignment, and auto-configuration of each supplied RPD. Technical support shall be provided thereafter to assist with troubleshooting, maintenance, or replacement of RPDs should such services be required.

C Construction
Follow all manufacturer's recommended installation procedures. Contact Mike Christoph at the City of Madison Traffic Engineering shop at (608) 266-9031 a minimum of seven working days in advance to coordinate installing equipment in existing and/or new traffic signal cabinet.

D Measurement
The department will measure Radar Presence Detection System as a lump sum unit of work, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.22	Radar Presence Detection System	LS

Payment is full compensation for furnishing and installing the Radar Presence Detection System.

156. Construction Staking Sanitary Sewer MAD (Project ID 5992-09-86), Item SPV.0105.30; Construction Staking Water Main MAD (Project ID 5992-09-86), Item SPV.0105.31.

A Description
Perform work according to the applicable provisions of standard spec 650.

B (Vacant)

C Construction
Set and maintain construction stakes or marks as necessary to achieve the required accuracy and to support the method of operations. Set and maintain a minimum of two construction stakes to establish location and grade of sanitary sewer structures according to the plans and details for sanitary sewer structures. Set and maintain construction stakes to establish location and grade of sanitary sewer main. Provide stakes that establish the horizontal and grade elevation of sanitary main at intervals of 25 feet for a minimum of 100 feet from each structure and at intervals of 50 feet thereafter. Determine offsets in conjunction with contractor requirements. Verify the invert elevations of existing structures which are to

remain and be connected into. Locate all stakes included in this bid item to within 0.02 feet horizontally and establish the grade elevation to within 0.01 feet vertically.

Place additional intermittent stakes as necessary to provide staking information at critical areas such as utility, driveway, roadway, and structure crossings.

D Measurement

The department will measure Construction Staking Sanitary Sewer MAD (Project ID 5992-09-86) and Construction Staking Water Main MAD (Project ID 5992-09-86) as a single complete lump sum unit of work, completed according to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.30	Construction Staking Sanitary Sewer MAD (Project ID 5992-09-86)	LS
SPV.0105.31	Construction Staking Water Main MAD (Project ID 5992-09-86)	LS

Payment is full compensation for locating and setting all construction stakes; and for relocating and resetting damaged or missing construction stakes.

157. Wastewater Control, Item SPV.0105.33.

A Description

Work under this item includes controlling or diverting, to the City of Madison's satisfaction, sanitary sewer flows during the construction of the sanitary sewer. The Meriter clinic located at 3102 Meriter Way is currently served with a private pump station extending to the northeast. The proposed Meriter Way will expose the 1¼" force main. Work under this bid item will include dewatering the force main and will include providing uninterrupted sewer service to the clinic.

B (Vacant)

C Construction

Provide a pump with a capacity of 100 gallons per minute for bid item Wastewater Control 100 gallons per minute and all associated equipment required to maintain a functioning sanitary sewer system during construction. It is not acceptable, at any time, to disrupt normal flow of wastewater in sanitary sewer service without prior approval from the City of Madison. This condition also holds at the time of connection of an existing lateral to the new sewer main. The contractor shall be responsible for designing a bypass system that will maintain flow during the period of construction. The system design shall be submitted to and approved by the City of Madison prior to the commencement of construction.

If the contractor elects to use bypass pumping as a means of wastewater control, the methods, equipment, type of hose, etc. are subject to approval by the City of Madison Engineer. Ramp any hoses crossing streets, driveways, parking areas, etc., to prevent damage to hoses. Contain spillage of wastewater to be within the utility trench and dispose of spillage into existing sewer downstream to previously installed sewer piping. Spillage of wastewater to adjacent streets, lawns, etc. not will be tolerated. Should spillage occur, cease all construction operations immediately and begin cleanup operations. Clean site thoroughly to the satisfaction of the engineer prior to the resumption of any construction operations.

D Measurement

The department will measure Wastewater Control as a single complete lump sum unit of work, completed according to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.33	Wastewater Control	LS

Payment is full compensation for furnishing all labor, tools, equipment and other incidentals to complete the contract work.

158. Construction Staking Sanitary Sewer VER (Project ID 5992-09-87), Item SPV.0105.40.

A Description

Work shall consist of construction staking sanitary sewer according to requirements of standard spec 650.3 and as herein provided.

B (Vacant)

C Construction

Set and maintain construction stakes or marks as necessary to achieve the required accuracy and to support the method of operations. Locate all pipe and manholes to within 0.02 feet horizontal and establish the elevations to within 0.01 feet vertically. Determine that the final elevations of sanitary manholes match the existing field elevations and provide this information to the engineer at least 14 calendar days before ordering manholes and sanitary sewer pipe.

Set construction stakes at intervals of 25 feet for first 100 feet upstream of manhole. Remaining stakes for that run of sanitary sewer to be set at intervals of 50 feet.

D Measurement
The department will measure Construction Staking Sanitary Sewer VER (Project ID 5992-09-87) as a single complete lump sum unit of work, completed according to the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.40	Construction Staking Sanitary Sewer VER (Project ID 5992-09-87)	LS

Payment is full compensation for locating and setting all construction stakes, for relocating and resetting damaged or missing construction stakes and for providing engineer with all notes and computations used to establish the required lines and grades within 21 days of completing this work.

159. Construction Staking Water Main VER (Project ID 5992-09-87), Item SPV.0105.41.

A Description
Work shall consist of construction staking water main according to requirements of standard spec 650.3 and as herein provided.

B (Vacant)

C Construction
Set and maintain construction stakes or marks as necessary to achieve the required accuracy and to support the method of operations. Locate all pipe, valves, bends and hydrants to within 0.25 feet horizontal and establish the elevations to within 0.10 feet vertically. Determine that the final elevations of valves and hydrants match the existing field elevations and provide this information to the engineer at least 14 calendar days before beginning water main construction.

Set construction stakes at water main valves, hydrants and bends and at interval of 50 feet for water main piping.

D Measurement
The department will measure Construction Staking Water Main VER (Project ID 5992-09-87) as a single complete lump sum of work, completed according to the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.41	Construction Staking Water Main VER (Project ID 5992-09-87)	LS

Payment is full compensation for locating and setting all construction stakes, for relocating and resetting damaged or missing construction stakes and for providing engineer with all notes and computations used to establish the required lines and grades within 21 days of completing this work.

160. Water for Seeded Areas, Item SPV.0120.01.

A Description
This special provision describes furnishing, hauling, and applying water to seeded areas as directed by the engineer, and as hereinafter provided.

B Materials
When watering seeded areas, use clean water, free of impurities or substances that might injure the seed.

C Construction
If rainfall is not sufficient, keep all seeded areas thoroughly moist by watering or sprinkling. Water for 30 days after seed placement or as the engineer directs. Apply water in a manner to preclude washing or erosion. Do not leave the topsoil un-watered for more than 3 days during this 30-day period unless the engineer determines that it is excessively wet and does not require watering. The equivalent of 5-inches of rainfall per week is considered the minimum.

D Measurement
The department will measure Water for Seeded Areas by volume by the thousand gallon units (MGAL), acceptably completed. The department will determine volume by engineer-approved meters or from tanks of known capacity.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0120.01	Water for Seeded Areas	MGAL

Payment is full compensation for furnishing, hauling, and applying the water.

161. Wall Modular Block Mechanically Stabilized Earth R-13-307, Item SPV.0165.01.

A Description
This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on

the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

This special provision describes the quality management program (QMP) for Mechanically Stabilized Earth (MSE) walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

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

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Modular Block Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing checks is provided by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and wall facing-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software used. The design

calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed according to AASHTO LRFD 11.10.2.3.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 6.0 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. All soil reinforcement layers shall be connected to facings. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be two times the block depth (front face to back face) or 32 inches, whichever is less. The first (bottom) layer of reinforcement shall be placed no further than 12 inches above the top of the leveling pad or the height of the block, but at least one block height above the leveling pad. The last (top) layer of soil reinforcement shall be no further than 21 inches below the top of the uppermost block.

All soil reinforcement required for the reinforced soil zone shall be connected to the wall facing.

Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3” shall be maintained between any obstruction and reinforcement, and splicing reinforcement is not allowed.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a concrete leveling pad. The bottom row of blocks shall be horizontal and 100% of the block surface shall bear on the leveling pad.

Concrete leveling pads shall be as wide as the proposed blocks plus 6 inches, with 6 inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6-inches.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks produced by a wet cast process. The concrete blocks shall have a minimum strength of 4000 psi at 28 days. The concrete for the blocks shall be air entrained, with an air content of 6% +/- 1.5%. All materials for the concrete mixture for the blocks shall meet the requirements of standard spec 501. Wall facing units produced by a wet cast process need not be certified as to absorption and freeze-thaw requirements.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02" and longer than 25% of the nominal height of the unit, chips larger than 1", have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. All units shall be free of cracks and other defects that would interfere with the proper placing of the units or significantly impair the strength or performance of the construction.

The top course of facing units shall be as noted on the plans, either;

- Solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material.
- A formed cast-in-place concrete coping. A coping of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the coping shall be as shown on the plans. Expansion joints shall be placed in the coping to correspond with each 24 inch change in vertical wall height and at maximum spacing of 50 feet. Contraction joints shall be placed at a maximum spacing of 10 feet. For cast in place concrete coping, use poured concrete Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Block dimensions may vary no more than ±1/8 inch from the standard values published by the manufacturer. Blocks must have a minimum depth (front face to back face) of 24 inches and a maximum depth of 28 inches. A single block type and style shall be used throughout each wall. The front face of the blocks shall conform to the plan requirements for color and shall have one of the following patterns or an approved equal:

Product Name	Pattern
Redi-Rock Retaining Wall Systems	Ledgestone
Redi-Rock Retaining Wall Systems	Cobblestone
Recon Series 50	Rustic

Comply with block manufacturer's requirements and the department's approved paint system for concrete.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

All blocks shall be certified as to strength and air content unless, due to contract changes after letting, certified blocks are not available when required. At the time of delivery of certified blocks, furnish the engineer a certified test report from a department-approved independent testing laboratory for each lot of modular blocks. The certified test report shall clearly identify the firm conducting the sampling and testing, the type of block, the date sampled, the name of the person who conducted the sampling, the represented lot, the number of blocks in the lot, and the specific test results for each of the stated requirements of this specification. The tests should have been conducted not more than 18 months prior to delivery. A lot shall not exceed the lesser of 150 CY or 1 day's production. The certified test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting certified test reports will be rejected and shall be removed from the project at no expense to the department. A department-approved independent testing laboratory shall control and conduct all modular block sampling and testing for certification. Prior to sampling, the manufacturer's representative shall identify all pallets of modular blocks contained in each lot. All pallets of blocks within the lot shall be numbered and marked to facilitate random sample selection.

The representative of the independent testing laboratory shall identify five pallets of blocks by random numbers and shall then select one block from each of these pallets. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. At no expense to the department, the contractor shall remove all rejected blocks from the project.

The department may conduct testing of certified or non-certified modular blocks lots delivered to the project. If a random sample of five blocks of any lot tested by the department fails to meet any of the requirements of this specification (nonconforming), the contractor shall remove from the project site all blocks from the failed lot not installed in the finished work at no cost to the department, unless the engineer allows otherwise. Nonconforming blocks installed in the finished work will be considered approved by the department as stated in standard spec 106.5(2) and any adjustment to the contract price will not exceed the price of the blocks charged by the supplier.

B.3.2 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate No. 1 as given in standard spec 501.2.5.4.4. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

Wall Backfill, Type B, shall be placed in a zone extending horizontally from 1 foot behind the back face of the wall to 1 foot beyond the end of the reinforcement and extending vertically from the top of the leveling pad to a minimum of 3 inches above the final reinforcement layer. Wall Backfill, Type B, shall also be placed in all areas excavated at the front face of the wall that are not occupied by pavement, subgrade, or topsoil.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material conforming to the following gradation requirements as per AASHTO T27.

Sieve Size	% by Weight Passing
1 inch	100
No. 40	0 - 60
No. 200	0 - 15

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material Type A and Type B shall meet the following requirements.

Test	Method	Value
pH	AASHTO T-289	4.5-9.0
Sulfate content [1]	AASHTO T-290	200 ppm max.
Chloride content [1]	AASHTO T-291	100 ppm max.
Electrical Resistivity	AASHTO T-288	3000 ohm-cm min.
Organic Content [1]	AASHTO T-267	1.0% max.
Angle of Internal Friction	AASHTO T-236[2]	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2)

[1] Requirement does not apply to walls with non-metallic reinforcement.

[2] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM D5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1" material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. For the additional required testing for every 2000 cubic yards of backfill placement, if the characteristic of the backfill and/or the source has not changed then Angle of Internal Friction tests are not included in the additional required testing. All certified reports of test results shall be less than 6 months old and performed by a certified independent laboratory.

B.3.3 Soil Reinforcement

B.3.3.1 Geogrids

Geogrid supplied as reinforcing members shall be manufactured from long chain polymers limited to polypropylene, high-density polyethylene, polyaramid, and polyester. Geogrids shall form a uniform rectangular grid of bonded, formed, or fused polymer tensile strands crossing with a nominal right angle orientation. The minimum grid aperture shall be 0.5 inch. The geogrid shall maintain dimension stability during handling, placing, and installation. The geogrid shall be insect, rodent, mildew, and rot resistant. The geogrid shall be furnished in a protective wrapping that shall prevent exposure to ultraviolet radiation and damage from shipping or handling. The geogrid shall be kept dry until installed. Each roll shall be clearly marked to identify the material contained.

The wall supplier shall provide the nominal long-term design strength (T_{al}) and nominal long-term connection strength, Talc as discussed below.

Nominal Long-Term Design Strength (T_{al})

The wall supplier shall supply the nominal long-term design strength (T_{al}) used in the design for each reinforcement layer and shall be determined by dividing the Ultimate Tensile Strength (T_{ult}) by the factors RF_{ID}, RF_{CR}, RF_{D}.

Hence,

$$T_{al} = \frac{T_{ult}}{RF_{ID} x RF_{CR} x RF_{D}}$$

where:

T_{ult} = Ultimate tensile strength of the reinforcement determined from wide width tensile tests (ASTM D6637) for geogrids based on the minimum average roll value (MARV) for the product.

RF_{ID} = Strength reduction factor to account for installation damage to the reinforcement. In no case shall RF_{ID} be less than 1.1.

RF_{CR} = Strength reduction factor to prevent long-term creep rupture of the reinforcement. In no case shall RF_{CR} be less than 1.2.

RF_{D} = Strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation. In no case shall RF_{D} be less than 1.1.

Values for RF_{ID}, RF_{CR}, and RF_{D} shall be determined from product specific test results. Guidelines for determining RF_{ID}, RF_{CR}, and RF_{D} from product specific data are provided in FHWA Publication No. FHWA-NHI-10-024 and FHWA–NHI-10-025 "Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes".

Nominal Long-term Connection Strength T_{ac}

The nominal long term connection strength, T_{ac}, shall be based on laboratory geogrid connection tests between wall facing and geogrids. T_{ac} shall be as given below

$$T_{ac} = \frac{T_{ult} * CR_{cr}}{RF_{D}}$$

where:

T_{ac} = Nominal long-term reinforcement facing connection strength per unit reinforcement width at a specified confining pressure.

T_{ult} = Ultimate tensile strength of the reinforcement for geogrids defined as the minimum average roll value (MARV) for the product.

CR_{cr} = Long term connection strength reduction factor to account for reduced ultimate strength resulting from connection.

RF_D = Strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation.

T_{ac} shall be developed from the tests conducted by an independent laboratory on the same facing blocks and geogrids as proposed for the wall and shall cover a range of overburden pressures comparable to those anticipated in the proposed wall. The connection strength reduction factor CR_{cr} shall be determined according to long-term connection test as described in Appendix B of FHWA Publication No. FHWA-NHI 10-025 "Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes". CR_{cr} may also be obtained from the short term connection test meeting the requirements of NCMA test method SRWU-1 in Simac et al 1993 or ASTM D4884.

The contractor shall provide a manufacturer's certificate that the Tult (MARV) of the supplied geogrid has been determined according to ASTM D4595 or ASTM D6637 as appropriate. Contractor shall also provide block to block and block to reinforcement connection test reports prepared and certified by an independent laboratory. Also provide calculations according to AASHTO LRFD, and using the results of laboratory tests, that the block-geogrid connections shall be capable of resisting 100% of the maximum tension load in the soil reinforcements at any level within the wall, for the design life of the wall system.

B.3.3.2 Galvanized Metal Reinforcement

In lieu of polymeric geogrid earth reinforcement, galvanized metal reinforcement may be used. Design and materials shall be according to AASHTO LRFD 11.10.6.4.2. The design life of steel soil reinforcements shall also comply with AASHTO LRFD. Steel soil reinforcement shall be prefabricated into single or multiple elements before galvanizing.

B.3.4 Miscellaneous

For concrete leveling pad, use Grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

For cast in place concrete swale, use poured concrete Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place swale concrete as specified in standard spec 716, Class II Concrete.

Provide high strength coated bar steel reinforcement for the concrete coping and swale according to standard spec 505.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall and the leveling pad shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Compact all backfill Type B as specified in standard spec 207.3.6. Compact the backfill Type B to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks.

A minimum of 6 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

C.3 Wall Components

C.3.1 General

Erect wall facing units and other associated elements according to the wall manufacturer's construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers according to the manufacturer's directions.

The MSE reinforcement shall lay horizontally on the top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstructions in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

C.3.2 Soil Reinforcement

C.3.2.1 Geogrid Layers

Place soil reinforcement at the positions and to the lengths as indicated on the accepted shop drawings. Take care that backfill placement over the positioned soil reinforcement elements does not cause damage or misalignment of these elements. Correct any such damage or misalignment as directed by the engineer. Do not operate wheeled or tracked equipment directly on the soil reinforcement. A minimum cover of 6 inches is required before such operation is allowed.

Place and anchor geogrid material between wall unit layers in the same manner as used to determine the Geogrid Block-to-Connection Strength. Place the grid material so that the machine direction of the grid is perpendicular to the wall face. Each grid layer shall be continuous throughout the lengths indicated on the plans. Join grid strips with straps, rings, hooks or other mechanical devices to prevent movement during backfilling operations. Prior to placing backfill on the grid, pull the grid taunt and hold in position with pins, stakes or other methods approved by the engineer.

C.3.2.2 Steel Layers

Place the steel reinforcement full width in one piece as shown on the plans. No splicing will be allowed. Maintain elements in position during backfilling.

C.4 Quality Management Program

C.4.1 Quality Control Plan

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

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

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. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at the each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

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

C.4.3 Equipment

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

Furnish nuclear gauges from the department's approved product list at http://www.atwoodsystems.com/. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D6938 and CMM 8-15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

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

C.4.4 Documentation

(1) Document all observations, inspection records, and process adjustments daily. Submit test results to the department's project materials coordinator on the same day they become available.

(2) Use forms provided in CMM Chapter 8. Note other information in a permanent field record and as a part of process control documentation enumerated in the contractor's quality control plan. Enter QC data and backfill material certified report results into the applicable materials reporting system (MRS) software within 5 business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

C.4.5 Quality Control (QC) Testing

Perform compaction testing on the backfill. Conform to CMM 8-15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of one test per 150 cubic yards of backfill, or major portion thereof in each lift. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform one gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

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

C.4.6.2 Quality Verification (QV) Testing

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

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

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

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

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

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E178 to evaluate potential statistically outlying data.

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

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

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will measure Wall Modular Block Mechanically Stabilized Earth by the square foot, acceptably completed, measured at the front face of wall as defined by the pay limits the contract plans show. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.01	Wall Modular Block Mechanically Stabilized Earth R-13-307	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including coping, swale, leveling pad, and rubberized membrane waterproofing; constructing the retaining system including temporary

drainage during construction; providing backfill, backfilling, compacting, developing/ completing /documenting the quality management program, and performing compaction testing.

Payment limit for furnishing all walls is the line of minimum embedment per section B.2. No payment will be made for additional embedment detailed for construction purposes. Parapets, railings, and other items above the wall cap or coping will be paid for separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

162. Architectural Concrete Pavement 5-Inch, Item SPV.0165.10.

A Description
This special provision describes the construction of stamped colored concrete pavement, on a prepared foundation.

B Materials
Provide all materials according to standard spec 602. Provide the stamping pattern as detailed on the plans and color to be approved by the engineer.

B.1 Concrete
Conform to standard spec 501 and as hereinafter provided:

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979 at a minimum percent loading of 6% and a maximum percent loading of 8% by weight of the cementitious materials in the mix.

Coordinate with the city to select the desired color of the concrete.

The department will accept the color based on contractor supplied comparison sample panels as hereinafter provided.

Add integral concrete colorant according to manufacturer's instructions.

Maintain mix characteristics for all colored concrete requiring a matching finish. Use the same source, brand, type, and color of portland cement, supplementary cementitious materials, aggregates and admixtures for colored concrete pavement throughout the project. Use constant cement content, supplementary cementitious material content. Except for minor adjustments, maintain a constant water/cementitious materials ratio.

B.2 Form Release Agent
Supply a powder antiquing form release agent. Apply form release agent according to manufacturer’s instructions using manufacturer’s recommended application techniques.

B.3 Concrete Curing
Supply a liquid membrane-forming clear curing compound conforming to AASHTO M 148, type 1. Apply curing compound for integrally colored concrete according to manufacturer's instructions using manufacturer's recommended application techniques. Apply curing compound at a standard time after each pour.

Do not cure colored concrete using plastic sheeting, unless necessary due to weather conditions.

B.4 Admixtures
Use admixtures designed for use and compatible with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides. Use the same admixtures for colored concrete pavement throughout the project.

B.5 Imprinting Pattern
6"x6" cobble stone pattern applied parallel to roadway centerline or city approved alternative.

C Construction
Construct stamped colored concrete pavement according to standard spec 602 and as hereinafter provided.

Prior to work commencing for stamped colored concrete, provide a finished stamped colored concrete sample having minimum dimensions of 2 feet by 2 feet by 2 inches (length, width, thickness). Up to five sample panels may be submitted to the engineer to demonstrate the typical pattern, texture, surface finish, color, and standard workmanship. Notify the engineer seven days in advance of delivering the finished stamped colored concrete samples.

Produce consistent colored concrete mixes. Except as required to maintain constant color, the engineer will not allow variations in the amounts, types, or source of materials. The contractor may make minor adjustments of water and air-entraining agent as field conditions dictate.

Colored concrete mixes for the entire project are to be consistent. If the contractor chooses to provide mixes with High Early Strength, then all colored concrete will be provided as High Early Strength. Switching from regular colored concrete to High Early Strength colored concrete or High Early Strength colored concrete to regular colored concrete will not be allowed.

If additional water is added to the colored concrete once a truck is on site, this concrete will be rejected.

Cover and protect adjacent construction and concrete from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored concrete as the engineer directs.

Uniformly apply liquid release agent onto the colored still plastic state concrete to provide clean release of imprinting tools from the concrete surface without lifting imprint or tearing concrete.

While initially finished concrete is in plastic state, accurately align and place imprinting stamps. Contractor will need to monitor the setting up of the concrete. Once the concrete has set to the point it can be stamped begin stamping. Uniformly pound or press imprint tools into concrete to produce required pattern and depth of imprint on concrete surface. Remove platform tools immediately. Hand texture and stamp edges and surfaces unable to be imprinted by stamp mats. Touch up imperfections such as broken corners, double imprints and surface cracks.

Stamp concrete consistently so that stamped concrete does not have a vertical elevation difference of 1/2 inch or depressions in concrete capable of causing ponding water or ice.

For concrete hand stamp edges and surfaces that are unable to be imprinted by platform tools, use texture mats and single blade hand stamps to match platform tool stamping pattern. Finish imprinting to match sample panels.

After concrete has been stamped and the sheen has left the surface of the colored concrete, seal colored concrete. Apply per manufacturer's recommendations. Apply two coats of seal. Apply second coat after first coat has dried. Do not seal over blemishes or imperfections caused by rainfall or protection materials.

Protect colored concrete from premature drying and excessive cold or hot temperatures. Apply evaporation retarders to concrete surfaces during initial finishing only if hot, dry, or windy conditions cause a moisture loss approaching 0.20 lb/sf/hr before and during initial finishing. Apply according to manufacturer’s written instructions.

Protect the colored concrete from damage. Do not permit construction traffic or material storage on colored concrete sidewalk. Exclude other foot traffic from colored concrete sidewalk for at least five days after placement.

Remove and replace adjacent concrete that is discolored to the approval of the engineer.

D Measurement

The department will measure Architectural Concrete Pavement 5-Inch by the square foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.10	Architectural Concrete Pavement 5-Inch	SF

Payment is full compensation according to standard spec 602.

Payment also includes full compensation for excavation, forming, for providing placing and finishing stamped colored concrete; for furnishing materials including concrete masonry, colored pigments, stamping and patterning, curing and release agents, and necessary admixtures; for providing sample panels; and for protecting adjacent pavements and curb and gutter.

163. Wall Modular Block Gravity Landscape, Item SPV.0165.11.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Modular Block Gravity Landscape Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer.

Walls shall be designed for a minimum live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as shown on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing checks is provided by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. Internal stability shall also be considered at each block level. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. The width of the modular block from front face to back face of the wall shall be included in the design computations and shown on the wall shop drawings. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software program used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed according to AASHTO LRFD 11.10.2.3.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete or base aggregate leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a concrete leveling pad or base aggregate leveling pad. The bottom row of blocks shall be horizontal and 100% of the block surface shall bear on the leveling pad.

Concrete leveling pads shall be as wide as the proposed blocks plus six inches, with six inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6-inches.

Base aggregate leveling pads shall be as wide as the blocks plus 12 inches, and the modular blocks shall be centered on the leveling pad. The minimum thickness of the leveling pad shall be 12-inches after compaction. The leveling pad shall be made from base aggregate dense 1 1/4-inch in conformance with standard spec 305.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. Furnish concrete produced by a dry-cast or wet-cast process. Concrete for all blocks shall not contain less than 565 pounds of cementitious materials per cubic yard. The contractor may use cement conforming to standard spec 501.2.1 or may substitute for portland cement at the time of batching conforming to standard spec 501.2.6 for fly, standard spec 501.2.7 for slag, or standard spec 501.2.8 for other pozzolans. In either case the maximum total supplementary cementitious content is limited to 30% of the total cementitious content by weight.

Dry-cast concrete blocks shall be manufactured according to ASTM C1372 and this specification.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02” and longer than 25% of the nominal height of the unit, chips larger than 1”, have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. A single block type and style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan.

The top course of facing units shall be as noted on the plans, either;

- Solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material.
- A formed cast-in-place concrete cap. A cap of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the cap shall not be less than 3 1/2 inches. Expansion joints shall be placed in the cap to correspond with each 24 inch change in vertical wall height and at maximum spacing of 10 feet. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Block dimensions may vary no more than ±1/8 inch from the standard values published by the manufacturer. Blocks must have a minimum depth (front face to back face) of 8 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is 1¾ inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

For concrete leveling pad, use Grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

For base aggregate leveling pad conform to item 305.0120 Base Aggregate Dense 1 1/4-Inch.

B.3.2 Material Testing

Provide independent quality verification testing of project materials according to the following requirements:

Test	Method	Requirement	
		Dry-cast	**Wet-cast**
Compressive Strength (psi)	ASTM C140	5000 min.	4000 min.
Air Content (%)	AASHTO T152	N/A	6.0 +/-1.5
Water Absorption (%)	ASTM C140	6 max.[3]	N/A
Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples	ASTM C1262[1]	 1.0 max.[2][3] 1.5 max.[2][3]	N/A

[1] Test shall be run using a 3% saline solution and blocks greater than 45 days old.

[2] Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable.

[3] The independent testing laboratory shall control and conduct all sampling and testing. Prior to sampling, the manufacturer's representative shall identify materials by lot. Five blocks per lot shall be randomly selected for testing. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. At no expense to the department, the contractor shall remove all rejected blocks from the project. If a random sample of five blocks of any lot tested by the department fails to meet any of the above testing requirements, the entire lot will be considered non-conforming.

The contractor and fabricator shall coordinate with the independent testing agency to ensure that strength and air content samples can be taken appropriately during manufacturing. At the time of delivery of materials, furnish the engineer a certified report of test from an AASHTO-registered or ASTM-accredited independent testing laboratory for each lot.

The certified test report shall include the following:

- Project ID
- Production process used (dry-cast or wet-cast)
- Name and location of testing facility
- Name of sampling technician
- Lot number and lot size

Testing of project materials shall be completed not more than 18 months prior to delivery. Independent testing frequency shall not exceed 5000 blocks for dry-cast blocks and the lesser of 150 CY or one day's production for wet-cast blocks. The certified test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting certified test reports will be rejected and shall be removed from the project at no expense to the department.

Nonconforming materials will be subject to evaluation according to standard spec 106.5.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate Size No. 1 as given in standard spec 501.2.5.4. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

A layer of Geotextile Type "DF" (Schedule B) shall be placed vertically between the backfill and the Type A backfill. The geotextile shall extend from the top of the leveling pad to 6 inches below the surface of the retained soil. The geotextile shall then wrap across the top of the Type A backfill to the back of block wall facing.

Backfill placed between retained soil and Type A backfill shall comply with the requirements for Granular Backfill Grade 1 as contained in standard spec 209.2.2. The contractor may substitute Type A Backfill for Granular Backfill Grade 1.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the wall and the leveling pad shall be according to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks.

C.3 Wall Components

Erect wall facing units and other associated elements according to the wall manufacturer's construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers according to the manufacturer's directions.

C.4 Geotechnical Information
Geotechnical data to be used in the design of the wall is given on the wall plan.

D Measurement
The department will measure Wall Modular Block Gravity Landscape by the square foot, acceptably completed, measured at the front face of wall as defined by the pay limits the contract plans show. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.11	Wall Modular Block Gravity Landscape	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including cap, copings and leveling pad; constructing the retaining system including drainage system; providing backfill, backfilling, compacting, and performing compaction testing.

Payment limit for all walls is the line of minimum embedment per section B.2. No payment will be made for additional embedment detailed for construction purposes.

Parapets, railings, and other items above the wall cap or coping will be paid for separately. Vehicle barrier and its support will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

164. Pavement Cleanup, Item SPV.0170.01.

A Description
This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site.

B Materials
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

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.

Conduct sweepings as the engineer directs or approves, to deal with dust problems that might arise during off-work hours or emergencies. Provide the engineer with a contact person available at all times to respond to requests for emergency sweeping. Respond to emergency sweeping requests within 4 hours.

If the vacuum-type sweeper breaks down, a mechanical broom sweeper may be substituted for no more than 24 hours total elapsed time. Repair the vacuum-type sweeper within that 24 hours or substitute a vacuum-type sweeper.

Skid steers with mechanical power brooms may only be utilized on sidewalks and driveways whose pavements will not support the weight of a street sweeper, unless otherwise approved by the engineer.

D Measurement

The department will measure Pavement Cleanup Project by the full 100-foot station, acceptably completed, measured along the roadway centerline or reference line with each full 100-foot station starting and ending at a +00 station. If two or more roadways occur, the department will measure along the centerline or reference line of each roadway. For divided highways, the department will extend measurement units for each roadway, in width, from 5 feet outside the grading limit of that roadway to a line mid-way between the reference lines or centerlines for each roadway.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0170.01	Pavement Cleanup	STA

Payment is full compensation for surveillance, mobilization, sweeping, and disposing of materials.

