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	1206-07-75	WISC 2017 338	Mount Horeb-Madison CTH PD to Raymond Rd/ Stg 2/Phase 2	USH 18
Dane	1206-08-75		Mount Horeb-Madison CTH PD to Raymond Rd (Phase 2 Utls)	USH 18
Dane	1206-08-79		Mount Horeb-Madison Verona Road Salt Storage Facility	USH 18

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, $ 800,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: July 11, 2017 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time July 31, 2019	
Assigned Disadvantaged Business Enterprise Goal 10%	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 Earthwork, base course, concrete pavement, HMA pavement, concrete curb and gutter, concrete barrier wall, concrete sidewalk, MGS guardrail, storm sewer, pavement marking, erosion control, lighting, ITS, landscaping, structures (B-13-356, -455, -833, C-13-115, R-13-268, -270, -272, -273, N-13-5, -6, S-13-442, -445, -446, -448, -449, -450, -451, -454, -456, -457), and salt shed.	
Notice of Award Dated	Date Guaranty Returned

PLEASE ATTACH
PROPOSAL GUARANTY HERE

Effective with November 2007 Letting

PROPOSAL REQUIREMENTS AND CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

Effective with August 2015 Letting

BID PREPARATION

Preparing the Proposal Schedule of Items

A General

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

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

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

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

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

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

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

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

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

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

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

B Submitting Electronic Bids

B.1 On the Internet

(1) Do the following before submitting the bid:

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

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

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

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

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

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

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

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

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

Bidder

Name

BN00

Proposals: 1, 12, 14, & 22

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

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

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

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

C Waiver of Electronic Submittal

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

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

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

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

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

PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

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

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

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

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

(Signature of Authorized Contractor Representative) (Date)

March 2010

LIST OF SUBCONTRACTORS

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

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

Name of Subcontractor	Class of Work	Estimated Value

DECEMBER 2000

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Special Provisions

Table of Contents

Article	Description	Page #
1.	General.	6
2.	Scope of Work.	6
3.	Prosecution and Progress.	6
4.	Traffic.	10
5.	Holiday and Special Events Work Restrictions.	28
6.	Utilities.	31
7.	Municipality Acceptance of Sanitary Sewer and Water Main Construction.	40
8.	General Provisions for City of Fitchburg Municipal Utilities (Water Main and Sanitary Sewer).	40
9.	General Provisions for Storm Sewer.	42
10.	General Requirements for Incident Management.	43
11.	Notice to Contractor - General.	44
12.	Notice to Contractor - Construction Safety.	47
13.	Notice to Contractor – Airport Operating Restrictions – Site Specific.	51
14.	Notice to Contractor, Verification of Asbestos Inspection, No Asbestos Found.	54
15.	Contract Award and Execution.	54
16.	Other Contracts.	59
17.	Timely Decision Making Manual.	59
18.	Notice to Contractor – Contamination Beyond Construction Limits.	60
19.	Health and Safety Requirements for Workers Remediating Petroleum Contamination.	60
20.	Coordination with Businesses and Residents.	61
21.	Environmental Protection, Dewatering and Wetlands.	61
22.	Erosion Control.	62
23.	Clearing and Grubbing.	63
24.	Clearing and Grubbing - Emerald Ash Borer.	63
25.	Abandoning Sewer, Item 204.0291.S.	65
26.	Removing Inlet Covers, Item 204.9060.S.001	65
27.	Removing Endwalls, Item 204.9060.S.002.	66
28.	Removing Business Sign and Base, Item 204.9060.S.003.	66
29.	Removing Modular Block Retaining Wall, Item 204.9090.S.001	67
30.	Sealing Pipes.	67
31.	Roadway Excavation.	68
32.	Borrow.	68
33.	QMP Base Aggregate.	68
34.	Base Aggregate Dense ¾-Inch, Item 305.0110.	77
35.	Base Aggregate Dense 1 ¼-Inch, Item 305.0120.	77
36.	Concrete Pavement.	77
37.	Asphaltic Curb.	79
38.	Cold Patch, Item 495.1000.S.	79
39.	Polymer Overlay, Item 509.5100.S.	80

40. Concrete Staining R-13-268, Item 517.1010.S.001; R-13-270, Item 517.1010.S.002; S-13-446, Item 517.1010.S.003; S-13-448, Item 517.1010.S.004; S-13-449, Item 517.1010.S.005; S-13-450, Item 517.1010.S.006; S-13-451, Item 517.1010.S.007; Barrier Wall, Item 517.1010.S.008; B-13-833, Item 517.1010.S.009; R-13-272, Item 517.1010.S.010; R-13-273, Item 517.1010.S.011. 85
41. Architectural Surface Treatment R-13-268, Item 517.1050.S.001; R-13-270, Item 517.1050.S.002; R-13-272, Item 517.1050.S.003; S-13-446, Item 517.1050.S.004; S-13-448, Item 517.1050.S.005; S-13-449, Item 517.1050.S.006; S-13-450, Item 517.1050.S.007; S-13-451, Item 517.1050.S.008; B-13-833, Item 517.1050.S.009; R-13-273, Item 517.1050.S.010. 88
42. Surface Drain Pipe Corrugated Metal Slotted 24-Inch, Item 521.2005.S.001. 89
43. Noise Barriers Double-Sided Sound Absorptive N-13-5, Item 531.0300.S.001; N-13-6, Item 531.0300.S.002. 90
44. Concrete Barrier Temporary Precast Installed. 100
45. Riprap. 101
46. Adjusting Manhole Covers. 101
47. Cover Plates Temporary, Item 611.8120.S. 101
48. Pipe Grates, Item 611.9800.S. 102
49. Drain Slotted Vane, Item 611.9900.S. 103
50. General Requirements for Storm Sewer Manholes. 103
51. Crash Cushions Permanent Low Maintenance. 104
52. Fence Safety, Item 616.0700.S. 104
53. Sod Lawn. 105
54. Landscape Planting Surveillance and Care Cycles. 106
55. Furnishing and Planting Plant Materials. 106
56. Signs Reflective. 109
57. Removing Signs (type); Removing Small Sign Supports. 110
58. Blue Specific Service Signs. 110
59. Field Facilities. 111
60. Nighttime Work Lighting-Stationary. 112
61. Traffic Control Surveillance and Maintenance (project) 1206-07-75, Item 643.0200.S.001. 113
62. Temporary Pedestrian Surface Asphalt, Item 644.1410.S. 115
63. Temporary Curb Ramp, Item 644.1601.S. 116
64. Temporary Pedestrian Safety Fence, Item 644.1616.S. 117
65. Pavement Marking Grooved Epoxy 4-Inch, Item 646.0107.S. 118
66. Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch, Item 646.0841.S; 8-Inch, Item 646.0843.S. 119
67. Temporary Pavement Marking. 122
68. Install Conduit Into Existing Item, Item 652.0700.S. 122
69. Electrical Service Meter Breaker Pedestal 968+35 VR, Item 656.0200.001 123
70. Anchor Assemblies Light Poles on Structures, Item 657.6005.S. 123
71. Intelligent Transportation Systems – Conduit. 124
72. Intelligent Transportation Systems (ITS) – Control of Materials. 124
73. Intelligent Transportation Systems – General Requirements. 125
74. General Provision for Traffic Signals. 130

75. Temporary Traffic Signals for Intersections USH 18/151 and Raymond Road, Item 661.0200.001 130
76. Install Pole Mounted Cabinet, Item 673.0225.S. 131
77. Install Ethernet Switch, Item 675.0400.S. 132
78. Fiber Optic Splice Enclosure. 133
79. Optimized Aggregate Gradation Incentive, Item 715.0710. 133
80. Flexural Strength for Concrete Mix Design. 137
81. Seismograph, Item 999.1000.S. 137
82. Crack and Damage Survey, Item 999.1500.S. 138
83. Roadway Embankment, Item SPV.0035.001. 140
84. Concrete Masonry Deck Patching, Item SPV.0035.002. 141
85. Expanded Polystyrene (EPS) Geofoam, Item SPV.0035.003 142
86. Excavation Special, Item SPV.0035.004. 149
87. Abandon Existing Sanitary Sewer – Slurry, Item SPV.0035.600 154
88. Utility Line Opening (ULO), Item SPV.0060.001. 155
89. Maintenance and Removal of Crash Cushions Temporary Left In Place by Others, Item SPV.0060.002. 156
90. Relocate Crash Cushion Temporary Left In Place By Others, Item SPV.0060.003. 157
91. Department Owned Crash Cushion Temporary, Item SPV.0060.004. 157
92. Maintenance of Permanent Crash Cushions Placed by Others, Item SPV.0060.005. 158
93. Pipe Bollard, Item SPV.0060.006. 159
94. Posts Round Tubular Steel 2-Inch 12-FT, Item SPV.0060.007; Reflective 10-FT, Item SPV.0060.008; Reflective 12-FT, Item SPV.0060.009. 160
95. Precast Sign Post Base, Item SPV.0060.010. 161
96. Covering Signs, Item SPV.0060.011. 162
97. Flexible Tubular Marker Post and Base, Item SPV.0060.013. 163
98. Gates Chain Link 8-FT Polymer-Coated, Item SPV.0060.014. 164
99. Decorative Medallion, Item SPV.0060.015. 165
100. Medallion Concrete Staining Multi-Color, Item SPV.0060.016. 167
101. Relocate Apron Endwalls for Underdrain, Item SPV.0060.048. 168
102. Inlet Covers Type 2X3-FT, Item SPV.0060.049; DW, Item SPV.0060.050. 169
103. Cover Plates, Item SPV.0060.051 170
104. Concrete Cutoff Wall, Item SPV.0060.052. 170
105. Covering and Locating Storm Sewer, Item SPV.0060.053. 171
106. Storm Sewer Tap, Item SPV.0060.054. 172
107. Manhole C4755, Item SPV.0060.055; C4757, Item SPV.0060.056 173
108. Inlet Covers, Flat Temporary, Item SPV.0060.057. 174
109. MSE Wall Sleeve Type 1, Item SPV.0060.058; Type 13, Item SPV.0060.059; Temporary Signal Pole, Item SPV.0060.060; Type 10, Item SPV.0060.061 175
110. Loop Detector Splice, Item SPV.0060.100. 176
111. Pull Box Non-Conductive 24x36-Inch, Item SPV.0060.101; Pull Box Non-Conductive 24x42-Inch, Item SPV.0060.102. 176
112. Fiber Tracer Marker Post, Item SPV.0060.103. 177
113. Remove Wireless Antenna, Item SPV.0060.104. 178
114. Relocate Wireless ITS Bluetooth Detector, Item SPV.0060.105. 179
115. Remove Non-Intrusive Detection, Item SPV.0060.107 180

116. Install Wireless Antenna, Item SPV.0060.108. 181
117. Install Non-Intrusive Detection, Item SPV.0060.109. 182
118. Relocate Existing City-Owned Lighting Cabinet, Item SPV.0060.150. 183
119. Remove Existing City-Owned Lighting Cabinet, Item SPV.0060.151. 184
120. Remove Existing City-Owned Light Pole Assembly, Item SPV.0060.152. 185
121. Relocate Existing Pull Box, Item SPV.0060.153. 185
122. Interim Lighting Williamsburg Way, Item SPV.0060.154. 186
123. Remove Existing Department-Owned ITS Pole Assembly, Item SPV.0060.155. 188
124. Fire Hydrants, Item SPV.0060.600. 188
125. Remove and Reuse Existing Hydrant, Item SPV.0060.601 189
126. Water Valve, 6-Inch, Item SPV.0060.602; 8-Inch, Item SPV.0060.603; 10-Inch, Item SPV.0060.604; 12-Inch, Item SPV.0060.605. 190
127. Adjust Existing Valve Box, Item SPV.0060.606. 191
128. Remove Existing Valve Box, Item SPV.0060.607. 192
129. Connect to Existing Water Main, Item SPV.0060.608. 193
130. Abandon Existing Water Main, Item SPV.0060.609. 193
131. Temporary Water Main Connection, Item SPV.0060.610. 194
132. Sanitary Sewer Structure, 4-Foot Diameter, Item SPV.0060.611. 195
133. Remove Existing Sanitary Sewer Structure, Item SPV.0060.612. 196
134. Sanitary Sewer Lateral Electronic Marker, Item SPV.0060.613. 197
135. Reconstruct Bench and Flowlines, Item SPV.0060.614. 197
136. Install Existing Sanitary Sewer Structure M-4, 4-Foot Diameter, Item SPV.0060.615. 198
137. Reconstruct Existing Sanitary Sewer Structure M-5, Item SPV.0060.616. 199
138. Connect to Existing Sanitary Sewer Structure, Item SPV.0060.617. 200
139. Baseline CPM Progress Schedule, Item SPV.0060.700; CPM Progress Schedule Updates and Accepted Revisions, Item SPV.0060.701. 201
140. Street Sweeping, Item SPV.0075.001. 211
141. Concrete Curb & Gutter 32-Inch Special, Item SPV.0090.001; 56-Inch Special, Item SPV.0090.002; 4-Inch Sloped 5-Foot Type A, Item SPV.0090.003; 24-Inch Type A, Item SPV.0090.004. 212
142. Fence Chain Link 4-FT Polymer-Coated, Item SPV.0090.005; 6-FT Polymer-Coated, Item SPV.0090.006. 213
143. Salvage Concrete Barrier Precast, Item SPV.0090.007. 214
144. MGS Guardrail Relap, Item SPV.0090.008. 215
145. Sawing Pavement Deck Preparation Areas, Item SPV.0090.009. 216
146. Salvage Modular Block Retaining Wall, Item SPV.0090.010. 216
147. Concrete Barrier Special Type A, Item SPV.0090.011; Type B, Item SPV.0090.012; Type C, Item SPV.0090.013; Type D, Item SPV.0090.014; Transition S42C-S56C, Item SPV.0090.015. 217
148. Concrete Barrier Temporary Precast Delivered - Department Owned, Item SPV.0090.016. 218
149. Pipe Underdrain 6-Inch with Geotextile Fabric and Aggregate, Item SPV.0090.050... 218
150. Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 53x83-Inch, Item SPV.0090.051. 219
151. Storm Sewer Pipe PVC 6-Inch, Item SPV.0090.052; 10-Inch, Item SPV.0090.053; 18-Inch, Item SPV.0090.054. 220

152. Water Main, 6-Inch, Item SPV.0090.600; 8-Inch, Item SPV.0090.601; 10-Inch, Item SPV.0090.602; 12-Inch, Item SPV.0090.603. 221
153. Granular Backfill for Water Main, Item SPV.0090.604. 222
154. Insulation, Item SPV.0090.605. 222
155. Sanitary Sewer Pipe, 8-Inch Item SPV.0090.606; 10-Inch, Item SPV.0090.607; 15-Inch, Item SPV.0090.611. 223
156. Granular Backfill for Sanitary Sewer, Item SPV.0090.608. 224
157. Trenchless Steel Casing Pipe, 24-Inch, Item SPV.0090.609. 225
158. Sanitary Sewer Lateral, 4-Inch, Item SPV.0090.610. 228
159. Open Cut Steel Casing Pipe, 24-Inch, Item SPV.0090.612; 30-Inch, Item SPV.0090.613. 229
160. Research and Locate Existing Property Monuments, Item SPV.0105.001. 232
161. Verify and Replace Existing Property Monuments, Item SPV.0105.002. 233
162. Construction Staking Supplemental Features, Item SPV.0105.003. 234
163. Remove Traffic Signals Verona Road & Raymond Road, Item SPV.0105.100; Verona Road & Williamsbug Way, Item SPV.0105.101; Verona Road & CTH PD, Item SPV.0105.102. 234
164. EVP Detector Verona Road & Raymond Road, Item SPV.0105.103. 235
165. Relocate ITS Camera Pole Assembly, Item SPV.0105.104. 236
166. Interim Traffic Signals for Intersections USH 18/151 and Williamsburg Way, Item SPV.0105.200; Interim Traffic Signals for Intersections USH 18/151 and CTH PD, Item SPV.0105.201. 238
167. Salt Storage Shed, Item SPV.0105.500. 242
168. Swing Gate, Item SPV.0105.502. 312
169. Bioretention Basin, Item SPV.0105.503. 313
170. Removing Erosion Control Items Left In Place By Others, Item SPV.0105.504. 316
171. Construction Staking Water Main, Item SPV.0105.600. 317
172. Construction Staking Sanitary Sewer, Item SPV.0105.601. 317
173. Water for Seeded Areas, Item SPV.0120.001. 318
174. Temporary Curb Ramp Detectable Warning Field, Item SPV.0165.001. 319
175. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-268, Item SPV.0165.002; R-13-270, Item SPV.0165.003; R-13-272, Item SPV.0165.004; R-13-273, Item SPV.0165.009. 320
176. Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP, Item SPV.0165.005. 335
177. Colored and Stamped Concrete 5-Inch, Item SPV.0165.006. 347
178. Asphaltic Median Sloped Nose, Item SPV.0165.007. 351
179. Colored Concrete Full Depth, Item SPV.0165.008. 352
180. Asphaltic Surface Safety Islands, Item SPV.0180.001. 354
181. R-13-272 MSE Wall Facing Protection, Item SPV.0195.001. 355
182. Excavation, Hauling, and Disposal of Contaminated Soil and Management of Contaminated Groundwater, Item SPV.0195.100. 356

SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1206-07-75, Mount Horeb-Madison, CTH PD to Raymond Rd/Stg 2/Phase 2; Project 1206-08-75, Mount Horeb-Madison, CTH PD to Raymond Rd (Phase 2 Utls); Project 1206-08-79, Mount Horeb-Madison, Verona Road Salt Storage Facility; USH 18, 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 earthwork, base course, concrete pavement, HMA pavement, concrete curb and gutter, concrete barrier wall, concrete sidewalk, MGS guardrail, storm sewer, pavement marking, erosion control, lighting, ITS, landscaping, Structures (B-13-356, B-13-455, B-13-833, C-13-115, R-13-268, R-13-270, R-13-272, R-13-273, N-13-5, N-13-6, S-13-442, S-13-445, S-13-446, S-13-448, S-13-449, S-13-450, S-13-451, S-13-454, S-13-456, S-13-457), salt shed, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.
104-005 (20090901)

3. Prosecution and Progress.

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

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

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

The contract time for completion, as well as the interim completion dates, are based on an expedited work schedule and may require extra work hours, forces, equipment and coordination. Included in this Prosecution and Progress article are interim and final

completion dates. These dates indicate that work efforts will require multiple or concurrent controlling operations to occur at the same time. This information is included to assist the contractor and its subcontractors; do not interpret this information as a demonstration of specified means and methods or work periods other than interim and final completion dates.

Conform to the schedule of operations for the construction staging as shown in the plan. Do not move operations within the proposed construction staging unless modifications to the staging and schedule are approved in writing by the engineer.

The established construction schedule for the contract will involve coordination of construction activities with other projects and are included in the article entitled Other Contracts as part of these special provisions.

Stages 1 and 2 are being completed under project 1206-07-74. Staging for this project begins with Stage 3.

Northern Long-eared Bat (Myotis septentrionalis)
Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees and structures (bridges, culverts, buildings). Evaluation of the Federal Highway Administration's Range-Wide Biological Assessment and Programmatic Informal Consultation process, and/or consultation with the United States Fish and Wildlife Service (USFWS) has determined the project will have "no effect" on northern long-eared bats. If additional construction activities beyond what was originally specified are required to complete the work, such as additional tree clearing, approval from the WisDOT Regional Environmental Coordinator (REC) is required prior to initiating these activities.

The species and all active roosts are protected by the Federal Endangered Species Act. If an individual or active roost is encountered during construction or clearing operations, stop work and notify the engineer and the WisDOT REC.

Although the project has been determined to have no effect to the NLEB, it is preferred to perform clearing during the inactive period for the NLEB. Therefore, where possible perform clearing operations within the project corridor between October 1 and March 31, both dates inclusive. Coordinate clearing operations outside this period with the engineer prior to performing the work.

B Construction Schedule of Operations
Prepare a CPM schedule according to standard spec 108.4 and these special provisions.

C 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 as required by Section B. of this article 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 indiate 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, road, ramp, shoulder and rolling 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.

D Work Restrictions

Where a closure(s) 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(s) in a timely manner. If, in the engineer's judgment, the contractor's operations fail to meet the approved schedule, permission for a full-time or rolling closures may be rescinded.

Do not conduct construction operations in the median area and adjacent outside shoulder area of any roadway at the same time without the written permission of the engineer.

Do not close pedestrian and bicycle access to the underpass near station 944+25 VR prior to establishing pedestrian and bicycle access across Verona Road at the Williamsburg Way signalized intersection as shown in the traffic control plans for Stage 4.

Limit the crosswalk closure at Verona Road and CTH PD to 9 hours during one nighttime closure to pave the islands as shown in the plans in Traffic Control - CTH PD - Off Peak Lane Closures S4A.

Close Anton Drive to through traffic near Carriage Street for a maximum of two consecutive calendar days to complete the watermain work as shown in the plans in Traffic Control - Stg. 4 - Anton Watermain Connection.

Do not switch Verona Road traffic to Stage 5 until Spring 2018.

Do not close Williamsburg Way in Stage 8 until Spring 2019 and once closed re-open Williamsburg Way to all traffic within 90 calendar days.

Do not close traffic lanes prior to or after the specified time periods in the Traffic article.

Keep Verona Road and CTH PD open to traffic at all times, except as permitted by these special provisions. Deliver, park and store equipment and material outside of the existing roadways clear zones or at a distance from existing edges of pavement as approved by the engineer. Provide ingress and egress locations to the engineer ten working days in advance of anticipated use. Do not use the ingress or egress locations until approved by the engineer. Sign and/or use flag persons at the ingress and egress locations as directed by the engineer and according to standard spec 104.6.1 (4).

Do not switch traffic to the next construction stage or phase until all signing, pavement marking, traffic control devices for the stage or phase are in place, conflicting pavement markings and signs are covered or removed, and as directed by the engineer.

Maintain pedestrian facilities according to Americans with Disabilities Act Accessibility Guidelines (ADAAG) requirements at all times.

E Interim and Final Completion of Work

Parcel 2, TPP 1206-07-30 Completion Date

Complete all work for removing buildings, site clearance and site restoration for Parcel 2, TPP 1206-07-30 prior to 12:01 AM on October 14, 2017.

If the contractor fails to complete all work for removing buildings, site clearance and site restoration for Parcel 2, TPP 1206-07-30 prior to 12:01 AM on October 14, 2017 the department will assess the contractor $1,000 in interim liquidated damages for each day that removing buildings, site clearance and site restoration for Parcel 2, TPP 1206-07-30 remains incomplete after 12:01 AM on October 14, 2017. An entire calendar day will be charged for any period of time within a calendar day that the work remains incomplete beyond 12:01 AM on October 14, 2017.

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.

Project ID 1206-08-79 Completion Date

Complete all work as shown in the plans for Project ID 1206-08-79 prior to 12:01 AM on August 4, 2018.

If the contractor fails to complete all work as shown in the plans for Project ID 1206-08-79 prior to 12:01 AM on August 4, 2018 the department will assess the contractor $2,000 in interim liquidated damages for each day that Project ID 1206-08-79 remains incomplete after 12:01 AM, August 4, 2018. An entire calendar day will be charged for any period of

time within a calendar day that the work remains incomplete beyond 12:01 AM, August 4, 2018.

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.

Williamsburg Way Closure and Completion Date
Complete all work on Williamsburg Way as shown in the plans for Stage 8, including all work on B-13-833, except the Concrete Staining for B-13-833, within 90 consecutive calendar days and prior to 12:01 AM on July 3, 2019.

If the contractor fails to complete all work on Williamsburg Way as shown in the plans for Stage 8, including all work on B-13-833, except the Concrete Staining for B-13-833, within 90 consecutive calendar days and prior to 12:01 AM on July 3, 2019 the department will assess the contractor $5,000 in interim liquidated damages for each calendar day that Williamsburg Way work, including B-13-833, except the Concrete Staining for B-13-833, remains incomplete after 90 consecutive calendar days. The department will assess the contractor $5,000 in interim liquidated damages for each calendar day that Williamsburg Way work, including B-13-833, except the Concrete Staining for B-13-833, remains incomplete beyond 12:01 AM, July 3, 2019. An entire calendar day will be charged for any period of time within a calendar day that the work remains incomplete beyond 90 consecutive calendar days and beyond 12:01 AM, July 3, 2019. Interim liquidated damages will be assessed separately for the 90 consecutive calendar day timeframe and the interim completion date.

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.

Project Completion Dates
The department will not grant time extensions to the final completion date nor 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.

4. 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 643.2.1 (1) sentences two and three with the following:

> Replace devices the ATSSA guide defines as marginal. Maintain traffic control devices on the project at or above the quality the ATSSA guide defines as acceptable by doing the following:

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 the pavement structure, pavement markings, and traffic signs for the entire project once construction operations begin. The department will pay for materials that engineer deems necessary to maintain those facilities or portions of facilities that are damaged at no fault of the contractor at contract unit prices, or as extra work.

Replace standard spec 643.3.1 (7) with the following:

Provide equipment, forces, and materials to promptly restore any traffic control devices or pavement markings damaged or disturbed within 1 hour of being contacted.

According to Traffic Control Surveillance and Maintenance (project), provide 24 hours per day, seven days per week 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 contacted by the engineer of a damaged or disturbed 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 included with the pay item concrete barrier temporary precast.

Before starting any work, provide the State Patrol, Dane County Sheriff's Office, City of Fitchburg Police Department, City of Fitchburg Fire Department, City of Madison Police Department, City of Madison Fire Department, City of Verona Police Department, City of Verona 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.

Fitchburg Fire Station Number 2 is planning to relocate. If the Fire Station remains adjacent to the project at 5415 King James Way, coordinate with the Fire Department to maintain emergency access at all times during construction. Provide the Fire Department with seven calendar days advance notice of all work that may affect their access to any portion of CTH PD, Verona Road and Williamsburg Way. Provide confirmation of the work affecting access to the Fire Department three calendar days in advance of the closure and again the day prior to the closure.

Have available at all times sufficient experienced personnel to promptly install, remove and reinstall the required traffic control devices to route traffic during the construction operations.

Do not perform construction operations until all traffic control devices for such work are in the proper location.

Cover existing signs which conflict with traffic control as directed by the engineer.

When required, close sidewalks according to Standard Detail Drawing "Traffic Control, Pedestrian Accommodation", according to the plans and these special provisions, and provide the engineer a written request to close the sidewalk five calendar days in advance of the closure.

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 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 vehicles and equipment entering or leaving live traffic lanes along Verona Road must utilize acceleration or deceleration lanes of sufficient length to allow merge speeds within 10 MPH of the posted speed prior to merging with Verona Road traffic. Provide and utilize temporary deceleration and acceleration lanes to/from the work zones. Construction of the temporary lanes is included with other items of work. 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 within the limits of construction. Provide temporary sidewalk, crosswalk, bicycle access and bus access as described in the applicable standard detail drawings, the plans and these special provisions under bid items Temporary Pedestrian Surface Asphalt and Temporary Curb Ramp 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 included with the work item being performed for the contract according to standard spec 104.6.1(4).
- Do not use any existing median maintenance crossovers for construction activities.

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 included with bid item Traffic Control Surveillance and Maintenance (project). 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.

Do not use flag persons to direct, control, or stop USH 18/151 (Verona Road) or CTH PD (McKee Road), unless provided written approval from the engineer.

Provide flag persons and associated advanced signing according to the MUTCD and the plans for temporary halting of traffic on the side roads. All flagging operations are included with the contract work item being performed according to standard spec 104.6.1(4).

Mount all traffic control signs at a minimum height of 5 feet, measured from the bottom of the sign, above the edge of pavement.

The traffic requirements are subject to change at the direction of the engineer in the event of an emergency, local event or significant traffic delays.

Wisconsin Lane Closure System Advance Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

Closure type with height, weight, or width restrictions (available width, all lanes in one direction ≤16')	MINIMUM NOTIFICATION
Lane and shoulder closures	7 calendar days
Full roadway closures	7 calendar days
Ramp closures	7 calendar days
Detours	7 calendar days
Closure type without height, weight, or width restrictions (available width, all lanes in one direction >16')	MINIMUM NOTIFICATION
Lane and shoulder closures	3 business days
Ramp closures	3 business days
Modifying all closure types	3 business days

Discuss LCS completion dates and provide changes in the schedule to the engineer at weekly project meetings in order to manage closures nearing their completion date.
stp-108-057 (20161130)

In addition to the closure types and required minimum advance notifications provided in Table 108-1, the following minimum advance notifications are also required for the closure type listed:

- Rolling Closure: 14 calendar days prior to closure, with updates seven calendar days and three calendar days prior to the closure.
- Traffic Switch: 14 calendar days prior to the anticipated switch, with updates seven calendar days and three calendar days prior to the switch.
- Detours, as provided in table 108-1, apply to vehicular, pedestrian and bicycle detours.

Place portable changeable message signs for all closure types noted above a minimum of seven calendar days in advance of the closure, switch or detour. Place portable changeable message signs a minimum of 14 calendar days prior to starting work on Verona Road and a minimum of seven calendar days prior to starting work elsewhere. These timeframes may be adjusted by the engineer.

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

General traffic operations during all stages
Maintain two lanes of traffic in each direction at all times on Verona Road and CTH PD except as described in Section B of this article.

Maintain a minimum lane width of 11 feet on Verona Road and CTH PD at all times during construction. When restricted to one lane maintain a minimum clear width to traffic control devices of 16 feet.

Shoulder closures on Verona Road are allowed to complete construction for various stages of the project. Perform shoulder closures according to Section B of this article.

Off peak travel times for Verona Road, CTH PD and all side roads are equivalent to the nightly closure times provided in Section B of this article. Peak travel times are any times other than the off peak times.

During daytime construction operations impacting the local roads, maintain at least one lane open to local traffic through the use of flaggers. Maintain a minimum width of 11 feet and a drivable surface utilizing a minimum of base aggregate dense for open lane(s). Open the roadway to 22 feet when flaggers and work operations are not present on the local roads.

Maintain two-way pedestrian and bicycle access on the Capital City Trail, Cannonball Path, Southwest Commuter Path and Military Ridge Path at all times.

B Specified Lane Closure Times and Lane Rental

A summary of nightly allowable lane closure times by location/direction are as follows:

USH 18/151 (Verona Road) and CTH PD Nightly Closures						
Description			Direction	Through Lanes	Start	End
Sunday Night	to	Friday Morning	Eastbound/ Westbound	Single	8:00 PM	5:00 AM
Friday Night	to	Sunday Morning	Eastbound/ Westbound	Single	8:00 PM	10:00 AM

Do not close lanes prior to or after the specified times provided in this article. If the contractor closes lanes of traffic prior to or fails to open lanes of traffic by the specified times, reductions will begin immediately upon exceeding the specified closure and will be based upon 15 minute increments of Lane Rental.

Lane Rental

It is in all stakeholders' best interest that peak travel times remain free from impairments such as delay due to construction activities therefore, a Lane Rental fee assessment has been established to enforce compliance of a number of time sensitive travel restrictions and discourage any unnecessary peak travel time lane closures.

Lane closure times are limited to the nightly times specified above when 24-hour continuous traffic volume data suggests vehicular travel falls below levels that can be safely managed in one full-width travel lane while traversing active work zones.

This data is supported by project team experience, which suggests prevailing daytime two lane directional traffic flow has the potential to, and often does rapidly deteriorate along

the project corridor whenever any seemingly “normal” situation develops. These include, but are not limited to, a disabled vehicle, intermittent periods of inclement weather, the presence of an oversized load or an incident. Furthermore, on the occasion(s) it is necessary to temporarily close a travel lane during daytime hours for any number of routine maintenance activities such as pothole and guardrail repair, miscellaneous shoulder work, or highway debris removal it is not uncommon for queues in excess of 2 miles to rapidly develop, which in turn lead to lengthy travel delays.

The lane rental assessment fee is $1,500 per 15 minutes, per lane, per direction of travel. This fee represents an estimated average cost of motorist inconvenience experienced by road users during each non-emergency closure (as previously discussed). The fee will not be assessed for closures dues to crashes within a work zone, or other emergency situations not initiated by the contractor.

The total reduction from monies due to the contractor will be the summation of the separate reduction for each work restriction violation. The department will administer reduction assessments for the road not being open to traffic under the Failing to Open Road to Traffic administrative item.

B.1 Restrictions

Maintain two access points for parcel 58 at all times. Reconstruct the access points to the parcel in the following order:

- Construct the westerly driveway while maintaining the existing easterly driveway and the existing driveway to Verona Road.
- Construct the easterly driveway while maintaining the newly constructed westerly driveway and the existing driveway to Verona Road.
- Remove the access to Verona Road after each proposed driveway is completed and operational.

If a revised order of construction is used, provide documentation of agreement for the revised order with the owner of Parcel 58 to the engineer a minimum of 14 calendar days prior to the work.

Do not conduct construction operations in the median area and adjacent outside shoulder area of any roadway at the same time without the written permission of the engineer.

Establish temporary pedestrian and bicycle access across Verona Road at the Williamsburg Way signalized intersection as shown in the plans prior to removing access to the pedestrian underpass located near station 944+25 VR.

Limit the crosswalk closure at Verona Road and CTH PD to 9 hours during one nighttime closure to pave the islands as shown in the plans in Traffic Control - CTH PD - Off Peak Lane Closures S4A.

Close Anton Drive to through traffic near Carriage Street for a maximum of two consecutive calendar days to complete the watermain work as shown in the plans in Traffic Control - Stg. 4 - Anton Watermain Connection.

Do not switch Verona Road traffic to Stage 5 until Spring 2018.

Do not close Williamsburg Way in Stage 8 until Spring 2019 and once closed re-open Williamsburg Way to all traffic within 90 calendar days.

C Rolling Closures

Rolling closures involve slowing traffic for a brief period and then allowing traffic to proceed behind a line of law enforcement vehicles that will coordinate the procession through the work site.

If rolling closures are used, conduct operations requiring law enforcement vehicles, to limit the stop or slowing of USH 18/151 or CTH PD traffic, to less than 15 minutes for the rolling closures. The necessary advanced signing, traffic control personnel, department personnel, and law enforcement personnel are required to be on site prior to and during these operations.

Arrange the implementation of the rolling closures according to the notification required in Section A of this article and through the engineer and Jeff Gustafson with the Southwest Region Office, (608) 516-6400. Provide final confirmation of the scheduled rolling closure to the engineer three calendar days in advance of the closure.