165. Dane County Parks Prairie Restoration, Item SPV.0180.01.

A Description

This special provision describes restoring natural prairie areas within the Dane County Park boundaries within the project limits that are disturbed by the proposed work. Restore all areas disturbed by the contractor's activities.

B Materials

Provide all seed according to standard spec 630.2. Provide documentation of seed source (supplier) and final proposed seed mixtures to the engineer a minimum of 30 calendar days prior to use for review. Obtain engineer's approval of each of the supplier(s) and mixes, in writing, prior to installation on this project.

Ensure that none of the seed mixes contain Birdsfoot Trefoil or Crown Vetch.

Provide seed from local plant origins from one of the following seed suppliers, or approved equal:

- Agrecol Native Nursery
- Taylor Creek Restoration Nurseries
- Prairie Moon Nursery
- Prairie Nursery

Provide a seed mixture conforming to the following species and mixture proportions.

Scientific Name	Common Name	% Mix by Weight	PLS Grams / 1 lb. Mix
Grasses			
Bouteloua curtipendula	Side Oats Grama	27.31	124
Schizachyrium scoparium	Little Bluestem	25.55	116
Sporobolus heterolepis	Prairie Dropseed	7.05	32
Wildflowers			
Agastache foeniculum	Lavender Hyssop	0.88	4
Allium cernuum	Nodding Pink Onion	2.64	12
Aster azureus	Sky Blue Aster	0.88	4
Aster laevis	Smooth Aster	0.88	4
Coreopsis lanceolata	Lanceleaf Coreopsis	1.76	8
Dodecatheon meadia	Shootingstar	0.88	4
Echinacea pallida	Pale Purple Coneflower	5.29	24
Echinacea purpurea	Purple Coneflower	3.52	16
Eryngium yuccifolium	Rattlesnake Master	2.64	12
Liatris pycnostachya	Prairie Blazingstar	2.64	12
Parthenium integrifolium	Wild Quinine	0.88	4

Scientific Name	Common Name	% Mix by Weight	PLS Grams / 1 lb. Mix
Grasses			
Penstemon digitalis	Smooth Penstemon	0.88	4
Rudbeckia hirta	Black-Eyed Susan	1.76	8
Rudbeckia triloba	Brown-Eyed Susan	0.88	4
Solidago rigida	Stiff Goldenrod	0.88	4
Tradescantia ohiensis	Spiderwort	1.76	8
Zizia aurea	Golden Alexanders	1.32	6
Legumes			
Astragalus canadensis	Canada Milk Vetch	0.88	4
Dalea candida	White Prairie Clover	3.52	16
Dalea purpurea	Purple Prairie Clover	4.41	20
Lespedeza capitata	Roundhead Bushclover	0.88	4

Do not include any additional cover crop or nurse crop as part of the Short Grass Prairie seed mix.

Furnish mulch according to standard spec 627.

Furnish Erosion Mat as required on the erosion control plans according to standard spec 628.

C Construction

Notify Dane County Parks staff (Lars Higdon, (608) 245-6898) a minimum of seven calendar days prior to beginning any work within the limits of Dane County Park lands, inclusive of erosion control. Dane County Parks will have staff onsite to observe erosion control installations, salvaging and placing salvaged topsoil, seeding, and permanent erosion control.

Remove vegetation and topsoil from the roadway foundation as required in standard spec 205.3.2 and salvage the topsoil. For installation of the MMSD sanitary sewer, salvage topsoil from the limits of excavation and below any areas to be used for stockpiled materials or equipment access. Restrict disturbance of existing ground to areas inside the slope intercepts of the roadway or with the TLE area designated for the sewer installation. Stockpile excess topsoil not required for covering the roadway embankment off the right-of-way and separate from all other topsoil areas. Isolate the salvaged topsoil from the prairie areas and do not allow mixing with other material.

Construct the roadway foundation, embankment, and MMSD sanitary sewer according to the standard spec and these special provisions.

After completion of the embankment, roadway foundation, and sewer, place the salvaged topsoil to a minimum depth of 6-inches within the limits of the disturbed area. Till the salvaged topsoil into the prepared grade below to a depth of 9-inches. Areas shall be graded smooth with no large clumps of sod at the surface.

Sow seeding mixtures according to standard spec 630.3.1(3) with a preference given to performing the Short Grass Prairie seeding after October 15.

Dormant seeding after November 15 may be an option but would require additional coordination and instruction from the engineer. Dormant seeding must be approved, in writing, by the engineer.

Do not apply fertilizer to restoration areas.

Utilize Method C for Seeding Mixture, Shortgrass Prairie and perform seeding according to standard spec 630.3.3.3(3).

Sow seed at a rate of 10 PLS ponds per acre and apply at a rate no less than 150 seeds per square foot.

Water the sown seed according to the Water for Seeded Areas item.

Mow the restored prairie areas two times after establishment of the seed; one mowing between June 1 and June 15 and a second mowing between July 15 and July 31. Coordinate the mowing with Dane County Parks staff. Mow the restored prairie area to a height of 10-inches.

Install Fence Safety between the roadway work and restored area according to the bid item for Fence Safety. Along proposed path locations, locate the fence 3-feet from the path. Remove the fence according to the bid item for Fence Safety no sooner than August 1, 2019 but prior to the contract completion date.

D Measurement

The department will measure Dane County Parks Prairie Restoration by the square yard, in place and acceptably completed. The department will not measure for payment disturbed areas outside the proposed slope intercepts or TLE boundary designated for installation of the MMSD sanitary sewer, unless approved in writing by the engineer.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.01	Dane County Parks Prairie Restoration	SY

Payment is full compensation for salvaging and placing topsoil; for tilling salvaged topsoil into the subgrade; for preparing the seed bed; for furnishing, sowing, covering, and firming the seed mix; and for coordination with Dane County Parks staff.

Any required mulch, erosion mat, silt fence, or other erosion control devices will be paid for separately at the contract unit price for those items. Water for Seeded Areas and Fence Safety will be paid for separately at the contract unit price for that item.

166. Slope Paving Concrete Stamped and Colored, Item SPV.0180.02.

A Description

This section describes paving embankment slopes with stamped and colored concrete slope paving to control and prevent erosion of the slopes and waterways.

B Materials

Provide all materials according to standard spec 604 and as hereinafter provided.

B.1 Concrete

Conform to standard spec 501 and as hereinafter provided:

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979 at a minimum percent loading of 6% by weight of the cementitious materials in the mix. Match the color used on the architectural concrete pavement under the nearby Mineral Point Road Structure, B-13-655, located between the path and the retaining wall.

The department will accept the color based on contractor supplied comparison sample panels as hereinafter provided.

Add integral concrete colorant according to manufacturer's instructions.

Maintain mix characteristics for all colored concrete requiring a matching finish. Use the same source, brand, type, and color of portland cement, supplementary cementitious materials, aggregates, and admixtures for colored concrete slope paving throughout the project. Use constant cement content and supplementary cementitious material content. Except for minor adjustments, maintain a constant water/cementitious materials ratio to maintain consistent color.

B.2 Form Release Agent

Apply form release agent according to manufacturer’s instructions using manufacturer’s recommended application techniques.

B.3 Concrete Curing

Supply a liquid membrane-forming clear curing compound conforming to ASTM C1315, type 1. Apply curing compound for integrally colored concrete according to manufacturer's instructions using manufacturer’s recommended application techniques. Apply curing compound at a standard time after each pour.

Do not cure colored concrete using plastic sheeting, unless necessary due to weather conditions.

B.4 Admixtures
Use admixtures designed for use and compatible with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides. Use the same admixtures for colored concrete slope paving throughout the project.

B.5 Imprinting Pattern:
Match the imprinting pattern used on the architectural concrete pavement under the nearby Mineral Point Road Structure, B-13-655, located between the path and the retaining wall.

C Construction
Construction shall be according to standard spec 604 and as hereinafter provided.

Prior to work commencing for stamped colored concrete, provide a finished stamped colored concrete sample having minimum dimensions of 2 feet by 2 feet by 2 inches (length, width, thickness). Up to five sample panels may be submitted to the engineer to demonstrate the typical pattern, texture, surface finish, color, and standard workmanship. Notify the engineer two days in advance of delivering the finished stamped colored concrete samples.

Produce consistent colored concrete mixes. Except as required to maintain constant color, the engineer will not allow variations in the amounts, types, or source of materials. The contractor may make minor adjustments of water and air-entraining agent as field conditions dictate.

Colored concrete mixes for the entire project are to be consistent. If the contractor chooses to provide mixes with High Early Strength, then all colored concrete will be provided as High Early Strength. Switching from regular colored concrete to High Early Strength colored concrete or High Early Strength colored concrete to regular colored concrete will not be allowed.

Cover and protect adjacent construction and concrete from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored concrete as the engineer directs.

Uniformly apply liquid release agent onto the colored still plastic state concrete to provide clean release of imprinting tools from the concrete surface without lifting imprint or tearing concrete.

While initially finished concrete is in plastic state, accurately align and place imprinting stamps. Contractor will need to monitor the setting up of the concrete. Once the concrete has set to the point it can be stamped begin stamping. Uniformly pound or press imprint tools into concrete to produce required pattern and depth of imprint on concrete surface. Remove platform tools immediately. Hand texture and stamp edges and surfaces unable to be imprinted by stamp mats. Touch up imperfections such as broken corners, double imprints and surface cracks.

Stamp concrete consistently so that stamped concrete does not have a vertical elevation difference of 1/2 inch or depressions in concrete capable of causing ponding water or ice.

For concrete hand stamp edges and surfaces that are unable to be imprinted by platform tools, use texture mats and single blade hand stamps to match platform tool stamping pattern. Finish imprinting to match sample panels.

After concrete has been stamped and the sheen has left the surface of the colored concrete, seal colored concrete. Apply per manufacturer's recommendations. Apply two coats of seal. Apply second coat after first coat has dried. Do not seal over blemishes or imperfections caused by rainfall or protection materials.

Protect colored concrete from premature drying and excessive cold or hot temperatures. Apply evaporation retarders to concrete surfaces during initial finishing only if hot, dry, or windy conditions cause a moisture loss approaching 0.20 lb/sf/hr before and during initial finishing. Apply according to manufacturer’s written instructions.

Protect the colored concrete from damage. Do not permit construction traffic or material storage on colored concrete sidewalk. Exclude other foot traffic from colored concrete sidewalk for at least five days after placement.

D Measurement

The department will measure Slope Paving Concrete Stamped and Colored by the square yard, acceptably completed. The measured area equals the sum of the pavement areas, measured in the plane of the surface. The department will not measure headers or cut-off walls**.**

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.02	Slope Paving Concrete Stamped and Colored	SY

Payment for the Slope Paving Concrete Colored and Stamped bid item is full compensation for excavating and backfilling required for preparing the paving foundation; for disposing of surplus materials; for forming; for providing materials for concrete masonry, colored pigments, stamping and patterning, curing and release agents and necessary admixtures; for providing sample panels; for mixing, placing, finishing, stamping, curing, sealing, and protecting concrete; and for protecting adjacent pavements and structures.

167. Shredded Hardwood Bark Mulch, Item SPV.0180.03.

A Description

This special provision describes furnishing and installing Shredded Hardwood Bark Mulch at the locations shown on the plans and in accordance to the pertinent provisions of standard spec 632 and as hereinafter provided.

B Materials

Shredded Hardwood Bark Mulch shall be finely shredded hardwood bark mulch and shall be the product of a mechanical chipper, hammermill, or tub grinder. The material shall be fibrous and uniformly colored to match the existing bark mulch within the area, free of large wood chunks, and shall be substantially free of mold, dirt, sawdust, and foreign material. No portion of the material shall be in an advanced state of decomposition. The material shall not contain chipped up manufactured boards or chemically treated wood, including but not limited to wafer board, particle board, and chromated copper arsenate (CCA) or penta-treated wood. The material shall contain no bark of the black walnut tree. The material, when air dried, shall all pass a 4-inch screen and no more than 20 percent by mass of the material shall pass a 0.10-inch sieve. Unattached bark or greenleaf composition, either singly or combined, shall not exceed 20 percent each by mass. The maximum length of individual pieces shall not exceed 4 inches.

C Construction

Install mulch in accordance with standard spec 632.3.9 to a depth of 3 inches.

Place the hardwood bark mulch in such a manner as to not damage plants already in place.

D Measurement

The department will measure Shredded Hardwood Bark Mulch by the square yard of surface area, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.03	Shredded Hardwood Bark Mulch	SY

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

168. MMSD Trench Backfill, Item SPV.0187.01.

A Description

Furnish and install backfill material over the MMSD sanitary sewer and appurtenances as shown in the plans and hereinafter provided.

B Materials

B.1 Applicable Specifications

Provide all sanitary sewer materials in conformance to the plans and specifications and the Standard Specifications for Sewer and Water Construction in Wisconsin.

Granular trench backfill shall conform to requirements of standard spec 209. Gradation shall be such that not less than 100 percent passes a 6-inch sieve, not less than 85 percent by weight passes a 3-inch sieve and not less than 25 percent by weight passes a No. 4 sieve. Material shall be free from dirt, debris, frozen materials, vegetable matter and lumps or balls of clay. Material shall be generally identified as pit run sand, pit run sand and gravel, crushed stone base course or crusher run crushed stone.

Material excavated from trench shall be used for backfill, unless otherwise specified or noted on the plans for backfill of trenches outside limits of paved areas. All trenches beneath paved areas shall be backfilled with granular backfill material.

Excavated material backfill used in non-paved areas shall be subsoil, clay, loamy clay, sand or gravel free of wood, cinders, vegetable matter and other rubbish. Large pieces, greater than 12-inch diameter, of concrete, rocks and boulders are not acceptable. Nor is inorganic matter or frozen ground acceptable as excavated material backfill. Separate rocks and boulders larger than 12-inch diameter from excavated material prior to using as backfill. Where backfill material contains rocks and boulders up to 12-inch diameter, provide additional 1 foot of cover material above top of pipe so that rocks and boulders do not come within 2 feet of top of pipe.

C Construction

C.1 Applicable Specifications

Provide all material for construction in conformance to the Standard Specifications for Sewer and Water Construction in Wisconsin.

C.2 Methods

Backfilling:

1. Unless otherwise provided, all trenches and excavations shall be backfilled immediately after pipe and appurtenances have been constructed therein.
2. Backfill material shall be brought up evenly on all sides of pipe and structures so that no unbalanced pressure is brought to bear upon pipe or masonry.
3. Backfill all excavations to original ground elevation unless otherwise specified.
4. All backfill material shall be subject to approval of the engineer.

Compaction:

Provide mechanical compaction for cohesive material and vibratory compaction for granular materials.

Lift Thickness and Compaction: Place and compact fill materials in maximum lift thicknesses and to minimum densities listed below.

Material / Location	Lift Thickness (in.)	Modified Proctor (%)
Select Sand Backfill within 3 feet below subgrade under paved surfaces, gravel parking surfaces, or RR corridor	12	95
Select Sand Backfill deeper than 3 feet below subgrade under paved surfaces, gravel parking surfaces, or RR corridor	12	90
Cohesive Material under paved surfaces when approved by the engineer	8	90
Foundation Stone	6	95
Bedding Material	6	95
Granular Material under non-paved areas	12	90
Cohesive Material under non-paved areas	12	85

Excavation across vegetated areas shall have all topsoil segregated from remaining excavated trench material. Placement of excavated material back into trench shall conform to the same stratification that existed prior to excavation. Only excavated material other than topsoil shall be hauled from site as excess excavated material.

C.3 Testing
MMSD will have a separate contractor perform compaction testing for the project.

D Measurement
The department will measure Trench Backfill MMSD by the linear foot, measured along the centerline of pipe from center of manhole to center of manhole.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0187.01	MMSD Trench Backfill	TF

Payment is full compensation for furnishing and installing all backfill materials along with compaction; properly disposing of excess materials; and for restoring the worksite.

169. Select Crushed Material for Travel Corridor Interstitial Space, Item SPV.0195.01.

A Description
Place select crushed material to fill voids and create a wildlife travel corridor, as shown in the plans and as hereinafter provided.

B Materials
Furnish select crushed material with a lower layer of 4 inch – 8 inch fractured-face stone and an upper layer of 1 inch – 2 inch fractured-face stone that is according to the pertinent requirements of standard spec 312. Material shall be clean and substantially free from material passing the No. 4 (4.75mm) sieve.

C Construction
After the placement of the normal Riprap Heavy according to standard spec 606.3, fill the interstitial spaces between the rock with a lower layer of 4 inch – 8 inch fractured-face stone and an upper layer of 1 inch – 2 inch fractured-face stone to prevent small wildlife from falling in between or getting caught between the larger rocks. The lower layer shall extend to 3" below the average surface of the Riprap Heavy.

D Measurement
The department will measure Select Crushed Material for Travel Corridor Interstitial Space by the ton, 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.0195.01	Select Crushed Material For Travel Corridor Interstitial Space	TON

Payment is full compensation for providing, placing, and shaping the material.

170. Sanitary Drop Manhole, 48-Inch VER, Item SPV.0200.01.

A Description
Construct sanitary drop manholes consisting of pre-cast reinforced concrete, pre-cast concrete adjustment rings, watertight joints, pre-cast concrete base, pre-cast concrete eccentric cone tops, drop structure, steps, and all excavation according to the applicable provisions of standard spec 611, Chapter 3.5.0 of the "Sewer/Water Specifications" and the construction detail in the plans.

B Materials
Sanitary drop manholes shall have minimum 48-inch inside diameter pre-cast concrete barrel sections, with eccentric type cone top section with 24-inch minimum opening, and 8-inch thick integral pre-cast concrete base. Provide concrete with a compressive strength of 4000 psi and conforming to ASTM C478. Minimum manhole wall thickness shall be 5 inches.

Drop structure shall have same inside diameter as connecting sanitary sewer. Lower invert of drop structure shall be constructed at spring line elevation of downstream pipe.

Manhole steps shall be corrosion resistant M.A. Industries, Inc. Model PS1-PF or equal with ½-inch diameter Grade 60 steel reinforcement coated with copolymer polypropylene plastic. Install steps 16-inch on center according to detail of the construction plans.

Provide manhole barrel joints with rubber ring gasket material or butyl plastic gasket material. Rubber gaskets shall conform to requirements of ASTM C443. Butyl plastic gasket material shall conform to requirements of ASTM C990 and AASHTO M-198, Ram-Nek, ConSeal, E-Z Stik or equal.

Provide pre-cast concrete adjusting rings conforming to ASTM C478. Adjustment rings shall be a minimum of 1-inch thick and a maximum of 6-inches thick. Provide an approved butyl sealant between rings to properly seal rings. Minimum height of adjustment section shall be 6 inches and maximum height shall be 16 inches.

Provide sanitary sewer pipe to pre-cast manhole wall connection with flexible, watertight boot or cast- in seal. Boots shall have stainless steel clamps and stainless steel hardware. Seal shall be Press-Seal PSX, Kor-N-Seal, or pre-approved equal.

Manhole barrel section external joint seal shall be a minimum of 9 inches wide, and consist of flexible rubberized seal conforming to ASTM C923 held in place with stainless steel compression bands or butyl adhesive tape conforming to ASTM C877 or heat shrink sleeve over visco-elastic adhesive sealant.

Acceptable product manufactures for external manhole joint seal:

1. Mac Wrap, Mar Mac Manufacturing Company, Inc.
2. Cretex Wrap, Cretex Specialty Products, Inc.
3. NPC External Joint Seal, NPC, Inc.
4. EZ-Wrap, Press-Seal Gasket Corporation
5. Riser Wrap, Pipeline Seal and Insulator, Inc.
6. Or equal

C Construction

Excavate to provide a smooth, compacted flat bottom. Place a minimum 6-inch depth of bedding material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction contained in these special provisions and compact prior to setting manhole base and riser section.

Construct concrete bench in the interior bottom of the sanitary manhole which are pre-cast or poured-in-place. The bench shall extend to the top of the pipe. Construct the bench invert to provide a smooth flow line and conform to the curvature of the pipe.

Install external manhole joint seal on all manhole barrel section joints in addition to joint gasket seal.

Construct manhole so that when manhole frame and cover, with adjustment section, are placed, cover will be at the established required grade.

D Measurement
The department will measure Sanitary Drop Manhole, 48-Inch VER by the vertical foot and the quantity measured for payment will be the number of vertical feet from the invert of the outgoing pipe to the top of the manhole chimney adjustment section to the nearest 0.1 foot, acceptably completed. Measurement does not include footage of manhole frame and cover.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0200.01	Sanitary Drop Manhole, 48-InchVER	VF

Payment is full compensation for furnishing and installing all materials including pre-cast manhole base, riser, drop structure, cone section and chimney adjustment rings; for installing gaskets, joint seals, steps, bedding material, and granular backfill material; for furnishing all excavation, dewatering, sheathing and shoring, forming foundation, and masonry work; for making sanitary sewer connections; for backfilling including mechanical compaction and compaction testing; for removing sheeting and shoring; for disposal of all surplus or waste material; and for clean up.

171. Sanitary Manhole, 48-Inch VER, Item SPV.0200.02.

A Description
Construct sanitary manholes consisting of pre-cast reinforced concrete, pre-cast concrete adjustment rings, watertight joints, pre-cast concrete base, pre-cast concrete eccentric cone tops, steps, and all excavation and granular backfill according to the applicable provisions of standard spec 611, Chapter 3.5.0 of the "Sewer/Water Specifications" and the construction detail in the plans.

B Materials
Provide sanitary manholes with a minimum 48-inch inside diameter pre-cast concrete barrel sections, with eccentric type cone top section with 24-inch minimum opening, and with an 8-inch thick integral pre-cast concrete base. Provide concrete with a compressive strength of 4000 psi and conforming to ASTM C478. Minimum manhole wall thickness shall be 5-inches.

Provide corrosion resistant manhole steps as manufactured by M.A. Industries, Inc. Model PS1-PF or equal with ½-inch diameter Grade 60 steel reinforcement coated with copolymer polypropylene plastic. Install steps 16-inch on center according to detail in the construction plans.

Provide manhole barrel joints with rubber ring gasket material or butyl plastic gasket material. Rubber gaskets shall conform to requirements of ASTM C443. Butyl plastic gasket material shall conform to requirements of ASTM C990 and AASHTO M-198, Ram-Nek, ConSeal, E-Z Stik or equal.

Provide pre-cast concrete adjusting rings conforming to ASTM C478. Adjustment rings shall be a minimum of 1-inch thick and a maximum of 6-inches thick. Provide an approved butyl sealant between rings to properly seal rings. Minimum height of adjustment section shall be 6 inches and maximum height shall be 16 inches.

Provide sanitary sewer pipe to pre-cast manhole wall connection with flexible, watertight boot or cast- in seal. Boots shall have stainless steel clamps and stainless steel hardware. Seal shall be Press-Seal PSX, APC, Inc., Kor-N-Seal, or pre-approved equal.

The manhole barrel section external joint seal shall be a minimum of 9 inches wide, and consist of flexible rubberized seal conforming to ASTM C923 held in place with stainless steel compression bands or butyl adhesive tape conforming to ASTM C877 or heat shrink sleeve over visco-elastic adhesive sealant.

Acceptable product manufactures for external manhole joint seal:

1. Mac Wrap, Mar Mac Manufacturing Company, Inc.
2. Cretex Wrap, Cretex Specialty Products, Inc.
3. NPC External Joint Seal, NPC, Inc.
4. EZ-Wrap, Press-Seal Gasket Corporation
5. Riser Wrap, Pipeline Seal and Insulator, Inc.
6. Or equal

C Construction

Excavate to provide a smooth, compacted flat bottom. Place a minimum 6-inch depth of bedding material conforming to the requirements of the General Provisions for Sanitary Sewer and Water Main Construction contained in these special provisions and compact prior to setting manhole base and riser section.

Construct concrete bench in the interior bottom of the sanitary manhole which are pre-cast or poured-in-place. The bench shall extend to the top of the pipe. Construct the bench invert to provide a smooth flow line and conform to the curvature of the pipe.

Install external manhole joint seal on all manhole barrel section joints in addition to joint gasket seal, where joint is below groundwater table to feet above groundwater table elevation.

Construct manhole so that when manhole frame and cover, with adjustment section, are placed, cover will be at the established required grade.

D Measurement
The department will measure Sanitary Manhole, 48-Inch VER by the vertical foot and the quantity measured for payment will be the number of vertical feet from the invert of the outgoing pipe to the top of the manhole chimney adjustment section to the nearest 0.1 foot, acceptably completed. Measurement does not include footage of manhole frame and cover.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0200.02	Sanitary Manhole, 48-Inch VER	VF

Payment is full compensation for furnishing and installing all materials including pre-cast manhole base, riser, bench, cone section, and chimney adjustment rings; for installing gaskets, joint seals, steps, bedding material, and granular backfill material; for furnishing all excavation, dewatering, sheathing and shoring, forming foundation, masonry work; for making sanitary sewer connections; for backfilling including mechanical compaction and compaction testing; for removing sheeting and shoring; for disposal of all surplus or waste material; and for clean up.

172. Construct Outside Drop, 8-Inch, Item SPV.0200.10; Construct Outside Drop, 10-Inch, Item SPV.0200.11.

A.1 Description
This special provision describes constructing outside drop structures on sanitary sewer access structures where shown in the drawings, or as directed by the City of Madison. Outside and Inside Drops are required if the elevation difference between the flow line of the incoming pipe and the springline of the outgoing pipe is greater than two feet.

A.2 MMSD Direct Connection Permit and Permit Fee
Connections to MMSD manholes require a Direct Connection Permit from MMSD. Obtain the permit and pay the permit fee ($1,025.00) for the permit. Fulfill the permit requirements for coordination and inspection of the connection. This connection fee applies to the connection at MMSD MH12-210 near Flagstone Drive and is considered incidental to Construct Outside Drop, 10-Inch, Item SPV.0200.11.

B Materials
Provide all materials associated with this item according to Standard Detail Drawing 5.7.2 and Article 507.3(d)1 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

C Construction
Construct Outside Drop according to Article 507.3(d)1 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

Maintain the normal flow of wastewater at all times during installation of the sanitary sewer access structure, construction of the outside drop structure, and when connecting new and existing pipes to the structure.

Complete any necessary temporary wastewater control according to the City of Madison Standard Specifications for Public Works Construction - Latest Edition, and as described under bid item Wastewater Control item.

Core connections (taps) to sewer access structure associated with the outside drop connection are included with the Outside Drop and not paid for separately as sanitary taps.

D Measurement

The department will be measure Construct Outside Drop (Size) by the vertical foot, measured from the invert of the entree Tee to the springline of the outgoing sewer according to City of Madison Standard Detail Drawing 5.7.2 (Detail A).

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0200.10	Construct Outside Drop, 8-Inch	VF
SPV.0200.11	Construct Outside Drop, 10-Inch	VF

Payment is full compensation for excavating, backfilling and disposing of surplus materials; for making tap connections; for coordinating, obtaining, making payment, and fulfilling the requirements for the MMSD Direct Connection Permit; and for furnishing all tools, materials, labor and incidentals necessary to complete the work.

173. Construct Inside Drop, 8-Inch, Item SPV.0200.12.

A Description

This special provision describes constructing outside drop structures on sanitary sewer access structures where shown in the drawings, or as directed by the City of Madison. Outside and Inside Drops are required if the elevation difference between the flow line of the incoming pipe and the springline of the outgoing pipe is greater than two feet. The detail drawing in the city specification Standard Detail Drawing 5.7.30 indicates that the inside drop can only be used for 6” diameter or smaller pipe. Please disregard this. The intent is to build the Inside Drop Connection with 8” diameter pipe.

B Materials

Provide all materials associated with this item according to Standard Detail Drawing 5.7.30 and Article 507.3(d)1 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

C Construction

Construct Inside Drop according to Article 507.3(d)1 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

Maintain the normal flow of wastewater at all times during installation of the sanitary sewer access structure, construction of the outside drop structure, and when connecting new and existing pipes to the structure.

Complete any necessary temporary wastewater control according to the City of Madison Standard Specifications for Public Works Construction - Latest Edition, and as described under bid item Wastewater Control item.

D Measurement

The department will be measure Construct Inside Drop by the vertical foot measured from the invert of the entree Tee to the springline of the outgoing sewer according to City of Madison Standard Detail Drawing 5.7.30. If the manhole has a bench above the spring line of the outgoing sewer, the inside drop should be measured from the invert of the tee to the top of the manhole structure bench. Sanitary Tap Connections (SPV.0060.83) for the inside drop shall be considered incidental to the Inside Drop Bid Item.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0200.12	Construct Inside Drop, 8-Inch	VF

Payment is full compensation for excavating, backfilling and disposing of surplus materials; for making connections; and for furnishing all tools, materials, labor and incidentals necessary to complete the work.

174. Sanitary Manhole 4-Foot Diameter w/Outside Drop (MMSD), Item SPV.0200.20; Sanitary Manhole 4-Foot Diameter (MMSD), Item SPV.0200.21; Sanitary Manhole 6-Foot Diameter (MMSD), Item SPV.0200.22; Sanitary Monitoring Manhole 6-Foot Diameter, Item SPV.0200.23.

A Description

Furnish and install sanitary sewer appurtenances as shown in the plans and as hereinafter provided. All manhole structures shall be designed for H-20 traffic loading according to AASHTO Specifications.

B Materials

B.1 Applicable Specifications

Provide all sanitary sewer materials in conformance to the plans and specifications and the Standard Specifications for Sewer and Water Construction in Wisconsin.

The products listed are intended to establish a basis for comparison of products of other manufacturers. Substitutions will be permitted but only with the prior written approval of the engineer.

Precast Manhole Sections

Precast concrete manhole sections shall be constructed according to the plans and specifications. Compressive strength of the concrete shall be 4000 psi and shall conform to ASTM C478. Wall thicknesses of manholes will vary with diameter in conformance with ASTM C76, Class B concrete tongue and groove joint pipe. The base thickness shall be 8-inches for depths 10 feet or less and 12-inches for depths over 10 feet.

Steps

Steps shall be M.A. Industries or approved equal and be constructed of a 1/2-inch diameter, Grade 60 reinforcing steel bar conforming with ASTM A615 completely encased in polypropylene conforming with ASTM D4101 to obtain a minimum thickness of 1 1/8 inch and minimum width of 12 inches. They shall be securely and permanently set in the manhole wall. Steps shall be 16 inches on center and have a 5 3/4 inch projection from the wall. Steps shall conform with ASTM F783.

Manhole Joint Material

Sanitary sewer manhole joint materials shall be plastic gasket material or butyl rubber gasket material. Plastic gaskets shall be preformed, high adhesion material, packaged ready for use between protective paper strips conforming to Federal Spec SS-S-0210, Type I, Rope Form; Ram-Nek by K.T. Snyder Company, Inc.; Kent Seal No. 2 or equal. Butyl rubber gaskets shall be preformed, high adhesion material, packaged ready for use between protective paper strips, conforming to Federal Spec SS-S-210A, Rope Form; by Press Seal Gasket Corporation or equal.

External seals at joints shall be Infi-Shield by Sealing Systems Inc., Cretex Wrap by Cretex, ConWrap by ConSeal, Mac Wrap by Mar Mac, or equivalent.

Waterstop Seals

New interceptor pipe and local sanitary sewers shall be connected to manholes with resilient connectors meeting the requirements of ASTM C923 as manufactured by A-Lok Products Inc., NPC Inc., Kor-N-Seal, or equal.

Adjustment Rings

HDPE or Polypropylene rings as manufactured by Ladtech, Cretex Pro-Ring, EJ Prescott, or equal. Use manufacturers approved sealant or adhesive between rings and manhole, between rings, and between top ring and casting.

Chimney Seal

Chimney seals shall be internal low or medium density HDPE “Top Hat” seal as manufactured by AP/M Permaform or equal.

Frames and Grates
MMSD standard manhole castings are as follows:
R-1550-A, 9-inch frame and lid, non-rocking, self-sealing gasketed cover with concealed pick holes, and type "C" checkered design lettered "Madison Metropolitan Sewerage District."

B.2 Shop Drawings
Prior to incorporating any materials or products into the work, submit to the engineer product literature and catalog cuts of the materials to be supplied. Submit information in sufficient detail to readily determine if these materials are in conformance with the specifications.

C Construction
C.1 Applicable Specifications
Provide all sanitary sewer construction in conformance to the Standard Specifications for Sewer and Water Construction in Wisconsin.

C.2 Methods
All lift holes on sanitary sewer manholes shall be sealed watertight.

Backfill
Provide backfill material composed of mechanically compacted granular material conforming to the requirements of SWS 8.43.4.

Inverts and Benches
Invert channels shall be troweled to a smooth, dense surface and a semicircular shape conforming to the inside of the adjacent sewer sections according to the contract drawings.

The bench shall be 24 inches in height measured from the flow line of the pipe for pipe 24-inch diameter or larger and shall be to the pipe crown for pipes less than 24-inch diameter and be sloped 1/2" per foot.

No horizontal surfaces shall be left on the inside of the manhole. The bench shall be shaped to drain into the floor channel.

Frames and Covers
Sanitary sewer manholes shall be built up so that the frames and cover, when placed, will be at the required grades and meet this specification. Mortar shall be used under the frame to adjust the casting to the required grade.

Final Adjustment
All castings shall be adjusted prior to paving or restoration depending on the location of the casting to meet the final grades.

D Measurement

The department will measure Sanitary Manhole (size) Diameter (type) and Sanitary Monitoring Manhole 6-Foot Diameter as the vertical feet of manholes from the invert of each manhole to the rim elevation, as constructed according to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0200.20	Sanitary Manhole 4-Foot Diameter W/ Outside Drop (MMSD)	VF
SPV.0200.21	Sanitary Manhole 4-Foot Diameter (MMSD)	VF
SPV.0200.22	Sanitary Manhole 6-Foot Diameter (MMSD)	VF
SPV.0200.23	Sanitary Monitoring Manhole 6-Foot Diameter	VF

Payment is full compensation for providing all labor and materials, including precast concrete manhole sections, base, cone, adjustment rings, steps, waterstop seals, couplings, frame and grate, chimney seal, final rim adjustment, testing and other required fittings; for furnishing all excavating, except rock excavation; for forming foundation; for replacing unstable material in the trench bottom; for sheeting and shoring; for dewatering; for constructing the manhole; for backfilling and compacting; for providing granular backfill material, including bedding material; for removing sheeting and shoring; for cleaning out the manhole and adjoining pipes and restoring the worksite.

ADDITIONAL SPECIAL PROVISION 1 (ASP 1)
FOR TRANSPORTATION ALLIANCE FOR NEW SOLUTIONS (TrANS)
PROGRAM EMPLOYMENT PLACEMENTS AND APPRENTICESHIPS

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Section 5204(e) – Surface Transportation Workforce Development Training and Education, provides for 100 percent Federal funding if the core program funds are used for training, education, or workforce development purposes, including "pipeline" activities. The core programs includes: Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Highway Bridge Program (HBP), Interstate Maintenance (IM), National Highway System (NHS), and Surface Transportation Program (STP). These workforce development activities cover surface transportation workers, including OJT/SS programs for women and minorities as authorized in 23 U.S.C. §140(b).

TrANS is an employment program originally established in 1995 in Southeastern Wisconsin. Currently TrANS has expanded to include TrANS program locations to serve contractors in Southeast (Milwaukee and surrounding counties), Southcentral (Dane County and surrounding counties including Rock County), and most Northeastern Wisconsin counties from locations in Keshena, Rhinelander and surrounding far Northern areas. TrANS attempts to meet contractor's needs in other geographic locations as possible. It is an industry driven plan of services to address the outreach, preparation, placement and retention of women, minorities and non-minorities as laborers and apprentices in the highway skilled trades. These candidate preparation and contractor coordination services are provided by community based organizations. For a list of the TrANS Coordinators contact the Disadvantaged Business Enterprise Office at (414) 438-4583 in Milwaukee or (608) 266-6961 in Madison. These services are provided to you at no cost.

I. BASIC CONCEPTS

Training reimbursements to employing contractors for new placements, rehires or promotions to apprentice of TrANS Program graduates will be made as follows:

1) **On-the-Job Training, Item ASP.1T0G, ASP 1 Graduate.** At the rate of $5.00 per hour on federal aid projects when TrANS graduates are initially hired, or seasonally rehired, as unskilled laborers or the equivalent.

   Eligibility and Duration: To the employing contractor, for up to 2000 hours from the point of initial hire as a TrANS program placement.

   Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that __8__ *(number)* TrANS Graduate(s) be utilized on this contract.

2) **On-the-Job Training, Item ASP.1T0A, ASP 1 Apprentice.** At the rate of $5.00 per hour on federal aid projects at the point when an employee who came out of the TrANS Program is subsequently entered into an apprenticeship contract in an underutilized skilled trade (this will include the Skilled Laborer Apprenticeship when that standard is implemented).

Eligibility and Duration: To the employing contractor, for the length of time the TrANS graduate is in apprentice status.

Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that __7__ *(number)* TrANS Apprentice(s) be utilized on this contract.

3) The maximum duration of reimbursement is two years as a TrANS graduate plus time in apprentice status.

4) If a TrANS program is not available in the contractor's area and another training program is utilized, payment of On-the-Job Training hours may be approved by the Wisconsin Department of Transportation (WisDOT) if the training program meets the established acceptance criteria. Only On-the-Job Training Hours accumulated after WisDOT approval will be reimbursed as specified under Items ASP.1T0G and ASP.1T0A. For more information, contact the Disadvantaged Business Enterprise Office at the phone numbers listed above.

5) WisDOT reserves the right to deny payments under items ASP.1T0G and ASP.1T0A if the contractor either fails to provide training or there is evidence of a lack of good faith in meeting the requirements of this training special provision.

I. RATIONALE AND SPECIAL NOTE

The $5.00 per hour now being paid for TrANS placements is intended to cover the duration of two years to allow for reaching entry-level laborer status. An additional incentive, the $5.00 rate, would promote movement into the underutilized skilled trades' apprenticeships and applies until the individual completes their apprenticeship. These incentives benefit TrANS candidates by giving them a better opportunity to enter a skilled trade; benefits contractors who will be assisted in meeting their EEO profiles and goals; and benefits the public who will see the program reinforce larger public-private employment reform in Wisconsin. The pool of TrANS graduates was created for the purpose of addressing underutilization in the skilled trades, an objective that is further reinforced by a parallel retention pilot program, known as the Companywide Reporting. *Whether or not reimbursement is involved, the WisDOT reassures contractors who are in the Companywide Program that TrANS placements still contribute toward fulfilling the new hire goal of 50% women and minorities.* Based on data administered by United States Department of Labor (US DOL), the highway skilled trades remain underutilized for women statewide (less than 6.9%); and for minorities in all counties (% varies by county).

NOTE: *Unless using other advancement strategies, contractors are encouraged to use some or all of this monetary incentive to offset the cut in hourly wages an individual may incur when entering an apprenticeship if the full general laborer hourly rate has been previously paid. No special accounting measures are required.*

II. IMPLEMENTATION

The implementation of ASP 1 is intended to cover only the amount of time it takes for underutilization to be resolved across the trades. This will be measured annually at the county and/or state levels using data administered by WisDWD in relation to goals set by the USDOL-

OFCCP. With appropriate state and federal approvals, we may also do some measurement at the company level.

It is the contractor's responsibility to note on their Certified Payrolls if their employee is a TrANS graduate or a TrANS apprentice. The District EEO Coordinators utilize the information on the Certified Payrolls to track the hours accumulated by TrANS Graduates and TrANS apprentices on WisDOT contracts. Payment under this ASP 1 is made based on the hours recorded off of the Certified Payrolls. Tracking may eventually include improved linkages with the WisDWD apprentice database, information from company and committee level sources.

TrANS is nondiscriminatory by regulation, and is a tool for optional use by contractors to address the underutilization of women and minorities as laborers and apprentices in our industry's skilled trades.

IV. *TRANS TRAINING*

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided to employees enrolled in apprenticeship and on-the-job training programs as follows:

The contractor shall provide on-the-job training aimed at developing full journey workers in the type of trade or job classifications involved. In the event the contractor subcontracts a portion of the contract work, the contractor shall determine how many, if any, of the trainees are to be trained by the subcontractor provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract.

Training and upgrading of minorities and women toward journey workers status is a primary objective of this training special provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority trainees and women trainees); to the extent such persons are available within a reasonable area of recruitment. The contractor will be given an opportunity and will be responsible for demonstrating the steps that they have taken in pursuance thereof, prior to determination as to whether the contractor is in compliance with this training special provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journey workers status or in which they have been employed as a journey worker. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the contractor's records should document the findings in each case.

V. APPRENTICESHIP TRAINING

The Federal Highway Administration's (FHWA) policy is to require full use of all available training and skill improvement opportunities to assure increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The FHWA On-the-Job Training (OJT) Program requires the State transportation agencies (STAs) to establish apprenticeships and training programs targeted to move women, minorities, and disadvantaged individuals into journey-level positions to ensure that a competent workforce is available to meet highway construction hiring needs, and to address the historical under-representation of members of these groups in highway construction skilled crafts.

The OJT Supportive Services (OJT/SS) Program was established in Title 23 Code of Federal Regulations (CFR), Part 230) to supplement the OJT program and support STA training programs by providing services to highway construction contractors and assistance to highway construction apprentices and trainees. The primary objectives of OJT/SS are:

(1) To increase the overall effectiveness of the State highway agencies' approved training programs.
(2) To seek other ways to increase the training opportunities for women, minorities, and disadvantaged individuals.

The STAs are responsible for establishing procedures, subject to the availability of Surface Transportation and Bridge Funds under 23 U.S.C. §140(b*)* (Nondiscrimination), for the provision of supportive services with respect to training programs approved under 23 CFR, Part 230(a*)* (Equal Employment Opportunity on Federal and Federal-aid Construction Contracts – including Supportive Services).

The contractor and subcontractor shall maintain records to demonstrate compliance with these apprenticeship requirements. Reasonable exemptions and modifications to and from any or all of these requirements will be determined by the Wisconsin Department of Transportation-Civil Rights Office. A request for an exemption or modification, with justification, shall be made in writing, addressed to WisDOT Civil Rights Office, 4802 Sheboygan Avenue, P.O. Box 7965, Rm. 451, Madison, WI 53707.

ADDITIONAL SPECIAL PROVISION 3

DISADVANTAGED BUSINESS ENTERPRISE [DBE] PROGRAM IMPLEMENTATION

1. Description

a. The federal DBE program requirements outlined in the Code of Federal Regulations at 49 CFR Part 26 apply to this Wisconsin Department of Transportation contract. WisDOT is a recipient of federal funds and this contract includes federal funds. United States Department of Transportation Federal DBE Program requires the following provisions:

(1) Pursuant to the federal DBE program regulation at 49 CFR Part 26, a contractor's failure to comply with any provision of the DBE regulations will be considered a material breach of contract. This is non-negotiable. If a contractor fails to carry out the DBE program and Title VI nondiscrimination requirements of its contracts, the following sanctions will be assessed depending upon the facts, reasoning, severity and remedial efforts of the contractor: termination of contract, withholding payment, assessment of monetary sanctions, assessment of liquidated damages and/or suspension/debarment proceedings that may result in the disqualification of the contractor from bidding for a designated period of time.

(2) The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains the federal fund recipient's [DOT] written consent. Unless [WisDOT] consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

b. The Wisconsin Department of Transportation [WisDOT] is committed to the compliant administration of the DBE Program. Each WisDOT Secretary affirms this commitment with his/her signed assurance. http://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/policy-statement.pdf

(1) The department encourages the contractor to assist and develop DBE firms to become fully knowledgeable contractors to successfully perform on its contracts. Under the contract, the contractor agrees to provide the assistance to participating DBE's in the following areas:
   i. Produce accurate and complete quotes.
   ii. Understand highway plans applicable to their work.
   iii. Understand specifications and contract requirements applicable to their work.
   iv. Understand contracting reporting requirements.

(2) Wisconsin DOT identifies the assigned DBE goal in its contract advertisements and posts the contract DBE goal on the cover of the bidding proposal. The contractor can meet the assigned, specified contract DBE goal by subcontracting work to a DBE or by procuring services or materials from a DBE. The department calculates the DBE participation as the dollar value of DBE participation included in the bid expressed as a percentage of the total contract bid amount.

(3) For more comprehensive information on the disadvantaged business program, visit the department's Civil Rights and Compliance Section website at: http://wisconsindot.gov/Pages/doing-bus/civil-rights/dbe/default.aspx

2. Definitions

Interpret these terms, used throughout this additional special provision, as follows:

a. **Bid Percentage:** The DBE percentage indicated in the bidding proposal at the time of bid.

b. **DBE:** A small business certified as disadvantaged business enterprise (DBE) under the federal DBE program and included on the Wisconsin UCP DBE Directory deemed ready, willing and able.

c. **DBE goal:** The amount of DBE participation expected in the contract as shown on the cover of the Highway Work Proposal.

d. **Manufacturer:** A firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract.

e. **Supplier:** A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment required under the contract are bought, kept in stock, and regularly sold or leased to the public.

f. **Voluntary Achievement:** The amount of DBE participation achieved and reported in the contract in excess of the assigned goal.

3. DBE Percentage Required at Bid Submission

Indicate the bid percentage (i.e. 0% through 100%) of DBE participation on the completed bidding proposal. For electronic submittals, show the percentage in the miscellaneous data folder, Item 3, DBE Percent. For paper submittals, show the percentage on the sheet included after the schedule of items. By submission of the bid, the bidder contractually commits to DBE participation at or above the bid percentage, or certifies that they have utilized comprehensive good faith efforts to solicit and utilize DBE firms to meet the DBE participation requirements of this contract proposal, and that the bid percentage is reflective of these good faith efforts. The bid percentage should demonstrate the efforts of the prime contractor prior to bid. If the bidder does not indicate the bid percentage of DBE participation on the completed bidding proposal, the department will consider the bid irregular and may reject the bid.

4. WisDOT Interpretation of Federal DBE Program Provision

Prime contractors must utilize the specific DBEs listed to perform the work and/or supply the materials for which each is listed on the Commitment to Subcontract to DBE Form [DT1506] and approved by WisDOT's DBE office to execute its contract. The approved Commitment to Subcontract to DBE Form [DT1506] becomes a contract document/record.

a. **Department's DBE Evaluation Process**
WisDOT evaluates DBE using the Commitment to Subcontract to DBE, payments to subcontractors and contract documentation. The prime contractor shall list the specific DBE certified firms and items of work s/he intends to use toward the fulfillment of the assigned DBE contract goal. The prime contractor receives DBE credit for payments made to the DBE firms performing the work listed on the approved Form DT1506.

b. **Documentation Submittal**
The contractor is to identify, by name, the DBE firms whose utilization is intended to satisfy this provision, the items of work of the DBE subcontract or supply agreement and the dollar value of those items of work by completing the Commitment to Subcontract to DBE Form [DT1506]. Effective January 1, 2017, the contractor will be required to submit the documentation within 5 business days after bid opening. All necessary supporting documentation including Attachment 'A' forms and/or Good Faith Efforts Form

[DT1202] must be submitted no later than 2 business days from contractor's initial submission of the DT 1506. The contractor must provide a signed Attachment 'A' form to the DBE office within the time limit in order to receive authorization for contract execution; the DBE office reserves the right accept alternate documentation in lieu of the signed form in extenuating circumstances. Documentation must be submitted to the DBE Office by email at DBE_Alert@dot.wi.gov (DBE_Alert@dot.wi.gov) or by postal mail ATTN: DBE Office, PO Box 7965, Madison, WI 53707-7965.

(1) **Bidder Meets DBE Goal**
If the bidder indicates that the contract DBE goal is met, after award and before execution, the department will evaluate the Commitment to Subcontract to DBE Form DT1506 and attachment A(s) to verify the actual DBE percentage calculation. If the DBE commitment is verified, the contract is eligible for execution with respect to the DBE commitment.

(2) **Bidder Does Not Meet DBE Goal**

i. If the bidder indicates a bid percentage on the Commitment to Subcontract to DBE Form [DT1506] that does not meet the contract DBE goal, the bidder must submit a Good Faith Efforts Form [DT1202] and supporting documentation. After award and before execution, the department will evaluate the bidder's DBE commitment and consider the bidder's good faith efforts submission.

ii. The department will evaluate the bidder's good faith effort request and notify the bidder of one of the following:

(a) If the department grants a good faith efforts, the bid is eligible for contract execution with respect to DBE commitment.

(b) If the department rejects the good faith efforts request, the department may declare the bid ineligible for execution. The department will provide a written explanation of why the good faith efforts request was rejected. The bidder may appeal the department's rejection as allowed under 7 a. & b.

c. **Bidder Fails to Submit Documentation**
If the contractor fails to furnish the Commitment to Subcontract to DBE Form [DT1506] within the specified time, the department may cancel the award. Delay in fulfilling this requirement is not a cause for extension of the contract time and shall not be used as a tool to delay execution.

5. Department's Criteria for Good Faith Effort

Appendix A of 49 CFR Part 26, is the guiding regulation concerning good faith efforts. However, the federal regulations do not explicitly define "good faith" but states that bidder must actively and aggressively attempt to meet the goal. The federal regulations are general and do not include every factor or effort that can be considered. As a result, each state must establish its own processes and consider the factors established in its own practices to create a process for making a determination of adequate good faith. WisDOT evaluates good faith on a contract basis just as each contract award is evaluated individually.

The department will only approve a contractor's good faith efforts if the bidder has made the effort, given the relevant circumstances under the contract that a bidder actively and aggressively seeking to meet the goal would make. The department will evaluate the bidder's good faith effort to determine whether a good faith efforts will be granted. The bidder must demonstrate, on the DT1202 that they have aggressively solicited DBE participation in an attempt to meet the contract DBE goal and attaining the stated DBE goal is not feasible.

a. The department, in conjunction with industry stakeholders, has developed the following guidance for contractor good faith effort. The guidance and the attached appendices provide a framework for the actions required by all parties in the processing and evaluation of bidder's total efforts to achieve the project specific DBE goal prior to the bid letting date.

b. Prime Contractors should:

(1) Document all efforts and decisions made toward achieving the DBE goal on the contract. The bidder should use the Civil Rights & Compliance System [CRCS] and related WisDOT- approved DBE outreach tools, including the Bid Express Small Business Network, to foster DBE participation on all applicable contracts.

(2) Prime contractors may request assistance with DBE outreach and follow-up by contacting the department's DBE Support Services Office by phone or email request at least 14 days prior to the bid letting date. Requesting assistance with outreach is not a decisive factor in the review Good faith effort evaluation. Phone numbers are 414-438-4584 and/or 414-659-0487; Fax: 414-438-5392; E-mail: DOTDBESupportServices@dot.wi.gov.

(3) Request quotes by identifying potential items to subcontract and solicit. Prime contractors are strongly encouraged to include in their initial contacts a single page including a detailed list of items for which they are accepting quotes, by project, within a letting. *See attached sample entitled "Sample Contractor Solicitation Letter" in Appendix A*. Prime contractors should also indicate a willingness to accept quotes in areas they are planning to perform themselves, as required by federal rules. In some cases, it might be appropriate to use DBE's to do work in a prime contractor's area of specialization.

i. Solicit quotes from certified DBE firms who match 'possible items to subcontract' using all reasonable and available means. Additionally, forward copies of solicitations highlighting the work areas for which you are seeking quotes to DOTDBESupportServices@dot.wi.gov.

ii. SBN is the preferred outreach tool. https://www.bidx.com/wi/main. Other acceptable means include postal mail, email, fax, phone call.

(a) Primes must ask DBE firms for a response in their solicitations. See *Sample Contractors Solicitation Letter* in Appendix. This letter can be included as an attachment to the SBN sub-quote request.

(b) Solicit quotes at least 10 calendar days prior to the letting date, at least two Fridays before the letting, to allow DBE firms sufficient time to respond. Prime contractors should contact DBE firms early, asking if they need help organizing their quote, assistance confirming equipment needs, or other assistance supporting their submission of a competitive quote for their services.

(c) Second solicitation should take place within 5 calendar days. Email and SBN are the preferred delivery of the follow-up solicitation.

iii. Upon request, provide interested DBE firms with adequate information about plans, specifications and the requirements of the contract by letter, information session, email, phone call and/or referral.

iv. When potential exists, the contractor should advise interested DBE firms on how to obtain bonding, line of credit or insurance if requested.

v. Document DBE firm's interest in quoting by taking appropriate steps to follow up initial solicitation with:

(a) Email to all prospective DBE firms in relevant work areas.

(b) Phone call log to DBE firms who express interest via written response or call.

(c) Fax/letter confirmation

(d) Signed copy of Bid Express SBN Record of Subcontractor Outreach Effort.

c. Evaluate DBE quotes Documentation is critical if a prime does not utilize the DBE firm's quote for any reason.

(1) Evaluate DBE firm's capability to perform 'possible items to subcontract' using legitimate reasons, including but not limited to, ***a discussion with the DBE firm*** regarding its capabilities prior to the bid letting. If lack of capacity is your reason for not utilizing the DBE quote, you are required to contact the DBE by phone and email regarding their ability to perform the work indicated in the UCP directory listed as their work area by NAICS code. Only the work area and/or NAICS code listed in the UCP directory can be counted toward DBE credit. Documentation of the conversation is required.

(2) In striving to meet an assigned DBE contract goal, prime contractors are expected to use DBE quotes that are responsive and reasonable. This includes DBE quotes that are not the low quote.

(3) **Special Circumstance** - Evaluation of DBE quotes with tied bid items. “Tied quotes are the condition in which a subcontractor submits quotes including multiple areas of expertise across multiple work areas noting that the items and price are tied. Typically this type of quoting represents a cost saving to the prime but is not clearly stated as a discount; tied quotes are usually presented as ‘all or none’ quote to the prime.” When non-DBE subcontractors submit tied bid items in their quotes to the prime, the DBE firms’ quote may seem not competitive. In such a case, the following steps are taken in comparing the relevant quotes. These are qualitative examples.

i. Compare bid items common to both quotes, noting the reasonableness in the price comparison.
ii. Review quotes from other firms for the bid items not quoted by the DBE firm to see if combining both can provide the same competitive advantage that the tied bid items offered.

d. Immediately after notification of contract award, the prime submits all **'Commitment to Subcontract'** forms to the DBE Office. Prime contractor has 5 days to submit the completed form for the DBE firms it intends to use on the contract for DBE credit. If the goal is not met in full, the prime contractor must provide the following information along with WisDOT form DT1202: Certificate of Good Faith Efforts.

(1) The names, addresses, e-mail addresses, telephone numbers of DBE's contacted. The dates of both initial and follow-up contact.
(2) A description of information provided to the DBE's regarding the plans, specifications, and estimated quantities for portions of the work to be performed by that DBE.
(3) Photocopies or electronic copies of all written solicitations to DBE's. A printed copy of SBN solicitation is acceptable.
(4) Documentation of each quote received from a DBE and, if rejected, the reason for that rejection.
(5) Bidder attendance at any pre-solicitation or pre-bid meetings the department held to inform DBE's of participation opportunities available on the project.

The prime contractor must obtain written consent from the DBE Office to change or replace any DBE firm listed on the approved Commitment to Subcontract to DBE Form [DT1506]. If the prime contractor utilizes another contractor, including the use of its own workforce, to perform the work assigned to a DBE on the approved DT1506, the prime contractor will not be entitled to payment for that work. Any changes to DBE after the approval of the DT1506 must be reviewed and approved by the DBE office prior to the change.

6. Use of Joint Checks

The *use of joint checks is allowable if it is a commonly recognized business practice in* the material industry. A joint check is defined as a two-party check between a DBE, a prime contractor and the regular dealer of materials supplier who is neither the prime nor an affiliate of the prime. Typically, the prime contractor issues one check as payor to the DBE subcontractor and to the supplier jointly (to guarantee payment to the supplier) as payment for the material/supplies used by the DBE in cases where the prime has submitted the DBE and material for DBE credit. The DBE subcontractor gains the opportunity to establish a direct contracting relationship with the supplier to potentially facilitate a business rapport that results in a line of credit or increased partnering opportunities.

The cost of material and supplies purchased by the DBE is part of the value of work performed by the DBE to be counted toward the goal. To receive credit, the DBE must be responsible for negotiating price, determining quality and quantity, ordering the materials, and installing (where applicable) and "paying for the material itself." See 49 CFR 26.55(c)(1).

The approval to use joint checks constitutes a commitment to provide further information to WisDOT, upon request by staff. WisDOT will allow the use of joint checks when the following conditions are met:

a. The Prime must request permission to use joint checks from the DBE Office by submitting the Application to Use Joint Checks.
   (1) Request should be made when the DBE Commitment form or Request to Sublet is submitted; the request will not be considered if submitted after the DBE Subcontractor starts its work.
   (2) Approval/Permission must be granted prior to the issuance of any joint checks.
   (3) The payment schedule for the supplier must be presented to the DBE office before the first check is issued.
   (4) The joint check for supplies must be strictly for the cost of supplies.

b. DBE subcontractor is responsible to furnish and/or install the material/work item. The DBE subcontractor shall not be an 'extra participant' in the transaction; the DBE's role in the transaction cannot be limited solely to signing the check(s) to release payment to the material supplier. At a minimum, the DBE subcontractor's tasks should include the following.
   (1) The DBE subcontractor (not the prime/payor) negotiates the quantities, price and delivery of materials;
   (2) The DBE subcontractor consents to sign/release the check to the supplier by signing the Application to Use Joint Checks after establishing the conditions and documentation of payment within the subcontract terms or in a separate written document.

c. The Prime contractor/payor acts solely as a guarantor,
   (1) The prime agrees to furnish the check used for the payment of materials/supplies under the contract.
   (2) The prime contractor/payor cannot require the subcontractor to use a specific supplier or the prime contractors negotiated unit price.

7. Bidder's Appeal Process

a. A bidder can appeal the department's decision to deny the bidder's good faith effort submission. The bidder must provide written documentation refuting the specific reasons for rejection as stated in the department's rejection notice. The bidder may meet in person with the department if so requested. Failure to appeal within 7 calendar days after receiving the department's written denial notice of a good faith effort evaluation constitutes a forfeiture of the bidder's right of appeal. A contract cannot be executed without documentation that the DBE provisions have been fulfilled.

b. The department will appoint a representative, who did not participate in the original determination, to assess the bidder's appeal. The department will issue a written decision within 5 calendar days after the bidder presents all written and oral testimony. In that written decision, the department will explain the basis for finding that the bidder did or did not meet the contract DBE goal or make an adequate good faith effort to meet the contract DBE goal. The department's decision is final. If the department finds that the bidder did not meet the contract DBE goal or did not make adequate efforts to meet the DBE goal, the department may declare the bid ineligible for execution.

8. Department's Criteria for DBE Participation

Directory of DBE firms

a. The only resource for DBE certified firms certified in the state of Wisconsin is the Wisconsin Unified Certification Program [UCP] DBE List. Wisconsin Department of Transportation maintains a current list of certified DBE firms titled Wisconsin UCP DBE Directory on the website at:
   http://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/dbe-ucp-directory.xlsx

b. The DBE office is also available to assist at 414-438-4583 or 608-267-3849.

9. Counting DBE Participation

Assessing DBE Work

a. The department will only count the DBE usage towards the contract DBE goal if the DBE firm is certified as a DBE by one of the unified certification program agencies. If a firm becomes DBE certified before entering into a subcontract, the department may consider that DBE usage towards the contract goal. The department only counts the value of the work a DBE actually performs towards the DBE goal. The department assesses the DBE work as follows:

b. The department counts work performed by the DBE's own resources. The department includes the cost of materials and supplies the DBE obtains for the work. The department also includes the cost of equipment the DBE leases for the work. The department will not include the cost of materials, supplies, or equipment the DBE purchases or leases from the prime contractor or its affiliate, except the department will count non-project specific leases the DBE has in place before the work is advertised.

c. The department counts fees and commissions the DBE charges for providing a bona fide professional, technical, consultant, or managerial services. The department also counts fees and commissions the DBE charges for providing bonds or insurance. The department will only count costs the engineer deems reasonable based on experience or prevailing market rates.

d. If a DBE subcontracts work, the department counts the value of the subcontracted work only if the DBE's subcontractor is also a DBE.

e. The contractor shall maintain records and may be required to furnish periodic reports documenting its performance under this item.

f. It is the prime contractor’s responsibility to determine whether the work that is committed and/or contracted to a DBE certified firm can be counted for DBE credit by referencing the work type and NAICS code listed for the DBE firm on the Wisconsin UCP DBE Directory.

g. It is the prime contractor’s responsibility to assess the DBE firm’s ability to perform the work for which s/he is committing/contracting the DBE to do. Note that the department encourages the prime contractor to assist and develop DBE firms to become fully knowledgeable contractors to successfully perform on its contracts.

10. Commercially Useful Function

a. Commercially useful function is evaluated after the contract has been executed, while the DBE certified firm is performing its work items. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved.

b. The department uses Form DT1011: DBE Commercially Useful Function Review and Certification to evaluate whether the DBE is performing a commercially useful function. WisDOT counts expenditures of a DBE toward the DBE goal only if the DBE is performing a commercially useful function on that contract.

c. A DBE is performing a commercially useful function if the following conditions are met:
   (1) For contract work, the DBE is responsible for executing a distinct portion of the contract work and it is carrying out its responsibilities by actually performing, managing, and supervising that work.
   (2) For materials and supplies, the DBE is responsible for negotiating price, determining quality and quantity, ordering, and paying for those materials and supplies.

11. Credit Evaluation for Trucking

All bidders are expected to adhere to the department's current trucking policy posted on the HCCI website at http://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/trucking-utilization-policy.pdf

12. Credit Evaluation for Manufacturers, Suppliers, Brokers

The department will calculate the amount of DBE credit awarded to a prime using a DBE firm for the provisions of materials and supplies on a contract-by-contract basis. The department will count the material and supplies that a DBE provides under the contract for DBE credit based on whether the DBE is a manufacturer, supplier or broker. Generally, DBE crediting measures and evaluates the DBE owner's role, responsibility and contribution to the transaction: maximum DBE credit when the DBE manufactures materials or supplies; DBE credit decreases when the DBE solely supplies material and minimal credit is allotted when the DBE's role is administrative or transactional.