D Advance Notifications

Notify the State Patrol, Dane County Sheriff's Office, City of Fitchburg Police Department, City of Fitchburg Fire Department, City of Madison Police Department, City of Madison Fire Department, City of Verona Police Department, City of Verona Fire Department, Fitch-Rona EMS, Dane County 911 Center, Engineer, School District, Madison Metro, the City of Madison Engineering Department, the City of Fitchburg Engineering Department and the post office two weeks in advance of all traffic switches, lane closures, ramp closures, road closures and detours. Confirm notifications with all parties one week prior to implementation. Notify parties if a closure is cancelled.

E Pedestrian and Bicycle Access

Maintain pedestrian and bicycle access, according to the current ADAAG, along Verona Road, CTH PD, and all local side roads by means of existing sidewalk, Temporary Pedestrian Surface Asphalt bid item, Temporary Curb Ramp bid item, or new sidewalk at a minimum width of 5 feet, for all abutting businesses and properties and a minimum width of 8 feet for the Capital City Trail, Cannonball Path, Southwest Commuter Path and Military Ridge Path. Keep a minimum width of 5 feet of existing sidewalk as long as practicable to maintain pedestrian access. Place Temporary Pedestrian Safety Fence along the sidewalks, bike paths or bus stops as shown in the plans and as directed by the engineer. Provide bus stop or temporary bus stop locations as shown in the plans or as directed by the engineer in coordination with the City of Madison Transit Department and the City of Fitchburg.

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 or concrete. Construct hard surfaces to match the width of the existing facility being maintained. The bid items Temporary Pedestrian Surface Asphalt and Temporary Curb Ramp have been provided for this work.

F Property Access

Maintain access to properties along the project for local residents, businesses, and emergency vehicles. Maintain access to all driveways and parking lots at all times where alternative access is not available. Keep business entrances open by partial driveway construction or by closing only one access at a time for properties with multiple driveways. Inform property owners five working days prior to closing access(es). Confirm the closure with the property owner two working days prior to use. Provide written documentation of coordination with the owner(s) to the engineer for any closure of any access to a business or private property.

G 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 30 feet from the edge of the traveled way of USH 18/151 (Verona Road). Equipment may be parked and materials stored closer than 30 feet on Verona Road if it is protected by a concrete barrier temporary precast.

Store materials and equipment within the right-of-way a minimum of 10 feet from the back of curb or sidewalk, whichever is greater, for CTH PD (McKee Road) and all local roads that are open to traffic. Equipment may be parked and materials stored closer than 10 feet on CTH PD if it is protected by a concrete barrier temporary precast.

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.

H Snowplowing, Winter Work Operations and Winter Maintenance

The established construction schedule for the contract involves construction activities and/or traffic control devices to be utilized in the winter months. 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.

During winter months, park equipment at distances, as provided in Section G of this Article, to provide snow storage from snow plowing operations. Do not store equipment or

materials within the work zone which may interfere with sight distances along any roadway.

Dane County and the local municipality will perform snow removal operations for roads that are open to through traffic during construction. Coordinate temporarily 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 (project).

Snow may be plowed from the traveled roadway and existing and temporary pedestrian and bicycle facilities 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 which may be required, maintenance and cleaning of traffic control devices, and other winter maintenance activities are included with other items of work under this contract.

I Freeway Service Team (FST)

As part of a traffic mitigation program called Freeway Service Team (FST), the department has contracted with a private towing vendor to patrol parts of Verona Road during peak hours, holidays and special events. To improve safety and minimize delay, contact 911 immediately for breakdowns or incidents in or near the construction work zone. FST will be dispatched directly to the scene to aid the vehicles.

J Roadside Hazard Protection During Construction

Conduct existing hazard protection removals including but not limited to concrete barrier walls and beamguard in several phases to allow timely installation of temporary or permanent hazard protection. Bridge pier columns, parapets, concrete barrier walls and sign bridge footings (hazards) are to remain protected at all times throughout construction. Remove existing hazard protection concurrently with the placement of any temporary or new permanent hazard protection so that the hazard remains protected at all times.

K Traffic Control 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. Address traffic, construction and pedestrians with any proposed staging modifications provided to the engineer.

Stages 1 and 2 were completed under project 1206-07-74. Staging for this project begins with Stage 3.

STAGE 3 - 2017

Verona Road:

Stage 3A:

Traffic

- Maintain eastbound and westbound Verona Road on existing lanes with off peak outside lane closure on westbound Verona Road.

Construction

- Construct westbound Verona Road temporary outside shoulder from approximately station 855+09 VR to station 864+67 VR.

Pedestrians

- Maintain on existing sidewalk.

Stage 3B:

Traffic

- Maintain eastbound Verona Road on existing lanes and westbound Verona Road on existing lanes and the outside widening completed in Stage 3A.

Construction

- Construct westbound Verona Road permanent and temporary median pavement and shoulder between approximately station 854+84 VR and station 863+20 VR.

Pedestrians

- Maintain on existing sidewalk.

Stage 3C:

Traffic

- Maintain eastbound Verona Road on existing lanes with off peak outside lane closure. Maintain westbound Verona Road on existing lanes as well as the new and temporary median lanes completed in Stage 3B.

Construction

- Construct westbound Verona Road outside permanent shoulder between approximately station 855+07 VR and station 860+50 VR.
- Construct eastbound Verona Road outside permanent shoulder between approximately station 854+28 VR and station 865+50 VR.

Pedestrians

- Maintain on existing sidewalk.

Stage 3D:

Traffic

- Maintain westbound Verona Road on existing lanes as well as the new and temporary median lanes completed in Stage 3B with off peak inside lane closures for the median construction.
- Maintain eastbound Verona Road on existing lanes and outside shoulder constructed in Stage 3C with off peak inside lane closures for the median construction. Use off peak inside and outside lane closures as necessary for construction on and along Verona Road throughout the project.
- Chalet Gardens Road access to/from Verona Road restricted to right-in/right-out.

Construction

- Construct temporary pavement median widening between approximately station 857+24 VR and station 871+96 VR, station 902+20 VR and station 903+50 VR, station 904+50 VR and station 911+00 VR, station 934+25 VR and station 935+45 VR, station 936+00 VR and station 968+44 VR, and station 969+75 VR and station 970+25 VR.
- Construct the eastbound temporary pavement outside shoulder between approximately station 936+00 VR and station 941+64 VR.
- Construct storm sewer crossing at approximately station 964+65 VR using off peak inside and outside lane closures.
- Install interim and temporary traffic signals at CTH PD, Williamsburg Way and Raymond Road

Pedestrians

- Maintain on existing sidewalk.

STAGE 4 - 2017 and 2018

Verona Road:

Traffic

- Traffic is maintained on existing Verona Road and median widening.
- Close the Verona Road and East Verona Road Frontage Road access to/from Chalet Gardens Road.
- Close the Verona Road access to/from Carriage Street.

Construction

- Construct eastbound Verona Road between approximately station 864+50 VR and station 889+99 VR.
- Construct widening along eastbound Verona Road between approximately station 950+00 VR and station 971+60 VR.
- Construct the F ramp between approximately station 141+90 F and station 150+00 F.
- Begin construction of the storm sewer and grading along the C ramp between approximately station 4+00 C and station 34+00 C.
- Install sanitary sewer casing pipe across Verona Road at approximately station 904+60 VR.
- Bore and Jack the sanitary sewer crossing of Verona Road at approximately station 945+40 VR and install sanitary sewer between approximately station 943+75 VR and station 959+50 VR.

Pedestrians

- Maintained on existing sidewalk.
- Pedestrian underpass at approximately station 944+25 VR is closed. Pedestrian and bicycle crossing of Verona Road relocated to an at grade crossing at Williamsburg Way.

CTH PD:

Traffic

- Maintain traffic on existing lanes with off peak lane closures.

Construction

- Construct various island removals and temporary pavement in the median and along the outside of CTH PD east of Verona Road.

Pedestrians

- Maintained on existing sidewalk.

Raymond Road:

Traffic

- Maintain one lane for westbound Raymond Road during off peak hours.

- Move westbound Verona Road right turn lane to Raymond Road to the near through lane.
- Flag traffic on westbound Raymond Road to install storm sewer while maintaining one lane of traffic during off peak hours.

Construction

- Construct Raymond Road between approximately station 96+50 RR and station 99+50 RR left, temporary sidewalk, and widening.

Pedestrians

- Maintained on existing sidewalk along the south side of Raymond Road.

STAGE 5 - 2018

Verona Road:

Traffic

- Westbound Verona Road traffic is maintained on a combination of the existing westbound lanes, existing eastbound lanes, new eastbound lanes and temporary pavement.
- Eastbound Verona Road traffic is maintained on a combination of the existing eastbound lanes, proposed eastbound ramps and temporary pavement.

Construction

- Construct westbound Verona Road and the D ramp between approximately station 860+50 VR and station 902+25 VR.
- Construct westbound Verona Road, the C ramp, the H ramp, the G ramp between approximately station 904+50 VR and 975+00 VR.
- Construct B-13-356 bridge overlay, B-13-833 west abutment, R-13-268, R-13-270, R-13-272, N-13-5, S-13-445, S-13-446, S-13-448 (outside base), S-13-449, S-13-450 and S-13-451.

Pedestrians

- Maintained on existing and temporary sidewalk.

STAGE 5A Williamsburg Way:

Traffic

- Williamsburg Way traffic west of Verona Road is maintained on existing westbound Williamsburg Way and temporary pavement.
- Williamsburg Way traffic east of Verona Road is maintained on existing Williamsburg Way.

Construction

- Backfill a portion of R-13-272 and construct south half

- Construct portions of R-13-270, R-13-272 and the B-13-833 west abutment near and through the south half of the Williamsburg Way intersection west of Verona Road.
- Backfill a portion of R-13-272 and construct the south half Construct south half of Williamsburg Way intersection between approximately station 97+45 WW and station 99+60 WW.

Pedestrians

1. Maintained on temporary sidewalk along the north side of Williamsburg Way.

STAGE 5B Williamsburg Way:

Traffic

2. Williamsburg Way traffic west of Verona Road is maintained on proposed eastbound Williamsburg Way and temporary pavement.
3. Williamsburg Way traffic east of Verona Road is maintained on existing Williamsburg Way.

Construction

4. Construct R-13-272 and the B-13-833 west abutment near and through north half of the Williamsburg Way intersection west of Verona Road.
5. Backfill a portion of R-13-272 and construct the north half of Williamsburg Way intersection between approximately station 97+45 WW and station 99+60 WW.

Pedestrians

- Maintained existing and temporary sidewalk on the south side of Williamsburg Way.

STAGE 5C Williamsburg Way:

Traffic

- Williamsburg Way traffic is maintained on eastbound and westbound Williamsburg Way.

Construction

- Construct Williamsburg Way median between approximately station 96+75 WW and station 98+75 WW.
- Construct S-13-454.

Pedestrians

- Maintained on existing and temporary sidewalk along the south side of Williamsburg Way.

STAGE 5A Raymond Road:

Traffic

- Raymond Road traffic is maintained on existing Raymond Road and temporary pavement.

Construction

- Construct eastbound Raymond Road between approximately station 95+75 RR and station 99+85 RR.
- Stage access to Parcel 58 (Speedway gas station) as provided in these special provisions and the plans.
- Construct Verona Road between approximately station 970+50 VR and station 975+00 VR, including the B-13-356 overlay as shown on the plans for coordination with Stage 5A of Raymond Road construction.

Pedestrians

- Maintained on temporary sidewalk on the north side of Raymond Road.
- Provide a temporary pedestrian crossing of Raymond Road west of Reetz Road, including a temporary bus pad.

STAGE 5B Raymond Road:

Traffic

- Raymond Road traffic is maintained on eastbound Raymond Road constructed in Stage 5A.

Construction

- Construct westbound Raymond Road between approximately station 96+50 RR and station 99+50 RR, including the eastern curb along Reetz Road.

Pedestrians

- Maintained on proposed sidewalk on the south side of Raymond Road.

STAGE 5C Raymond Road:

Traffic

- Maintain traffic on eastbound Raymond Road.

Construction

- Construct Verona Road between approximately 969+50 VR and station 974+50 VR, including the B-13-356 overlay as shown on the plans for coordination with Stage 5C of Raymond Road construction.

Pedestrians

- Maintain on proposed sidewalk on the south side of Raymond Road.

STAGE 5D Raymond Road:

Traffic

- Maintain traffic on eastbound and westbound Raymond Road constructed in the previous stages.

Construction

- Construct Raymond Road median between approximately station 96+40 RR and station 97+20 RR, and station 98+35 RR and station 99+85 RR.

Pedestrians

- Maintain on proposed sidewalk on the south side of Raymond Road.

STAGE 6 - 2018

Verona Road:

Traffic

- Westbound Verona Road traffic is maintained on a combination of the existing westbound lanes, new westbound lanes, existing eastbound lanes, new eastbound lanes and temporary pavement.
- Eastbound Verona Road traffic is maintained on a combination of the existing eastbound lanes, new eastbound ramps, new westbound lanes and temporary pavement.

Construction

- Construct eastbound Verona Road between approximately station 950+00 VR and station 974+00 VR, including N-13-6, overlay of B-13-455 and S-13-190-01.
- Construct curb and gutter along the East Verona Road Frontage Road near the former Chalet Gardens Road access.
- Construct the F ramp between approximately station 150+00 F and station 152+50 F.

Pedestrians

- Maintain on existing sidewalk.
- Pedestrian crossing at Williamsburg Way maintained in Stage 5C configuration.

STAGE 7 - 2018

Verona Road:

Stage 7A:

Traffic

- Eastbound and westbound Verona Road traffic is placed on a combination of the proposed lanes and ramps.
- Eastbound Verona Road lane closures used during nighttime hours.

Construction

- Construct Verona Road median between approximately station 854+50 VR and station 871+00 VR. Relap the guardrail as shown on the plans.
- Construct the Verona Road eastbound lanes between approximately station 944+90VR and station 952+00 VR, including the remainder of S-13-448.
- Construct Verona Road median islands between approximately station 968+00 VR and station 972+30 VR.

Pedestrians

- Maintain on proposed and existing sidewalks similar to stage 6.

Verona Road:

Stage 7B:

Traffic

- Eastbound and westbound Verona Road traffic is maintained on a combination of the proposed lanes and ramps.

Construction

- Construct eastbound Verona Road shoulder between approximately station 865+30 VR and station 876+85 VR.
- Construct Verona Road median island between approximately station 969+85 VR and station 971+10 VR.

Pedestrians

- Maintain on proposed and existing sidewalks similar to stage 6.

STAGE 8 - 2019

Verona Road:

Stage 8A:

Traffic

- Eastbound and westbound Verona Road traffic remains on a combination of the proposed lanes and ramps.
- Williamsburg Way limited to right-in and right-out movements.

Construction

- Construct R-13-273.
- Construct B-13-833.
- Begin Verona Road grading from CTH PD to Williamsburg Way.

Pedestrians

- Maintain on proposed and existing sidewalks. Pedestrian crossing of Verona Road at Williamsburg Way is closed and detoured to CTH PD.

Stage 8B:

Traffic

- Eastbound and westbound Verona Road traffic remains on a combination of the proposed lanes and ramps.
- Williamsburg Way remains limited to right-in and right-out movements.

Construction

- Remove concrete barrier temporary precast between approximately station 133+68 H and station 138+04 G once the barrier walls and parapets are completed on R-13-272 and B-13-833.
- Complete curb and gutter and barrier wall between approximately station 134+20 H and station 138+75 G upon completion of B-13-833.

Pedestrians

- Maintain on proposed and existing sidewalks. Pedestrian crossing of Verona Road at Williamsburg Way remains closed and detoured to CTH PD.

5. Holiday and Special Events Work Restrictions.

Holidays

Work is permitted however lane closures and delivery of materials will not be permitted on any portion of the highway carrying USH 18/151 (Verona Road) and CTH PD (McKee Road) during the following holiday periods:

2017

- Labor Day Holiday – From noon Friday, September 1, 2017 to 5:00 AM Tuesday, September 5, 2017;
- Thanksgiving Day Holiday – From noon Wednesday, November 22, 2017 to 5:00 AM Monday, November 27, 2017;
- Christmas Day Holiday – From noon Friday, December 22, 2017 to 5:00 AM Tuesday, December 26, 2017.

2018

- Easter Holiday – From noon Friday, March 30, 2018 to 5:00 AM Monday, April 2, 2018;
- Memorial Day Holiday – From noon Friday May 25, 2018 to 5:00 AM Tuesday, May 29, 2018;
- Independence Day Holiday – From noon Friday, June 29, 2018 to 2:00 AM Sunday, July 1, 2018; From noon Tuesday, July 3, 2018 to noon Thursday, July 5, 2018; From noon Friday, July 6, 2018 to 5:00 AM Monday, July 9, 2018;
- Labor Day Holiday – From noon Friday, August 31, 2018 to 5:00 AM Tuesday, September 4, 2018;

- Thanksgiving Day Holiday – From noon Wednesday, November 21, 2018 to 5:00 AM Monday, November 26, 2018.

2019

- Easter Holiday – From noon Friday, April 19, 2019 to 5:00 AM Monday, April 22, 2019;
- Memorial Day Holiday – From noon Friday May 24, 2019 to 5:00 AM Tuesday, May 28, 2019;
- Independence Day Holiday – From noon Wednesday, July 3, 2019 to 5:00 AM Monday, July 8, 2019;
- Labor Day Holiday – From noon Friday, August 30, 2019 to 5:00 AM Tuesday, September 3, 2019.