It is the bidder's responsibility to find out if the DBE is considered a supplier or a manufacturer before listing them on Commitment to Subcontract to DBE form DT1506.

a. Manufacturers
   (1) A manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.
   (2) If the materials or supplies are obtained from a DBE manufacturer, count **100%** percent of the cost of the materials or supplies toward DBE goals.

b. Regular Dealers of Material and/or Supplies
   (1) A regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
   (2) If the materials or supplies are purchased from a DBE regular dealer, count **60%** percent of the cost of the materials or supplies toward DBE goals.
   (3) At a minimum, a regular dealer must meet the following criteria to be counted for DBE credit:
      i. The DBE firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
      ii. The DBE firm must both own and operate distribution equipment for the product--bulk items such as petroleum products, steel, cement, gravel, stone, or asphalt. If some of the distribution equipment is leased, the lease agreement must accompany the DBE Commitment form for evaluation of the dealer's control before the DBE office approves the DBE credit.

c. Brokers, Transaction Expediters, Packagers, Manufacturers Representatives
   (1) No portion of the cost of the materials, supplies, services themselves will count for DBE credit; however, WisDOT will evaluate the fees or commissions charged when a prime purchases materials, supplies or services from a DBE certified firm which is neither a manufacturer nor a regular dealer, namely: brokers, packagers, manufacturers' representatives or other persons who arrange or expedite transactions.
   (2) Brokerage fees have historically been calculated as **10%** of the purchase amount.
   (3) WisDOT may count the amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site.
   (4) The evaluation will review the contract need for the item/service, review the sub-contract or invoice for the item/service, compare the fees customarily allowed for similar services to determine whether they are reasonable.

When DBE suppliers are contracted, additional documentation must accompany the DT1506 and Attachment 'A' forms. An invoice or bill-of-sale that includes the company names of the bidder and the DBE supplier and documentation of the calculations used as the basis for the purchase agreement, subcontract or invoice. *WisDOT recognizes that the amount on the Attachment 'A' form may be more or less than the amount on the invoice*. Please respond to the following questions and submit with your DBE Commitment Form.

1. What is the product or material?
2. Is this item in the prime's inventory or was the item purchased when contract was awarded?
3. Which contract line items were referenced to develop this quote?
4. What is the amount of material or product used on the project?

13. Credit Evaluation for DBE Primes

Wisconsin DOT calculates DBE credit based on the amount and type of work performed by DBE certified firms. If the prime contractor is a DBE certified firm, the department will only count the work that DBE prime contractor performs with its own forces for DBE credit. We will also calculate DBE credit for the work performed by any other DBE certified subcontractor, DBE certified supplier, DBE certified manufacturer on that contract in that DBE's approved work areas/NAICS code. Crediting for manufacturers and suppliers is calculated consistent with paragraph 12 of this document and 49 CFR Part 26.

14. Joint Venture

If a DBE performs as a participant in a joint venture, the department will only count that portion of the total dollar value of the contract equal to that portion of the work that the DBE performs with its own forces for DBE credit.

15. Mentor Protégé

a. If a DBE performs as a participant in a mentor protégé agreement, the department will count for credit the portion of the work performed by the DBE protégé firm.

b. DBE credit will be evaluated and confirmed by the DBE Office for any contracts on which the mentor protégé team identifies itself to the DBE Office as a current participant of the Mentor Protégé Program.

c. Refer to WisDOT's Mentor Protégé guidelines for guidance on the number of contracts and amount of DBE credit that can be counted on any WisDOT project.

16. DBE Replacement or Termination

Contractual Requirement

The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains written consent from the Department's DBE Office. If the Department does not provide consent to replace or terminate a DBE firm, the prime contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

Contractor Considerations

a. A prime contractor cannot terminate and/or replace a DBE subcontractor listed on the approved Commitment to Subcontract to DBE Form [DT1506] without prior written consent from the DBE Office. This includes, but is not limited to, instances in which a prime contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

b. If a prime contractor feels it is necessary to replace or terminate a DBE firm that has been approved for DBE credit toward its contract, s/he will be required to provide reasons and documentation to support why the prime cannot fulfill the contractual commitment that it made to the Department regarding the DBE utilization.

c. Prime contractor is required to make affirmative efforts to find another DBE subcontractor to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the assigned DBE contract goal.

d. In circumstances when a DBE subcontractor fails to complete its work on the contract for any reason or is terminated from a contract, the prime contractor is expected to make affirmative efforts to maintain its commitment to the assigned DBE goal.

e. The DBE firm should communicate with the prime contractor regarding its schedule and capacity in the context of the contract. If the DBE anticipates that it cannot fulfill its subcontract, s/he shall advise the prime contractor and suggest a DBE that may replace their services or provide written consent to be released from its subcontract.

(1) Before the prime contractor can request to terminate or substitute a DBE firm; s/he must:
   i. Make every effort to fulfill the DBE commitment by working with the listed DBE to ensure that they are fully knowledgeable of your expectations for successful performance on the contract. Document these efforts in writing.
   ii. If those efforts fail, provide written notice to the DBE subcontractor of your *intent to* request to terminate and/or replace the firm including the reason(s) you want to pursue this action.
   iii. Copy the DBE Office on all correspondence related to changing a DBE firm who has been approved for DBE credit on a contract including the preparation and coordination efforts with the DBE on the contract.
   iv. Clearly state the amount of time the DBE firm has to remedy and/or respond to your notice of intent to replace/terminate their firm from the contract. The DBE shall be allowed five days to respond, in writing. **EXCEPTION:** The prime contractor must provide a verifiable reason for a response period shorter than five days. For example a WisDOT project manager must verify that waiting 5 days for a DBE performing traffic control work to respond would affect the public safety.
   v. The DBE subcontractor must forward a written response to the prime contractor and copy the DBE Office. The written response must outline why it objects to the proposed termination of its subcontract and list the reasons that WisDOT should not approve the request for their firm to be replaced or removed from the contract.

The Request to Replace or Terminate a DBE

The prime contractor must provide a written request to replace or terminate a DBE firm that has been approved for DBE credit on a WisDOT contract. The written request can be an email or printed document delivered by email or fax; at minimum, the request must contain the following:

1. Contract ID number.
2. Wisconsin DOT Contract Project Manager name and contact information.
3. DBE name and work type and/or NAICS code.
4. Contract's progress schedule.
5. Reason(s) for requesting that the DBE be replaced or terminated.
6. Attach/include all communication with the DBE to deploy/address/resolve work completion,

WisDOT will review your request and any supporting documentation that you submit to evaluate whether the circumstance and the reasons constitute a good cause for replacing or terminating the DBE that was approved for DBE credit on that contract.

Examples of Good Causes to Replace a DBE according to the federal DBE program guidelines {49 CFR part 26.53}

- The listed DBE subcontractor fails or refuses to execute a written contract.
- The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor.
- The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements.
- The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness.
- The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1,200 or applicable state law.
- You have determined that the listed DBE subcontractor is not a responsible contractor.
- The listed DBE subcontractor voluntarily withdraws from the project and provides to you written notice of its withdrawal.
- The listed DBE is ineligible to receive DBE credit for the type of work required.
- A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.

Evaluation and Response to the Request
If WisDOT determines that your reasons comply with the good cause standards; the DBE office will send the prime contractor and the WisDOT project manager an email stating that we concur with the reasons and approve the replacement or termination.

If WisDOT determines that your reasons do not comply with the good cause standards of the federal DBE program, the DBE Office will send the prime contractor an email that includes *the requirement* to utilize the committed DBE, *remedial actions* to support the completion of the contractual commitment, a list of available WisDOT support services *and administrative remedies that may be invoked* for failure to comply with federal DBE guidelines for DBE replacement.

The Wisconsin Department of transportation contact for all actions related to replacing a DBE is the DBE Program Chief and/or the DBE Program Engineer which can be reached at DBE_Alert@dot.wi.gov or by calling 608-267-3849.

17. DBE Utilization beyond the approved DBE Commitment Form DT1506

If the Prime/subcontractor increases the scope of work for a participating DBE or adds a DBE subcontractor that was not on the approved Form DT1506 at any time after contract award, s/he should follow these steps so that the participation can be accurately credited toward the DBE goal.

a. Send an email to the DBE Engineer at DBE_Alert@dot.wi.gov describing the work to be performed by the new DBE including the proposed schedule or duration, DBE name and contact information. You may also call the DBE Engineer at 414-659-0487 to notify him of the change verbally.
If the scope change added work for a participating DBE; list the date and reason for the scope change.

b. Forward a complete, signed Attachment 'A' form to the DBE Office at DBE_Alert@dot.wi.gov. A complete Attachment A includes DBE contact information, signature, subcontract value and proper description of the work areas to be performed by the DBE.
The DBE office will confirm the DBE participation and revise the DT1506 based on the email/discussion and attach the new/revised Attachment A to the Contract record/documentation.

18. Contract Modifications

When additional opportunity is available by contract modifications, the Prime Contractor shall utilize DBE Subcontractors that were committed to equal work items, in the original contract.

19. Payment

Costs for conforming to this Additional Special Provision (ASP) and any associated DBE requirements are incidental to the contract.

APPENDIX A
Sample Contractor Solicitation Letter Page 1
This sample is provided as a guide not a requirement

GFW SAMPLE MEMORANDUM

TO:	DBE FIRMS
FROM:	POTENTIAL PRIME CONTRACTOR OR MAJOR SUBCONTRACTOR
SUBJECT:	**REQUEST FOR DBE QUOTES** **LET DATE & TIME**
DATE:	MONTH DAY YEAR
CC:	DBE OFFICE ENGINEER

Our company is considering bidding on the projects indicated on the next page, as a prime and/or a subcontractor for the Wisconsin Department of Transportation Month- date -year Letting. Page 2 lists the projects and work items that we may subcontract for this letting. We are interested in obtaining subcontractor quotes for these projects and work categories. Also note that we are willing to accept quotes in areas we may be planning to perform ourselves as required by federal rules.

Please review page 2, respond whether you plan to quote, highlight the projects and work items you are interested in performing and return it via fax or email within 3 days. Plans, specifications and addenda are available through WisDOT at the DBE Support Services office or at the Highway Construction Contract Information (HCCI) site at http://roadwaystandards.dot.wi.gov/hcci/

Your quote should include all of the costs required to complete the items you propose to perform including labor, equipment, material, and related bonding or insurance. The quote should note items that you are DBE certified to perform, tied items, and any special terms. Page 2, with the indicated projects and items you plan to quote, should be used as a cover sheet for your quote.

Please make every effort to have your quotes into our office by time deadline the prior to the letting date. ***Make sure the correct letting date, project ID and proposal number, unit price and extension are included in your quote.*** We prefer quotes be sent via SBN but prime's alternatives are acceptable. Our office hours are include hours and days. Please call our office as soon as possible prior to the letting if you need information/clarification to prepare your quote at contact number.

If you wish to discuss or evaluate your quote in more detail, contact us after the contract is awarded. Status of the contract can be checked at WisDOT's HCCI site at http://roadwaystandards.dot.wi.gov/hcci/

All questions should be directed to:

Project Manager, John Doe,
Phone: (000) 123-4567
Email: Joe@joetheplumber.com
Fax: (000) 123- 4657

Sample Contractor Solicitation Letter Page 2

This sample is provided as a guide not a requirement

REQUEST FOR QUOTATION

Prime's Name: _____

Letting Date: _____

Project ID: _____

Please check all that apply

- ☐ Yes, we will be quoting on the projects and items listed below
- ☐ No, we are not interested in quoting on the letting or its items referenced below
- ☐ Please take our name off your monthly DBE contact list
- ☐ We have questions about quoting this letting. Please have someone contact me at this number

Prime Contractor 's Contact Person	DBE Contractor Contact Person
Phone:	Phone
Fax:	Fax
Email:	Email

Please circle the jobs and items you will be quoting below

Proposal No.	1	2	3	4	5	6	7
County							

WORK DESCRIPTION:

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

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

We prefer quotes be sent via SBN but prime's preferred alternatives are acceptable.

If there are further questions please direct them to the prime contractor's contact person at phone number.

APPENDIX B
BEST PRACTICES FOR PRIME CONTRACTOR & DBE SUBCONTRACTOR GOOD FAITH EFFORT

This list is not a set of requirements; it is a list of potential strategies

Primes

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

DBE

- DBE firms should contact primes as soon as possible with questions regarding their quotes or bid; seven days prior is optimal.
- Continually check for contract addendums on the HCCI website through the Thursday prior to letting to stay abreast of changes.
- Review the status of contracts on the HCCI website reviewing the 'apparent low bidder' list, and bid tabs at a minimum.
- Prepare a portfolio or list of related projects and prime and supplier references; be sure to note transportation-related projects of similar size and scope, firm expertise and staffing.
- Participate in DBE office assessment programs.
- Participate on advisory and mega-project committees.
- Sign up to receive the DBE Contracting Update.
- Consider membership in relevant industry or contractor organizations.
- Active participation is a must. Quote as many projects as you can reasonably work on; quoting the primes and bidding as a prime with the department are the only ways to get work.

APPENDIX C
Types of Efforts considered in determining GFE
This list represents concepts being assessed; analysis requires additional steps

1. Whether the contractor attended any pre-solicitation or pre-bid meetings that were scheduled by WisDOT to inform DBEs of contracting and subcontracting opportunities.
2. Whether the contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract was being solicited, in sufficient time to allow the DBEs to participate effectively.
3. Whether the contractor followed up initial solicitations of interest by contacting DBEs to determine if the DBEs were interested; returned the phone calls of interested DBE firms.
4. Whether the contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goal.
5. Whether the contractor provided interested DBEs with adequate information about the plans, specifications and requirements of the contract.
6. Whether the contractor negotiated in good faith with interested DBEs, not rejected DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities.
7. Whether the contractor made efforts to assist interested DBEs in being more competitive.
8. Whether the contractor effectively used the services of available minority community organizations: minority contractors groups, local, state, and Federal minority business assistance offices, and other organizations that provide assistance to small businesses and DBE firms.
9. Whether Prime used CRCS to identify DBE who specialize in relevant work areas.
10. Whether the contractor used available resources including contacting the DBE office, using WisDOT's website
11. Whether the contractor returned calls of firms expressing interest in a timely manner.

APPENDIX D
Good Faith Effort Evaluation Guidance
Excerpt from Appendix A of 49 CFR Part 26

APPENDIX A TO PART 26 -- GUIDANCE CONCERNING GOOD FAITH EFFORTS

I. When, as a recipient, you establish a contract goal on a DOT assisted contract, a bidder must, in order to be responsible and/or responsive, make good faith efforts to meet the goal. The bidder can meet this requirement in either of two ways. First, the bidder can meet the goal, documenting commitments for participation by DBE firms sufficient for this purpose. Second, even if it doesn't meet the goal, the bidder can document adequate good faith efforts. This means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful.

II. In any situation in which you have established a contract goal, part 26 requires you to use the good faith efforts mechanism of this part. As a recipient, it is up to you to make a fair and reasonable judgment whether a bidder that did not meet the goal made adequate good faith efforts. It is important for you to consider the quality, quantity, and intensity of the different kinds of efforts that the bidder has made. The efforts employed by the bidder should be those that one could reasonably expect a bidder to take if the bidder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE contract goal. Mere pro forma efforts are not good faith efforts to meet the DBE contract requirements. We emphasize, however, that your determination concerning the sufficiency of the firm's good faith efforts is a judgment call: meeting quantitative formulas is not required.

III. The Department also strongly cautions you against requiring that a bidder meet a contract goal (i.e., obtain a specified amount of DBE participation) in order to be awarded a contract, even though the bidder makes an adequate good faith efforts showing. This rule specifically prohibits you from ignoring bona fide good faith efforts.

IV. The following is a list of types of actions which you should consider as part of the bidder's good faith efforts to obtain DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

A. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

B. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

C. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

D. (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

(2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a

contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

E. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non solicitation of bids in the contractor's efforts to meet the project goal.

F. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

G. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

H. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

V. In determining whether a bidder has made good faith efforts, you may take into account the performance of other bidders in meeting the contract. For example, when the apparent successful bidder fails to meet the contract goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts, the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the goal, but meets or exceeds the average DBE participation obtained by other bidders, you may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made good faith efforts.

Appendix E
Small Business Network [SBN] Overview

The Small Business Network is a part of the Bid Express® service that was created to ensure that prime bidders have a centralized online location to find subs - including small and disadvantaged business enterprises (DBEs). It is available for prime bidders to use as part of their Basic Service subscription.
Within the Small Business Network, **Prime Contractors** can:

1. Easily select proposals, work types and items:
    a. After adding applicable work types, select items that you wish to quote. Enter the sub-quote quantities and add comments, if desired. Adding or removing items and work types can be done quickly. If needed, you can save the sub-quote for completion at a later time.

2. Create sub-quotes for the subcontracting community:
    a. Create sub-quotes with ease using the intuitive sub-quote creator. In seven short steps, you can rapidly create a custom sub-quote directed to all subcontractors that bid on the applicable work types. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.
    b. Create a sub-quote to send to subcontractors or suppliers that lists the items in a proposal that you want quoted
    c. Create an unlimited number of sub-quotes for items you want quoted, and optionally mark them as a DBE-preferred request.
    d. Add attachments to sub-quotes.

3. View sub-quote requests & responses:
    a. After logging into the Bid Express service, you can quickly review all of your sub-quote requests and all unsolicited sub-quote requests from subcontractors. To simplify the Small Business Network home screen, sub-quote requests can be hidden with one click if they are not applicable.
    b. View or receive unsolicited sub-quotes that subcontractors have posted, complete with terms, conditions and pricing.

4. View Record of Subcontractor Outreach Effort:
    a. For each sub-quote produced, a *Record of Subcontractor Outreach Effort* is generated that shows the response statistics for a particular sub-quote. If accepted by the letting agency, this report may serve as proof of a "Good Faith" effort in reaching out to the DBE community.
    b. Easily locate pre-qualified and certified small and disadvantaged businesses.
    c. Advertise to small and disadvantaged businesses more efficiently and cost effectively.
    d. Document your interactions with subs/DBEs by producing an Outreach Report (may be accepted as proof of DBE outreach at the discretion of each agency).

The Small Business Network is a part of the Bid Express® service that was created to ensure that small businesses have a centralized area to access information about upcoming projects. It can help small businesses learn more about opportunities, compete more effectively, network with other contractors and subcontractors, and win more jobs.

1. View and reply to sub-quote requests from primes:
    a. After logging into the Bid Express service, you can quickly review all incoming sub-quote requests and all unsolicited sub-quotes created by your company. Receive notifications by selected work type. To simplify on the Small Business Network home screen, sub-quote requests can be filtered by work types relevant to your interests, or hidden with one click if they are not applicable.

2. Select items when responding to sub-quote requests from primes:
    a. You have the freedom to choose and price any number of items when responding to a sub-quote request. Quantities can be modified, and per-item comments are also available.
    b. View requests for sub-quotes for work that primes have posted for projects they are bidding, add your pricing, terms, and conditions, and submit completed sub-quotes to the requesting primes.
    c. Add attachments to a sub-quote.

3. Create and send unsolicited sub-quotes to specific contractors:
    a. Create unsolicited sub-quotes with ease using the intuitive sub-quote creator. In eight short steps, you can rapidly create a custom sub-quote directed at any number of specific vendors of your choosing. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.

4. Easily select and price items for unsolicited sub-quotes:
    a. After adding applicable work types, select items that you wish to quote. The extended price calculates automatically, cutting out costly calculation errors. Comments can be provided on a per-item basis as well.
    b. Create an unsolicited sub-quote that lists the items from a proposal that you want to quote, include pricing, terms and conditions, and send it to selected prime/plan holder.
    c. Add attachments to a sub-quote.
    d. Add unsolicited work items to sub-quotes that you are responding to.

5. Easy Access to Valuable Information
    a. Receive a confirmation that your sub-quote was opened by a prime.
    b. View Bid Tab Analysis data from past bids, including the high, average and low prices of items.
    c. View important notices and publications from DOT targeted to small and disadvantaged businesses.

6. Accessing Small Business Network for WisDOT contracting opportunities
    a. If you are a contractor not yet subscribing to the Bid Express service, go to **www.bidx.com** and select "Order Bid Express." The Small Business Network is a part of the Bid Express Basic Service.
    b. DBE firms can request a Bid Express Small Business Network Account at no cost by calling 414-438-4588.

ADDITIONAL SPECIAL PROVISION 4

Payment to First-Tier Subcontractors

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

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

Payment to Lower-Tier Subcontractors

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

Release of Routine Retainage

After granting substantial completion the department may reduce the routine retainage withheld from the prime contractor to 75 percent of the original total amount retained.

When the Department sends the semi-final estimate the department may reduce the routine retainage withheld from the prime contractor to 10 percent of the original total amount retained.

Within 30 calendar days of receiving the semi-final estimate from the department, submit written certification that subcontractors at all tiers are paid in full for acceptably completed work and that no routine retainage is being withheld. The department will pay the prime contractor in full and reduce the routine retainage withheld from the prime contractor to zero when the department approves the final estimate.

This special provision does not limit the right of the department, prime contractor, or subcontractors at any tier to withhold payment for work not acceptably completed or work subject to an unresolved contract dispute.

ADDITIONAL SPECIAL PROVISIONS 5

Fuel Cost Adjustment

A Description

Fuel Cost Adjustments will be applied to partial and final payments for work items categorized in Section B as a payment to the contractor or a credit to the department. ASP-5 shall not apply to any force account work.

B Categories of Work Items

The following items and Fuel Usage Factors shall be used to determine Fuel Cost Adjustments:

(1) Earthwork.		Unit	Gal. Fuel Per Unit
205.0100	Excavation Common	CY	0.23
205.0200	Excavation Rock	CY	0.39
205.0400	Excavation Marsh	CY	0.29
208.0100	Borrow	CY	0.23
208.1100	Select Borrow	CY	0.23
209.1100	Backfill Granular Grade 1	CY	0.23
209.1500	Backfill Granular Grade 1	Ton	0.115
209.2100	Backfill Granular Grade 2	CY	0.23
209.2500	Backfill Granular Grade 2	Ton	0.115
350.0102	Subbase	CY	0.28
350.0104	Subbase	Ton	0.14
350.0115	Subbase 6-Inch	SY	0.05
350.0120	Subbase 7-Inch	SY	0.05
350.0125	Subbase 8-Inch	SY	0.06
350.0130	Subbase 9-Inch	SY	0.07
350.0135	Subbase 10-Inch	SY	0.08
350.0140	Subbase 11-Inch	SY	0.09
350.0145	Subbase 12-Inch	SY	0.09

C Fuel Index

A Current Fuel Index (CFI) in dollars per gallon will be established by the Department of Transportation for each month. The CFI will be the price of No. 2 fuel oil, as reported in U.S. Oil Week, using the first issue dated that month. The CFI will be the average of prices quoted for Green Bay, Madison, Milwaukee and Minneapolis.

The base Fuel Index (BFI) for this contract is $1.50 per gallon.

D Computing the Fuel Cost Adjustment

The engineer will compute the ratio CFI/BFI each month. If the ratio falls between 0.85 and 1.15, inclusive, no fuel adjustment will be made for that month. If the ratio is less than 0.85 a credit to the department will be computed. If the ratio is greater than 1.15 additional payment to the contractor will be computed. Credit or additional payment will be computed as follows:

(1) The engineer will estimate the quantity of work done in that month under each of the contract items categorized in Section B.

(2) The engineer will compute the gallons of fuel used in that month for each of the contract items categorized in Section B by applying the unit fuel usage factors shown in Section B.

(3) The engineer will summarize the total gallons (Q) of fuel used in that month for the items categorized in Section B.

(4) The engineer will determine the Fuel Cost Adjustment credit or payment from the following formula:

$$FA = \left(\frac{CFI}{BFI} - 1 \right) x\ Q\ x\ BFI$$

(plus is payment to contractor; minus is credit to the department)

Where	FA	=	Fuel Cost Adjustment (plus or minus)
	CFI	=	Current Fuel Index
	BFI	=	Base Fuel Index
	Q	=	Monthly total gallons of fuel

E Payment

A Fuel Cost Adjustment credit to the department will be deducted as a dollar amount each month from any sums due to the contractor. A Fuel Cost Adjustment payment to the contractor will be made as a dollar amount each month.

Upon completion of the work under the contract, any difference between the estimated quantities and the final quantities will be determined. An average CFI, calculated by averaging the CFI for all months that fuel cost adjustment was applied, will be applied to the quantity differences. The average CFI shall be applied in accordance with the procedure set forth in Section D.

ADDITIONAL SPECIAL PROVISION 6
ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

109.1.1.2 Bid Items Designated as Pay Plan Quantity

Replace the entire text with the following effective with the June 2017 letting:

109.1.1.2.1 General

(1) If the schedule of items designates a bid item with a **P** in the item description, the department will use the plan quantity, the approximate quantity the schedule of items shows, for payment unless one or both of the following occurs:

- Scope changes regardless of the magnitude of the revised work.
- Errors and omissions that affect the plan quantity.

109.1.1.2.2 Scope Changes

(1) For engineer-directed quantity increases, the engineer will issue a contract change order for extra work, establish the cost of the added work as specified in 109.4, and measure the revised work. For engineer-directed quantity decreases, the engineer will issue a contract change order to adjust the plan quantity under the designated bid item.

109.1.1.2.3 Errors and Omissions

(1) The engineer may issue a change order under 105.4(5) to adjust the plan quantity for an error or omission and may revise the contract unit price as specified in 109.4.

305.2.1 General

Replace paragraph two with the following effective with the June 2017 letting:

(2) Where the contract specifies or allows 1 1/4-inch base, do not place reclaimed asphalt, reprocessed material, or blended materials below virgin aggregate materials unless the contract specifies or the engineer allows in writing.

310.2 Materials

Replace paragraph three with the following effective with the June 2017 letting:

(3) Do not place reclaimed asphalt, reprocessed material, or blended materials below open-graded base unless the contract specifies or the engineer allows in writing.

320.3.1.1 Consolidating, Finishing, and Curing

Replace paragraph two with the following effective with the June 2017 letting:

(2) Cure concrete base as specified for concrete pavement in 415.3.12. Use wax-based curing compound conforming to 501.2.9.

390.3.2 Concrete Patching

Replace paragraph two with the following effective with the June 2017 letting:

(2) Cure exposed patches as specified for concrete pavement in 415.3.12. Use wax-based curing compound conforming to 501.2.9. Protect as specified for concrete pavement in 415.3.14. Open to traffic as specified for concrete base in 320.3.

390.3.4 Special High Early Strength Concrete Patching

Replace the entire text with the following effective with the June 2017 letting:

(1) Construct as specified for special high early strength repairs under 416.3.8 except as follows:

- The contractor may delay removal for up to 14 calendar days after cutting the existing pavement.
- Open to traffic as specified for concrete base in 320.3.

(2) Cure exposed patches as specified for concrete pavement in 415.3.12. Use wax-based curing compound conforming to 501.2.9. Do not apply excess curing compound that could cause slippery pavement under traffic.

440.3.5.2 Corrective Actions for Localized Roughness

Replace paragraph two with the following effective with the September 2016 letting:

(2) The engineer will not direct corrective action or assess a pay reduction for an area of localized roughness without physically riding that work. The engineer will not direct corrective action on bridges without authorization from the department's bureau of structures.

450.3.1.1.4 Recording Truck Loads

Replace the entire text with the following effective with the December 2016 letting:

(1) If not using automatic batch recording, install a digital recorder as part of the platform truck or storage silo scales. Ensure that the recorder can produce a printed digital record of at least the gross or net weights of delivery trucks. Provide gross, tare, net weights, load count, and the cumulative tonnage; the date, time, ticket number, WisDOT project ID, and mix 250 number; and the mix type including the traffic, binder, and mix designation codes specified in 460.3.1. Ensure that scales cannot be manually manipulated during the printing process. Provide an interlock to prevent printing until the scales come to rest. Size the scales and recorder to accurately weigh the heaviest loaded trucks or tractor-trailers hauling asphaltic mixture. Ensure that recorded weights are accurate to within 0.1 percent of the nominal capacity of the scale.

(2) Ensure that tickets identify additives not included in the mix design submittal. Indicate on the ticket if the mixture will be placed under a cold weather paving plan and identify the warm mix additive and dosage rate required under 450.3.2.1.2.2.

455.3.2.1 General

Replace paragraph one with the following effective with the December 2016 letting:

(1) Apply tack coat only when the air temperature is 32 F or more unless the engineer approves otherwise in writing. Before applying tack coat ensure that the surface is reasonably free of loose dirt, dust, or other foreign matter. Do not apply to surfaces with standing water. Do not apply if weather or surface conditions are unfavorable or before impending rains.

460.2.1 General

Replace the entire text with the following effective with the December 2016 letting:

(1) Furnish a homogeneous mixture of coarse aggregate, fine aggregate, mineral filler if required, SMA stabilizer if required, recycled material if used, warm mix asphalt additive or process if used, and asphaltic material. Design mixtures conforming to table 460-1 and table 460-2 to 4.0% air voids to establish the aggregate structure.

(2) Determine the target JMF asphalt binder content for production from the mix design data corresponding to 3.0% air voids (97% Gmm) target at the design the number of gyrations (Ndes). Add liquid asphalt to achieve the required air voids at Ndes.

(3) For SMA, determine the target JMF asphalt binder content for production from the mix design data corresponding to 4.0% air voids (96% Gmm) target at Ndes.

460.2.8.2.1.5 Control Limits

Replace paragraph one with the following effective with the December 2016 letting:

(1) Conform to the following control limits for the JMF and warning limits based on a running average of the last 4 data points:

ITEM	JMF LIMITS	WARNING LIMITS
Percent passing given sieve:		
37.5-mm	+/- 6.0	+/- 4.5
25.0-mm	+/- 6.0	+/- 4.5
19.0-mm	+/- 5.5	+/- 4.0
12.5-mm	+/- 5.5	+/- 4.0
9.5-mm	+/- 5.5	+/- 4.0
2.36-mm	+/- 5.0	+/- 4.0
75-µm	+/- 2.0	+/- 1.5
Asphaltic content in percent	- 0.3	- 0.2
Air voids in percent[1]	+1.3/-1.0	+1.0/-0.7
VMA in percent[2]	- 0.5	- 0.2

[1] For SMA, JMF limits are +/-1.3 and warning limits are +/-1.0.

[2] VMA limits based on minimum requirement for mix design nominal maximum aggregate size in table 460-1.

460.2.8.2.1.6 Job Mix Formula Adjustment

Replace paragraph one with the following effective with the December 2016 letting:

(1) The contractor may request adjustment of the JMF according to CMM 8-36.6.13.1. Have an HMA technician certified at a level appropriate for process control and troubleshooting or mix design submit a written JMF adjustment request. Ensure that the resulting JMF is within specified master gradation bands. The department will have a certified Hot Mix Asphalt, Mix Design, Report Submittals technician review the proposed adjustment and, if acceptable, issue a revised JMF.

460.2.8.3.1.6 Acceptable Verification Parameters

Replace paragraph one with the following effective with the December 2016 letting:

(1) The engineer will provide test results to the contractor within 2 mixture-production days after obtaining the sample. The quality of the product is acceptably verified if it meets the following limits:

- Va is within a range of 2.0 to 4.3 percent. For SMA, Va is within a range of 2.7 to 5.3 percent.
- VMA is within minus 0.5 of the minimum requirement for the mix design nominal maximum aggregate size.

460.3.3.1 Minimum Required Density

Replace paragraph one with the following effective with the December 2016 letting:

(1) Compact all layers of HMA mixture to the density table 460-3 shows for the applicable mixture, location, and layer.

TABLE 460-3 MINIMUM REQUIRED DENSITY[1]

LOCATION	LAYER	PERCENT OF TARGET MAXIMUM DENSITY		
		MIXTURE TYPE		
		LT and MT	HT	SMA[5]
TRAFFIC LANES[2]	LOWER	93.0[3]	93.0[4]	___
	UPPER	93.0	93.0	___
SIDE ROADS, CROSSOVERS, TURN LANES, & RAMPS	LOWER	93.0[3]	93.0[4]	___
	UPPER	93.0	93.0	___
SHOULDERS & APPURTENANCES	LOWER	91.0	91.0	___
	UPPER	92.0	92.0	___

[1] The table values are for average lot density. If any individual density test result falls more than 3.0 percent below the minimum required target maximum density, the engineer may investigate the acceptability of that material.

[2] Includes parking lanes as determined by the engineer.

[3] Minimum reduced by 2.0 percent for a lower layer constructed directly on crushed aggregate or recycled base courses.

[4] Minimum reduced by 1.0 percent for a lower layer constructed directly on crushed aggregate or recycled base courses.

[5] The minimum required densities for SMA mixtures are determined according to CMM 8-15.

460.5.2.1 General

Replace paragraph six with the following effective with the December 2016 letting:

(6) If during a QV dispute resolution investigation the department discovers mixture with 1.5 > Va > 5.0 or VMA more than 1.0 below the minimum allowed in table 460-1, and the engineer allows that mixture to remain in place, the department will pay for the quantity of affected material at 50 percent of the contract price.

460.5.2.3 Incentive for HMA Pavement Density

Replace paragraph one with the following effective with the December 2016 letting:

(1) If the lot density is greater than the minimum specified in table 460-3 and all individual air voids test results for that mixture placed during the same day are within 2.5 - 4.0 percent, the department will adjust pay for that lot as follows:

INCENTIVE PAY ADJUSTMENT FOR HMA PAVEMENT DENSITY[1]

PERCENT LOT DENSITY ABOVE SPECIFIED MINIMUM	PAY ADJUSTMENT PER TON[2]
From -0.4 to 1.0 inclusive	$0
From 1.1 to 1.8 inclusive	$0.40
More than 1.8	$0.80

[1] SMA pavements are not eligible for density incentive.

[2] The department will prorate the pay adjustment for a partial lot.

501.2.6 Fly Ash

Replace the entire subsection with the following effective with the December 2016 letting:

501.2.6.1 General

(1) Fly ash is defined as a finely divided residue resulting from the combustion of coal in a base loaded electric generating plant, transported from the boiler by flue gases, and later collected, generally by precipitators. Use fly ash in concrete manufactured by facilities and processes known to provide satisfactory material.

(2) Test fly ash using a recognized laboratory, as defined in 501.2.2(1), starting at least 30 days before its proposed use, and continuing at ASTM-required frequencies as the work progresses. The manufacturer shall test the chemical and physical properties listed in tables 1 and 2 of ASTM C618 at the frequencies and by the test methods prescribed in ASTM C311.

(3) Use only one source of fly ash for a bid item of work under the contract, unless the engineer directs or allows otherwise in writing.

(4) Prequalify any proposed fly ash source as follows: The contractor shall obtain a copy of the certified report of tests or analysis made by a qualified independent laboratory, recognized by the department under 501.2.2, showing full and complete compliance with the above specification from the fly ash manufacturer and furnish it to the engineer. Provide this report to the engineer at least 14 calendar days before using the fly ash.

(5) The manufacturer shall retain test records for at least 5 years after completing the work, and provide these records upon request.

501.2.6.2 Class C Ash

(1) Conform to ASTM C618 class C except limit the loss on ignition to a maximum of 2 percent.

501.2.6.3 Class F Ash

(2) Furnish a class F fly ash from a source listed on the department's approved product list, and conform to ASTM C618 class F except limit the loss on ignition to a maximum of 2 percent.

502.3.7.8 Floors

Replace paragraph sixteen with the following effective with the September 2016 letting:

(16) The finished bridge floor shall conform to the surface test specified in 415.3.10. The engineer will not direct corrective grinding without authorization from the department’s bureau of structures.

503.3.2.1.1 Tolerances

Increase the "length of beam" max tolerance for prestressed concrete I-type girders from 3/4" to 1 1/2" effective with the December 2016 letting:

PRESTRESSED CONCRETE I-TYPE GIRDERS

Length of beam..... +/- 1/8" per 10', up to a max of +/- 1 1/2"

Errata

Make the following corrections to the standard specifications:

104.2.2.5 Change Orders for Eliminated Work

Correct errata by changing "eliminated bid items" to "eliminated work."

104.2.2.5 Change Orders for Eliminated Work

(1) The department has the right to partially eliminate or completely eliminate work the project engineer finds to be unnecessary for the project. If the project engineer partially eliminates or completely eliminates work, the project engineer will issue a contract change order for a fair and equitable amount as specified in 109.5.

105.4 Coordination of the Contract Documents

Correct errata to change "apparent error or omission" to just "error or omission."

(5) Neither the contractor nor the department may take advantage of an error or omission in the contract. Notify the engineer immediately as specified in 104.3 upon discovering an error or omission. The engineer will offer an interpretation and make the necessary corrections.

105.13.4 Content of Claim

Correct errata to change references to the "Blue Book" rates to reference "EquipmentWatch" rates.

(1) Include the following 5 items in the claim.

1. A concise description of the claim.
2. A clear contractual basis for the claim. This should include reference to 104.2 on revisions to the contract and as appropriate, specific reference to contract language regarding the bid items in question.
3. Other facts the contractor relies on to support the claim.
4. A concise statement of the circumstances surrounding the claim and reasons why the department should pay the claim. Explain how the claimed work is a change to the contract work.
5. A complete breakdown of the costs used to compile the claim. Include copies of all EquipmentWatch equipment rental rate sheets used, with the applicable number highlighted.

108.13 Terminating the Contract for Convenience of the Department

Correct errata by changing "eliminated bid items" to "eliminated work."

(4) If the department orders termination of the contract for convenience, the department will pay for all completed work as of that date at the contract price. The department will pay for partially completed work at agreed prices or by force account methods specified in 109.4.5 provided, however, that payment does not exceed the contract price for the bid item under which the work was performed. The department will pay for work eliminated by the termination only to the extent provided under 109.5. The department will pay for new work, if any, at agreed prices or paid for by force account methods specified in 109.4.5.

109.2 Scope of Payment

Correct errata to clarify that work under the contract is included in payment unless specifically excluded.

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

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

109.4.5.5.1 General

Correct errata to change references to the "Blue Book" rates to reference "EquipmentWatch" rates.

(2) The department will pay for use of contractor-owned equipment the engineer approves for force account work at published rates. The department will pay the contractor expense rates, as modified in 109.4.5.5, given in EquipmentWatch Cost Recovery (formerly Rental Rate Blue Book) . Base all rates on revisions effective on January 1 for all equipment used in that calendar year.

http://equipmentwatch.com/estimator/

109.4.5.5.2 Hourly Equipment Expense Rates (Without Operators)

Correct errata to change references to the "Blue Book" rates to reference "EquipmentWatch" rates.

(1) The contractor shall determine, and the department will confirm, hourly equipment expense rates as follows:

HEER = [RAF x ARA x (R/176)] + HOC

Where:

HEER = Hourly equipment expense rate.
RAF = EquipmentWatch regional adjustment factor.
ARA = EquipmentWatch age rate adjustment factor.
R = Current EquipmentWatch monthly rate.
HOC = EquipmentWatch estimated hourly operating cost.

(2) The EquipmentWatch hourly operating cost represents all costs of equipment operation, including fuel and oil, lubrication, field repairs, tires, expendable parts, and supplies.

109.4.5.5.3 Hourly Equipment Stand-By Rate

Correct errata to change references to the "Blue Book" rates to reference "EquipmentWatch" rates.

(1) For equipment that is in operational condition and is standing-by with the engineer's approval, the contractor shall determine, and the department will confirm, the hourly stand-by rate as follows:

HSBR = RAF x ARA x (R/176) x (1/2)

Where:

HSBR = Hourly stand-by rate.

RAF = EquipmentWatch regional adjustment factor.

ARA = EquipmentWatch age rate adjustment factor.

R = Current EquipmentWatch monthly rate.

(2) The department will limit payment for stand-by to 10 hours or less per day up to 40 hours per week. The department will not pay the contractor for equipment that is inoperable due to breakdown. The department will not pay for idle equipment if the contractor suspends work or if the contractor is maintaining or repairing the equipment.

109.4.5.5.4 Hourly Outside-Rented Equipment Rate

Correct errata to change references to the "Blue Book" rates to reference "EquipmentWatch" rates.

(1) If the contractor rents or leases equipment from a third party for force account work, the contractor shall determine, and the department will confirm, the hourly outside-rented equipment rate as follows:

HORER = HRI + HOC

Where:

HORER = Hourly outside-rented equipment rate

HRI = Hourly rental invoice costs prorated for the actual number of hours that rented equipment is operated solely on force account work

HOC = EquipmentWatch hourly operating cost.

109.5 Eliminated Work

Correct errata by changing "eliminated bid items" to "eliminated work."

109.5 Eliminated Work

(1) If the department partially eliminates or completely eliminates work as specified in 104.2.2.5, the department will pay contractor costs incurred due to that elimination. The department will pay a fair and equitable amount covering all costs incurred as of the date the work was deleted. Immediately submit a certified statement covering all money expended for the eliminated work.

(2) The department will execute a contract change order for the following costs related to eliminated work:

1. Preparation expenses defined as follows:
   - If preparation for the eliminated work has no value to other contract work, the department will reimburse the contractor in full for that preparation.
   - If preparation for the eliminated work is distributed over other contract work, the department will prorate reimbursement based on the value of the eliminated work compared to the total value of associated contract work.
2. All restocking and cancellation charges.
3. A markup for applicable overhead and other indirect costs paid as 7 percent of the contract price of the work actually eliminated.

(3) If the department partially eliminates or completely eliminates work, the department may pay for, and take ownership of, materials or supplies the contractor has already purchased.

201.3 Construction

Correct errata by changing the link from 201.3(14) to 201.3(15).

(16) Dispose of clearing and grubbing debris before proceeding with grading operations. If the contractor intends to burn debris but cannot secure burning permits on schedule, do not delay removing clearing debris from areas affected by other operations. While waiting to secure burning permits, pile clearing and grubbing debris beyond the limits affected by other work. Do not leave elm debris beyond the limits specified in 201.3(15).

204.3.2.2.1 General

Correct errata by removing the reference to 490 which was deleted effective with the 2017 spec.

(1) Under the Removing Pavement bid item, remove concrete pavements, concrete alleys, concrete driveways, or rigid base including all surfaces or other pavements superimposed on them.

440.1 Description

Correct errata to replace "150 feet of the points of curvature" with " entry and exit curves".

(2) Profile the final mainline riding surfaces greater than 1500 feet in continuous length. Include bridges, bridge approaches, and railroad crossings in the calculation of IRI. Exclude roundabouts and pavements within their entry and exit curves from the calculation of IRI.

460.2.8.2.1.3.1 Contracts with 5000 Tons of Mixture or Greater

Correct 460.2.8.2.1.3.1 (6) to change the reference from ASTM D4867 to AASHTO T283.

(6) Also conduct field tensile strength ratio tests according to AASHTO T283 on mixtures requiring an antistripping additive. Test each full 50,000 ton production increment, or fraction of an increment, after the first 5000 tons of production. Perform required increment testing in the first week of production of that increment. If field tensile strength ratio values are either below the spec limit or less than the mixture design JMF percentage value by 20 or more, notify the engineer. The engineer and contractor will jointly determine a corrective action.

506.2.8.3 Expansion Bearing Assemblies

Correct errata to update ASTMs and change the specified melting point from 622 +/- 3 to 621 +/- 18 F.

(6) Use PTFE materials that are virgin polytetrafluoroethylene fluorocarbon resin, unfilled conforming to ASTM D4894. The finished materials shall exhibit the following physical properties:

REQUIREMENT	TEST METHOD	UNFILLED VALUE
Hardness at 78 F	ASTM D2240 Shore "D"	50-65
Tensile strength, psi	ASTM D1708	2800 Min.
Elongation, percent	ASTM D1708	200 Min.
Specific gravity	ASTM D792	2.16 +/- 0.03
Melting point	ASTM D4591	621 +/- 18 F

514.3.2 Adjusting Floor Drains

Correct errata by clarifying priming and painting requirements for adjusted floor drains.

(1) If the plans show or contract specifies, provide new drain frames and inserts. Fabricate, blast clean, and apply a shop coat of primer. Touch up areas of damaged primer after installation with a department-approved organic zinc-rich primer.

657.2.2.1.1 General

Correct errata by eliminating the reference to department provided arms in the last sentence.

(1) Furnish shop drawings as specified in 506.3.2, except submit 5 copies with the materials list. Ensure the drawings contain sufficient detail to allow satisfactory review and show the outside diameters of the pole at the butt, top, and splice locations the plans show. Show the width, depth, length, and thickness of all material, and list pertinent ASTM specification designations and metal alloy designations together with the tensile strength of metallic members. Provide tightening procedures for arm-to-pole connections on the shop drawings.

657.2.2.1.4 Poles Designed Under Legacy Standards

Correct errata by deleting the entire subsection to eliminate redundant language.

657.2.2.2 Trombone Arms

Correct errata by changing the reference from 657.2.2.1.3 to 657.2.2.1.2.

(1) Design aluminum trombone arms as specified in 657.2.2.1.2 based on the completed maximum loading configuration the plans show. Furnish shop drawings conforming to 657.2.2.1.1 that show the width, depth, length, and thickness of all members. Also list the ASTM alloy designation and strength of each aluminum member on the shop drawings.

715.3.1.2.2 Lots by Lane-Feet

Correct errata ride spec reference from "the special provisions" to "440.3.4.2."

(1) The contractor may designate slip-formed pavement lots and sublots conforming to the following:

- Lots and sublots are one paving pass wide and may include one or more travel lanes, integrally placed shoulders, integrally placed ancillary concrete, and pavement gaps regardless of mix design and placement method.
- Sublots are 1000 feet long for single-lane and 500 feet long for two-lane paving. Align sublot limits with ride segment limits defined in 440.3.4.2. Adjust terminal sublot lengths to match the project length or, for staged construction, the stage length. Ensure that sublot limits match for adjacent paving passes. Pavement gaps do not affect the location of sublot limits.
- Create lots by grouping 4 to 8 adjacent sublots matching lots created for adjacent paving passes.

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 Paul Ndon at (414) 438-4584 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 contact Paul Ndon. 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

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

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

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

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

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

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

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

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

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

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

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Non-discrimination Provisions

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

a. Withholding payments to the contractor under the contract until the contractor complies; and/or
b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

SEPTEMBER 2002

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Employment Practices" and "Equal Opportunity Clause" set forth in the Required Contract Provisions, FHWA 1273.

2. The goals and timetables for minority and female participation expressed in percentage terms for the contractor's aggregate work force in each trade, on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade:

County	%	County	%	County	%
Adams	1.7	Iowa	1.7	Polk	2.2
Ashland	1.2	Iron	1.2	Portage	0.6
Barron	0.6	Jackson	0.6	Price	0.6
Bayfield	1.2	Jefferson	7.0	Racine	8.4
Brown	1.3	Juneau	0.6	Richland	1.7
Buffalo	0.6	Kenosha	3.0	Rock	3.1
Burnett	2.2	Kewaunee	1.0	Rusk	0.6
Calumet	0.9	La Crosse	0.9	St. Croix	2.9
Chippewa	0.5	Lafayette	0.5	Sauk	1.7
Clark	0.6	Langlade	0.6	Sawyer	0.6
Columbia	1.7	Lincoln	0.6	Shawano	1.0
Crawford	0.5	Manitowoc	1.0	Sheboygan	7.0
Dane	2.2	Marathon	0.6	Taylor	0.6
Dodge	7.0	Marinette	1.0	Trempealeau	0.6
Door	1.0	Marquette	1.7	Vernon	0.6
Douglas	1.0	Menominee	1.0	Vilas	0.6
Dunn	0.6	Milwaukee	8.0	Walworth	7.0
Eau Claire	0.5	Monroe	0.6	Washburn	0.6
Florence	1.0	Oconto	1.0	Washington	8.0
Fond du Lac	1.0	Oneida	0.6	Waukesha	8.0
Forest	1.0	Outagamie	0.9	Waupaca	1.0
Grant	0.5	Ozaukee	8.0	Waushara	1.0
Green	1.7	Pepin	0.6	Winnebago	0.9
Green Lake	1.0	Pierce	2.2	Wood	0.6

Goals for female participation for each trade: 6.9%

These goals are applicable to all the contractor's construction work, (whether or not it is federal or federally assisted), performed in the covered area. If the contractor performs construction work in the geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The contractor's compliance with the Executive Order and the Regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the Regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

   As referred to in this section, the Director means:

   Director
   Office of Federal Contract Compliance Programs
   Ruess Federal Plaza
   310 W. Wisconsin Ave., Suite 1115
   Milwaukee, WI 53202

   The "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

4. As used in this notice, and in the contract resulting from solicitation, the "covered area" is the county(ies) in Wisconsin to which this proposal applies.

APRIL 2013

ADDITIONAL FEDERAL-AID PROVISIONS

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidding collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

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 February 2016 letting

Cargo Preference Act Requirement

All Federal-aid projects shall comply with 46 CFR 381.7 (a) – (b) as follows:

(a) *Agreement Clauses.* "Use of United States-flag vessels:"

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590."

(b) *Contractor and Subcontractor Clauses.* "Use of United States-flag vessels: The contractor agrees—"

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

Effective with February 2017 Letting

WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF TRANSPORTATION AND SYSTEM DEVELOPMENT

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

I. Prevailing Wage Rates, Hours of Labor, and Payment of Wages
II. Payroll Requirements
III. Postings at the Site of the Work
IV. Wage Rate Distribution
V. Additional Classifications

I. PREVAILING WAGE RATES, HOURS OF LABOR AND PAYMENT OF WAGES

The U.S. Department of Labor (Davis-Bacon Minimum Wage Rates) attached hereto and made a part hereof furnishes the prevailing wage rates pursuant to Section 84.062 of the Wisconsin Statutes. These wage rates are the minimum required to be paid to the 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 84.062, Stats. Apprentices shall be paid at rates not less than those prescribed in their apprenticeship contract.

While the wage rates shown are the minimum rates required by the contract to be paid during its life, this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

Pursuant to Section 16.856 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 base rate of pay. All work on Saturday, Sunday and the following holidays is to be paid at time and a half:

January 1
Last Monday in May
July 4
First Monday in September
Fourth Thursday in November
December 25
The day before if January 1, July 4 or December 25 falls on a Saturday, and

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, euclid 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.

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 84.062 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 and accessible place at the site of work:

a. "NOTICE TO EMPLOYEES," which provides information required to be posted by the provisions of Section 84.062 of the Wisconsin Statutes.

b. A copy of the U.S. Department of Labor (Davis-Bacon, Minimum Wage Rates).

c. A copy of the contractor's Equal Employment Opportunity Policy.

All required documents shall be posted by the first day of work and be accurate and complete. Postings must be readable, in an area where they will be noticed, and maintained until the last day of work.

IV. WAGE RATE REDISTRIBUTION

A contractor or subcontractor performing work subject to a Davis-Bacon wage determination may discharge its minimum wage obligations for the payment of both straight time wages and fringe benefits by (1) paying both in cash, (2) making payments or incurring costs for bona fide fringe benefits, or (3) by a combination thereof. Thus, under the Davis-Bacon a contractor may offset an amount of monetary wages paid in excess of the minimum wage required under the determination to satisfy its fringe benefit obligations. *See* 40 USC 3142(d) and 29 CFR 5.31.

V. ADDITIONAL CLASSIFICATIONS

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5(a)(1)(ii)). The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination.

The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

a. The work to be performed by the classification requested is not performed by a classification in the wage determination; and

b. The classification is utilized in the area by the construction industry; and

c. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

General Decision Number: WI170008 06/23/2017 WI8

Superseded General Decision Number: WI20160008

State: Wisconsin

Construction Types: Heavy (Sewer and Water Line and Tunnel)

Counties: Wisconsin Statewide.

TUNNEL, SEWER & WATER LINE CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2017
1	02/03/2017
2	02/10/2017
3	02/24/2017
4	03/17/2017
5	03/31/2017
6	04/14/2017
7	04/21/2017
8	04/28/2017
9	06/02/2017
10	06/23/2017

BRWI0001-002 06/01/2016

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 31.84	20.95

BRWI0002-002 06/01/2016

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.04	19.70

BRWI0002-005 06/01/2016

ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 35.07	20.51

BRWI0003-002 06/01/2016

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.22	20.57

BRWI0004-002 06/01/2016

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.59	21.49

BRWI0006-002 06/01/2016

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.04	19.75

BRWI0007-002 06/01/2016

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.53	20.95

BRWI0008-002 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.98	20.62

BRWI0009-001 06/01/2016

GREEN LAKE, MARQUETTE, OUTAGAMIE, SHAWANO, WAUPACA, WASHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.22	20.57

BRWI0011-002 06/01/2016

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.22	20.57

BRWI0013-002 06/01/2016

DANE, GRANT, IOWA, AND RICHLAND COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.49	20.99

BRWI0019-002 06/01/2016

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 31.98	20.81

BRWI0021-002 06/01/2015

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.58	16.65

BRWI0034-002 06/01/2015

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.86	17.22

CARP0087-001 05/01/2016

BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys 35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES

	Rates	Fringes
Carpenter & Piledrivermen	$ 36.85	18.39

CARP0252-002 06/01/2016

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE (except area bordering Michigan State Line), FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER		
CARPENTER	$ 33.56	18.00
MILLWRIGHT	$ 35.08	18.35
PILEDRIVER	$ 34.12	18.00

CARP0252-010 06/01/2016

ASHLAND COUNTY

	Rates	Fringes
Carpenters		
Carpenter	$ 33.56	18.00
Millwright	$ 35.08	18.35
Pile Driver	$ 34.12	18.00

CARP0264-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WAUKESHA, AND WASHINGTON COUNTIES

	Rates	Fringes
CARPENTER	$ 35.78	22.11

CARP0361-004 05/01/2016

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 34.57	18.16

CARP2337-001 06/01/2016

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON

ZONE B: KENOSHA & RACINE

	Rates	Fringes
PILEDRIVERMAN		
Zone A	$ 31.03	22.69
Zone B	$ 31.03	22.69

CARP2337-003 06/01/2016

	Rates	Fringes
MILLWRIGHT		
Zone A	$ 29.98	21.53
Zone B	$ 29.98	21.53

ZONE DEFINITIONS

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON COUNTIES

ZONE B: KENOSHA & RACINE COUNTIES

ELEC0014-002 05/30/2016

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Maryville, Colby, Unity, Sherman, Fremont, Lynn & Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST CROIX, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes
Electricians:	$ 32.00	19.28

ELEC0127-002 06/01/2016

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 37.71	30%+10.02

ELEC0158-002 05/30/2016

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE (East of a ine 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES

	Rates	Fringes
Electricians:	$ 30.50	29.50% + 9.57

ELEC0159-003 05/30/2016

COLUMBIA, DANE, DODGE (Area West of Hwy 26, except Chester and Emmet Townships), GREEN, LAKE (except Townships of Berlin, Seneca, and St. Marie), IOWA, MARQUETTE (except Townships of Neshkoka, Crystal Lake, Newton, and Springfield), and SAUK COUNTIES

	Rates	Fringes
Electricians:	$ 36.50	20.39

ELEC0219-004 06/01/2016

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

	Rates	Fringes
Electricians:		
Electrical contracts over $180,000	$ 32.38	18.63
Electrical contracts under $180,000	$ 30.18	18.42

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* ELEC0242-005 06/04/2017

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 35.90	25.64

ELEC0388-002 05/30/2016

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Beecher, Dunbar, Goodman & Pembine), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Aniwa and Hutchins), VILAS AND WOOD COUNTIES

	Rates	Fringes
Electricians:	$ 30.69	26.00% +10.05

ELEC0430-002 06/01/2016

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 36.07	21.84

ELEC0494-005 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 36.01	24.00

ELEC0494-006 06/01/2017

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 32.06	21.88

ELEC0577-003 05/30/2016

CALUMET (except Township of New Holstein), GREEN LAKE (N. part including Townships of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Townships of Crystal Lake, Neshkoro, Newton, and Springfield), OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
Electricians:	$ 30.68	17.28

ELEC0890-003 06/01/2016

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 32.45	26.10% + $10.56

ENGI0139-003 06/01/2016

REMAINING COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 38.72	20.60
Group 2	$ 37.47	20.60
Group 3	$ 36.27	20.60
Group 4	$ 35.74	20.60

Group 5.....$ 33.67 20.60
Group 6.....$ 33.04 20.60

HAZARDOUS WASTE PREMIUMS:
EPA Level "A" Protection: $3.00 per hour
EPA Level "B" Protection: $2.00 per hour
EPA Level "C" Protection: $1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of over 100 tons; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.

GROUP 2: Backhoes (Excavators) weighing 130,00 lbs and over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver

GROUP 3: Backhoes (Excavators) weighing under 130,000 lbs; Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs; over 46 meter Concrete Pump.

GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and Paver Operator; Screed-Milling Machine; Roller over 5 tons; Concrete pumps 46 meter and under; Grout Pumps; Rotec type machine; Hydro Blaster, 10,000 psi and over; Rotary Drill Operator; Percussion Drilling Machine; Air Track Drill with or without integral hammer; Blaster; Boring Machine (vertical or horizontal); Side Boom; Trencher, wheel type or chain type having 8 inch or larger bucket; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists; Mechanic and Welder; Off Road Material Haulers.

GROUP 5: Tractor, Bulldozer, or Endloader (under 40 hp); Tampers -Compactors, riding type; Stump Chipper, large; Roller, Rubber Tire; Backfiller; Trencher, chain type (bucket under 8 inch); Concrete Auto Breaker, large; Concrete Finishing Machine (road type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers, small; Brooms and Sweeeprs; Lift Slab Machine; Roller under 5 tons; Industrial Locomotives; Fireman (Pile Drivers and Derricks); Pumps (well points); Hoists, automatic; A-Frames and Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial Tractor mounted equipment; Post Hole Digger; Auger (vertical and horizontal); Skid Steer Loader with or without attachments; Robotic Tool Carrier with or without attachments; Power Pack Vibratory/Ultra Sound Driver and Extractor; Fireman (Asphalt Plants); Screed Operator; Stone Crushers and Screening Plants; Air, Electric, Hydraulic Jacks (Slip Form); Prestress Machines; Air Compressor, 400 CFM or over; Refrigeration Plant/Freese Machine; Boiler Operators (temporary heat); Forklifts; Welding Machines; Generators; Pumps over 3"; Heaters, Mechanical; Combination small equipment operator; Winches, small electric; Oiler; Greaser; Rotary Drill Tender; Conveyor; Elevator Operator

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ENGI0139-007 06/06/2016

DODGE, FOND DU LAC, JEFFERSON, KENOSHA, MILWAUKEE, OZAUKEE, RACINE, SHEBOYGAN, WALWORTH, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Power Equipment Operator		

Group 1	$ 39.19	21.05
Group 2	$ 38.41	21.05
Group 3	$ 37.46	21.05
Group 4	$ 36.41	21.05
Group 5	$ 35.01	21.05

HAZARDOUS WASTE PREMIUMS:
EPA Level "A" Protection: $3.00 per hour
EPA Level "B" Protection: $2.00 per hour
EPA Level "C" Protection: $1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, Tower Cranes, and Derricks with or without attachments, with a lifting capacity of over 100 tons; or Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths measuring 176 feet or longer; Backhoes (Excavators) 130,000 lbs and over; Caisson Rigs and Pile Drivers

GROUP 2: Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or under; or Cranes, Tower Cranes, and Derricks with boom, lead, and\or jib lengths measuring 175 feet or under; Backhoes (Excavators) under 130,000 lbs; Skid Rigs; Dredge Operator: Traveling Crane (Bridge type); Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Pumps and Boring Machines (directional)

GROUP 3: Material Hoists; Stack Hoists; Tractor or Truck mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane, 5 tons or under; Manhoist; Tractor over 40 hp; Bulldozer over 40 hp; Endloader over 40 hp; Forklift, 25 ft and over; Motor Patrol; Scraper Operator; Sideboom; Straddle Carrier; Mechanic and Welder; Bituminous Plant and Paver Operator; Roller over 5 tons; Percussion Drill Operator; Rotary Drill Operator; Blaster; Air Track Drill; Trencher (wheel type or chain type having over 8 inch bucket); Elevator; Milling Machine and Boring Machine (horizontal or vertical); Backhoe Mounted Compactor

GROUP 4: Backfiller; Concrete Auto Breaker (large); Concrete Finishing Machine (road type); Roller, Rubber Tire; Concrete Batch Hopper; Concrete Conveyor System; Concrete Mixers (14S or over); Screw type Pumps and Gypsum Pumps; Grout Pumps; Tractor, Bulldozer, End Loader, under 40 hp; Pumps (well points); Trencher (chain type 8 inch or smaller bucket; Industrial Locomotives; Roller under 5 tons; Fireman (Piledrivers and Derricks); Robotic Tool Carrier with or without attachments.

GROUP 5: Hoists (Automatic); Forklift, 12 ft to 25 ft; Tamper-Compactors, riding type; A-Frame andWinch Trucks; Concrete Auto Breaker; Hydrohammer, small; Brooms and Sweepers; Hoist (Tuggers); Stump Chipper, large; Boats (Tug, Safety, Work Barges and Launch); Shouldering Machine Operator; Screed Operator; Farm or Industrial Tractor; Post Hole Digger; Stone Crushers and Screening Plants; Firemen (Asphalt Plants); Air Compressor (400 CFM or over); Augers (vertical and horizontal); Generators, 150 KW and over; Air, Electric Hydraulic Jacks (Slipform); Prestress Machines; Skid Steer Loader with or without attachments; Boiler operators (temporary heat); Forklift, 12 ft and under; Screed Operator Milling Machine; Refrigeration Plant/Freeze Machine; Power Pack Vibratory/Ultra Sound Driver and Extractor; Generators under 150 KW; Combination small equipment operator; Compressors under 400 CFM; Welding Machines; Heaters, Mechanical; Pumps; Winches, Small Electric; Oiler and Greaser; Conveyor; High pressure utility locating machine (daylighting machine).