The engineer will have the ability to suspend work activates 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

Work is permitted however lane closures and delivery of materials will not be permitted on any portion of the highway carrying USH 18/151 (Verona Road) and CTH PD (McKee Road) during the following holiday periods:

2017

- Midwest Horse Fair, April 21-23, 2017
  From 5:00 AM to 10:00 AM Friday and Saturday
- Epic's Executives Meeting, April 24-28, and May 1-5, 2017
  From 5:00 AM to 10:00 AM Monday through Friday
- PGA Champions Tour, June 23-25, 2017
  From 5:00 AM to 10:00 AM and 3:00 PM to 8:00 PM Friday through Sunday
- Shake the Lake, Date Pending
  From 9:00 PM to 2:00 AM
- Elver Park Fireworks, Date Pending
  From 9:00 PM to 2:00 AM
- Epic's Users Group Meeting, September 25-28, 2017
  From 5:00 AM to 10:00 AM Monday through Thursday

2018

- Midwest Horse Fair, April 20-22, 2018
  From 5:00 AM to 10:00 AM Friday and Saturday
- Epic's Executives Meeting, April 23-27, and April 30-May 4, 2018
  From 5:00 AM to 10:00 AM Monday through Friday
- PGA Champions Tour, June 22-24, 2018
  From 5:00 AM to 10:00 AM and 3:00 PM to 8:00 PM Friday through Sunday
- Shake the Lake, Date Pending
  From 9:00 PM to 2:00 AM

- Elver Park Fireworks, Date Pending
  From 9:00 PM to 2:00 AM
- Epic's Users Group Meeting, September 24-27, 2018
  From 5:00 AM to 10:00 AM Monday through Thursday

2019

- Midwest Horse Fair, April 12-14, 2019
  From 5:00 AM to 10:00 AM Friday and Saturday
- Epic's Executives Meeting, April 1-5, and April 8-12, 2019
  From 5:00 AM to 10:00 AM Monday through Friday
- PGA Champions Tour, June 21-23, 2019
  From 5:00 AM to 10:00 AM and 3:00 PM to 8:00 PM Friday through Sunday
- Shake the Lake, Date Pending
  From 9:00 PM to 2:00 AM
- Elver Park Fireworks, Date Pending
  From 9:00 PM to 2:00 AM
- Epic's Users Group Meeting, September 23-26, 2019
  From 5:00 AM to 10:00 AM Monday through Thursday

Wisconsin Badgers Football Home Games - Work is permitted however lane closures and delivery of materials will not be permitted on any portion of the highway carrying USH 18/151 (Verona Road) and CTH PD (McKee Road) from a maximum of four hours prior to scheduled kickoff to three hours immediately after the end of the game, at the discretion of the engineer. The engineer, in coordination with the department's traffic engineer, will have the ability to suspend work activities based upon changes to game day schedule and game day traffic. Home games in 2017 and 2018 are scheduled on the following dates:

2017

- Friday, September 1, 2017
- Saturday, September 9, 2017
- Saturday, September 30, 2017
- Saturday, October 14, 2017
- Saturday, October 21, 2017
- Saturday, November 11, 2017
- Saturday, November 18, 2017

2018

- Saturday, September 1, 2018
- Saturday, September 8, 2018
- Saturday, September 15, 2018
- Saturday, October 6, 2018
- Saturday, October 20, 2018
- Saturday, November 3, 2018
- Saturday, November 24, 2018

For events identified that have dates listed as pending, the dates must be confirmed with the engineer as soon as possible. The department will determine the dates and times for work restrictions associated with these events. Dates above for special events may also be revised, at which time the engineer will provide revised restrictions which are not more restrictive than the restrictions provided.

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

6. Utilities.

This contract comes under the provision of Administrative Rule Trans 220.
107-065 (20080501)

Some of the utility work described below is dependent on prior work being performed at a specific site. In such situations provide the project engineer and the affected utility a good faith notice of when the utility is to start work at the site. The notice shall be given a minimum of 14 calendar days in advance of when the work is to be completed and when the site will be available to the utility to begin work. Notify the affected utility 3 working days prior to the start of construction to coordinate the adjustments.

Additional detailed information regarding the location of the relocated utility facilities is available on the permits issued to the utility companies. View these permits at the SW Regional Office during normal working hours. Contact the Regional Utility Permit Coordinator, Mark Goggin at (608) 789-5955 or by email at Mark.Goggin@dot.wi.gov.

Alliant Energy (Alliant) (electric) has overhead and underground facilities within the project area. No conflicts are anticipated with Alliant's existing facilities. Alliant's utility relocations have been completed as part of project 1206-07-74 as follows:

- Use of Alliant's existing underground facilities along the east side of USH 18/151 (Verona Road) from approximately STA. 894+90 VR to STA. 903+53 VR have been discontinued and the existing underground facilities have been left in place.
- Use of Alliant's existing underground facilities along the north side of CTH PD (McKee Road) from approximately STA. 94+77 EB to STA. 98+70 EB have been discontinued. The existing underground facilities have been left in place.
- Use of Alliant's existing underground facilities along the west side of USH 18/151 (Verona Road) from approximately STA. 905+05 VR to the north have been discontinued and been left in place.

Underground facilities have been placed jointly with Charter Communications crossing USH 18/151 (Verona Road) at approximately STA. 894+90 VR. The underground facilities are anticipated to be approximately 3 feet below existing ground

Underground facilities have been placed along the east side of USH 18/151 (Verona Road) within approximately 2 feet of the right of way from approximately STA. 895+00 VR to

STA. 903+20 VR. The underground facilities are anticipated to be approximately 3 feet below existing ground. The underground facilities cross CTH PD (McKee Road) at an approximate depth of 5 feet below existing ground at approximately STA. 102+00 EB.

Underground facilities have been placed jointly with AT&T and Charter Communications in easement along the east side of USH 18/151 (Verona Road) from approximately STA. 905+40 VR to STA. 916+90 VR with a crossing of USH 18/151 (Verona Road) at approximately STA. 916+90 VR. The underground facilities are anticipated to be approximately 3 feet below existing ground from approximately STA. 905+40 VR to STA. 914+00 VR and to be approximately 6 feet below existing ground from approximately STA. 914+00 VR to STA. 916+90 VR. The crossing of USH 18/151 (Verona Road) is anticipated to be approximately 8 feet below existing ground.

Power poles have been placed on the east and west side of USH 18/151 (Verona Road) at approximately STA. 875+65 VR 140' LT and STA. 876+15 VR 155' RT with an overhead crossing of USH 18/151 (Verona Road) between the poles.

Underground facilities have been placed along the west side of Verona Road approximately 5 feet left of the C Ramp alignment from approximately STA. 12+05 C to STA. 16+80 C. The depth of the underground facilities varies between approximately 3 feet and 6 feet below existing ground. Underground facilities have been placed going west from facility previously described at approximately STA. 12+05 C, STA. 14+15 C, and STA. 16+80 C. The depth of the underground facilities varies between 3 feet and 10 feet below existing ground. Alliant will adjust their underground facilities along the west side of USH 18/151 (Verona Road) from approximately STA. 12+05 C to STA. 16+80 C to avoid conflicts with the storm sewer construction west of retaining wall R-13-268. Contact Alliant 7 days prior to the storm sewer construction. The adjustments are anticipated to take 2 days to complete.

Contact Alliant a minimum of 1-week prior to excavation if 3 feet of undisturbed soil cannot be maintained adjacent to Alliant's power poles during excavation.

The proposed sanitary sewer, storm sewer and water main will cross the existing Alliant Energy underground facilities at several locations. These underground facilities will not be relocated. Alliant Energy will make arrangements to temporarily support/protect the underground facilities during construction. Support/protection is required when trench widths exceed 10 feet. Contact Alliant Energy as required by Trans 220.05 (10) for each site/location. Temporary support/protection will take 1 working day to complete at each site.

Contact Alliant 2 weeks prior to working near Alliant facilities. Coordinate operations with Alliant. Contact Craig Hendricks at (608) 458-8184. Invite Craig Hendricks to the weekly construction meetings.

American Transmission Company (ATC) (electric) has overhead facilities within the project area. No conflicts are anticipated with ATC's existing facilities. ATC's utility relocations have been completed as part of project 1206-07-74 as follows:

ATC's existing power poles along the south side of CTH PD (McKee Road) from approximately STA. 75+60 EB and STA. 113+85 EB have been removed and relocated. New power poles have been placed at approximately the following stations:

- STA. 75+54 EB 32.5' RT
- STA. 77+88 EB 32.5' RT
- STA. 80+40 EB 34' RT
- STA. 83+20 EB 35' RT
- STA. 85+58 EB 36' RT
- STA. 87+70 EB 35' RT
- STA. 90+55 EB 66' RT
- STA. 94+00 EB 77' RT
- STA. 96+94 EB 87' RT
- STA. 101+59 EB 66' RT
- STA. 105+94 EB 60' RT
- STA. 110+32 EB 59' RT
- STA. 113+74 EB 47' RT

ATC's overhead facility is a double circuit line with one 138 kV circuit and one 69 kV circuit. ATC recommends the contractor consider both circuits are 138 kV and maintain OSHA safe working clearance from the ATC circuits based on the latest OSHA requirements with respect to a 138 kV circuit. It is the contractor's responsibility to determine OSHA requirements.

To request an outage of ATC facilities contact Matt Dopp, ATC Construction Manager, at (608) 225-5983 to obtain ATC's Transmission Facility Outage Agreement form and for instructions on how to start the agreement process. Early coordination increases the opportunity for the requested outage to be granted. Peak loads are common during summer months and outage requests during these months are rarely allowed.

Contact ATC at least three days in advance of the following:

- Grade change (cut or fill) within 1 foot of an ATC facility.
- Excavations up to 3 feet deep within 10 feet of an ATC facility.
- Excavations greater than 3 feet deep within 20 feet of an ATC facility.
- Grade change in excess of 1 foot of change from the WisDOT plans within 20 feet of an ATC facility (including overhead wires).
- Directional bore or plowing work within 10 feet of an ATC facility.

Exercise caution when working near ATC's transmission facilities. Any contact with or damage to ATC's facilities must be reported immediately to either Matt Dopp, ATC Construction Manager, at (608) 225-5983 or Doug Vosberg, ATC Maintenance Specialist, at (608) 438-7650.

Coordinate operations with ATC as necessary. Invite Matt Dopp, ATC Construction Manager, to the weekly construction meetings.

AT&T Wisconsin (AT&T) (communication) has existing overhead and underground facilities within the project area. The majority of AT&T's utility relocations took place as part of WisDOT project 1206-07-74 as follows:

- Use of AT&T's existing underground facilities along the east side of Nesbitt Road from approximately STA. 888+70 VR to STA. 898+25 VR have been discontinued and remain in place.
- Use of AT&T's existing underground facilities along the west side of USH 18/151 (Verona Road) from approximately STA. 900+50 VR to the north have been discontinued and remain in place.
- Use of AT&T's existing facilities along the east side of USH 18/151 (Verona Road) from approximately STA. 910+20 VR to STA. 955+75 VR have been discontinued and remain in place.
- The existing underground facility along the east side of USH 18/151 (Verona Road) from approximately STA. 936+85 VR to STA. 955+70 VR have been discontinued and remain in place.
- Use of the existing underground facilities along the north side of Williamsburg Way from approximately STA. 102+05 WW to the east have been discontinued and remain in place.

Two existing AT&T manholes in the north quadrant of the Raymond Road and Reetz Road intersection will be adjusted during construction of the proposed sidewalk. Contact AT&T 7 days prior to the need for the manhole adjustments. The adjustments are anticipated to take 1 working day to complete.

Underground facilities have been placed jointly with Alliant and Charter along the east side of USH 18/151 (Verona Road) from approximately STA. 910+25 VR to STA. 916+60 VR.

Underground facilities have been placed jointly with Charter Communications, MG&E Electric, and ExteNet Systems along the east side of the existing East Verona Road Frontage Road from approximately STA. 916+60 VR to STA. 921+37 VR. The underground facilities cross the proposed East Verona Road Frontage Road at approximately STA. 922+00 VR and continue to the north to approximately STA. 946+00 VR along the back of the sidewalk. From approximately STA. 946+00 VR to STA. 955+70 VR the underground facility is located in the terrace on the east side of the East Verona Road Frontage Road. The depth of the underground facilities is anticipated to vary between approximately 3 and 15 feet below finished ground. Contact AT&T for additional information.

Contact AT&T 7 days prior to working near AT&T facilities. Coordinate operations with AT&T. Contact Carol Anason (608) 252-2385. Invite Carol Anason to the weekly construction meetings.

City of Fitchburg (street lights) has existing light poles and underground electric facilities located within the project area. The existing light poles and underground electric facilities in conflict with the project will be relocated or removed as part of project 1206-07-75 with

this contract. Coordinate operations with the City of Fitchburg. Contact Alysen Kohlnhofer (608) 270-4277. Invite Alysen Kohlnhofer to the weekly construction meetings.

City of Madison (communication) has underground facilities located at the Raymond Road and Reetz Road intersection that are not anticipated to be in conflict with the project. Coordinate operations with the City of Madison. Contact Brian Smith (608) 261-9625.

Charter Communications (Charter) (communication) has existing overhead and underground facilities located within the project area. No conflicts are anticipated with Charter's existing facilities. Charter's utility relocations took place as part of WisDOT project 1206-07-74 as follows:

- Use of Charter's existing underground facilities along the east side of Nesbitt Road from approximately STA. 888+70 VR to STA. 898+25 VR have been discontinued and remain in place.
- Use of the existing underground facilities crossing USH 18/151 (Verona Road) at approximately STA. 917+30 VR have been discontinued and remain in place.
- Use of the existing underground facilities crossing USH 18/151 (Verona Road) at approximately STA. 948+85 VR has been discontinued and remain in place.

Underground facilities have been placed jointly with Alliant and AT&T along the east side of USH 18/151 (Verona Road) from approximately STA. 908+25 VR to STA. 916+60 VR.

Underground facilities have been placed jointly with AT&T, MG&E Electric, and ExteNet along the back of sidewalk on the east side of the East Verona Road Frontage Road from approximately STA. 916+60 VR to STA. 943+15 VR.

Overhead facilities are attached to MG&E Electric power poles on the east side of the East Verona Road Frontage Road from approximately STA. 943+15 VR to STA. 948+45 VR. Underground facilities have been placed jointly with ExteNet to cross USH 18/151 (Verona Road) at approximately STA. 948+25 VR. The depth of the underground facilities is anticipated to be approximately 6 feet below existing ground.

Underground facilities have been placed jointly with MG&E Electric crossing USH 18/151 (Verona Road) at approximately STA. 920+00 VR.

Underground facilities have been placed jointly with Alliant crossing USH 18/151 (Verona Road) at approximately STA. 894+90 VR and STA. 916+90 VR.

Underground facilities are proposed jointly with MG&E Electric along the west side of USH 18/151 (Verona Road) from approximately STA. 949+20 VR to STA. 960+30 VR as described elsewhere in these special provisions.

A representative from Charter must be present any time construction work is conducted within 10 feet of Charter's facilities. Contact Charter 5 days prior to beginning work within 10 feet of Charter facilities. Contact Charter 5 days before removing or adjusting any

Charter facilities to verify the facility is no longer in use. Do not assume an unmarked facility is discontinued.

If excavation is within 2 feet of the outer edge of a Charter facility in any direction, only hand excavation, air cutting, and vacuum excavation are permitted.

The maximum unsupported exposed length for a Charter facility is 5 feet. Support the facility with sand bags or padded skids when required. At no time should Charter facilities be used as a brace to support equipment or materials.

Contact Charter 5 days prior to working near Charter facilities. Coordinate operations with Charter. Contact Glen Jakusz (608) 209-3202. Invite Glen Jakusz to the weekly construction meetings.

ExteNet Systems (ExteNet) (communication) has existing overhead and underground facilities located within the project area. No conflicts are anticipated with ExteNet's existing facilities. ExteNet's utility relocations took place as part of WisDOT project 1206-07-74 as follows:

Underground facilities have been placed jointly with AT&T, MG&E Electric, and Charter along the back of the proposed sidewalk on the east side of the East Verona Road Frontage Road from approximately STA. 930+90 VR to STA. 948+50 with a node pole in the terrace of the East Verona Road Frontage Road at approximately STA. 930+90 VR.

Underground facilities have been placed jointly with Charter to cross USH 18/151 (Verona Road) at approximately STA. 948+25 VR. A pull box is located at approximately STA. 948+00 VR, 136' RT where the facility continues to the northeast along the existing right of way line to approximately STA. 948+50 VR where it continues west to an existing MG&E Electric power pole.

Contact ExteNet NOC at (866) 892-5327 a minimum of 24 hours prior to construction to coordinate working within 10 feet of ExteNet's facilities.

Coordinate operations with ExteNet. Contact Lili Giertz (920) 395-7136. Invite Lili Giertz to the weekly construction meetings.

MG&E Gas (gas/petroleum) has existing underground facilities located within the project limits. No conflicts are anticipated with MG&E Gas' existing facilities. MG&E Gas' utility relocations took place as part of WisDOT project 1206-07-74 as follows:

- Use of the existing 6-inch steel underground facilities along the west side of Verona Road from approximately STA. 897+25 VR to STA. 924+75 VR have been discontinued and remain in place.
- Use of the existing 2-inch steel underground facilities along the south side of CTH PD (McKee Road) from approximately STA. 92+75 EB to STA. 99+40 EB have been discontinued and remain in place.