IRON0008-002 06/01/2016

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes

IRONWORKER.....$ 30.86 25.42

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 33.15	25.42

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/01/2015

ADAMS, COLUMBIA, CRAWFORD, DANE, DODGE, FLORENCE, FOREST, GRANT, GREENE, (Excluding S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LA CROSSE, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, ROCK (Northern area, vicinity of Edgerton and Milton), SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
IRONWORKER	$ 32.85	21.84

IRON0498-005 06/01/2016

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

	Rates	Fringes
IRONWORKER	$ 36.29	30.77

IRON0512-008 05/01/2015

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 35.50	23.45

IRON0512-021 05/01/2015

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 31.04	23.45

LABO0113-004 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Laborers: (Open Cut)		
Group 1	$ 14.76	19.24
Group 2	$ 17.03	19.24
Group 3	$ 20.57	19.24
Group 4	$ 29.94	19.24
Group 5	$ 30.08	19.24
Group 6	$ 30.14	19.24
Group 7	$ 32.35	19.24
Group 8	$ 35.17	19.24
Group 9	$ 35.81	19.24

LABORERS CLASSIFICATIONS [OPEN CUT]

GROUP 1: Yard Laborer

GROUP 2: Landscaper

GROUP 3: Flag Person

GROUP 4: Paving Laborer

GROUP 5: General Laborer on Surface; Top Man

GROUP 6: Mud Mixer

GROUP 7: Mucker; Form Stripper; Bottom Digger and Misc; Bottom Man and Welder on Surface

GROUP 8: Concrete Manhole Builder; Caisson Worker; Miner; Pipe Layer; Rock Driller and Joint Man; Timber Man and Concrete Brusher; Bracer in Trench Behind Machine & Tight Sheeting; Concrete Formsetter and Shoveler; Jackhammer Operator

GROUP 9: Blaster

LABO0113-005 06/01/2016

SEWER, TUNNEL & UNDERGROUND

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
Laborers:		
Group 1	$ 21.43	19.24
Group 2	$ 27.36	19.24
Group 3	$ 29.92	19.24
Group 4	$ 31.69	19.24

TUNNEL WORK UNDER COMPRESSED AIR: 0-15 lbs add $1.00, 15-30 lbs add $2.00, over 30 lbs add $3.00

LABORERS CLASSIFICATIONS

GROUP 1: Flagperson

GROUP 2: Top Man, General Laborer, Wellpoint Installation, Wire Mesh and Reinforcement, Concrete Worker, Form Stripper, Strike-off Work

GROUP 3: Machine and Equipment Operator, Sheeting, Form Setting, Patch Finisher, Bottom Man, Joint Sawer, Gunnite Man, Manhole Builder, Welder-Torchman, Blaster, Caulker, Bracer, Bull Float, Conduit Worker, Mucker and Car Pusher, Raker and Luteman, Hydraulic Jacking of Shields, Shield Drivers, Mining Machine, Lock Tenders, Mucking Machine Operator, Motor Men & Gauge Tenders and operation of incidental Mechanical Equipment and all Power Driven Tools

GROUP 4: Pipelayer, Miner and Laser Operator

LABO0113-008 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON & WAUKESHA COUNTIES

	Rates	Fringes
Laborers: (Tunnel-Free Air)		
Group 1	$ 20.57	19.24
Group 2	$ 30.08	19.24
Group 3	$ 30.14	19.24
Group 4	$ 32.35	19.24
Group 5	$ 32.49	19.24
Group 6	$ 35.17	19.24
Group 7	$ 35.81	19.24

LABORERS CLASSIFICATIONS [TUNNEL - FREE AIR]:

GROUP 1: Flagperson

GROUP 2: General Laborer on surface; Tower Man

GROUP 3: Saw Man; Top Man

GROUP 4: Form Stripper; Car Pusher

GROUP 5: Mucker; Dinkey; Welder (rate on surface)

GROUP 6: Concrete Manhole Builder; Mucking Machine; Miner; Mining Machine; Welder; Rock Driller; Concrete Buster; Jack Hammer Operator; Caisson Worker; Pipelayer and Joint Man; Bracerman

GROUP 7: Blaster

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* LABO0113-009 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON & WAUKESHA COUNTIES

	Rates	Fringes
Laborers: (Tunnel - *COMPRESSED AIR 0 - 15 lbs.)		
Group 1	$ 20.57	19.25
Group 2	$ 30.08	19.25
Group 3	$ 32.89	19.25
Group 4	$ 33.69	19.25
Group 5	$ 33.81	19.25
Group 6	$ 36.51	19.25
Group 7	$ 37.13	19.25

LABORERS CLASSIFICATIONS [TUNNEL - COMPRESSED AIR]:

*Compressed Air 15 - 30 lbs add $2.00 to all classifications
*Compressed Air over 30 lbs add $3.00 to all classifcations

GROUP 1: Flagperson

GROUP 2: General Laborer on surface

GROUP 3: Lock Tender on surface

GROUP 4: Form Stripper; Car Pusher

GROUP 5: Mucker; Dinkey

GROUP 6: Mucking Machine; Miner; Mining Machine; Welder & Rock Driller; Lock Tender in tunnel; Concrete Buster; Jack Hammer Operator; Caisson Worker; Pielayer and Joint Man; Bracerman; Nozzle Man on Gunite; Timber Man; Concrete Brusher

GROUP 7: Blaster

NOTE: Hazardous & Toxic Waste Removal: add $0.15 per hour.

LABO0140-005 06/06/2016

ADAMS, ASHLAND, BARRON, BROWN, BUFFALO, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE,FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, JACKSON, JEFFERSON, JUNEAU, LACROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, ST CROIX, SAUK, SAWYER, SHAWANO, SHEBOYGAN, TAYLOR, TREMMPEALEAU, VERNON, VILAS, WALWWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER (SEWER & WATER)		
Group 1	$ 25.33	16.55
Group 2	$ 27.18	16.55

Group 3	$ 27.38	16.55
Group 4	$ 28.13	16.55

FOR ALL TUNNEL WORK UNDER COMPRESSED AIR: 0-15 lbs add $1.00, 15-30 lbs add $2.00, over 30 lbs add $3.00

LABORER CLASSIFICATIONS:

GROUP 1: Flagperson

GROUP 2: General Laborer, Wellpoint Installation; Form Stripper; Strike Off worker

GROUP 3: Sheeting Formsetting; Patch Finisher; Bottom Man; Joint Sawer; Gunnite Man; Manhole Builder; Welder; Torchman; Blaster; Caulker Bracer; Bull Float; Mucker and Car Pusher; Raker and Luteman; Hydraulic jacking of shields, Shield Drivers; Mining Machine; Lock Tenders; Mucking Machine Operators; Motor Men and Gauge Tenders; Power Tool Operators

GROUP 4: Pipelayer, Miner, and Laser Operator

LABO0464-002 06/06/2016

DANE AND DOUGLAS COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 25.23	16.55
Group 2	$ 27.43	16.55
Group 3	$ 27.63	16.55
Group 4	$ 28.38	16.55

FOR ALL TUNNEL WORK UNDER COMPRESSED AIR: 0 - 15 lbs add $1.00, 15- 30 lbs add $2.00, over 30 lbs add $3.00

LABORERS CLASSIFICATIONS:

GROUP 1: Flagperson

GROUP 2: General Laborer; Wellpoint Installation; Concrete Worker; Form Stripper; Strike Off worker

GROUP 3: Sheeting Formsetting; Patch Finisher; Bottom Man; Joint Sawer; Gunnite Man; Manhole Builder; Welder; Torchman; Blaster; Caulker Bracer; Bull Float; Mucker and Car Pusher; Raker and Luteman; Hydraulic jacking of shields, Shield Dirvers; Mining Machine; Lock Tenders; Mucking Machine Operators; Motor Men and Gauge Tenders; Power Tool Operators

GROUP 4: Pipelayer, Miner, and Laser Operator

LABO1091-010 06/01/2016

BAYFIELD, BURNETT, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
Laborers: (SEWER & WATER)		
Group 1	$ 25.02	16.55
Group 2	$ 27.08	16.55
Group 3	$ 27.28	16.55
Group 4	$ 28.03	16.55

FOR ALL TUNNEL WORK UNDER COMPRESSED AIR:
0 - 15 lbs add $1.00, 15-30 lbs add $2.00, over 30 lbs add $3.00

LABORERS CLASSIFICATIONS:

GROUP 1: Flagperson

GROUP 2: Laborers, Wellpoint Installation; Form Stripper; Strike Off worker

GROUP 3: Sheeting Formsetting; Patch Finisher; Bottom Man; Joint Sawer; Gunnite Man; Manhole Builder; Welder; Torchman; Blaster; Caulker Bracer; Bull Float; Mucker and Car Pusher; Raker and Luteman; Hydraulic jacking of shields, Shield Dirvers; Mining Machine; Lock Tenders; Mucking Machine Operators; Motor Men and Gauge Tenders; Power Tool Operators

GROUP 4: Pipelayer, Miner, and Laser Operator

PLAS0599-010 06/01/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area 1	$ 39.46	17.17
Area 2 (BAC)	$ 35.07	19.75
Area 3	$ 35.61	19.40
Area 4	$ 34.70	20.51
Area 5	$ 36.27	18.73
Area 6	$ 32.02	22.99

AREA DESCRIPTIONS

AREA 1: BAYFIELD, DOUGLAS, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA 2: ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

AREA 3: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

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* TEAM0039-001 06/01/2017

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 27.40	20.48
3 or more Axles; Euclids Dumptor & Articulated, Truck Mechanic	$ 27.55	20.48
WELL DRILLER	$ 16.52	3.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons

resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: WI170010 06/23/2017 WI10

Superseded General Decision Number: WI20160010

State: Wisconsin

Construction Type: Highway

Counties: Wisconsin Statewide.

HIGHWAY, AIRPORT RUNWAY & TAXIWAY CONSTRUCTION PROJECTS (does not include bridges over navigable waters; tunnels; buildings in highway rest areas; and railroad construction)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2017
1	02/03/2017
2	02/10/2017
3	02/24/2017
4	03/17/2017
5	03/31/2017
6	04/21/2017
7	04/28/2017
8	06/02/2017
9	06/23/2017

BRWI0001-002 06/01/2016

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 31.84	20.95

BRWI0002-002 06/01/2016

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.04	19.70

BRWI0002-005 06/01/2016

ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 35.07	20.51

BRWI0003-002 06/01/2016

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.22	20.57

BRWI0004-002 06/01/2016

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.59	21.49

BRWI0006-002 06/01/2016

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.04	19.75

BRWI0007-002 06/01/2016

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 33.53	20.95

BRWI0008-002 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.98	20.62

BRWI0011-002 06/01/2016

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.22	20.57

BRWI0019-002 06/01/2016

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 31.98	20.81

BRWI0034-002 06/01/2015

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.86	17.22

CARP0087-001 05/01/2016

BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys 35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES

	Rates	Fringes
Carpenter & Piledrivermen	$ 36.85	18.39

CARP0252-002 06/01/2016

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE (except area bordering Michigan State Line), FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E.

of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER		
CARPENTER	$ 33.56	18.00
MILLWRIGHT	$ 35.08	18.35
PILEDRIVER	$ 34.12	18.00

CARP0252-010 06/01/2016

ASHLAND COUNTY

	Rates	Fringes
Carpenters		
Carpenter	$ 33.56	18.00
Millwright	$ 35.08	18.35
Pile Driver	$ 34.12	18.00

CARP0264-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WAUKESHA, AND WASHINGTON COUNTIES

	Rates	Fringes
CARPENTER	$ 35.78	22.11

CARP0361-004 05/01/2016

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 34.57	18.16

CARP2337-001 06/01/2016

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON

ZONE B: KENOSHA & RACINE

	Rates	Fringes
PILEDRIVERMAN		
Zone A	$ 31.03	22.69
Zone B	$ 31.03	22.69

ELEC0014-002 05/30/2016

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Maryville, Colby, Unity, Sherman, Fremont, Lynn & Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST CROIX, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes
Electricians:	$ 32.00	19.28

ELEC0014-007 05/30/2016

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer		
Installer/Technician	$ 24.35	13.15

Low voltage construction, installation, maintenance and removal of teledata facilities (voice, data, and video)

including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated systems digital network).

ELEC0127-002 06/01/2016

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 37.71	30%+10.02

ELEC0158-002 05/30/2016

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE (East of a ine 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES

	Rates	Fringes
Electricians:	$ 30.50	29.50% + 9.57

ELEC0159-003 05/30/2016

COLUMBIA, DANE, DODGE (Area West of Hwy 26, except Chester and Emmet Townships), GREEN, LAKE (except Townships of Berlin, Seneca, and St. Marie), IOWA, MARQUETTE (except Townships of Neshkoka, Crystal Lake, Newton, and Springfield), and SAUK COUNTIES

	Rates	Fringes
Electricians:	$ 36.50	20.39

ELEC0219-004 06/01/2016

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

	Rates	Fringes
Electricians:		
Electrical contracts over $180,000	$ 32.38	18.63
Electrical contracts under $180,000	$ 30.18	18.42

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* ELEC0242-005 06/04/2017

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 35.90	25.64

ELEC0388-002 05/30/2016

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Beecher, Dunbar, Goodman & Pembine), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Aniwa and Hutchins), VILAS AND WOOD COUNTIES

	Rates	Fringes
Electricians:	$ 30.69	26.00% +10.05

ELEC0430-002 06/01/2016

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 36.07	21.84

ELEC0494-005 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 36.01	24.00

ELEC0494-006 06/01/2017

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 32.06	21.88

ELEC0494-013 06/01/2015

DODGE (East of Hwy 26 including Chester Twp, excluding Emmet Twp), FOND DU LAC (Except Waupuin), MILWAUKEE, OZAUKEE, MANITOWOC (Schleswig), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Sound & Communications		
Installer	$ 16.47	14.84
Technician	$ 26.00	17.70

Installation, testing, maintenance, operation and servicing of all sound, intercom, telephone interconnect, closed circuit TV systems, radio systems, background music systems, language laboratories, electronic carillion, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

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ELEC0577-003 05/30/2016

CALUMET (except Township of New Holstein), GREEN LAKE (N. part including Townships of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Townships of Crystal Lake, Neshkoro, Newton, and Springfield), OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
Electricians:	$ 30.68	17.28

ELEC0890-003 06/01/2016

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 32.45	26.10% + $10.56

ELEC0953-001 07/01/2015

	Rates	Fringes
Line Construction:		
(1) Lineman	$ 42.14	32% + 5.00
(2) Heavy Equipment Operator	$ 40.03	32% + 5.00
(3) Equipment Operator	$ 33.71	32% + 5.00
(4) Heavy Groundman Driver	$ 26.78	14.11
(5) Light Groundman Driver	$ 24.86	13.45
(6) Groundsman	$ 23.18	32% + 5.00

ENGI0139-005 06/01/2016

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 39.27	21.80
Group 2	$ 38.77	21.80
Group 3	$ 38.27	21.80
Group 4	$ 38.01	21.80
Group 5	$ 37.72	21.80
Group 6	$ 31.82	21.80

HAZARDOUS WASTE PREMIUMS:
EPA Level "A" protection - $3.00 per hour
EPA Level "B" protection - $2.00 per hour
EPA Level "C" protection - $1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, tower cranes, and derricks with or without attachments with a lifting capacity of over 100 tons; or cranes, tower cranes, and derricks with boom, leads and/or jib lengths measuring 176 feet or longer.

GROUP 2: Cranes, tower cranes and derricks with or without attachments with a lifting capacity of 100 tons or less; or cranes, tower cranes, and derricks with boom, leads, and/or jibs lengths measuring 175 feet or under and Backhoes (excavators) weighing 130,000 lbs and over; caisson rigs; pile driver; dredge operator; dredge engineer; Boat Pilot.

GROUP 3: Mechanic or welder - Heavy duty equipment; cranes with a lifting capacity of 25 tons or under; concrete breaker (manual or remote); vibratory/sonic concrete breaker; concrete laser screed; concrete slipform paver; concrete batch plant operator; concrete pvt. spreader - heavy duty (rubber tired); concrete spreader & distributor; automatic subgrader (concrete); concrete grinder & planing machine; concrete slipform curb & gutter machine; slipform concrete placer; tube finisher; hydro blaster (10,000 psi & over); bridge paver; concrete conveyor system; concrete pump; Rotec type Conveyor; stabilizing mixer (self-propelled); shoulder widener; asphalt plant engineer; bituminious paver; bump cutter & grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer & scarifier; Backhoes (excavators) weighing under 130,000 lbs; grader or motor patrol; tractor (scraper, dozer, pusher, loader); scraper - rubber tired (single or twin engine); endloader; hydraulic backhoe (tractor type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller over 5 tons; percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches & A-frames; post driver; material hoist.

GROUP 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self propelled; tractor (mounted or towed compactors & light equipment); shouldering machine; self- propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint sawer (multiple blade) belting machine; burlap machine; texturing machine; tractor endloader (rubber tired) - light; jeep digger; forklift; mulcher; launch operator; fireman, environmental burner

GROUP 5: Air compressor; power pack; vibrator hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; Concrete proportioning plants; generators; mudjack operator; rock

breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator; Oiler, pump (over 3 inches); Drilling Machine Tender.

GROUP 6: Off-road material hauler with or without ejector.

IRON0008-002 06/01/2016

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER	$ 30.86	25.42

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 33.15	25.42

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/01/2015

ADAMS, COLUMBIA, CRAWFORD, DANE, DODGE, FLORENCE, FOREST, GRANT, GREENE, (Excluding S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LA CROSSE, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, ROCK (Northern area, vicinity of Edgerton and Milton), SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
IRONWORKER	$ 32.85	21.84

IRON0498-005 06/01/2016

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

	Rates	Fringes
IRONWORKER	$ 36.29	30.77

IRON0512-008 05/01/2015

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 35.50	23.45

IRON0512-021 05/01/2015

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 31.04	23.45

LABO0113-002 06/01/2016

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 27.51	20.35
Group 2	$ 27.66	20.35
Group 3	$ 27.86	20.35
Group 4	$ 28.01	20.35
Group 5	$ 28.16	20.35
Group 6	$ 24.00	20.35

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagperson; traffic control person

LABO0113-003 06/01/2016

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 26.76	20.35
Group 2	$ 26.86	20.35
Group 3	$ 26.91	20.35
Group 4	$ 27.11	20.35
Group 5	$ 26.96	20.35
Group 6	$ 23.85	20.35

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated);

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson and Traffic Control Person

LABO0113-011 06/01/2016

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 26.57	20.35
Group 2	$ 26.72	20.35
Group 3	$ 26.92	20.35
Group 4	$ 26.89	20.35
Group 5	$ 27.22	20.35
Group 6	$ 23.71	20.35

LABORERS CLASSIFICATIONS:

GROUP 1: General laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagman; traffic control person

LABO0140-002 06/01/2016

ADAMS, ASHLAND, BARRON, BAYFIELD, BROWN, BUFFALO, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DOUGLAS, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IRON, JACKSON, JUNEAU, IOWA, JEFFERSON, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILLAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 30.67	16.55
Group 2	$ 30.77	16.55
Group 3	$ 30.82	16.55
Group 4	$ 31.02	16.55
Group 5	$ 30.87	16.55
Group 6	$ 27.30	16.55

LABORER CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bitminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator, Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk and Pavement); Strike Off Man

GROUP 4: Line and Grade Secialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson; Traffic Control

LABO0464-003 06/01/2016

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 30.95	16.41
Group 2	$ 31.05	16.41
Group 3	$ 31.10	16.41
Group 4	$ 31.30	16.41
Group 5	$ 31.15	16.41
Group 6	$ 27.30	16.41

LABORERS CLASSIFICATIONS:

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminious Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; Powderman

GROUP 6: Flagperson and Traffic Control Person

PAIN0106-008 05/02/2016

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller	$ 29.86	16.35
Spray, Sandblast, Steel	$ 30.46	16.35
Repaint:		
Brush, Roller	$ 28.36	16.35
Spray, Sandblast, Steel	$ 28.96	16.35

PAIN0108-002 06/01/2016

RACINE COUNTY

	Rates	Fringes
Painters:		
Brush, Roller	$ 32.74	18.70
Spray & Sandblast	$ 33.74	18.70

PAIN0259-002 05/01/2008

BARRON, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, SAWYER, ST. CROIX, AND WASHBURN COUNTIES

	Rates	Fringes
PAINTER	$ 24.11	12.15

PAIN0259-004 05/01/2015

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
PAINTER	$ 22.03	12.45

PAIN0781-002 06/01/2016

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Painters:		
Bridge	$ 30.42	22.19
Brush	$ 30.07	22.19
Spray & Sandblast	$ 30.82	22.19

PAIN0802-002 06/01/2016

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 27.50	17.72

PREMIUM PAY:
Structural Steel, Spray, Bridges = $1.00 additional per hour.

PAIN0802-003 06/01/2016

ADAMS, BROWN, CALUMET, CLARK, DOOR, FOND DU LAC, FOREST, GREEN LAKE, IRON, JUNEAU, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, PORTAGE, PRICE, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WAUSHARA, WAUPACA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
PAINTER	$ 24.39	11.72

PAIN0934-001 06/01/2016

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush	$ 32.74	18.70
Spray	$ 33.74	18.70
Structural Steel	$ 32.89	18.70

PAIN1011-002 06/01/2016

FLORENCE COUNTY

	Rates	Fringes
Painters:	$ 24.56	11.93

PLAS0599-010 06/01/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area 1	$ 39.46	17.17
Area 2 (BAC)	$ 35.07	19.75
Area 3	$ 35.61	19.40
Area 4	$ 34.70	20.51
Area 5	$ 36.27	18.73
Area 6	$ 32.02	22.99

AREA DESCRIPTIONS

AREA 1: BAYFIELD, DOUGLAS, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA 2: ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

AREA 3: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

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* TEAM0039-001 06/01/2017

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 27.40	20.48
3 or more Axles; Euclids Dumptor & Articulated, Truck Mechanic	$ 27.55	20.48
WELL DRILLER	$ 16.52	3.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or

"UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations

Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

March 2017

NOTICE TO BIDDERS
WAGE RATE DECISION

The wage rate decision of the Department of Labor which has been incorporated in these advertised specifications is incomplete in that the classifications may be omitted from the Department of Labor's decision.

Since the bidder is responsible, independently, for ascertaining area practice with respect to the necessity, or lack of necessity, for the use of these classifications in the prosecution of the work contemplated by this project, no inference may be drawn from the omission of these classifications concerning prevailing area practices relative to their use. Further, this omission will not, per se, be construed as establishing any governmental liability for increased labor cost if it is subsequently determined that such classifications are required.

There may be omissions and/or errors in the federal wage rates. The bidder is responsible for evaluating and determining the correct applicable rate.

If a project includes multiple types of construction (highway, bridge over navigable water, sanitary sewer and water main, building) and there is not a separate wage determination for this type of work included in the proposal, use the wage determination that is in the proposal.