- Use of the existing 12-inch steel, 400 pound per square inch (psi), underground facilities along and under the eastbound lanes of CTH PD (McKee Road) from approximately STA. 86+50 EB to STA. 112+50 EB have been discontinued and remain in place.
- Use of the existing 6-inch plastic and 4-inch steel underground facilities along the east side of USH 18/151 (Verona Road) from approximately STA. 905+15 VR to STA. 962+45 VR and the crossings of USH 18/151 (Verona Road) at approximately STA. 906+40 VR, STA. 922+25 VR and STA. 959+05 VR have been discontinued and remain in place.
- Use of the existing 2-inch steel, 60 psi facilities along the south side of Raymond Road from approximately STA. 96+45 RR to STA. 99+00 RR have been discontinued and remain in place.
- Use of the existing 4-inch plastic underground facilities crossing CTH PD at approximately 103+05 WB have been discontinued in place.

Underground 400 psi facilities have been placed along the west side USH 18/151 (Verona Road) from approximately STA. 921+50 VR to STA. 922+25 VR with a crossing of USH 18/151 (Verona Road) at approximately STA. 921+00 VR. The depth of the gas facility crossing USH 18/151 (Verona Road) is approximately 8 feet to 16 feet below existing ground. Contact MG&E Gas for additional information.

Underground 60 psi facilities have been placed crossing USH 18/151 (Verona Road) at approximately STA. 922+95 VR. The depth of the gas facilities is approximately 8 to 16 feet below existing ground. Contact MG&E Gas for additional information.

Underground 60 psi facilities have been placed along the north side of CTH PD within approximately 1 foot of the right of way from approximately STA. 103+95 EB to STA. 106+80 EB where the facility connects to existing facilities on the north side of CTH PD. The depth of the underground facility is anticipated to be approximately 3 feet to 5 feet below existing ground. Contact MG&E Gas for additional information.

Underground 60 psi facilities have been placed along the south side of Raymond Road along the back of proposed sidewalk from approximately STA. 96+45 RR to STA. 98+50 RR. From STA. 98+50 RR the facility will continue southwest approximately 10 feet RT of the FD alignment to approximately STA. 10+00 FD. The depth of the proposed facility is anticipated to be approximately 3 feet below finished ground.

Underground 4-inch plastic facilities have been placed crossing CTH PD at approximately STA. 103+50. Contact MG&E Gas for additional information.

Contact Shaun Endres of MG&E Gas prior to removing any gas facilities to verify that the facilities have been disconnected and do not carry natural gas. Do not assume that unmarked facilities have been disconnected. At no time is it acceptable to push, pull, cut or drill an unmarked facility without approval from MG&E Gas. Hand dig within 18 inches of gas facilities.

Contact Mike Savage of MG&E Gas at (608) 235-2345 at least one week in advance of excavating within 10 feet of 400 psi facilities so MG&E Gas can have a representative on site during the excavation.

Coordinate operations with MG&E Gas. Contact Shaun Endres (608) 213-6708. Invite Shaun Endres to the weekly construction meetings.

MG&E Electric (electric) has existing overhead and underground facilities located within the project area. MG&E Electric has completed portions of their relocations as indicated below. MG&E Electric anticipates their remaining relocations will take place beginning May 9, 2016 and are anticipated to be completed by July 1, 2017. The anticipated proposed relocations are as follows:

- The existing overhead facilities along the west side of USH 18/151 (Verona Road) from approximately STA. 949+20 VR to STA. 960+30 VR will be removed.
- The existing power poles along the west side of USH 18/151 (Verona Road) at approximately STA. 968+10 VR, STA. 969+90 VR, and STA. 970+90 VR will be removed.
- New power poles are proposed on the west side of USH 18/151 (Verona Road) at approximately STA. 968+50 VR, STA. 970+40 VR, and STA. 971+50 VR.

Underground facilities are proposed jointly with Charter along the west side of USH 18/151 (Verona Road) from approximately STA. 949+20 VR to STA. 960+30 VR approximately 5 feet east of the proposed sanitary sewer. The depth of the proposed facility is anticipated to match the depth of the proposed sanitary sewer. MG&E is reviewing additional route for this relocation. Contact MG&E Electric to verify the location of these relocated facilities.

Underground facilities have been placed jointly with AT&T, Charter, and ExteNet along the back of sidewalk on the east side of the East Verona Road Frontage Road from approximately STA. 916+60 VR to STA. 943+20 VR.

Underground facilities have been placed jointly with Charter crossing USH 18/151 (Verona Road) at approximately STA. 920+00 VR. The depth of the underground facilities is anticipated to vary between approximately 8 feet and 12 feet. Contact MG&E Electric for additional information.

Overhead facilities are located along the east side of USH 18/151 (Verona Road) from approximately STA. 936+50 VR to STA. 941+00 VR that provide power to the existing signal cabinet at the Williamsburg Way and USH 18/151 (Verona Road) intersection. Coordinate removal of the existing overhead facilities with MG&E Electric.

Contact MG&E Electric prior to cutting/removing facilities to verify they are de-energized.

Contact MG&E Electric 5 days prior to working near MG&E Electric facilities.

Coordinate operations with MG&E Electric. Contact Rich Parker (608) 252-7379. Invite Rich Parker to the weekly construction meetings.

Madison Metropolitan Sewerage District (MMSD) (sanitary sewer) has existing underground facilities located within the project limits. MMSD facility work will take place during construction and is anticipated to take 5 working days to complete. The anticipated proposed work is as follows:

MMSD will place insulation along their existing facilities on the east side of USH 18/151 (Verona Road) from approximately STA. 869+00 VR to STA. 882+00 VR after grading for the proposed ditch has been completed but prior to final restoration and erosion control completion. Contact MMSD a minimum of 4 weeks prior to the grading being completed and again 1 week prior to completing the grading. The work is anticipated to take 5 working days to complete.

Use of MMSD's existing underground facilities along the east side of USH 18/151 (Verona Road) from approximately STA. 885+05 VR to STA. 904+25 VR and along the south side of CTH PD (McKee Road) from approximately STA. 100+77 EB to STA. 107+10 EB have been discontinued and are anticipated to be slurry filled.

Contact MMSD 7 days prior to working near MMSD facilities. Coordinate operations with MMSD. Contact Eric Hjellen (608) 222-1201. Invite Eric Hjellen to the weekly construction meetings.

Metropolitan Unified Fiber Network (MUFN) (communication) has existing underground facilities located within the project area that are anticipated to be conflict with the project.

The existing underground facilities crossing USH 18/151 (Verona Road) at approximately STA. 875+65 VR will be lowered in place during construction. The depth of the underground facility is anticipated to be between approximately 3 feet and 15 feet below existing ground. MUFN anticipates adjusting their facilities will take 1 working day to completed. Contact MUFN prior to beginning construction.

Contact MUFN 7 days prior to working near MUFN facilities. Coordinate operations with MUFN. Contact Randy Simms (906) 282-3802. Invite Randy Simms to the weekly construction meetings.

1206-08-75

City of Fitchburg (sanitary sewer) has existing underground facilities located within the project area. Relocation of the existing underground facilities will be accomplished as part of project 1206-08-75 with this contract. Coordinate operations with the City of Fitchburg. Contact Tracy Foss (608) 270-4272. Invite Tracy Foss to the weekly construction meetings.

City of Fitchburg (water) has existing underground facilities located within the project area. Relocations of the existing underground facilities will be accomplished as part of project 1206-08-75 with this contract. Coordinate operations with the City of Fitchburg. Contact Tracy Foss (608) 270-4272. Invite Tracy Foss to the weekly construction meetings.

1206-08-79

Alliant Energy (Alliant) (electric) has existing overhead facilities at the salt shed site that are not anticipated to be in conflict with the project.

Metropolitan Unified Fiber Network (MUFN) (communication) will adjust their existing underground facilities as needed at the salt shed site to avoid conflicts with the proposed work. Contact MUFN 7 days prior to working near their facilities. Adjustments are anticipated to be completed in 1 working day.

TDS Telecom (communication) has existing underground facilities located at the salt shed area. No conflicts are anticipated. Contact Todd Ellickson at (608) 664-4419 TDS 3 days prior to clearing and grubbing the salt shed area.

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

Both the department and City of Fitchburg personnel will inspect construction of sanitary sewer and water main under this contract. However, acceptance of the sanitary sewer and water main construction will be by the City of Fitchburg.
105-001 (20140630)

8. General Provisions for City of Fitchburg Municipal Utilities (Water Main and Sanitary Sewer).

Perform work according to these special provisions, the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, City of Fitchburg Standard Specifications for Public Works Construction-Latest Edition and City of Madison Standard Specifications for Public Works Construction-Latest Edition. In the event of a conflict, the documents listed above are in precedence order.

The Latest Edition of the City of Fitchburg Standard Specifications for Public Works Construction, Latest Edition are available on the city website at:
http://www.fitchburgwi.gov/DocumentCenter/View/10074

The Latest Edition of the City of Madison Standard Specifications for Public Works Construction, Latest Edition are available on the city website at:
http://www.cityofmadison.com/business/pw/specs.cfm

These above provided website locations may change. Confirm the latest edition of the specifications with the City of Fitchburg and the City of Madison.

Work Sequence
Contact the engineer and identified person below ten working days prior to starting work on the water main and sanitary sewer and provide a schedule of operations.

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

Contact the owner of a parcel with sanitary sewer or water main lateral work five business days prior to the work. Provide an update to the property owner of the anticipated work on the lateral and potential service interruption a minimum of 48 hours prior to the work. Conduct construction operations in a manner that will cause the least interference and inconvenience to the parcel including, but not limited to, performing the construction operations during nighttime hours. Additional intermediate construction staging of the sanitary sewer and water main laterals, not shown on the plans, may be necessary to cause the least interference and inconvenience to the parcel.

As construction staging and sequence allows, disinfect the new water mains. Contact the engineer and the City of Fitchburg prior to flushing and testing all newly installed water mains. Coordinate as necessary with the City of Fitchburg for these operations. After the water main has passed bacteriological and pressure testing, install replacement water services and make connections to the existing water system.

Keep valves at connections of the new water main to 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, sequence construction to preclude backflow of any water from the new water main to the existing water main. Provide safe bacteriological results to the City of Fitchburg for all service lines after connection to the new main.

Following the installation of replacement water services and the connection of replacement water main to the existing water main at locations noted on the plans, the existing water main shall be cut off, drained, open ends plugged, and the pipe abandoned in place. This work is considered incidental to the new water main.

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.

Pipe to be removed that is in the same trench as a new pipe shall not be compensated as remove pipe and shall be considered to be incidental to the new pipe installation.

Existing Water and Sanitary Sewer Service Laterals
The horizontal location and size of all laterals indicated on the plans is taken from surveys, approximate measurements, and the City of Fitchburg'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 or installing new sanitary wyes. Follow the plans to determine which services are to be abandoned, reconnected, extended, or replaced to the property line.

Location of Existing Facilities
The horizontal and vertical location and size of all existing water mains and sanitary sewers indicated on the plans is taken partially from surveys, approximate measurements, and the City of Fitchburg'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 and City of Fitchburg of locations where alterations of the lines and grades shown are necessary so that an acceptable solution can be determined.

Testing and Acceptance
Submit testing results as required by the City of Fitchburg Standard Specifications for Public Works Construction-Latest Edition to the engineer and the City of Fitchburg. Final acceptance of water main, sanitary sewer, backfill materials, bedding, and abandonments will be provided by the City of Fitchburg.

Allow the City of Fitchburg to sample/test materials as requested.

Provide complete copies of required submittals to the engineer and City of Fitchburg as follows:

Shop Drawings:	One PDF or hard copy
Sampling/Testing Results:	One PDF or hard copy

E-mail or deliver the submittals and testing results to Tracy Foss, City of Fitchburg, 5520 Lacy Road, Fitchburg, WI 53711, tracy.foss@fitchburgwi.gov.

The City of Fitchburg will review and return shop drawings to the contractor within one week of date of receipt.

9. General Provisions for Storm Sewer.

Construct all storm sewer according to the pertinent provisions of standard spec 607, 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 includes 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. The use of mortar as a pipe joint method is prohibited.

Lay all storm sewer on a 6-inch minimum thick bed of Base Aggregate Dense 1 ¼-Inch according to standard spec 305.2.1 or when water is encountered, size No. 1 coarse concrete aggregate according to standard spec 501.2.5.4. Bedding for pipe is included with the installation costs of the round or elliptical pipe.

Submit a dewatering plan with the ECIP for approval. Dewatering is incidental to all storm sewer pipe installation.

Construct all structures using 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 1 ¼-Inch according to standard spec 305.2.1 or when water is encountered, size No. 1 coarse concrete aggregate according to standard spec 501.2.5.4. Bedding for structures is included with the installation costs of the structure.

Do not use station and offset for inlet structures, as given on the storm plans, exclusively 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.

Center all castings on the structure unless otherwise noted.

Steps are not required in storm sewer structures.

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 will be paid for separately by bid items Storm Sewer Tap, Covering and Locating Storm Sewer and Concrete Collars for Pipe, where shown on the plans or directed by the engineer.

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 Fitchburg personnel. Contact Mark Hodel, City of Fitchburg Department of Public Works at (608) 444-6322, or mark.hodel@fitchburgwi.gov, at least three business days in advance to schedule pickup.

Remove from the right-of-way and properly dispose of all frames or grates and all other material that the City of Fitchburg does not pickup.

10. General Requirements for Incident Management.

Provide 24-hour contact information, including three current telephone number(s), to the engineer, Dane County Sherriff's Department, local City of Fitchburg first responders, and local City of Madison first responders in the event a safety hazard develops.

Repair, replace, or restore the damaged or disturbed traffic control devices within one hour from the time notified as indicated in the Traffic article of these special provisions.

Incidents within the construction work zone will be handled by the City of Fitchburg or the City of Madison, whichever has jurisdiction according to standard operating protocol. Invite the following agencies or individuals to the preconstruction and bi-weekly construction informational meetings:

City of Fitchburg Police Department, Chief Thomas Blatter	(608) 270-4300
City of Madison Police Department, Chief Michael C. Koval	(608) 266-4022
City of Verona Police Department, Chief Bernard Coughlin	(608) 845-7623
City of Fitchburg Fire Department, Chief Joe Pulvermacher	(608) 278-2980
City of Madison Fire Department, Chief Steven Davis	(608) 266-4420
City of Verona Fire Department, Chief Joseph Giver	(608) 845-9401
Fitch-Rona EMS, Chief Brian Myrland	(608) 497-2909
City of Fitchburg Department of Public Works, Director Cory Horton	(608) 270-4260
Dane County Department of Public Works, Deputy Commissioner Pamela Dunphy	(608) 266-4036
Wisconsin State Patrol, Captain Jason L. Zeeh	(608) 846-8500
Wisconsin Department of Transportation, Jeff Gustafson	(608) 516-6400

11. Notice to Contractor - General.

Parcel 2
Schedule a meeting with the property owner of parcel 2 (plat 1206-07-30) and engineer a minimum of ten working days prior to razing the building on the parcel. The remaining building for Parcel 2 has underground parking. Maintain access to the underground parking at all times during construction.

Parcel 2 Contact: Dale Benjamin, (608) 268-4641, dale@benjaminplumbing.com

Parcel 34
The property owner for parcel 34 requested the drainage from the parcel parking lot towards the project be improved from approximately station 131+80 H to 132+20 H. The project plat was completed prior to the request. Therefore, the cross sections indicate matching into existing ground at approximately the temporary limited easement (TLE) limits. Please contact the property owner to see if they will provide a construction permit for working outside the TLE to grade the area between the TLE and the parking lot to drain towards the project.

Parcel 34 Contact: Tony Millonig, (608) 273-8263, chalet@chaletski.com, 5252 Verona Road

Parcel 46
Schedule a meeting with the Parcel 46 property owner and engineer a minimum of ten working days prior to starting work adjacent to the parcel. Parcel 46 contains satellite dishes with signals that may be sensitive to interference from equipment operating within several hundred feet of the satellite dishes. When operating equipment near the parcel, if interference is caused by the equipment, as notified by the engineer or owner, remove or repair the equipment immediately so interference is not caused with the signal.

Parcel 46 Contact: Jamie Childs, (608) 209-3214, James.Childs@charter.com

Parcel 52
To the extent practicable, do not disturb the grapevines, rhubarb or raspberries within the temporary limited easement of Parcel 52 of plat 1206-07-25 (2322 Westchester Road).

Parcel 52 Contact: Helen Wineke, (608) 271-6971.

Retaining Wall and Railing Coordination
The plans provide dimensions for the mechanically stabilized earth retaining wall panels. The panel dimensions provided in the plans include the manufacturer specified gaps that will be provided for the retaining wall panels. The retaining wall and railing manufacturers shall coordinate their designs to ensure that the railing properly aligns with the retaining wall panels, including all expansion joints.

Excavation Adjacent to Trees
Avoid excavating within 5 feet of the face of a tree to remain, when practicable, due to the potential of damaging the root system.

American Transmission Company (ATC) (electric) has overhead facilities within the project area. The existing overhead facility is a double circuit line with one 138kV and one 69 kV circuit. These facilities are anticipated to be energized during construction. Use caution when operating around ATC foundations and overhead facilities. See the Utilities article for information on requesting a line outage of ATC's 138 kV and 69 kV facilities.

Level 3 Communications
Level 3 communications is reviewing potential fiber optic utilities within the project corridor. Contact Level 3 Communications prior to starting work on the project to verify if they are placing or have placed facilities within any part of the project area. Contact Jim Buhrdorf, Engineering Manager, eX2 Technology LLC, 402-669-8099 (cell), jbuhrdorf@ex2technology.com

Concrete Barrier Temporary Precast Delivered - Department Owned
Concrete Barrier Temporary Precast Delivered - Department-Owned is located on site from project 1206-07-74. Approximately 12,200 linear feet of department-owned concrete

barrier temporary precast is located on site. This concrete barrier temporary precast should be utilized in lieu of furnishing contractor owned concrete barrier temporary precast whenever possible. Coordinate available quantities and dates of availability with Chris Fredrick of WisDOT at (608) 884-7130.

Madison Metro Coordination
Madison Metro Transit will be moving, removing and re-installing bus route signs, bases, and posts along the local roads and frontage roads. Notify Tim Sobota, Madison Metro Transit at (608) 261-4289 a minimum of ten business days prior to impacting Metro Transit signing and bus stops.

Commercial and Residential Parking Lots
Contact the owner of the parcel ten business days prior to work taking place within the parking lots. Conduct construction operations within commercial and residential parking lots in a manner that will cause the least interference and inconvenience to existing parking stalls and parking lot circulation. Do not store equipment or stockpile materials within the temporary limited easement. Additional intermediate construction staging of the parking lots, not shown on the plans, may be necessary to maintain continuous parking and parking lot circulation. Maintain a minimum driving surface of base aggregate dense within parking lots.

Equipment, Stockpiles, and Materials
Avoid parking equipment and stockpiling materials in areas of business or rental signing so as not to obstruct business or rental signing. Do not store equipment, vehicles or materials outside the project limits or on adjacent city streets without the approval of the engineer. Do not store equipment or materials on USH 18/151 (Verona Road) closer than 30 feet to the edge of the traveled way unless the equipment and materials are protected by concrete barrier wall. If equipment and materials are stored behind concrete barrier wall, maintain a minimum of 4 feet clearance behind the concrete barrier wall to any equipment or materials that extend above the concrete barrier wall.

Right-of-Way Access
Prior to entry onto any parcel shown in Transportation Project Plat (TPP) 1206-07-25 or 1206-07-30 contact Chris Fredrick, WisDOT Construction Manager, at (608) 884-7130 to verify that the parcel is available for entry.

Project Aesthetics
The retaining walls and sign structure for this project utilize the same concrete formliner and concrete staining color scheme as shown in the plans and as previously used on WisDOT projects1206-07-74, 1206-07-77, 1206-07-78 and 1206-07-84. Coordinate the concrete formliners and concrete stain colors for this project to ensure a similar and consistent appearance with the previous projects. Inconsistent appearance of concrete formliners and concrete staining colors shall be removed.

Automatic Traffic Recorder (ATR) 13-0123, Station 869+60
An ATR in included in the project at station 869+00. Notify Jane Oldenburg of WisDOT, at (608) 245-2679 a minimum of ten business days prior to construction of any portions of the ATR.

1206-08-79 Salt Storage Facility Earthwork
WisDOT Verona Road Project 1206-07-74 intends to provide the majority of the earthwork for the salt shed facility site to approximately finished subgrade elevation. The earthwork provided as part of this contract for project 1206-08-79 for the salt shed facility is estimated based on the intent stated above. The actual earthwork completed as part of project 1206-07-74 is unknown and should be reviewed prior to bid and again prior to starting work.

S-13-448
Remove the existing sanitary sewer structure and sanitary sewer pipe near station 948+70 VR LT, as shown in the plans, to accommodate the west foundation for Structure S-13-448 prior to slurry filling the sanitary sewer pipe.

12. Notice to Contractor - Construction Safety.

Description
This specification describes minimum occupational safety and health requirements for the prime contractor and their subcontractors performing work on this project. The fundamental objective of these requirements is to eliminate construction related injuries and incidents so that their associated impacts to workers and the public, budgets and schedules are avoided or minimized.

Definitions
Certified Crane Operator. To be certified a crane operator one must pass both written and practical tests offered by a nationally accredited testing organization, such as the National Commission for the Certification of Crane Operators (NCCCO) or the Operating Engineers Certification Program (OECP).

Competent Person. One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Critical Lift. A critical lift applies to, but is not limited to the following: any crane lift or hoisting operation that exceeds 75 percent of the rated capacity of the crane, requires the use of more than one crane or hoisting device, involves barge-mounted cranes, where the center of gravity could change, lifts where existing outriggers cannot be fully extended due to site constraints, lifts involving multiple lift rigging assemblies or other non-routine/difficult rigging arrangements.

Project Safety Officer (PSO). The person or persons designated by the department to coordinate implementation of a construction safety management system, including risk

assessment, training, evaluating effectiveness, corrective/preventive action, and management review.

Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.

Safety Representative (SR). A person designated by the contractor to develop and implement the company's health and safety plan, assess job hazards, and identify and carry out corrective and preventive actions.

General Requirements
Notify the department immediately of any agency compliance inspections, including but not limited to the Occupational Safety and Health Administration (OSHA).

Report all project-related fatalities and OSHA-recordable injuries and illnesses that result in inpatient hospitalizations within 8 hours to the Project Safety Officer (PSO). Report all other project-related OSHA-recordable injuries and illnesses monthly to the PSO.

Safety Representative Requirements
Provide at least one Safety Representative (SR). Each SR shall perform inspections, safety observations and other safety-related duties on-site on a weekly basis, at a minimum. Provide an alternate SR in the event of illness or other unforeseen circumstances.

Each SR and alternate SR shall have training, knowledge and experience in construction safety and health, including but not limited to a current OSHA 10-hour Occupational Safety and Health Training Course in Construction Safety and Health. Provide evidence of SR certifications, qualifications and training to the PSO.

Each SR and alternate SR shall attend a 2-hour Construction Safety Awareness Training provided by the department at the beginning of the project and at least once every two years. The SR shall communicate and distribute materials provided in the 2-hour Construction Safety Awareness Training to their site workers prior to starting site construction activities.

Requirements for Construction Health & Safety Programs
In addition to implementing programs to meet the requirements of OSHA Construction Safety and Health standards, develop a written safety plan for the work to be performed. Note: General guidance is provided in Section 1-35.1.2 of the Construction and Materials Manual.

Traffic Control and Vehicle Collision Prevention/Risk Reduction
All vehicles and mobile equipment shall use high-intensity rotating, flashing, oscillating, or strobe lights according to Section 6G.02 of the Manual of Uniform Traffic Control Devices (FHWA, 2009).

Provide crash cushions or truck (or trailer)-mounted attenuators (TMAs) on shadow vehicles to protect workers, vehicles, and mobile equipment from vehicle collisions according to the Manual of Uniform Traffic Control Devices (FHWA, 2009, Section 6F.86). Coordinate with the engineer at least 72 hours before placing a TMA in service.

Personal Protective Equipment (PPE)
Minimum Requirement Personal Protective Equipment (PPE) to be worn in Construction Work Areas:

ASTM F2413-11 safety-toed boots rated for impact and puncture resistance (PR) shall be worn.

ANSI Z-87+ impact-resistant safety glasses with sideshields shall be worn. Requirements for faceshields, goggles, welding shades, etc. shall be determined by the SR.

ANSI Z-89.1 Class G or E hard hats where there is potential for impact or injury to the head.

Daytime Work: ANSI/ISEA 107-2004 Class 2 or 3 high visibility vests at all times and Type E pants for flaggers and other personnel working on the traffic side of concrete barriers (yellow/lime).

Nighttime Work: ANSI/ISEA 107-2004 Class 2 or 3 retro-reflective safety vests (yellow/lime) and Type E pants (Type 3 ensemble) and a hard-hat-mounted LED light ("miner's lamp").

Hearing protection shall be used, if the work site noise exceeds 90 decibels (dBA), as 8-hour average exposure measurements. [29 CFR 1926.52 and .101]

Walking and Working Surfaces
Keep all accessible work areas and passageways free from debris, obstructions and other slip, trip and fall hazards.

Excessive Driving Hours/Extended Work Shifts
Distribute a one-page handout to each truck driver accessing the work zone to increase their awareness of hazards related to extended work shifts. The department will make the handout available electronically.

Cranes and Hoists.
Ensure that all crane operators have been certified by the National Commission for the Certification of Crane Operators (NCCCO) or by the Operating engineer Certification Program (OECP) if they will be operating a 10-Ton or greater capacity crane or if they are involved in critical lifts.

Provide critical lift plans to the department at least 72 hours prior to a critical lift. The contractor is responsible for all submittals, assumptions, calculations, and conclusions. Have a professional engineer, registered in the state of Wisconsin and knowledgeable of

the specific site conditions and requirements, verify the adequacy of the design. Submit one copy of each design, signed and sealed by the same professional engineer verifying the design, to the engineer.

Crane operators shall safely terminate hoisting operations in the event of wind conditions that exceed the original equipment manufacturer's specifications for safe operation.

Documentation and Records

Maintain documents and records and ensure that they are readily available upon request. At a minimum this includes:

a. Written Safety Plan for Work Activities to be Performed
b. Names of Safety Representatives and copies of their OSHA 10-Hour Occupational Safety and Health Training Course in Construction Safety and Health training cards.
c. Names of Competent Persons and Qualified Persons (if required by OSHA for the work performed).
d. Reports of inspections of the job sites, materials, and equipment [29 CFR 1926.20(b)(2)].
e. Documentation that the SR has communicated and distributed materials from the Construction Safety Awareness Training to their site workers. At a minimum this will include a dated sign-in sheet with the names and signatures of the workers trained. The department will provide a sign-in sheet template electronically.
f. Project site OSHA 300 Log (no worker names)[29 CFR 1904.29]
g. Project site OSHA 301 Incident Report (no worker names) [29 CFR 1904.29]
h. Hazard Communication Program [29 CFR 1926.59]
    i. Hazardous Chemical Inventory,
    ii. Location of Safety Data Sheets (SDSs)
    iii. Hazard Warning Symbols
    iv. Information and training requirements.
i. Exposure Monitoring results (if monitoring is required under a specific OSHA standard-no worker names)
j. Crane operator certifications (if applicable)
k. Fall Protection Plan (if applicable) [29 CFR 1926.500-.503 and 1926.104]
l. Confined Space Entry Procedures (if applicable). [29 CFR 1926.1200-.1213]
m. Lockout/Tagout Procedures (if applicable). [29 CFR 1926.417 and .702]
n. Respiratory Protection Program (if applicable) [29 CFR 1926.103 and 1910.134(c)]
o. Emergency Action Plan [29 CFR 1926.35]
    i. Emergency escape procedures and emergency escape route assignments
    ii. Procedures to be followed by employees who remain to operate critical equipment before they evacuate
    iii. Procedures to account for all employees after emergency evacuation has been completed
    iv. Rescue and medical duties for those employees who are to perform them;
        - First Aid and Medical Treatment Procedures [29 CFR 1926.50]
        - Equipment and Supplies
        - Names of persons certified in first aid
        - Location of the nearest medical facility.

v. The preferred means of reporting fires and other emergencies
vi. Prime contractor's alarm system
vii. Names or regular job titles of persons who can be contacted for further information or explanation of duties under the plan.

p. Fire Protection Program (if applicable) [29 CFR 1926.150]
q. Fire Prevention Plan and Hot Work Permit procedures (if applicable) [29CFR 1926.352]

13. Notice to Contractor – Airport Operating Restrictions – Site Specific.

The Federal Aviation Administration (FAA) has height restrictions surrounding select airports. The department has obtained Temporary Determination of No Hazard to Air Navigation for temporary structure (i.e. mobile cranes and bucket trucks) erections associated with the items indicated below. This project was separated into 500 foot segments with a determination for each segment at the following locations. A copy of the determination can be obtained through the engineer.

Aeronautical Study Number	Station Range	Temporary Structure	Proposed Ground Elevation	Temporary Structure Height (AGL)	Object
2016-AGL-15525-OE	870+00 VR - 875+00 VR	Mobile Crane	985	76	Sign Structure S-13-457
2016-AGL-15526-OE	875+00 VR - 880+00 VR	Mobile Crane	989	75	Sign Structure S-13-456
2016-AGL-15527-OE	885+00 VR - 890+00 VR	Mobile Crane	994	79	Sign Structure S-13-442
2016-AGL-15528-OE	905+00 VR - 910+00 VR	Mobile Crane	1012	72	Sign Structure S-13-445
2016-AGL-15529-OE	915+00 VR - 920+00 VR	Mobile Crane	1006	102	Sign Structure S-13-446
2016-AGL-15530-OE	935+00 VR - 940+00 VR	Mobile Crane	1042	77	Sign Structure S-13-454
2016-AGL-15531-OE	945+00 VR - 950+00 VR	Mobile Crane	1039	79	Sign Structure S-13-448
2016-AGL-15532-OE	950+00 VR - 955+00 VR	Mobile Crane	1038	80	Sign Structure S-13-449

Aeronautical Study Number	Station Range	Temporary Structure	Proposed Ground Elevation	Temporary Structure Height (AGL)	Object
2016-AGL-15533-OE	960+00 VR - 965+00 VR	Mobile Crane	1033	77	Sign Structure S-13-450
2016-AGL-15534-OE	970+00 VR - 975+00 VR	Mobile Crane	1029	79	Sign Structure S-13-451
2016-AGL-15535-OE	965+00 VR - 970+00 VR	Bucket Truck	1031	70	ITS -50 ft. pole
2016-AGL-15536-OE	955+00 VR - 960+00 VR	Mobile Crane	1036	68	Noise wall N-13-6
2016-AGL-15537-OE	930+00 VR - 935+00 VR	Bucket Truck	1038	55	Light pole 133+60 H
2016-AGL-15538-OE	920+00 VR - 925+00 VR	Mobile Crane	1032	50	Retaining wall R-13-270
2016-AGL-15539-OE	925+00 VR - 930+00 VR	Mobile Crane	1048	50	Retaining wall R-13-270
2016-AGL-15540-OE	910+00 VR - 915+00 VR	Mobile Crane	1005	73	Retaining wall R-13-268
2016-AGL-15541-OE	855+00 VR - 860+00 VR	Bucket Truck	983	32	Type 1 sign 859+50 VR LT
2016-AGL-15542-OE	940+00 VR - 945+00 VR	Mobile Crane	1045	50	Retaining wall R-13-272
2016-AGL-15543-OE	935+00 VR - 940+00 VR	Pile Driving Equipment	1037	100	B-13-833 Abutment

As a condition of the Determinations, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, install and maintain according to FAA Advisory circular 70/7460-1 L Change 1.

Notify the manager of Verona Airport (Robin Slotten) at (608) 845-7239 at least three business days prior to any temporary structure being erected and again when the temporary structure is removed from the site.

Any failure or malfunction that lasts more than 30 minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867, so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Any height of a temporary structure exceeding above ground level (AGL) or above mean sea level (AMSL), as listed in the temporary determination, will result in a substantial adverse effect and will warrant a Determination of Hazard to Air Navigation.

The temporary determinations expire on May 29, 2018 unless extended, revised, or terminated by the issuing office. If an extension is needed, the contractor must request an extension to the effective period of the determination. The request must be postmarked or delivered, to the office below, at least 30 days prior to the expiration date:

Federal Aviation Administration
Air Traffic Airspace Branch, ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-0520

For questions on extensions to the effective period of the determinations, contact the FAA office at (847) 294-7575 and reference the Aeronautical Study Number.

Any changes in coordinates and/or heights will void the determination. Any future construction or alteration, including increase to height, requires a separate notice to the FAA.

Determinations include temporary construction equipment such as the equipment noted above, which may be used during actual construction. Equipment shall not exceed the overall heights as indicated in the determination. The contractor must request separate notice to the FAA if equipment has a height greater than the determination. Submit FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA a minimum of 45 days before beginning construction operations that propose to use equipment that will exceed the elevations provided within the department completed filings. If required, the FAA will return FAA Form 7460-2, Notice of Actual Construction or Alteration, with a determination. Complete and send FAA Form 7460-2, Part 1 to the FAA at least 48 hours prior to starting the actual construction or alteration of a structure. Additionally, submit Part 2 no later than five days after the structure has reached its greatest height.

Contact Justin Hetland, Airspace Safety Program Manager, Bureau of Aeronautics at (608) 267-5018 (Justin.Hetland@dot.wi.gov) with any questions. Refer to the following FAA website for instructions to complete the form and the required information.
http://oeaaa.faa.gov/oeaaa/external/portal.jsp

The contractor must copy the engineer on any correspondence with the FAA.

A determination concerns the effect of temporary structures on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance

responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

14. Notice to Contractor, Verification of Asbestos Inspection, No Asbestos Found.

James Gondek, License Number All-108099, inspected Structure B-13-356 and B-13-455 for asbestos on July 14, 2011. No regulated Asbestos Containing Material (RACM) was found on this structure. A copy of the inspection report is available from: Mark Vesperman, P.E., (608) 884-1227.
stp-107-127 (20120615)

Robert J. Stigsell, License Number AII-03628, inspected the commercial building to be removed at 5396 King James Way, Parcel 2 of Transportation Project Plat 1206-07-30, for asbestos on October 17, 2016. Asbestos containing material documented at the parcel will be removed by the department prior to construction. A copy of the inspection report is available from the department by contacting Chris Fredrick at (608) 884-7130.