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0010	108.4300 RBC Progress Schedule	1.000 EACH	_____.____	_____.____
0020	201.0105 Clearing	238.000 STA	_____.____	_____.____
0030	201.0120 Clearing	842.000 ID	_____.____	_____.____
0040	201.0205 Grubbing	238.000 STA	_____.____	_____.____
0050	201.0220 Grubbing	842.000 ID	_____.____	_____.____
0060	203.0100 Removing Small Pipe Culverts	42.000 EACH	_____.____	_____.____
0070	203.0200 Removing Old Structure (station) 01. Station 513"R"+18	LS	LUMP SUM	_____.____
0080	203.0200 Removing Old Structure (station) 02. Station 164"NB"+03	LS	LUMP SUM	_____.____
0090	203.0200 Removing Old Structure (station) 03. Station 204"NB"+82	LS	LUMP SUM	_____.____
0100	203.0500.S Removing Old Structure Over Waterway (station) 03. Station 144"NB"+87	LS	LUMP SUM	_____.____
0110	203.0500.S Removing Old Structure Over Waterway (station) 04. Station 179"NB"+20.50	LS	LUMP SUM	_____.____
0120	203.0500.S Removing Old Structure Over Waterway (station) 05. Station 402"WB"+26.08	LS	LUMP SUM	_____.____
0130	203.0500.S Removing Old Structure Over Waterway (station) 06. Station 532"R"+54	LS	LUMP SUM	_____.____
0140	204.0100 Removing Pavement	139.000 SY	_____.____	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0150	204.0110 Removing Asphaltic Surface	166.000 SY	_____.____	_____.____
0160	204.0120 Removing Asphaltic Surface Milling	3,475.000 SY	_____.____	_____.____
0170	204.0150 Removing Curb & Gutter	15,518.000 LF	_____.____	_____.____
0180	204.0155 Removing Concrete Sidewalk	4,252.000 SY	_____.____	_____.____
0190	204.0157 Removing Concrete Barrier	10.000 LF	_____.____	_____.____
0200	204.0165 Removing Guardrail	1,905.000 LF	_____.____	_____.____
0210	204.0170 Removing Fence	10,155.000 LF	_____.____	_____.____
0220	204.0185 Removing Masonry	57.000 CY	_____.____	_____.____
0230	204.0195 Removing Concrete Bases	34.000 EACH	_____.____	_____.____
0240	204.0210 Removing Manholes	17.000 EACH	_____.____	_____.____
0250	204.0220 Removing Inlets	44.000 EACH	_____.____	_____.____
0260	204.0225 Removing Septic Tanks	1.000 EACH	_____.____	_____.____
0270	204.0235 Removing Buildings (parcel) 01. Parcel 34	LS	LUMP SUM	_____.____
0280	204.0240 Site Clearance (parcel) 01. Parcel 34	LS	LUMP SUM	_____.____
0290	204.0245 Removing Storm Sewer (size) 01. 12-Inch or Less	851.000 LF	_____.____	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0300	204.0245 Removing Storm Sewer (size) 02. 15 to 18-Inch	1,814.000 LF	_____.____	_____.____
0310	204.0245 Removing Storm Sewer (size) 03. 21 to 24-Inch	2,367.000 LF	_____.____	_____.____
0320	204.0245 Removing Storm Sewer (size) 04. 27 to 30-Inch	77.000 LF	_____.____	_____.____
0330	204.0245 Removing Storm Sewer (size) 05. 36-Inch	56.000 LF	_____.____	_____.____
0340	204.0245 Removing Storm Sewer (size) 06. 42-Inch	46.000 LF	_____.____	_____.____
0350	204.0265 Abandoning Wells	1.000 EACH	_____.____	_____.____
0360	204.0280 Sealing Pipes	2.000 EACH	_____.____	_____.____
0370	204.9060.S Removing (item description) 01. Bollards	4.000 EACH	_____.____	_____.____
0380	205.0100 Excavation Common	341,429.000 CY	_____.____	_____.____
0390	205.0200 Excavation Rock	16,056.000 CY	_____.____	_____.____
0400	205.2000.S Settlement Gauges	10.000 EACH	_____.____	_____.____
0410	206.1000 Excavation for Structures Bridges (structure) 01. B-13-845	LS	LUMP SUM	_____.____
0420	206.2000 Excavation for Structures Culverts (structure) 02. C-13-2080	LS	LUMP SUM	_____.____
0430	206.2000 Excavation for Structures Culverts (structure) 03. C-13-2081	LS	LUMP SUM	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0440	206.2000 Excavation for Structures Culverts (structure) 04. C-13-2082	LS	LUMP SUM	_____.____
0450	206.2000 Excavation for Structures Culverts (structure) 05. C-13-2083	LS	LUMP SUM	_____.____
0460	206.2000 Excavation for Structures Culverts (structure) 06. C-13-2084	LS	LUMP SUM	_____.____
0470	206.2000 Excavation for Structures Culverts (structure) 07. C-13-2085	LS	LUMP SUM	_____.____
0480	206.2000 Excavation for Structures Culverts (structure) 08. C-13-2086	LS	LUMP SUM	_____.____
0490	206.3000 Excavation for Structures Retaining Walls (structure) 09. R-13-292	LS	LUMP SUM	_____.____
0500	206.3000 Excavation for Structures Retaining Walls (structure) 10. R-13-293	LS	LUMP SUM	_____.____
0510	206.3000 Excavation for Structures Retaining Walls (structure) 11. R-13-294	LS	LUMP SUM	_____.____
0520	206.3000 Excavation for Structures Retaining Walls (structure) 12. R-13-295	LS	LUMP SUM	_____.____
0530	206.3000 Excavation for Structures Retaining Walls (structure) 13. R-13-296	LS	LUMP SUM	_____.____
0540	206.3000 Excavation for Structures Retaining Walls (structure) 14. R-13-297	LS	LUMP SUM	_____.____
0550	206.3000 Excavation for Structures Retaining Walls (structure) 15. R-13-298	LS	LUMP SUM	_____.____
0560	206.3000 Excavation for Structures Retaining Walls (structure) 16. R-13-299	LS	LUMP SUM	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0570	206.3000 Excavation for Structures Retaining Walls (structure) 17. R-13-300	LS	LUMP SUM	_____.____
0580	206.3000 Excavation for Structures Retaining Walls (structure) 18. R-13-301	LS	LUMP SUM	_____.____
0590	206.3000 Excavation for Structures Retaining Walls (structure) 19. R-13-302	LS	LUMP SUM	_____.____
0600	206.3000 Excavation for Structures Retaining Walls (structure) 20. R-13-303	LS	LUMP SUM	_____.____
0610	206.3000 Excavation for Structures Retaining Walls (structure) 21. R-13-304	LS	LUMP SUM	_____.____
0620	206.3000 Excavation for Structures Retaining Walls (structure) 22. R-13-305	LS	LUMP SUM	_____.____
0630	208.0100 Borrow	32,011.000 CY	_____.____	_____.____
0640	209.0200.S Backfill Controlled Low Strength	52.000 CY	_____.____	_____.____
0650	209.1100 Backfill Granular Grade 1	1,894.000 CY	_____.____	_____.____
0660	209.1500 Backfill Granular Grade 1	1,334.000 TON	_____.____	_____.____
0670	210.1500 Backfill Structure Type A	19,377.000 TON	_____.____	_____.____
0680	210.2500 Backfill Structure Type B	3,406.000 TON	_____.____	_____.____
0690	213.0100 Finishing Roadway (project) 01. 5992-09-82	1.000 EACH	_____.____	_____.____
0700	213.0100 Finishing Roadway (project) 02. 5992-09-83	1.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0710	213.0100 Finishing Roadway (project) 03. 5992-09-85	1.000 EACH	_____.____	_____.____
0720	214.0100 Obliterating Old Road	6.000 STA	_____.____	_____.____
0730	305.0110 Base Aggregate Dense 3/4-Inch	1,853.000 TON	_____.____	_____.____
0740	305.0120 Base Aggregate Dense 1 1/4-Inch	276,854.000 TON	_____.____	_____.____
0750	310.0115 Base Aggregate Open-Graded	602.000 CY	_____.____	_____.____
0760	311.0110 Breaker Run	900.000 TON	_____.____	_____.____
0770	312.0110 Select Crushed Material	224,601.000 TON	_____.____	_____.____
0780	415.0100 Concrete Pavement 10-Inch	660.000 SY	_____.____	_____.____
0790	415.0410 Concrete Pavement Approach Slab	811.000 SY	_____.____	_____.____
0800	416.0170 Concrete Driveway 7-Inch	896.000 SY	_____.____	_____.____
0810	440.4410 Incentive IRI Ride	45,725.000 DOL	1.00000	45,725.00
0820	450.4000 HMA Cold Weather Paving	1,403.000 TON	_____.____	_____.____
0830	455.0605 Tack Coat	19,844.000 GAL	_____.____	_____.____
0840	460.2000 Incentive Density HMA Pavement	46,300.000 DOL	1.00000	46,300.00
0850	460.4110.S Reheating HMA Pavement Longitudinal Joints	20,656.000 LF	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0860	460.5223 HMA Pavement 3 LT 58-28 S	3,171.000 TON	_____.____	_____.____
0870	460.5224 HMA Pavement 4 LT 58-28 S	7,546.000 TON	_____.____	_____.____
0880	460.5424 HMA Pavement 4 LT 58-28 H	2,647.000 TON	_____.____	_____.____
0890	460.6223 HMA Pavement 3 MT 58-28 S	34,436.000 TON	_____.____	_____.____
0900	460.6224 HMA Pavement 4 MT 58-28 S	5,872.000 TON	_____.____	_____.____
0910	460.6424 HMA Pavement 4 MT 58-28 H	18,649.000 TON	_____.____	_____.____
0920	465.0105 Asphaltic Surface	3,173.000 TON	_____.____	_____.____
0930	465.0125 Asphaltic Surface Temporary	7,949.000 TON	_____.____	_____.____
0940	465.0310 Asphaltic Curb	600.000 LF	_____.____	_____.____
0950	465.0315 Asphaltic Flumes	8.000 SY	_____.____	_____.____
0960	502.0100 Concrete Masonry Bridges	2,569.000 CY	_____.____	_____.____
0970	502.2000 Compression Joint Sealer Preformed Elastomeric (width) 01. 2 1/4-Inch	99.000 LF	_____.____	_____.____
0980	502.3200 Protective Surface Treatment	2,735.000 SY	_____.____	_____.____
0990	502.4205 Adhesive Anchors No. 5 Bar	44.000 EACH	_____.____	_____.____
1000	504.0100 Concrete Masonry Culverts	1,437.000 CY	_____.____	_____.____
1010	504.0500 Concrete Masonry Retaining Walls	2,792.000 CY	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1020	504.1000.S Precast Concrete Wingwalls (structure) 04. C-13-2082	LS	LUMP SUM	_____.____
1030	504.1000.S Precast Concrete Wingwalls (structure) 05. C-13-2083	LS	LUMP SUM	_____.____
1040	504.2000.S Precast Concrete Box Culvert (ft X ft) 04. 12-FT X 7-FT	174.000 LF	_____.____	_____.____
1050	504.2000.S Precast Concrete Box Culvert (ft X ft) 05. 12-FT X 8-FT	143.000 LF	_____.____	_____.____
1060	505.0400 Bar Steel Reinforcement HS Structures	135,395.000 LB	_____.____	_____.____
1070	505.0600 Bar Steel Reinforcement HS Coated Structures	631,470.000 LB	_____.____	_____.____
1080	505.0800.S Bar Steel Reinforcement HS Stainless Structures	1,510.000 LB	_____.____	_____.____
1090	511.1200 Temporary Shoring (structure) 01. B-13-845	1,300.000 SF	_____.____	_____.____
1100	511.1200 Temporary Shoring (structure) 02. C-13-2080	1,280.000 SF	_____.____	_____.____
1110	511.1200 Temporary Shoring (structure) 03. C-13-2081	2,650.000 SF	_____.____	_____.____
1120	511.1200 Temporary Shoring (structure) 04. C-13-2082	3,800.000 SF	_____.____	_____.____
1130	511.1200 Temporary Shoring (structure) 05. C-13-2083	5,200.000 SF	_____.____	_____.____
1140	511.1200 Temporary Shoring (structure) 07. C-13-2085	1,940.000 SF	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1150	511.1200 Temporary Shoring (structure) 08. C-13-2086	850.000 SF	_____.____	_____.____
1160	511.1200 Temporary Shoring (structure) 13. R-13-296	850.000 SF	_____.____	_____.____
1170	511.1200 Temporary Shoring (structure) 20. R-13-303	1,052.000 SF	_____.____	_____.____
1180	511.1200 Temporary Shoring (structure) 23. R-13-307	2,000.000 SF	_____.____	_____.____
1190	511.1300 Temporary Shoring (location) 01. Station 530"R"+90, RT	551.000 SF	_____.____	_____.____
1200	516.0500 Rubberized Membrane Waterproofing	2,437.000 SY	_____.____	_____.____
1210	517.1010.S Concrete Staining (structure) 01. B-13-845	12,760.000 SF	_____.____	_____.____
1220	517.1010.S Concrete Staining (structure) 02. C-13-2080	5,280.000 SF	_____.____	_____.____
1230	517.1010.S Concrete Staining (structure) 06. C-13-2084	660.000 SF	_____.____	_____.____
1240	517.1010.S Concrete Staining (structure) 07. C-13-2085	6,500.000 SF	_____.____	_____.____
1250	517.1010.S Concrete Staining (structure) 08. C-13-2086	5,370.000 SF	_____.____	_____.____
1260	517.1010.S Concrete Staining (structure) 09. R-13-292	3,480.000 SF	_____.____	_____.____
1270	517.1010.S Concrete Staining (structure) 10. R-13-293	2,590.000 SF	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1280	517.1010.S Concrete Staining (structure) 11. R-13-294	470.000 SF	_____.____	_____.____
1290	517.1010.S Concrete Staining (structure) 12. R-13-295	2,230.000 SF	_____.____	_____.____
1300	517.1010.S Concrete Staining (structure) 13. R-13-296	180.000 SF	_____.____	_____.____
1310	517.1010.S Concrete Staining (structure) 14. R-13-297	3,020.000 SF	_____.____	_____.____
1320	517.1010.S Concrete Staining (structure) 15. R-13-298	640.000 SF	_____.____	_____.____
1330	517.1010.S Concrete Staining (structure) 16. R-13-299	3,160.000 SF	_____.____	_____.____
1340	517.1010.S Concrete Staining (structure) 17. R-13-300	3,325.000 SF	_____.____	_____.____
1350	517.1010.S Concrete Staining (structure) 18. R-13-301	440.000 SF	_____.____	_____.____
1360	517.1010.S Concrete Staining (structure) 19. R-13-302	1,990.000 SF	_____.____	_____.____
1370	517.1010.S Concrete Staining (structure) 20. R-13-303	3,175.000 SF	_____.____	_____.____
1380	517.1010.S Concrete Staining (structure) 21. R-13-304	315.000 SF	_____.____	_____.____
1390	517.1010.S Concrete Staining (structure) 22. R-13-305	645.000 SF	_____.____	_____.____
1400	517.1010.S Concrete Staining (structure) 23. R-13-307	5,460.000 SF	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1410	517.1015.S Concrete Staining Multi-Color (structure) 01. B-13-845	865.000 SF	_____.____	_____.____
1420	517.1015.S Concrete Staining Multi-Color (structure) 06. C-13-2084	1,890.000 SF	_____.____	_____.____
1430	517.1015.S Concrete Staining Multi-Color (structure) 09. R-13-292	1,490.000 SF	_____.____	_____.____
1440	517.1015.S Concrete Staining Multi-Color (structure) 10. R-13-293	1,380.000 SF	_____.____	_____.____
1450	517.1015.S Concrete Staining Multi-Color (structure) 11. R-13-294	185.000 SF	_____.____	_____.____
1460	517.1015.S Concrete Staining Multi-Color (structure) 12. R-13-295	1,310.000 SF	_____.____	_____.____
1470	517.1015.S Concrete Staining Multi-Color (structure) 13. R-13-296	170.000 SF	_____.____	_____.____
1480	517.1015.S Concrete Staining Multi-Color (structure) 14. R-13-297	1,625.000 SF	_____.____	_____.____
1490	517.1015.S Concrete Staining Multi-Color (structure) 15. R-13-298	260.000 SF	_____.____	_____.____
1500	517.1015.S Concrete Staining Multi-Color (structure) 16. R-13-299	1,365.000 SF	_____.____	_____.____
1510	517.1015.S Concrete Staining Multi-Color (structure) 17. R-13-300	1,710.000 SF	_____.____	_____.____
1520	517.1015.S Concrete Staining Multi-Color (structure) 18. R-13-301	230.000 SF	_____.____	_____.____
1530	517.1015.S Concrete Staining Multi-Color (structure) 19. R-13-302	990.000 SF	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1540	517.1015.S Concrete Staining Multi-Color (structure) 20. R-13-303	1,625.000 SF	_____.____	_____.____
1550	517.1015.S Concrete Staining Multi-Color (structure) 21. R-13-304	360.000 SF	_____.____	_____.____
1560	517.1015.S Concrete Staining Multi-Color (structure) 22. R-13-305	955.000 SF	_____.____	_____.____
1570	517.1015.S Concrete Staining Multi-Color (structure) 23. R-13-307	4,130.000 SF	_____.____	_____.____
1580	517.1050.S Architectural Surface Treatment (structure) 01. B-13-845	865.000 SF	_____.____	_____.____
1590	517.1050.S Architectural Surface Treatment (structure) 06. C-13-2084	1,340.000 SF	_____.____	_____.____
1600	517.1050.S Architectural Surface Treatment (structure) 09. R-13-292	1,490.000 SF	_____.____	_____.____
1610	517.1050.S Architectural Surface Treatment (structure) 10. R-13-293	1,380.000 SF	_____.____	_____.____
1620	517.1050.S Architectural Surface Treatment (structure) 11. R-13-294	185.000 SF	_____.____	_____.____
1630	517.1050.S Architectural Surface Treatment (structure) 12. R-13-295	1,310.000 SF	_____.____	_____.____
1640	517.1050.S Architectural Surface Treatment (structure) 13. R-13-296	170.000 SF	_____.____	_____.____
1650	517.1050.S Architectural Surface Treatment (structure) 14. R-13-297	1,625.000 SF	_____.____	_____.____
1660	517.1050.S Architectural Surface Treatment (structure) 15. R-13-298	260.000 SF	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1670	517.1050.S Architectural Surface Treatment (structure) 16. R-13-299	1,365.000 SF	_____.____	_____.____
1680	517.1050.S Architectural Surface Treatment (structure) 17. R-13-300	1,710.000 SF	_____.____	_____.____
1690	517.1050.S Architectural Surface Treatment (structure) 18. R-13-301	230.000 SF	_____.____	_____.____
1700	517.1050.S Architectural Surface Treatment (structure) 19. R-13-302	990.000 SF	_____.____	_____.____
1710	517.1050.S Architectural Surface Treatment (structure) 20. R-13-303	1,625.000 SF	_____.____	_____.____
1720	517.1050.S Architectural Surface Treatment (structure) 21. R-13-304	360.000 SF	_____.____	_____.____
1730	517.1050.S Architectural Surface Treatment (structure) 22. R-13-305	955.000 SF	_____.____	_____.____
1740	517.1050.S Architectural Surface Treatment (structure) 26. Traffic Face C-13-2084	550.000 SF	_____.____	_____.____
1750	520.1012 Apron Endwalls for Culvert Pipe 12-Inch	4.000 EACH	_____.____	_____.____
1760	520.1018 Apron Endwalls for Culvert Pipe 18-Inch	18.000 EACH	_____.____	_____.____
1770	520.1024 Apron Endwalls for Culvert Pipe 24-Inch	5.000 EACH	_____.____	_____.____
1780	520.1036 Apron Endwalls for Culvert Pipe 36-Inch	2.000 EACH	_____.____	_____.____
1790	520.1048 Apron Endwalls for Culvert Pipe 48-Inch	1.000 EACH	_____.____	_____.____
1800	520.3148 Culvert Pipe Class III 48-Inch	50.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1810	520.3312 Culvert Pipe Class III-A 12-Inch	52.000 LF	_____.____	_____.____
1820	520.3318 Culvert Pipe Class III-A 18-Inch	487.000 LF	_____.____	_____.____
1830	520.4124 Culvert Pipe Class IV 24-Inch	138.000 LF	_____.____	_____.____
1840	520.4136 Culvert Pipe Class IV 36-Inch	153.000 LF	_____.____	_____.____
1850	520.8000 Concrete Collars for Pipe	4.000 EACH	_____.____	_____.____
1860	522.0136 Culvert Pipe Reinforced Concrete Class III 36-Inch	385.000 LF	_____.____	_____.____
1870	522.0160 Culvert Pipe Reinforced Concrete Class III 60-Inch	118.000 LF	_____.____	_____.____
1880	522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	1.000 EACH	_____.____	_____.____
1890	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	6.000 EACH	_____.____	_____.____
1900	522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	3.000 EACH	_____.____	_____.____
1910	522.1030 Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	3.000 EACH	_____.____	_____.____
1920	522.1036 Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	8.000 EACH	_____.____	_____.____
1930	522.1042 Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	1.000 EACH	_____.____	_____.____
1940	522.1054 Apron Endwalls for Culvert Pipe Reinforced Concrete 54-Inch	1.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1950	523.0519 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	1.000 EACH	_____.____	_____.____
1960	523.0524 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	2.000 EACH	_____.____	_____.____
1970	523.0529 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	1.000 EACH	_____.____	_____.____
1980	523.0543 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 43x68-Inch	2.000 EACH	_____.____	_____.____
1990	523.0568 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 68x106-Inch	1.000 EACH	_____.____	_____.____
2000	524.0660 Apron Endwalls for Culvert Pipe Salvaged 60-Inch	2.000 EACH	_____.____	_____.____
2010	550.0500 Pile Points	40.000 EACH	_____.____	_____.____
2020	550.1100 Piling Steel HP 10-Inch X 42 Lb	1,000.000 LF	_____.____	_____.____
2030	550.2106 Piling CIP Concrete 10 3/4 X 0.365-Inch	4,075.000 LF	_____.____	_____.____
2040	550.2126 Piling CIP Concrete 12 3/4 X 0.375-Inch	9,210.000 LF	_____.____	_____.____
2050	601.0150 Concrete Curb Integral Type D	1,950.000 LF	_____.____	_____.____
2060	601.0411 Concrete Curb & Gutter 30-Inch Type D	100.000 LF	_____.____	_____.____
2070	602.0410 Concrete Sidewalk 5-Inch	73,375.000 SF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
2080	602.0415 Concrete Sidewalk 6-Inch	17,515.000 SF	_____.____	_____.____
2090	602.0420 Concrete Sidewalk 7-Inch	9,510.000 SF	_____.____	_____.____
2100	602.0515 Curb Ramp Detectable Warning Field Natural Patina	1,516.000 SF	_____.____	_____.____
2110	603.8000 Concrete Barrier Temporary Precast Delivered	13,475.000 LF	_____.____	_____.____
2120	603.8125 Concrete Barrier Temporary Precast Installed	13,475.000 LF	_____.____	_____.____
2130	606.0200 Riprap Medium	517.500 CY	_____.____	_____.____
2140	606.0300 Riprap Heavy	472.000 CY	_____.____	_____.____
2150	608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	8,294.000 LF	_____.____	_____.____
2160	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	1,020.000 LF	_____.____	_____.____
2170	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	1,222.000 LF	_____.____	_____.____
2180	608.0321 Storm Sewer Pipe Reinforced Concrete Class III 21-Inch	90.000 LF	_____.____	_____.____
2190	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	7,699.000 LF	_____.____	_____.____
2200	608.0327 Storm Sewer Pipe Reinforced Concrete Class III 27-Inch	95.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
2210	608.0330 Storm Sewer Pipe Reinforced Concrete Class III 30-Inch	2,739.000 LF	_____.____	_____.____
2220	608.0336 Storm Sewer Pipe Reinforced Concrete Class III 36-Inch	2,510.000 LF	_____.____	_____.____
2230	608.0342 Storm Sewer Pipe Reinforced Concrete Class III 42-Inch	3,519.000 LF	_____.____	_____.____
2240	608.0348 Storm Sewer Pipe Reinforced Concrete Class III 48-Inch	850.000 LF	_____.____	_____.____
2250	608.0354 Storm Sewer Pipe Reinforced Concrete Class III 54-Inch	151.000 LF	_____.____	_____.____
2260	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	825.000 LF	_____.____	_____.____
2270	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	412.000 LF	_____.____	_____.____
2280	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	734.000 LF	_____.____	_____.____
2290	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	553.000 LF	_____.____	_____.____
2300	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	618.000 LF	_____.____	_____.____
2310	608.0436 Storm Sewer Pipe Reinforced Concrete Class IV 36-Inch	535.000 LF	_____.____	_____.____
2320	608.0442 Storm Sewer Pipe Reinforced Concrete Class IV 42-Inch	291.000 LF	_____.____	_____.____
2330	608.6006 Storm Sewer Pipe Composite 6-Inch	56.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
2340	610.0119 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 19x30-Inch	49.000 LF	_____.____	_____.____
2350	610.0124 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	197.000 LF	_____.____	_____.____
2360	610.0129 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 29x45-Inch	191.000 LF	_____.____	_____.____
2370	610.0143 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 43x68-Inch	762.000 LF	_____.____	_____.____
2380	610.0158 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 58x91-Inch	95.000 LF	_____.____	_____.____
2390	610.0168 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 68x106-Inch	3,265.000 LF	_____.____	_____.____
2400	611.0530 Manhole Covers Type J	6.000 EACH	_____.____	_____.____
2410	611.0612 Inlet Covers Type C	4.000 EACH	_____.____	_____.____
2420	611.0624 Inlet Covers Type H	462.000 EACH	_____.____	_____.____
2430	611.0642 Inlet Covers Type MS	2.000 EACH	_____.____	_____.____
2440	611.0645 Inlet Covers Type MS-A	17.000 EACH	_____.____	_____.____
2450	611.2004 Manholes 4-FT Diameter	22.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
2460	611.2005 Manholes 5-FT Diameter	50.000 EACH	_____.____	_____.____
2470	611.2006 Manholes 6-FT Diameter	42.000 EACH	_____.____	_____.____
2480	611.2007 Manholes 7-FT Diameter	14.000 EACH	_____.____	_____.____
2490	611.2008 Manholes 8-FT Diameter	6.000 EACH	_____.____	_____.____
2500	611.2044 Manholes 4x4-FT	1.000 EACH	_____.____	_____.____
2510	611.2604 Manholes Variable Special 4-FT Diameter	10.000 EACH	_____.____	_____.____
2520	611.3004 Inlets 4-FT Diameter	77.000 EACH	_____.____	_____.____
2530	611.3230 Inlets 2x3-FT	338.000 EACH	_____.____	_____.____
2540	611.3901 Inlets Median 1 Grate	11.000 EACH	_____.____	_____.____
2550	611.3902 Inlets Median 2 Grate	4.000 EACH	_____.____	_____.____
2560	611.8110 Adjusting Manhole Covers	6.000 EACH	_____.____	_____.____
2570	611.8115 Adjusting Inlet Covers	6.000 EACH	_____.____	_____.____
2580	611.8120.S Cover Plates Temporary	73.000 EACH	_____.____	_____.____
2590	611.9800.S Pipe Grates	30.000 EACH	_____.____	_____.____
2600	612.0206 Pipe Underdrain Unperforated 6-Inch	795.000 LF	_____.____	_____.____
2610	612.0406 Pipe Underdrain Wrapped 6-Inch	20,205.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
2620	612.0902.S Insulation Board Polystyrene (inch) 01. 2-Inch	212.000 SY	_____.____	_____.____
2630	614.0150 Anchor Assemblies for Steel Plate Beam Guard	1.000 EACH	_____.____	_____.____
2640	614.2300 MGS Guardrail 3	1,962.500 LF	_____.____	_____.____
2650	614.2500 MGS Thrie Beam Transition	39.400 LF	_____.____	_____.____
2660	614.2610 MGS Guardrail Terminal EAT	1.000 EACH	_____.____	_____.____
2670	616.0204 Fence Chain Link 4-FT	26.000 LF	_____.____	_____.____
2680	616.0700.S Fence Safety	5,900.000 LF	_____.____	_____.____
2690	619.1000 Mobilization	1.000 EACH	_____.____	_____.____
2700	620.0300 Concrete Median Sloped Nose	2,016.000 SF	_____.____	_____.____
2710	624.0100 Water	3,457.000 MGAL	_____.____	_____.____
2720	625.0100 Topsoil	209,565.000 SY	_____.____	_____.____
2730	625.0500 Salvaged Topsoil	6,148.000 SY	_____.____	_____.____
2740	627.0200 Mulching	25,885.000 SY	_____.____	_____.____
2750	628.1504 Silt Fence	46,439.000 LF	_____.____	_____.____
2760	628.1520 Silt Fence Maintenance	183,901.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
2770	628.2004 Erosion Mat Class I Type B	34,310.000 SY	_____.____	_____.____
2780	628.2006 Erosion Mat Urban Class I Type A	173,964.000 SY	_____.____	_____.____
2790	628.2027 Erosion Mat Class II Type C	718.000 SY	_____.____	_____.____
2800	628.6005 Turbidity Barriers	590.000 SY	_____.____	_____.____
2810	628.7005 Inlet Protection Type A	502.000 EACH	_____.____	_____.____
2820	628.7010 Inlet Protection Type B	12.000 EACH	_____.____	_____.____
2830	628.7015 Inlet Protection Type C	480.000 EACH	_____.____	_____.____
2840	628.7020 Inlet Protection Type D	13.000 EACH	_____.____	_____.____
2850	628.7504 Temporary Ditch Checks	1,464.000 LF	_____.____	_____.____
2860	628.7515.S Stone or Rock Ditch Checks	132.000 CY	_____.____	_____.____
2870	628.7555 Culvert Pipe Checks	265.000 EACH	_____.____	_____.____
2880	628.7560 Tracking Pads	1.000 EACH	_____.____	_____.____
2890	629.0210 Fertilizer Type B	135.890 CWT	_____.____	_____.____
2900	630.0140 Seeding Mixture No. 40	3,597.000 LB	_____.____	_____.____
2910	630.0175 Seeding Mixture No. 75	34.000 LB	_____.____	_____.____
2920	630.0200 Seeding Temporary	166.000 LB	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
2930	631.0300 Sod Water	243.000 MGAL	_____.____	_____.____
2940	631.1000 Sod Lawn	4,305.000 SY	_____.____	_____.____
2950	632.0101 Trees (species) (size) (root) 01. Thornless Cockspur Hawthorne, B&B, 2.5" Cal.	1.000 EACH	_____.____	_____.____
2960	632.0101 Trees (species) (size) (root) 02. Black Hills Spruce, B&B, 8-Foot HT.	4.000 EACH	_____.____	_____.____
2970	632.0101 Trees (species) (size) (root) 03. Fat Albert Blue Spruce, B&B, 7-Foot HT.	6.000 EACH	_____.____	_____.____
2980	632.0101 Trees (species) (size) (root) 04. Blackhaw Viburnum, Cont., #10	3.000 EACH	_____.____	_____.____
2990	632.0101 Trees (species) (size) (root) 05. Staghorn Sumac, Cont., #10	8.000 EACH	_____.____	_____.____
3000	632.9101 Landscape Planting Surveillance and Care Cycles	15.000 EACH	_____.____	_____.____
3010	633.5200 Markers Culvert End	6.000 EACH	_____.____	_____.____
3020	634.0612 Posts Wood 4x6-Inch X 12-FT	6.000 EACH	_____.____	_____.____
3030	634.0614 Posts Wood 4x6-Inch X 14-FT	18.000 EACH	_____.____	_____.____
3040	634.0620 Posts Wood 4x6-Inch X 20-FT	2.000 EACH	_____.____	_____.____
3050	637.0620 Sign Flags Permanent Type II	4.000 EACH	_____.____	_____.____
3060	637.1220 Signs Type I Reflective SH	552.000 SF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
3070	637.2210 Signs Type II Reflective H	2,003.130 SF	_____.____	_____.____
3080	637.2230 Signs Type II Reflective F	321.660 SF	_____.____	_____.____
3090	638.2102 Moving Signs Type II	155.000 EACH	_____.____	_____.____
3100	638.2602 Removing Signs Type II	161.000 EACH	_____.____	_____.____
3110	638.3000 Removing Small Sign Supports	146.000 EACH	_____.____	_____.____
3120	638.4000 Moving Small Sign Supports	67.000 EACH	_____.____	_____.____
3130	640.1303.S Pond Liner Clay	2,795.000 CY	_____.____	_____.____
3140	641.8100 Overhead Sign Support (structure) 01. S-13-483	LS	LUMP SUM	_____.____
3150	641.8100 Overhead Sign Support (structure) 02. S-13-491	LS	LUMP SUM	_____.____
3160	641.8100 Overhead Sign Support (structure) 03. S-13-492	LS	LUMP SUM	_____.____
3170	641.8100 Overhead Sign Support (structure) 04. S-13-480	LS	LUMP SUM	_____.____
3180	641.8100 Overhead Sign Support (structure) 05. S-13-481	LS	LUMP SUM	_____.____
3190	641.8100 Overhead Sign Support (structure) 06. S-13-482	LS	LUMP SUM	_____.____
3200	641.8100 Overhead Sign Support (structure) 07. S-13-484	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
3210	641.8100 Overhead Sign Support (structure) 08. S-13-493	LS	LUMP SUM	_____.____
3220	641.8100 Overhead Sign Support (structure) 09. S-13-494	LS	LUMP SUM	_____.____
3230	641.8100 Overhead Sign Support (structure) 10. S-13-487	LS	LUMP SUM	_____.____
3240	641.8100 Overhead Sign Support (structure) 11. S-13-495	LS	LUMP SUM	_____.____
3250	641.8100 Overhead Sign Support (structure) 12. S-13-488	LS	LUMP SUM	_____.____
3260	641.8100 Overhead Sign Support (structure) 13. S-13-489	LS	LUMP SUM	_____.____
3270	641.8100 Overhead Sign Support (structure) 14. S-13-490	LS	LUMP SUM	_____.____
3280	641.8100 Overhead Sign Support (structure) 15. S-13-496	LS	LUMP SUM	_____.____
3290	641.8100 Overhead Sign Support (structure) 16. S-13-497	LS	LUMP SUM	_____.____
3300	642.5401 Field Office Type D	1.000 EACH	_____.____	_____.____
3310	643.0200.S Traffic Control Surveillance and Maintenance (project) 01. 5992-09-82	775.000 DAY	_____.____	_____.____
3320	643.0200.S Traffic Control Surveillance and Maintenance (project) 02. 5992-09-83	775.000 DAY	_____.____	_____.____
3330	643.0200.S Traffic Control Surveillance and Maintenance (project) 03. 5992-09-85	775.000 DAY	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
3340	643.0300 Traffic Control Drums	827,173.000 DAY	_____.____	_____.____
3350	643.0410 Traffic Control Barricades Type II	7,898.000 DAY	_____.____	_____.____
3360	643.0420 Traffic Control Barricades Type III	100,926.000 DAY	_____.____	_____.____
3370	643.0500 Traffic Control Flexible Tubular Marker Posts	41.000 EACH	_____.____	_____.____
3380	643.0600 Traffic Control Flexible Tubular Marker Bases	41.000 EACH	_____.____	_____.____
3390	643.0705 Traffic Control Warning Lights Type A	212,099.000 DAY	_____.____	_____.____
3400	643.0715 Traffic Control Warning Lights Type C	126,857.000 DAY	_____.____	_____.____
3410	643.0800 Traffic Control Arrow Boards	3,020.000 DAY	_____.____	_____.____
3420	643.0900 Traffic Control Signs	251,743.000 DAY	_____.____	_____.____
3430	643.0920 Traffic Control Covering Signs Type II	14.000 EACH	_____.____	_____.____
3440	643.1000 Traffic Control Signs Fixed Message	108.000 SF	_____.____	_____.____
3450	643.1050 Traffic Control Signs PCMS	1,048.000 DAY	_____.____	_____.____
3460	643.2000 Traffic Control Detour (project) 01. 5992-09-83	1.000 EACH	_____.____	_____.____
3470	643.3000 Traffic Control Detour Signs	2,111.000 DAY	_____.____	_____.____
3480	644.1410.S Temporary Pedestrian Surface Asphalt	5,980.000 SF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
3490	644.1420.S Temporary Pedestrian Surface Plywood	500.000 SF	_____.____	_____.____
3500	644.1430.S Temporary Pedestrian Surface Plate	500.000 SF	_____.____	_____.____
3510	644.1601.S Temporary Curb Ramp	10.000 EACH	_____.____	_____.____
3520	644.1616.S Temporary Pedestrian Safety Fence	1,430.000 LF	_____.____	_____.____
3530	645.0105 Geotextile Type C	1,590.000 SY	_____.____	_____.____
3540	645.0111 Geotextile Type DF Schedule A	2,450.000 SY	_____.____	_____.____
3550	645.0120 Geotextile Type HR	1,823.600 SY	_____.____	_____.____
3560	645.0140 Geotextile Type SAS	140.000 SY	_____.____	_____.____
3570	646.0106 Pavement Marking Epoxy 4-Inch	82,672.000 LF	_____.____	_____.____
3580	646.0126 Pavement Marking Epoxy 8-Inch	12,572.000 LF	_____.____	_____.____
3590	646.0600 Removing Pavement Markings	31,980.000 LF	_____.____	_____.____
3600	646.0690.S Removing Pavement Markings Water Blasting	49,675.000 LF	_____.____	_____.____
3610	647.0166 Pavement Marking Arrows Epoxy Type 2	100.000 EACH	_____.____	_____.____
3620	647.0196 Pavement Marking Arrows Epoxy Type 5	4.000 EACH	_____.____	_____.____
3630	647.0206 Pavement Marking Arrows Bike Lane Epoxy	79.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
3640	647.0306 Pavement Marking Symbols Bike Lane Epoxy	78.000 EACH	_____.____	_____.____
3650	647.0336 Pavement Marking Symbols Bike Shared Lane Epoxy	5.000 EACH	_____.____	_____.____
3660	647.0356 Pavement Marking Words Epoxy	96.000 EACH	_____.____	_____.____
3670	647.0456 Pavement Marking Curb Epoxy	1,733.000 LF	_____.____	_____.____
3680	647.0566 Pavement Marking Stop Line Epoxy 18-Inch	1,118.000 LF	_____.____	_____.____
3690	647.0606 Pavement Marking Island Nose Epoxy	34.000 EACH	_____.____	_____.____
3700	647.0726 Pavement Marking Diagonal Epoxy 12-Inch	791.000 LF	_____.____	_____.____
3710	647.0766 Pavement Marking Crosswalk Epoxy 6-Inch	5,503.000 LF	_____.____	_____.____
3720	647.0990.S Removing Special Pavement Markings Water Blasting	18.000 EACH	_____.____	_____.____
3730	649.0400 Temporary Pavement Marking Removable Tape 4-Inch	94,940.000 LF	_____.____	_____.____
3740	649.0402 Temporary Pavement Marking Paint 4-Inch	78,920.000 LF	_____.____	_____.____
3750	649.0403 Temporary Pavement Marking Epoxy 4-Inch	90,990.000 LF	_____.____	_____.____
3760	649.0801 Temporary Pavement Marking Removable Tape 8-Inch	3,200.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
3770	649.0802 Temporary Pavement Marking Paint 8-Inch	3,595.000 LF	_____.____	_____.____
3780	649.0803 Temporary Pavement Marking Epoxy 8-Inch	6,320.000 LF	_____.____	_____.____
3790	649.1100 Temporary Pavement Marking Stop Line 18-Inch	65.000 LF	_____.____	_____.____
3800	649.1200 Temporary Pavement Marking Stop Line Removable Tape 18-Inch	285.000 LF	_____.____	_____.____
3810	649.1600 Temporary Pavement Marking Diagonal Removable Tape 12-Inch	260.000 LF	_____.____	_____.____
3820	649.1802 Temporary Pavement Marking Arrows Paint	31.000 EACH	_____.____	_____.____
3830	649.1803 Temporary Pavement Marking Arrows Epoxy	12.000 EACH	_____.____	_____.____
3840	649.2002 Temporary Pavement Marking Words Paint	31.000 EACH	_____.____	_____.____
3850	649.2003 Temporary Pavement Marking Words Epoxy	12.000 EACH	_____.____	_____.____
3860	650.4000 Construction Staking Storm Sewer	617.000 EACH	_____.____	_____.____
3870	650.4500 Construction Staking Subgrade	56,411.000 LF	_____.____	_____.____
3880	650.5000 Construction Staking Base	56,411.000 LF	_____.____	_____.____
3890	650.5500 Construction Staking Curb Gutter and Curb & Gutter	96,173.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
3900	650.6000 Construction Staking Pipe Culverts	15.000 EACH	_____._____	_____._____
3910	650.6500 Construction Staking Structure Layout (structure) 01. B-13-845	LS	LUMP SUM	_____._____
3920	650.6500 Construction Staking Structure Layout (structure) 02. C-13-2080	LS	LUMP SUM	_____._____
3930	650.6500 Construction Staking Structure Layout (structure) 03. C-13-2081	LS	LUMP SUM	_____._____
3940	650.6500 Construction Staking Structure Layout (structure) 04. C-13-2082	LS	LUMP SUM	_____._____
3950	650.6500 Construction Staking Structure Layout (structure) 05. C-13-2083	LS	LUMP SUM	_____._____
3960	650.6500 Construction Staking Structure Layout (structure) 06. C-13-2084	LS	LUMP SUM	_____._____
3970	650.6500 Construction Staking Structure Layout (structure) 07. C-13-2085	LS	LUMP SUM	_____._____
3980	650.6500 Construction Staking Structure Layout (structure) 08. C-13-2086	LS	LUMP SUM	_____._____
3990	650.6500 Construction Staking Structure Layout (structure) 09. R-13-292	LS	LUMP SUM	_____._____
4000	650.6500 Construction Staking Structure Layout (structure) 10. R-13-293	LS	LUMP SUM	_____._____
4010	650.6500 Construction Staking Structure Layout (structure) 11. R-13-294	LS	LUMP SUM	_____._____
4020	650.6500 Construction Staking Structure Layout (structure) 12. R-13-295	LS	LUMP SUM	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
4030	650.6500 Construction Staking Structure Layout (structure) 13. R-13-296	LS	LUMP SUM	_____.____
4040	650.6500 Construction Staking Structure Layout (structure) 14. R-13-297	LS	LUMP SUM	_____.____
4050	650.6500 Construction Staking Structure Layout (structure) 15. R-13-298	LS	LUMP SUM	_____.____
4060	650.6500 Construction Staking Structure Layout (structure) 16. R-13-299	LS	LUMP SUM	_____.____
4070	650.6500 Construction Staking Structure Layout (structure) 17. R-13-300	LS	LUMP SUM	_____.____
4080	650.6500 Construction Staking Structure Layout (structure) 18. R-13-301	LS	LUMP SUM	_____.____
4090	650.6500 Construction Staking Structure Layout (structure) 19. R-13-302	LS	LUMP SUM	_____.____
4100	650.6500 Construction Staking Structure Layout (structure) 20. R-13-303	LS	LUMP SUM	_____.____
4110	650.6500 Construction Staking Structure Layout (structure) 21. R-13-304	LS	LUMP SUM	_____.____
4120	650.6500 Construction Staking Structure Layout (structure) 22. R-13-305	LS	LUMP SUM	_____.____
4130	650.6500 Construction Staking Structure Layout (structure) 23. R-13-307	LS	LUMP SUM	_____.____
4140	650.6500 Construction Staking Structure Layout (structure) 24. S-13-480	LS	LUMP SUM	_____.____
4150	650.6500 Construction Staking Structure Layout (structure) 25. S-13-481	LS	LUMP SUM	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
4160	650.6500 Construction Staking Structure Layout (structure) 26. S-13-482	LS	LUMP SUM	_____.____
4170	650.8500 Construction Staking Electrical Installations (project) 01. 5992-09-82	LS	LUMP SUM	_____.____
4180	650.8500 Construction Staking Electrical Installations (project) 02. 5992-09-83	LS	LUMP SUM	_____.____
4190	650.8500 Construction Staking Electrical Installations (project) 03. 5992-09-85	LS	LUMP SUM	_____.____
4200	650.9910 Construction Staking Supplemental Control (project) 01. 5992-09-82	LS	LUMP SUM	_____.____
4210	650.9910 Construction Staking Supplemental Control (project) 02. 5992-09-83	LS	LUMP SUM	_____.____
4220	650.9910 Construction Staking Supplemental Control (project) 03. 5992-09-85	LS	LUMP SUM	_____.____
4230	650.9920 Construction Staking Slope Stakes	49,925.000 LF	_____.____	_____.____
4240	652.0210 Conduit Rigid Nonmetallic Schedule 40 1-Inch	2,769.000 LF	_____.____	_____.____
4250	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	34,743.000 LF	_____.____	_____.____
4260	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	21,283.000 LF	_____.____	_____.____
4270	652.0325 Conduit Rigid Nonmetallic Schedule 80 2-Inch	4,678.000 LF	_____.____	_____.____
4280	652.0335 Conduit Rigid Nonmetallic Schedule 80 3-Inch	9,896.000 LF	_____.____	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
4290	652.0605 Conduit Special 2-Inch	10.000 LF	_____.____	_____.____
4300	652.0800 Conduit Loop Detector	7,357.000 LF	_____.____	_____.____
4310	653.0905 Removing Pull Boxes	35.000 EACH	_____.____	_____.____
4320	654.0110 Concrete Bases Type 10	9.000 EACH	_____.____	_____.____
4330	654.0113 Concrete Bases Type 13	6.000 EACH	_____.____	_____.____
4340	655.0230 Cable Traffic Signal 5-14 AWG	6,643.000 LF	_____.____	_____.____
4350	655.0240 Cable Traffic Signal 7-14 AWG	2,509.000 LF	_____.____	_____.____
4360	655.0250 Cable Traffic Signal 9-14 AWG	3,320.000 LF	_____.____	_____.____
4370	655.0260 Cable Traffic Signal 12-14 AWG	1,958.000 LF	_____.____	_____.____
4380	655.0615 Electrical Wire Lighting 10 AWG	22,738.000 LF	_____.____	_____.____
4390	655.0620 Electrical Wire Lighting 8 AWG	40,744.000 LF	_____.____	_____.____
4400	655.0630 Electrical Wire Lighting 4 AWG	122,394.000 LF	_____.____	_____.____
4410	655.0800 Loop Detector Wire	18,966.000 LF	_____.____	_____.____
4420	656.0200 Electrical Service Meter Breaker Pedestal (location) 01. CTH M & Ineichen Drive	LS	LUMP SUM	_____.____
4430	656.0200 Electrical Service Meter Breaker Pedestal (location) 02. Station 100"SB"+41.50, LT.	LS	LUMP SUM	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
4440	656.0200 Electrical Service Meter Breaker Pedestal (location) 03. CTH M & CTH PD	LS	LUMP SUM	_____.____
4450	656.0200 Electrical Service Meter Breaker Pedestal (location) 04. CTH M & Flagstone Drive	LS	LUMP SUM	_____.____
4460	656.0200 Electrical Service Meter Breaker Pedestal (location) 05. CTH M & Mid Town Road	LS	LUMP SUM	_____.____
4470	656.0200 Electrical Service Meter Breaker Pedestal (location) 06. CTH M & Boyer Street	LS	LUMP SUM	_____.____
4480	657.0100 Pedestal Bases	12.000 EACH	_____.____	_____.____
4490	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	159.000 EACH	_____.____	_____.____
4500	657.0420 Traffic Signal Standards Aluminum 13-FT	11.000 EACH	_____.____	_____.____
4510	658.0500 Pedestrian Push Buttons	25.000 EACH	_____.____	_____.____
4520	658.5069 Signal Mounting Hardware (location) 01. CTH M & CTH PD	LS	LUMP SUM	_____.____
4530	658.5069 Signal Mounting Hardware (location) 02. CTH M & Mid Town Road	LS	LUMP SUM	_____.____
4540	659.0205 Luminaires Underdeck 70 Watts	2.000 EACH	_____.____	_____.____
4550	659.0210 Luminaires Underdeck 100 Watts	2.000 EACH	_____.____	_____.____
4560	690.0150 Sawing Asphalt	26,620.000 LF	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
4570	690.0250 Sawing Concrete	372.000 LF	_____.____	_____.____
4580	715.0415 Incentive Strength Concrete Pavement	1,500.000 DOL	1.00000	1,500.00
4590	715.0502 Incentive Strength Concrete Structures	40,386.000 DOL	1.00000	40,386.00
4600	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	6,480.000 HRS	5.00000	32,400.00
4610	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	2,100.000 HRS	5.00000	10,500.00
4620	SPV.0035 Special 01. Rock Excavation, Sanitary Sewer and Water Main	210.000 CY	_____.____	_____.____
4630	SPV.0060 Special 01. Outlet Boxes 4x4x4-Inch	18.000 EACH	_____.____	_____.____
4640	SPV.0060 Special 02. Junction Boxes 8x8x4-Inch	3.000 EACH	_____.____	_____.____
4650	SPV.0060 Special 03. Pedestrian Underpass Cabinet	3.000 EACH	_____.____	_____.____
4660	SPV.0060 Special 04. Luminaires Underpass LED	12.000 EACH	_____.____	_____.____
4670	SPV.0060 Special 05. Outlet Boxes 4x4x6-Inch	6.000 EACH	_____.____	_____.____
4680	SPV.0060 Special 06. Reset Property Corners	13.000 EACH	_____.____	_____.____
4690	SPV.0060 Special 07. Remove and Replace Mailboxes	16.000 EACH	_____.____	_____.____
4700	SPV.0060 Special 08. Landmark Reference Monuments Special	6.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
4710	SPV.0060 Special 09. Locate and Reference Property Corners	13.000 EACH	_____.____	_____.____
4720	SPV.0060 Special 10. Manhole Covers Type VER	32.000 EACH	_____.____	_____.____
4730	SPV.0060 Special 11. Inlet Cover Type Driveway Special	10.000 EACH	_____.____	_____.____
4740	SPV.0060 Special 12. Manhole Cover Type MAD	67.000 EACH	_____.____	_____.____
4750	SPV.0060 Special 13. Sidewalk Trench Drain	2.000 EACH	_____.____	_____.____
4760	SPV.0060 Special 14. SSPRCHE 68x106-Inch Bend	6.000 EACH	_____.____	_____.____
4770	SPV.0060 Special 15. Pond Outlet Structure	2.000 EACH	_____.____	_____.____
4780	SPV.0060 Special 16. Manholes Special 10-FT Diameter	5.000 EACH	_____.____	_____.____
4790	SPV.0060 Special 17. Manholes Special 12x12-FT	1.000 EACH	_____.____	_____.____
4800	SPV.0060 Special 18. Utility Line Opening (ULO)	16.000 EACH	_____.____	_____.____
4810	SPV.0060 Special 19. Sewer Electronic Markers	13.000 EACH	_____.____	_____.____
4820	SPV.0060 Special 20. Traffic Signal Removal	11.000 EACH	_____.____	_____.____
4830	SPV.0060 Special 21. Concrete Base Type P	3.000 EACH	_____.____	_____.____
4840	SPV.0060 Special 22. Concrete Base Type M	5.000 EACH	_____.____	_____.____
4850	SPV.0060 Special 23. Concrete Base Type LB-2	18.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
4860	SPV.0060 Special 24. Concrete Base Type LB-3	168.000 EACH	_____.____	_____.____
4870	SPV.0060 Special 25. Concrete Base Type LB-8	7.000 EACH	_____.____	_____.____
4880	SPV.0060 Special 26. Concrete Base Type G	10.000 EACH	_____.____	_____.____
4890	SPV.0060 Special 27. Electrical Utility Access Structure	6.000 EACH	_____.____	_____.____
4900	SPV.0060 Special 28. Electrical Pullbox, Type I	185.000 EACH	_____.____	_____.____
4910	SPV.0060 Special 29. Electrical Pullbox, Type III	10.000 EACH	_____.____	_____.____
4920	SPV.0060 Special 30. Electrical Pullbox, Type V	25.000 EACH	_____.____	_____.____
4930	SPV.0060 Special 31. Electrical Pullbox, Type VII	2.000 EACH	_____.____	_____.____
4940	SPV.0060 Special 32. Transformer Base 16-Inch Steel	16.000 EACH	_____.____	_____.____
4950	SPV.0060 Special 33. Monotube Pole, Type 9	15.000 EACH	_____.____	_____.____
4960	SPV.0060 Special 34. Monotube Arm, 20-Foot	7.000 EACH	_____.____	_____.____
4970	SPV.0060 Special 35. Monotube Arm, 25-Foot	1.000 EACH	_____.____	_____.____
4980	SPV.0060 Special 36. Monotube Arm, 30-Foot	1.000 EACH	_____.____	_____.____
4990	SPV.0060 Special 37. Monotube Arm, 35-Foot	1.000 EACH	_____.____	_____.____
5000	SPV.0060 Special 38. Monotube Arm, 40-Foot	1.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5010	SPV.0060 Special 39. Monotube Arm, 50-Foot	4.000 EACH	_____.____	_____.____
5020	SPV.0060 Special 41. Traffic Signal Heads 12-Inch, 3-Section Vertical	59.000 EACH	_____.____	_____.____
5030	SPV.0060 Special 42. Traffic Signal Heads 12-Inch, 5-Section Vertical	8.000 EACH	_____.____	_____.____
5040	SPV.0060 Special 43. Traffic Signal Heads 16-Inch, Pedestrian with Countdown	24.000 EACH	_____.____	_____.____
5050	SPV.0060 Special 44. Backplates Signal Face, 3-Section 12-Inch	59.000 EACH	_____.____	_____.____
5060	SPV.0060 Special 45. Backplates Signal Face, 5-Section 12-Inch	8.000 EACH	_____.____	_____.____
5070	SPV.0060 Special 46. Traffic Signal Control Cabinet	2.000 EACH	_____.____	_____.____
5080	SPV.0060 Special 47. Traffic Signal Controller	2.000 EACH	_____.____	_____.____
5090	SPV.0060 Special 48. Optical Signal Preempt	2.000 EACH	_____.____	_____.____
5100	SPV.0060 Special 49. Traffic Signal Ethernet Switch	2.000 EACH	_____.____	_____.____
5110	SPV.0060 Special 50. Malfunction Management Unit (MMU)	2.000 EACH	_____.____	_____.____
5120	SPV.0060 Special 51. Erecting City Owned Signs	18.000 EACH	_____.____	_____.____
5130	SPV.0060 Special 52. Sign Post Base for Concrete Installation	15.000 EACH	_____.____	_____.____
5140	SPV.0060 Special 53. Precast Sign Post Base	220.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5150	SPV.0060 Special 60. Street Light Removal	14.000 EACH	_____.____	_____.____
5160	SPV.0060 Special 61. Lighting Control Cabinet	5.000 EACH	_____.____	_____.____
5170	SPV.0060 Special 62. Pole 30-Foot, 11 Gauge	175.000 EACH	_____.____	_____.____
5180	SPV.0060 Special 63. Pole Aluminum 20-Foot Street Light	18.000 EACH	_____.____	_____.____
5190	SPV.0060 Special 64. LED Luminaire and Mounting Bracket Type 1	31.000 EACH	_____.____	_____.____
5200	SPV.0060 Special 65. LED Luminaire and Mounting Bracket Type 2	243.000 EACH	_____.____	_____.____
5210	SPV.0060 Special 66. LED Luminaire and Mounting Bracket Type 3	42.000 EACH	_____.____	_____.____
5220	SPV.0060 Special 67. SSPRC 36-Inch Bend	1.000 EACH	_____.____	_____.____
5230	SPV.0060 Special 68. Temporary Drainage Structures	28.000 EACH	_____.____	_____.____
5240	SPV.0060 Special 69. Concrete Pipe Support	2.000 EACH	_____.____	_____.____
5250	SPV.0060 Special 70. Connect to Existing Water Main VER, 10-Inch	2.000 EACH	_____.____	_____.____
5260	SPV.0060 Special 71. Connect to Existing Water Main VER, 8-Inch	1.000 EACH	_____.____	_____.____
5270	SPV.0060 Special 72. Fire Hydrant VER	11.000 EACH	_____.____	_____.____
5280	SPV.0060 Special 73. Removing Fire Hydrant and Valve VER	1.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5290	SPV.0060 Special 74. Water Valve and Valve Box VER 12-Inch	7.000 EACH	_____.____	_____.____
5300	SPV.0060 Special 75. Water Valve and Valve Box VER 10-Inch	1.000 EACH	_____.____	_____.____
5310	SPV.0060 Special 76. Water Valve and Valve Box VER 8-Inch	2.000 EACH	_____.____	_____.____
5320	SPV.0060 Special 77. Water Valve and Valve Box VER 6-Inch	13.000 EACH	_____.____	_____.____
5330	SPV.0060 Special 78. Sanitary Manhole Cover VER	12.000 EACH	_____.____	_____.____
5340	SPV.0060 Special 79. Adjust Sewer Access Structure Special (MMSD)	3.000 EACH	_____.____	_____.____
5350	SPV.0060 Special 80. Sanitary Sewer Internal Chimney Seal	1.000 EACH	_____.____	_____.____
5360	SPV.0060 Special 81. Sanitary Lateral Connect	2.000 EACH	_____.____	_____.____
5370	SPV.0060 Special 82. Abandon Sanitary Sewer - Pipe Plug	3.000 EACH	_____.____	_____.____
5380	SPV.0060 Special 83. Sanitary Sewer Tap	2.000 EACH	_____.____	_____.____
5390	SPV.0060 Special 84. Adjust Sewer Access Structure Special	3.000 EACH	_____.____	_____.____
5400	SPV.0060 Special 85. Sanitary Sewer Access Structure (4-Foot Diameter)	9.000 EACH	_____.____	_____.____
5410	SPV.0060 Special 86. Sanitary Sewer Access Structure (5-Foot Diameter)	1.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5420	SPV.0060 Special 87. Slurry Backfill	4.000 EACH	_____.____	_____.____
5430	SPV.0060 Special 88. Connection to Existing Manhole (MMSD)	1.000 EACH	_____.____	_____.____
5440	SPV.0060 Special 89. Reconstruct Bench and Flowlines	2.000 EACH	_____.____	_____.____
5450	SPV.0060 Special 90. Adandon Water Valve Box MAD	7.000 EACH	_____.____	_____.____
5460	SPV.0060 Special 91. Relocate Existing Hydrant MAD	1.000 EACH	_____.____	_____.____
5470	SPV.0060 Special 92. Furnish Excavation And Ditch For Live Tap	4.000 EACH	_____.____	_____.____
5480	SPV.0060 Special 93. Adjust Existing Water Valve Box MAD	23.000 EACH	_____.____	_____.____
5490	SPV.0060 Special 94. Connect to Existing Water Main MAD	26.000 EACH	_____.____	_____.____
5500	SPV.0060 Special 95. Furnish and Install 6-Inch Valve MAD	33.000 EACH	_____.____	_____.____
5510	SPV.0060 Special 96. Furnish and Install 8-Inch Valve MAD	12.000 EACH	_____.____	_____.____
5520	SPV.0060 Special 97. Furnish and Install 12-Inch Valve MAD	41.000 EACH	_____.____	_____.____
5530	SPV.0060 Special 98. Furnish and Install 16-Inch Valve MAD	1.000 EACH	_____.____	_____.____
5540	SPV.0060 Special 99. Hydrants MAD	33.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5550	SPV.0090 Special 01. Parapet Concrete Type 'TX'	2,527.000 LF	_____.____	_____.____
5560	SPV.0090 Special 02. Railing Steel Type Ornamental B-13-845	131.000 LF	_____.____	_____.____
5570	SPV.0090 Special 03. Railing Steel Type Ornamental C-13-2082	113.000 LF	_____.____	_____.____
5580	SPV.0090 Special 04. Railing Steel Type Ornamental C-13-2083	79.000 LF	_____.____	_____.____
5590	SPV.0090 Special 05. Railing Steel Type Ornamental R-13-296	43.000 LF	_____.____	_____.____
5600	SPV.0090 Special 06. Railing Steel Type Ornamental R-13-304	104.000 LF	_____.____	_____.____
5610	SPV.0090 Special 07. Railing Steel Type Ornamental R-13-305	223.000 LF	_____.____	_____.____
5620	SPV.0090 Special 08. Railing Steel Type Ornamental R-13-307	485.000 LF	_____.____	_____.____
5630	SPV.0090 Special 09. Three-Sided Precast Concrete Structure C-13-2084	67.000 LF	_____.____	_____.____
5640	SPV.0090 Special 14. Reinforced Alley Curb	1,942.000 LF	_____.____	_____.____
5650	SPV.0090 Special 15. Concrete Curb & Gutter 24-Inch Type A Special	165.000 LF	_____.____	_____.____
5660	SPV.0090 Special 16. Concrete Curb & Gutter 24-Inch Type D Special	42,688.000 LF	_____.____	_____.____
5670	SPV.0090 Special 17. Concrete Curb & Gutter 30-Inch Type A Special	366.000 LF	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5680	SPV.0090 Special 18. Concrete Curb & Gutter 30-Inch Type D Special	48,962.000 LF	_____.____	_____.____
5690	SPV.0090 Special 19. Fence Special Split Rail	1,560.000 LF	_____.____	_____.____
5700	SPV.0090 Special 20. Reflective Sign Post	2,446.000 LF	_____.____	_____.____
5710	SPV.0090 Special 21. Loop Detector Lead-In Cable Special	33,254.000 LF	_____.____	_____.____
5720	SPV.0090 Special 22. Fiber Optic Cable 72-Count	25,567.000 LF	_____.____	_____.____
5730	SPV.0090 Special 23. Milling and Removing Longitudinal Joint	7,519.000 LF	_____.____	_____.____
5740	SPV.0090 Special 30. Electrical Wire Lighting, 14-3 Grounded	11,090.000 LF	_____.____	_____.____
5750	SPV.0090 Special 40. Abandon Water Main VER	42.000 LF	_____.____	_____.____
5760	SPV.0090 Special 43. Hydrant Lead VER, 6-Inch Ductile Iron	183.000 LF	_____.____	_____.____
5770	SPV.0090 Special 44. Sanitary Sewer VER, 8-Inch PVC	640.000 LF	_____.____	_____.____
5780	SPV.0090 Special 45. Sanitary Sewer VER, 12-Inch PVC	1,790.000 LF	_____.____	_____.____
5790	SPV.0090 Special 46. Sanitary Sewer VER, 15-Inch PVC	1,125.000 LF	_____.____	_____.____
5800	SPV.0090 Special 47. Sanitary Sewer Lateral VER, 6-Inch PVC	140.000 LF	_____.____	_____.____
5810	SPV.0090 Special 48. Steel Casing Pipe, 24-Inch	30.000 LF	_____.____	_____.____