15. Contract Award and Execution.

Supplement standard spec 103 as follows:

103.9 Mobilization Workshops
103.9.1 Workshop Schedule
After contract award, attend the following workshops. Each workshop is described below and will include but not be limited to the topics outlined below.

Workshop	Timeframe
Initial Work Plan (IWP)	Prior to Notice to Proceed (NTP)
Cost Reduction Incentive and Submittals	Prior to preconstruction meeting
Utility Coordination	Prior to preconstruction meeting
Baseline CPM Progress Schedule	After NTP and submittal of Baseline CPM Progress Schedule
Work Force Opportunities	Day of preconstruction meeting

The workshop dates will be scheduled by the engineer after contract award. The engineer may modify the original workshop schedule to ensure attendance by the necessary department and contractor personnel. Workshops may be scheduled earlier than specified if agreed to by all parties. Workshops may be deleted and/or combined depending on the complexity and requirements of the project.

103.9.2 Workshops
103.9.2.1 Initial Work Plan
103.9.2.1.1 General
The Initial Work Plan workshop will provide a forum to discuss and answer questions relative to the proposal, bid schedule, and other questions in the Project Questionnaire described in standard spec 103.9.2.1.2. The Initial Work Plan Workshop will include:

- Contractor responses to the attached Project Questionnaire.
- Department presentation of the use of CPM scheduling on the project.
- Contractor presentation of the conceptual work plan for the project.
- Department and contractor discussion of the level of detail and features in the Initial Work Plan Schedule and the Baseline CPM Progress Schedule.

103.9.2.1.2 Project Questionnaire
Provide the following information in the order shown below. This information will constitute the "Project Questionnaire."

General Information
If a Joint Venture, provide information for each member of the Joint Venture.

1. Provide the following information about the company:
    - Firm Name
    - Address
    - Telephone and facsimile numbers; e-mail address
    - Contracting Specialties
    - Years performing work in contracting specialties
    - Geographic areas served
    - Total Management Employees and years of service
    - Project Managers
    - General Superintendents
    - Craft Superintendents
    - Engineers
    - Estimators
    - CPM Schedulers

Construction Engineering

- Provide/attach a copy of your Construction Project Manager's resume indicating the manager's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).
- Provide (if applicable) your third-party construction engineering firms.
- Provide plan for Construction surveying.

Subcontractors

- Attach the list of all subcontractors that are intended for this project and the items of work they shall perform.

Permanent Material Suppliers

- Attach the list of all permanent material suppliers that are intended for the project.

Quality Control (where applicable)

- Provide the name of your Construction Quality Control firm and qualifications indicating the firms' experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).
- Provide/attach a copy of your Construction Quality Control Manager's resume indicating the manager's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).
- List the major elements and/or Table of Contents of your Construction Quality Management Program.
- Provide the name of your Independent Quality Control Testing firm (Construction Quality Control Lab) and qualifications indicating the firm's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).

Organization Chart

- Provide a functional and personnel Organization Chart showing the authority and responsibilities of each individual identified.

Work Rules

- Provide the plan for hours per day, days per week, and number of shifts for key elements of work; i.e. sewer tunnels, retaining wall construction, roadway excavation, bridge structures, and roadway structural section activities.

Maintenance of Traffic

- Provide the name of your Traffic Control Manager and qualifications indicating the firm's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).
- Attach a copy of your Preliminary Schedule indicating your approach to achieving the substantial completion schedule.
- Include an outline of your approach to the maintenance of traffic and how you shall stage the construction to meet the substantial completion schedule including planned locations for local street and freeway access into and out of the work zones for each stage of construction.

Construction

- Provide the approach (resources, equipment, suppliers, number of crews, and where required ground support systems) for the following activities:

- Retaining wall construction by type of work
- Bridge demolition
- Roadway structural section
- Roadway excavation
- Underground construction
- Office and yard facilities

103.9.2.2 Cost Reduction Incentives & Submittals
The Cost Reduction Incentive (CRI) & Submittals workshop will have two primary topics outlined below:

Cost Reduction Incentives
Identify value enhancing opportunities and consider modifications to the plans and specifications that will reduce either the total cost, time of construction or traffic congestion, without impairing, in any manner, the essential functions or characteristics of the project, including, but not limited to, service life, economy of operation, ease of maintenance, benefits to the traveling public, desired appearance, or design and safety standards.

Submit recommendations resulting from the workshop for approval by the engineer as cost reduction incentive proposals in conformance with the provisions in standard spec 104.10 "Cost Reduction Incentive."

The department and the contractor may be able to complete the CRI Concept process, as specified in standard spec 104.10.2, during the CRI workshop.

Submit CRIs after the CRI workshops that were not introduced at the CRI workshop.

Submittals
The Submittals Workshop will identify the key required submittals for the project, categorize submittals into functional areas, and develop a schedule for submittals, submittal reviews, and material fabrications and deliveries. The workshop participants will at a minimum:

1. Review the project special provisions.

2. Categorize submittals into functional areas including but not limited to:
    - MSE Retaining Walls
    - Temporary Shoring
    - Falsework and Formwork
    - Girder Shop Drawings, Fabrication, and Delivery Dates
    - Steel Transportation, Delivery, and Erection
    - Structure Demolition Plans
    - Pile Hammers and High Capacity Piling
    - Concrete/ Asphalt
    - Materials

- ITS / Lighting
- Traffic Signals
- Sanitary Sewer and Water
- Permits

3. Develop a schedule for submittals. Submittal schedule data shall be incorporated into CPM progress schedule to reflect submittal preparation durations and dates, submittal approval durations and dates, and material fabrication periods with forecasted delivery dates. Reference Baseline CPM Progress Schedule in these special provisions.

103.9.2.3 Utility Coordination

The Utility Coordination Workshop will define the scope and schedule of utility relocation work and the respective roles and responsibilities of the project team.

1. At a minimum, the following key personnel will attend the Utility Coordination Meeting.
    - Department's Utility Coordinator
    - Contractor's Project Manager, Foreman, Supervisor
    - Designer Team's Utility Coordinator
    - Key Utility Company Representative(s)

2. At a minimum, the Utility Coordination Meeting will include a review of the following:
    - Summary of all required utility relocations on the project
    - Special provisions addressing utility work
    - Sharing of contact information
    - Scheduling of work for utility relocation(s) including critical milestones and staging for the work
    - Contractor's work schedule and anticipated conflicts with the utility's construction schedule.

103.9.2.4 Baseline CPM Scheduling

At the Baseline CPM Scheduling workshop, provide a presentation of the Baseline CPM Schedule. In the presentation, include a discussion of the anticipated fabrication and delivery durations for long lead material procurements, construction staging and sequencing of the work, understanding of traffic phasing, and application of labor and equipment resources to the work. Address comments raised in the engineer's review.

103.9.2.5 Work Force Opportunities

The Work Force Opportunities workshop will provide a venue for contractors to have meaningful dialogue with TrANS providers regarding the hiring of TrANS graduates. For the prime contractor and the subcontractors, provide staff with hiring authority to participate in a job-matching session during this workshop. The workshop will take place on the same day and in the same location as the pre-construction meeting. The workshop participants will at a minimum:

1. Review contractor hiring processes for general labor positions.

2. Review and listen to presentation provided by TrANS providers regarding the training program including details regarding how contractors can hire TrANS graduates.

3. Review TrANS graduate availability for working on project.

4. Meet one-on-one for at least two minutes with each TrANS graduate in attendance at the meeting.

(1/5/2017)

16. Other Contracts.

The following projects will require coordination with the work under this contract:

Construction for this contract is anticipated to be concurrent with other contracts in the vicinity of this project area:

1. Project 1206-07-74 and 1206-08-74, Mount Horeb-Madison, CTH PD to Raymond Road, USH 18, Dane County. This is the Verona Road/CTH PD Phase 1 project that is anticipated to be constructed between 2016 and 2017.
2. CTH PD, Meriter Way to Maple Grove Road. This project is sponsored by the City of Madison, along CTH PD and is anticipated to take place in 2017.
3. Carling Drive, Lovell Lane to the East Verona Road Frontage Road. This project is sponsored by the City of Fitchburg and City of Madison and is anticipated to take place in 2017.
4. Chalet Gardens Road resurfacing. This project is sponsored by the City of Fitchburg and is anticipated to take place in 2018 or 2019.
5. Project 1206-08-77 Mount Horeb-Madison, CTH PD to Raymond Road, USH 18, Dane County. This is the Verona Road/CTH PD Phase 3 project that is anticipated to be constructed beginning in 2018, with construction through 2020.

Coordinate construction activates, traffic control sign placement and traffic control operations with these projects.

17. Timely Decision Making Manual.

Use the Timely Decision Making Manual (TDM) on this contract. Coordinate with the department to modify the various published tools as necessary to meet the particular project needs and determine how to implement those tools under the contract. Ensure the full participation of the contractor and its principal subcontractors throughout the term of the contract.

Forms and associated guidance are published in the TDM available at the department's Highway Construction Contract Information (HCCI) web site at:

Timely Decision Making Manual (TDM)

stp-105-005 (20151210)

18. Notice to Contractor – Contamination Beyond Construction Limits.

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

1. (Site 6, 9) Station 901+30 VR to 902+80 VR 125 feet RT of the reference line at General Beverages Sales (6169 McKee Road).

2. (Site 96) Station 107+00 EB to 108+00 EB, from 50 feet left of the reference line to construction limits, from ground surface to 2 feet below ground surface. Station 106+50 EB to 107+25 EB, from 25 feet right of the reference line to construction limits right, from ground surface to 2 feet below ground surface.

3. (Site 62) Station 97+00 RR to 98+50 RR 100 feet RT of the reference line at Speedway Station #4132 (4902 Verona Road).

4. (Raymond Road) Station 96+50 RW to 99+00 RW from 25 feet left of the reference to the construction limits. Stockpiled material from project 1206-07-78.

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

The Hazardous Materials Report is available by contacting:

Name: Daniel Haak
Address: TRC Environmental Corporation
708 Heartland Trail, Suite 3000, Madison, WI 53717
Phone: (608) 826-3628
Fax: (608) 826-3941
e-mail: dhaak@trcsolutions.com

stp-107-100 (20050901)

19. Health and Safety Requirements for Workers Remediating Petroleum Contamination.

Add the following to standard spec 107.1(2):

Soil contamination with gasoline, diesel fuel, fuel oil, or other petroleum related products may be encountered during excavation activities. Prepare a site specific Health and Safety Plan complying with the Occupational Safety and Health Administration (OSHA) standard for Hazardous Waste Operation and Emergency Response (HAZWOPER), 29 CFR 1910.120.

All site workers taking part in remediation activities or who will have the reasonable probability of exposure of safety or health hazards associated with the hazardous material shall have completed Health and Safety training that meets OSHA requirements. Prior to the start of remediation work, submit to the engineer a site specific Health and Safety Plan, and written verification that workers will have completed up-to-date OSHA training.

Develop, delineate, and enforce the health and safety exclusions zones for each contaminated site location pursuant to 29 CFR 1910.120.
stp-107-115 (20150630)

20. 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 two weeks prior notice to the engineer to allow for these notifications.
stp-108-060 (20141107)

21. Environmental Protection, Dewatering and Wetlands.

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.

Supplement standard spec 107.18 as follows:

The project includes work at the salt storage facility site that is adjacent to a delineated wetland. Take all necessary precautions to prevent pollution of the wetland with sediment, fuels, oils, bitumens, calcium chloride, magnesium chloride, paint, or other harmful materials. Conduct and schedule work operations to avoid siltation. As part of the Erosion

Control Implementation Plan (ECIP) submittal, supply all pertinent information used to determine the best management practices for this location. Avoid the wetland. If the wetland cannot be avoided by the proposed construction means and methods obtain permits from the United States Army Corps of Engineers and the Wisconsin Department of Natural Resources according to standard spec 107.3 of the standard spec.

22. 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 ten 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.

23. Clearing and Grubbing.

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 two 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.

24. Clearing and Grubbing - Emerald Ash Borer.

Supplement standard spec 201.3 with the following:

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

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

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

(Note: blue ash twigs are 4-sided. All other Wisconsin ash trees have round stems.)

Mountain ash (Sorbus Americana and S. decora) is not a true ash and is not susceptible to EAB infestation.

The contractor shall be responsible for hiring a certified arborist to identify all ash trees that will be cleared and grubbed for the project. In addition, prior to scheduled clearing and grubbing activities, the arborist shall mark all ash trees with flagging tied around the trunk perimeter (florescent lime is suggested as it isn't identified with other project activities).

Follow and obey the following DATCP order:

ATCP 21.17 Emerald Ash Borer, Import Controls and Quarantine

1. Importing or moving regulated items from infested areas; prohibition.

   Except as provided in sub. (3), no person may do any of the following:
   a) Import a regulated item under sub. (2) into this state if that item originates from an emerald ash borer regulated area identified in 7CFR 301.53-3.
   b) Move any regulated item under sub. (2) out of an emerald ash borer regulated area that is identified in 7CFR 301.53-3 and located in this state.

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

2. Regulated items.
   The following are regulated items for purposes of sub. (2):
   a) The emerald ash borer, Agrilus planipennis Fairmaire in any living stage.
   b) Ash trees.
   c) Ash limbs, branches, and roots.
   d) Ash logs, slabs or untreated lumber with bark attached.
   e) Cut firewood of all non-coniferous species.
   f) Ash chips and ash bark fragments (both composted and uncomposted) larger than 1 inch in diameter.
   g) Any other item or substance that may be designated as a regulated item if a DATCP pest control official determines that it presents a risk of spreading emerald ash borer and notifies the person in possession of the item or substance that it is subject to the restrictions of the regulations.

Regulatory Considerations

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

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

Chipped ash trees

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

2) May be buried on site within the right-of-way according to standard spec 201.3 (14).
3) May be buried on adjacent properties to projects within the quarantined zone with prior approval of the engineer according to standard spec 201.3 (15).
4) May be trucked to a licensed landfill within the quarantined zone with the engineer's approval according to standard spec 201.3 (15).

25. Abandoning Sewer, Item 204.0291.S.

A Description
This special provision describes abandoning existing sewer by filling it with cellular concrete according to the pertinent requirements of standard spec 204 and standard spec 501, as shown in the plans, and as hereinafter provided.

B Materials
Provide cellular concrete meeting the following specifications: 1 part cement, 1 part fly ash, 8 parts sand, or an approved equal, and water. Provide cement meeting the requirements of standard spec 501.2.1 for Type 1 Portland Cement. Provide sand meeting the requirements of standard spec 501.2.5.3 Provide water meeting the requirements of standard spec 501.2.4.

C Construction
Fill the abandoned sewer pipe with cellular concrete as directed by the engineer. In the event that the sewer cannot be completely filled from existing manholes, tap the sewer where necessary and fill from these locations.

D Measurement
The department will measure Abandoning Sewer in volume by the cubic yard according to standard spec 109.1.3.

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

ITEM NUMBER	DESCRIPTION	UNIT
204.0291.S	Abandoning Sewer	CY

Payment is full compensation for furnishing all materials and excavating and backfilling where necessary.
stp-204-050 (20080902)

26. Removing Inlet Covers, Item 204.9060.S.001.

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

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Inlet Covers as each removing inlet covers, acceptably completed.

E Payment
Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.001	Removing Inlet Covers	Each

stp-204-025 (20150630)

27. Removing Endwalls, Item 204.9060.S.002.

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

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Endwalls as each removing endwalls, acceptably completed.

E Payment
Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.002	Removing Endwalls	Each

stp-204-025 (20150630)

28. Removing Business Sign and Base, Item 204.9060.S.003.

A Description
This special provision describes removing business signs and their bases according to the pertinent provisions of standard spec 204, 651 and as hereinafter provided.

B (Vacant)

C Construction
Contact the parcel owner at least seven days prior to removing any attached private lights and associated conduit and wiring to coordinate disconnecting the power source.

Remove existing lights, conduit, and wiring according to standard specs 204 and 651. Disconnect underground conduit system from light and remove existing wiring and conduit to the right-of-way. Cap conduit and abandon wiring in place beyond the right-of-way.

Dispose of surplus materials and restore the site.

D Measurement
The department will measure Removing Business Sign and Base as each removing business sign and base, acceptably completed.

E Payment
Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.003	Removing Business Sign and Base	Each

Payment includes removing lights, conduit, and wiring; for capping conduit; and for disposing of surplus material.
stp-204-025 (20150630)

29. Removing Modular Block Retaining Wall, Item 204.9090.S.001.

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

B (Vacant)

C (Vacant)

D Measurement
The department will measure Removing Modular Block Retaining Wall in length by the linear foot, acceptably completed.

E Payment
Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.001	Removing Modular Block Retaining Wall	LF

stp-204-025 (20150630)

30. Sealing Pipes.

Replace standard spec 204.3.3.2 (3) as follows:

Under the Sealing Pipes bid item, thoroughly clean the ends of the abandoned pipe, and seal them with any grade of concrete specified under 501.3.1.3.

31. Roadway Excavation.

Add the following to 205.5.2(1) of the standard specifications:

Provide the department with an earth flow diagram within 30 calendar days of receiving the contract Notice to Proceed.

Identify on the earth flow diagram, all excavation material within the project; material shrinkage and swell factors; acceptable on-site material available for use as embankment within the project; anticipated off-site material that will be required for use as embankment within the project (if applicable); and anticipated material to be disposed of off-site (if applicable). It is the sole responsibility of the contractor to prepare their individual investigation and testing program to establish material shrinkage and swell factors.