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Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5820	SPV.0090 Special 49. Water Main VER, 6-Inch Ductile Iron	15.000 LF	_____.____	_____.____
5830	SPV.0090 Special 50. Water Main VER, 8-Inch Ductile Iron	300.000 LF	_____.____	_____.____
5840	SPV.0090 Special 51. Water Main VER, 10-Inch Ductile Iron	105.000 LF	_____.____	_____.____
5850	SPV.0090 Special 52. Water Main VER, 12-Inch Ductile Iron	4,780.000 LF	_____.____	_____.____
5860	SPV.0090 Special 53. Water Service VER, 2-Inch Copper	134.000 LF	_____.____	_____.____
5870	SPV.0090 Special 60. Utility Trench Patch Type III	754.000 LF	_____.____	_____.____
5880	SPV.0090 Special 61. Select Fill For Sanitary Sewer	2,386.000 LF	_____.____	_____.____
5890	SPV.0090 Special 62. Sanitary Sewer Pipe PVC, 8-Inch	1,937.000 LF	_____.____	_____.____
5900	SPV.0090 Special 63. Sanitary Sewer Pressure Pipe (C900), 10-Inch	139.000 LF	_____.____	_____.____
5910	SPV.0090 Special 65. 6-Inch Sanitary Sewer Lateral	310.000 LF	_____.____	_____.____
5920	SPV.0090 Special 66. Remove Sanitary Sewer Pipe	90.000 LF	_____.____	_____.____
5930	SPV.0090 Special 67. Furnish and Install 6-Inch Pipe & Fittings MAD	844.000 LF	_____.____	_____.____
5940	SPV.0090 Special 68. Furnish and Install 8-Inch Pipe & Fittings MAD	3,330.000 LF	_____.____	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
5950	SPV.0090 Special 69. Furnish and Install 12-Inch Pipe & Fittings MAD	14,890.000 LF	_____.____	_____.____
5960	SPV.0090 Special 70. Furnish and Install 16-Inch Pipe & Fittings MAD	89.000 LF	_____.____	_____.____
5970	SPV.0090 Special 71. 24-Inch Steel Casing Pipe MAD	200.000 LF	_____.____	_____.____
5980	SPV.0090 Special 72. Insulation MAD	816.000 LF	_____.____	_____.____
5990	SPV.0090 Special 80. Sanitary Sewer Pipe 20" Furnishing	3,233.000 LF	_____.____	_____.____
6000	SPV.0090 Special 81. Sanitary Sewer Pipe 20" Installing	3,233.000 LF	_____.____	_____.____
6010	SPV.0105 Special 01. Temporary Water Diversion, Culvert C-13-2081	LS	LUMP SUM	_____.____
6020	SPV.0105 Special 02. Temporary Water Diversion, Culvert C-13-2082	LS	LUMP SUM	_____.____
6030	SPV.0105 Special 03. Temporary Water Diversion, Culvert C-13-2083	LS	LUMP SUM	_____.____
6040	SPV.0105 Special 04. Temporary Water Diversion, Culvert C-13-2084	LS	LUMP SUM	_____.____
6050	SPV.0105 Special 05. Remove and Replace Weir Screen	LS	LUMP SUM	_____.____
6060	SPV.0105 Special 10. Construction Site Maintenance - Mowing (Project ID 5992-09-82)	LS	LUMP SUM	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
6070	SPV.0105 Special 11. Construction Site Maintenance - Mowing (Project ID 5992-09-83)	LS	LUMP SUM	_____.____
6080	SPV.0105 Special 12. Construction Site Maintenance - Mowing (Project ID 5992-09-85)	LS	LUMP SUM	_____.____
6090	SPV.0105 Special 15. Construction Staking Stormwater Management Ponds	LS	LUMP SUM	_____.____
6100	SPV.0105 Special 20. Temporary Traffic Signals CTH PD-CTH M	LS	LUMP SUM	_____.____
6110	SPV.0105 Special 21. Temporary Traffic Signals CTH M-Mid Town Road	LS	LUMP SUM	_____.____
6120	SPV.0105 Special 22. Radar Presence Detection System	LS	LUMP SUM	_____.____
6130	SPV.0105 Special 30. Construction Staking Sanitary Sewer MAD (Project ID 5992-09-86)	LS	LUMP SUM	_____.____
6140	SPV.0105 Special 31. Construction Staking Water Main MAD (Project ID 5992-09-86)	LS	LUMP SUM	_____.____
6150	SPV.0105 Special 33. Wastewater Control	LS	LUMP SUM	_____.____
6160	SPV.0105 Special 40. Construction Staking Sanitary Sewer VER (Project ID 5992-09-87)	LS	LUMP SUM	_____.____
6170	SPV.0105 Special 41. Construction Staking Water Main VER (Project ID 5992-09-87)	LS	LUMP SUM	_____.____
6180	SPV.0120 Special 01. Water for Seeded Areas	11,608.000 MGAL	_____.____	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
6190	SPV.0165 Special 01. Wall Modular Block Mechanically Stabilized Earth R-13-307	4,775.000 SF	_____.____	_____.____
6200	SPV.0165 Special 10. Architectural Concrete Pavement 5-Inch	57,930.000 SF	_____.____	_____.____
6210	SPV.0165 Special 11. Wall Modular Block Gravity Landscape	1,020.000 SF	_____.____	_____.____
6220	SPV.0170 Special 01. Pavement Cleanup	512.000 STA	_____.____	_____.____
6230	SPV.0180 Special 01. Dane County Parks Prairie Restoration	10,500.000 SY	_____.____	_____.____
6240	SPV.0180 Special 02. Slope Paving Concrete Stamped and Colored	770.000 SY	_____.____	_____.____
6250	SPV.0180 Special 03. Shredded Hardwood Bark Mulch	50.000 SY	_____.____	_____.____
6260	SPV.0187 Special 01. MMSD Trench Backfill	3,233.000 TF	_____.____	_____.____
6270	SPV.0195 Special 01. Select Crushed Material for Travel Corridor Interstitial Space	80.000 TON	_____.____	_____.____
6280	SPV.0200 Special 01. Sanitary Drop Manhole, 48-Inch VER	28.380 VF	_____.____	_____.____
6290	SPV.0200 Special 02. Sanitary Manhole, 48-Inch VER	150.560 VF	_____.____	_____.____
6300	SPV.0200 Special 10. Construct Outside Drop, 8-Inch	28.260 VF	_____.____	_____.____
6310	SPV.0200 Special 11. Construct Outside Drop, 10-Inch	2.390 VF	_____.____	_____.____

Proposal ID: 20170808004 **Project(s):** 5992-09-82, 5992-09-83, 5992-09-85, 5992-09-86, 5992-09-87, 5992-09-88

Federal ID(s): WISC 2017401, WISC 2017403, WISC 2017402, N/A, N/A, N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
6320	SPV.0200 Special 12. Construct Inside Drop, 8-Inch	7.270 VF	_____.____	_____.____
6330	SPV.0200 Special 20. Sanitary Manhole 4-Foot Diameter W/ Outside Drop (MMSD)	38.800 VF	_____.____	_____.____
6340	SPV.0200 Special 21. Sanitary Manhole 4-Foot Diameter (MMSD)	180.300 VF	_____.____	_____.____
6350	SPV.0200 Special 22. Sanitary Manhole 6-Foot Diameter (MMSD)	13.800 VF	_____.____	_____.____
6360	SPV.0200 Special 23. Sanitary Monitoring Manhole 6-Foot Diameter	15.300 VF	_____.____	_____.____
	Section: 0001		**Total:**	_____.____

Total Bid: _____.____

PLEASE ATTACH SCHEDULE OF ITEMS HERE