32. Borrow.

Replace standard spec 208.1(1) with the following:

This section describes constructing embankments and other portions of the work consistent with the earthwork summary and defines the contract requirements for embankment material if required by the plans or if the contractor elects to utilize off-site material to complete the roadway embankments.

Delete standard spec 208.2.2(2).

Add the following to standard spec 208.3:

The contractor shall be responsible for complying with all permit requirements in obtaining embankment materials.

Replace standard spec 208.4 with the following:

The department will not measure embankment material from its source.

Replace standard spec 208.5 with the following:

The department will not pay directly for work specified under this section. This work is incidental to the Roadway Embankment bid item.

33. 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 three 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 ten 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)

34. Base Aggregate Dense ¾-Inch, Item 305.0110.

Revise standard spec 301.2.4.3 as follows:
Furnish aggregate classified as crushed stone, from a department-approved quarry, for ¾-inch base when used in the top 3 inches of the unpaved portion of the shoulder or for unpaved driveways and field entrances.
(1/5/2017) (SWR 305.01-09212015)

35. Base Aggregate Dense 1 ¼-Inch, Item 305.0120.

Revise standard spec 305.2.2.1 as follows:
Use 1 ¼-inch base aggregate that conforms to the following gradation requirements.

SIEVE	PERCENT PASSING BY WEIGHT
1 1/4 inch	95 - 100
1 inch	---
3/4 inch	70 - 90
3/8 inch	45 - 75
No. 4	30 - 60
No. 10	20 - 40
No. 40	7 - 25
No. 200	3 - 10 [1]

[1] Limited to a maximum of 8.0 percent for base placed between old and new pavement.

(1/5/2017) (SWR 305.02-08032016)

36. Concrete Pavement.

Supplement standard spec 415.2.1 with the following:

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

Use virgin aggregates only.

Deleterious Substances
The amount of deleterious substances must not exceed the following percentages:

DELETERIOUS SUBSTANCE	PERCENT BY WEIGHT
Shale	1.0
Coal	1.0
Clay lumps	0.3
Soft fragments	5.0
Any combination of above	5.0
Thin or elongated pieces based on a 3:1 ratio	15.0
Materials passing the No. 200 sieve	1.5
Chert[1]	2.0

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

Physical Properties
The department will ensure that Los Angeles wear testing conforms to AASHTO T 96, soundness testing conforms to AASHTO T 104 using 5 cycles in sodium sulfate solution on aggregate retained on the No. 4 sieve, and freeze-thaw soundness testing conforms to AASHTO T 103. The percent wear must no exceed 40, the weighted soundness must not exceed 9 percent, and the weighted freeze-thaw average loss must not exceed 12 percent.

Add standard spec 415.3.3 (3) as follows:

(3) Place multiple layers of polyethylene sheets over the entire area where concrete pavements contact the concrete masonry associated with and MSE wall. Payment for the sheets is incidental to the concrete pavement bid item.

Add standard spec 415.3.7.1 (7) as follows:

(7) Treat sawed surfaces of transverse and longitudinal joints with a silane concrete sealer found on the department approved products list for Concrete Protective Surface Treatments. Prepare surface by pressure washing all saw slurry from sawed joints and allow to dry thoroughly prior to application of silane sealer. Apply the product directly to the interior of the sawed joint. Do not use the broadcast spray method of application.

Supplement standard spec 415.3.14 with the following:

Provide a minimum of one concrete finisher to remain on the project site each day after final finishing of all concrete surfaces until such time as the concrete has hardened sufficiently to resist surface scarring caused by footprints, handprints, or any other type of

imprint, malicious or otherwise. Actively and continuously patrol on foot the newly placed concrete and repair any damage to the surface that might be sustained as described above.

37. Asphaltic Curb.

Replace standard spec 465.2 (2) with the following:

(2) Under the other 465 bid items, the contractor need not submit a mix design. Furnish aggregates mixed with a type AC asphaltic material, except under the Asphaltic Curb bid item furnish PG58-28 asphaltic material. If the Asphaltic Curb is being placed adjacent to and concurrently with Asphaltic Surface Temporary, use Asphaltic Surface Temporary for the asphaltic curb. Use coarse and fine mineral aggregates uniformly coated and mixed with the asphaltic material in an engineer-approved mixing plant. The contractor may include reclaimed asphaltic pavement materials in the mixture.

38. Cold Patch, Item 495.1000.S.

A Description
This special provision describes furnishing cold patch and filling potholes and other voids in existing pavement surfaces as the engineer directs.

B Materials
Furnish a mixture of course aggregate, natural sand, and MC-250 bituminous material designed to have a workability range of 15-100º F without heating. Ensure that the mixture:

- Adheres to wet surfaces.
- Resists damage from water, salt, and deicing products.
- Requires no mixing or special handling before use.
- Supports traffic immediately after placement and compaction.

Conform to the following gradation:

SIEVE SIZE	PERCENT PASSING (by weight)
1/2-inch (12.5 mm)	100
3/8-inch (9.5 mm)	90 - 100
No. 4 (4.75 mm)	–90 max
No. 8 (2.38 mm)	20 - 65
No. 200 (0.074 mm)	2 - 10
Bitumen	4.8 - 5.4

The department will accept cold patch based primarily on the engineer's visual inspection. The department may also test for gradation.

C Construction
Stockpile cold patch on site on a smooth, firm, well-drained area cleared of vegetation and foreign material. Cover the stockpile and ensure that it is easily accessible. Replenish the stockpile throughout the project duration, but limit the size at any given time to 5 tons on

site unless the engineer approves otherwise. Dispose of unused material at project completion unless the engineer directs otherwise.

Place cold patch by hand. Remove ponded water and loose debris before placement. Compact flush with a tamper, roller, or vehicle tire after placement.

Refill patched areas as necessary to maintain a flush pavement surface until project completion.

D Measurement
The department will measure Cold Patch by the ton, acceptably stockpiled on site.

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

ITEM NUMBER	DESCRIPTION	UNIT
495.1000.S	Cold Patch	TON

Payment for Cold Patch is full compensation for providing and maintaining patches; for furnishing and replenishing stockpiled material on-site; and for disposing of excess material at project completion.

39. Polymer Overlay, Item 509.5100.S.

A Description
This special provision describes furnishing and applying two layers of a two-component polymer overlay system to the bridge decks shown on the plans. The minimum total thickness of the overlay system shall be ¼".

B Materials
B.1 General
Furnish materials specifically designed for use over concrete bridge decks. Furnish polymer liquid binders from the department's approved product list.

B.2 Polymer Resin
The polymer resin base and hardener shall be composed of two-component, 100% solids, 100% reactive, thermosetting compound with the following properties:

Property	Requirements	Test Method
Gel Time [A]	15 - 45 minutes @ 73° to 75° F	ASTM C881
Viscosity [A]	7 - 70 poises	ASTM D2393, Brookfield RVT, Spindle No. 3, 20 rpm
Shore D Hardness [B]	60-75	ASTM D2240
Absorption [B]	1% maximum at 24 hr	ASTM D570
Tensile Elongation [B]	30% - 70% @ 7 days	ASTM D638

Tensile Strength [B]	>2000 psi @ 7 days	ASTM D638
Chloride Permeability [B]	<100 coulombs @ 28 days	AASHTO T277

[A] Uncured, mixed polymer binder
[B] Cured, mixed polymer binder

B.3 Aggregates

Furnish natural or synthetic aggregates that have a proven record of performance in applications of this type. Furnish aggregates that are non-polishing, clean, free of surface moisture, fractured or angular in shape; free from silt, clay, asphalt, or other organic materials; and meet the following properties and gradation requirements:

Aggregate Properties:

Property	Requirement	Test Method
Moisture Content*	½ of the measured aggregate absorption, %	ASTM C566
Hardness	≥6.5	Mohs Scale
Fractured Faces	100% with at least 1 fractured face & 80% with at least 2 fractured faces of material retained on No.16	ASTM 5821
Absorption	≤1%	ASTM C128

* Sampled and tested at the time of placement.

Gradation:

Sieve Size	% Passing by Weight
No. 4	100
No. 8	30 – 75
No. 16	0 – 5
No. 30	0 – 1

B.4 Required Properties of Overlay System

The required properties of the overlay system are listed in the table below:

Property	Requirement [A]	Test Method
Minimum Compressive Strength at 8 Hrs. (psi)	1,000 psi @ 8 hrs 5,000 psi @ 24 hrs	ASTM C 579 Method B, Modified [B]
Thermal Compatibility	No Delaminations	ASTM C 884
Minimum Pull-off Strength	250 psi @ 24 hrs	ACI 503R, Appendix A

[A] Based on samples cured or aged and tested at 75°F

[B] Plastic inserts that will provide 2-inch by 2-inch cubes shall be placed in the oversized brass molds.

B.5 Approval of Bridge Deck Polymer Overlay System

A minimum of 20 working days prior to application, submit product data sheets and specifications from the manufacturer, and a certified test report to the engineer for approval. The engineer may request samples of the polymer and/or aggregate, prior to application, for the purpose of acceptance testing by the department.

For materials not pre-qualified, in addition to the above submittals, submit product history/reference projects and a certified test report from an independent testing laboratory showing compliance with the requirements of the specification.

The product history/reference projects consist of a minimum of five bridge/roadway locations where the proposed overlay system has been applied in Wisconsin or in locations with a similar climate - include contact names for the facility owner, current phone number or e-mail address, and a brief description of the project.

Product data sheets and specifications from the manufacture consists of literature from the manufacturer showing general instructions, application recommendations/methods, product properties, general instructions, or any other applicable information.

C Construction

C.1 General

Conduct a pre-installation conference with the manufacturer's representative prior to construction to establish procedures for maintaining optimum working conditions and coordination of work. Furnish the engineer a copy of the recommended procedures and apply the overlay system according to the manufacturer’s instructions. The manufacturer's representative familiar with the overlay system installation procedures shall be present at all times during surface preparation and overlay placement to provide quality assurance that the work is being performed properly.

Store resin materials in their original containers in a dry area. Store and handle materials according to the manufacturer’s recommendations. Store all aggregates in a dry environment and protect aggregates from contaminants on the job site.

C.2 Deck Preparation

C.2.1. Deck Repair

Remove all asphaltic patches and unsound or disintegrated areas of the concrete decks as the plans show, or as the engineer directs. Work performed to repair the concrete deck will be paid for under other items. Ensure that products used for deck patching are compatible with the polymer overlay system.

NOTE: Some polymer systems require concrete patch material to be in place a minimum of 28-days before overlaying - contact polymer manufacturer before completing deck patching/repair.

C.2.2 Surface Preparation

Determine an acceptable shotblasting machine operation (size of shot, flow of shot, forward speed, and/or number of passes) that provides a surface profile meeting CSP 5 according to the International Concrete Repair Institute Technical Guideline No. 03732. If the engineer requires additional verification of the surface preparation, test the tensile bond strength according to ACI 503R, Appendix A of the ACI *Manual of Concrete Practice*. The surface preparation will be considered acceptable if the tensile bond strength is greater than or equal to 250 psi or the failure area at a depth of ¼ inches or more is greater than 50% of the test area. Continue adjustment of the shotblasting machine and necessary testing until the surface is acceptable to the engineer or a passing test result is obtained.

Prepare the entire deck using the final accepted adjustments to the shotblasting machine as determined above. Thoroughly blast clean with hand-held equipment any areas inaccessible by the shotblasting equipment. Do not perform surface preparation more than 24 hours prior to the application of the overlay system.

Prepare the vertical concrete surfaces adjacent to the deck a minimum of 2" above the overlay according to SSPC-SP 13 by sand blasting, using wire wheels, or other approved method.

Just prior to overlay placement, clean all dust, debris, and concrete fines from the prepared surfaces including the vertical surfaces with compressed air. When using compressed air, the air stream must be free of oil. Any grease, oil, or other foreign matter that rests on or has absorbed into the concrete shall be removed completely. If any prepared surfaces (including the first layer of the polymer overlay) are exposed to rain or dew, lightly sandblast (breeze blast) the exposed surfaces.

Protect drains, expansion joints, access hatches, or other appurtenances on the deck from damage by the shot and sand blasting operations and from materials adhering and entering. Tape or form all construction joints to provide a clean straight edge.

Create a transitional area approaching transverse expansion joints and ends of the deck using the shotblasting machine or other approved method. Remove 5/16" to 3/8" of concrete adjacent to the joint or end of deck and taper a distance of 3 feet.

The engineer may consider alternate surface preparation methods per the overlay system manufacture's recommendations. The engineer will approve the final surface profile and deck cleanliness prior to the contractor placing the polymer overlay.

C.3 Application of the Overlay

Perform the handling and mixing of the polymer resin and hardening agent in a safe manner to achieve the desired results according to the manufacturer's instructions. Do not apply the overlay system if any of the following exists:

a. Ambient air temperature is below 50^{o}F.
b. Deck temperature is below 50^{o}F.

c. Moisture content in the deck exceeds 4.5% when measured by an electronic moisture meter or shows visible moisture after two hours when measured according to ASTM D4263.
d. Rain is forecasted during the minimum curing periods listed under C.5.
e. Materials component temperatures below 50°F or above 99°F.
f. Concrete age is less than 28 days unless approved by the engineer.
g. The deck temperature exceeds 100°F.
h. If the gel time is 10 minutes or less at the predicted high air temperature for the day.

After the deck has been shotblasted or during the overlay curing period, only necessary surface preparation and overlay application equipment will be allowed on the deck. Begin overlay placement as soon as possible after surface preparation operations.

The polymer overlay shall consist of a two-course application of polymer and aggregate. Each of the two courses shall consist of a layer of polymer covered with a layer of aggregate in sufficient quantity to completely cover the polymer. Apply the polymer and aggregate according to the manufacturer's requirements. Apply the overlay using equipment designed for this purpose. The application machine shall feature positive displacement volumetric metering and be capable of storing and mixing the polymer resins at the proper mix ratio. Disperse the aggregate using a standard chip spreader or equivalent machine that can provide a uniform, consistent coverage of aggregate. First course applications that do not receive enough aggregate before the polymer gels shall be removed and replaced. A second course applied with insufficient aggregate may be left in place, but will require additional applications before opening to traffic.

After completion of each course, cure the overlay according to the manufacturer's instructions. Follow the minimum cure times listed under C.5 or as prescribed by the manufacturer. Remove the excess aggregate from the surface treatment by sweeping, blowing, or vacuuming without tearing or damaging the surface; the material may be re-used if approved by the engineer and manufacturer. Apply all courses of the overlay system before opening the area to traffic. Do not allow traffic on the treated area until directed by the engineer.

After the first layer of coating has cured to the point where the aggregate cannot be pulled out, apply the second layer. Prior to applying the second layer, broom and blow off the first layer with compressed air to remove all loose excess aggregate.

Prior to opening to traffic, clean expansion joints and joint seals of all debris and polymer. If required by the engineer, a minimum of three days following opening to traffic, remove loosened aggregates from the deck, expansion joints, and approach pavement.

C.4 Application Rates

Apply the polymer overlay in two separate courses according to the manufacturer's instructions, but not less than the following rate of application.

Course	Minimum Polymer Rate[A] (GAL/100 SF)	Aggregate[B] (LBS/SY)

1	2.5	10+
2	5.0	14+

[A] The minimum total applications rate is 7.5 GAL/100 SF.
[B] Application of aggregate shall be of sufficient quantity to completely cover the polymer.

C.5 Minimum Curing Periods
As a minimum, cure the coating as follows:

	Average temperature of deck, polymer and aggregate components in °F							
Course	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-99
1	6 hrs.	5 hrs.	4 hrs.	3 hrs.	2.5 hrs	2 hrs	1.5 hrs.	1 hr.
2	8 hrs.	6.5 hrs.	6.5 hrs.	5 hrs.	4 hrs.	3 hrs.	3 hrs.	3 hrs.

C.6 Repair of Polymer Overlay
Repair all areas of unbonded, uncured, or damaged polymer overlay for no additional compensation. Submit repair procedures from the manufacturer to the engineer for approval. Absent a manufacturer's repair procedures and with the approval of the engineer, complete repairs according to the following: Saw cut the limits of the area to the top of the concrete; remove the overlay by scarifying, grinding, or other approved methods; shot blast or sand blast and air blast the concrete prior to placement of polymer overlay; and place the polymer overlay according to section C.3.

D Measurement
The department will measure Polymer Overlay in area by the square yard, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
509.5100.S	Polymer Overlay	SY

Payment is full compensation for preparing the surface; for tensile bond testing; for providing the overlay; for cleanup; and for sweeping/vacuuming and disposing of excess materials. Concrete Deck Repair will be paid for separately.
stp-509-030 (20150630)

40. Concrete Staining R-13-268, Item 517.1010.S.001; R-13-270, Item 517.1010.S.002; S-13-446, Item 517.1010.S.003; S-13-448, Item 517.1010.S.004; S-13-449, Item 517.1010.S.005; S-13-450, Item 517.1010.S.006; S-13-451, Item 517.1010.S.007; Barrier Wall, Item 517.1010.S.008; B-13-833, Item 517.1010.S.009; R-13-272, Item 517.1010.S.010; R-13-273, Item 517.1010.S.011.

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 not measure Concrete Staining (Structure). The department will use pay plan quantity conforming to standard spec 109.1.1.2.

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

ITEM NUMBER	DESCRIPTION	UNIT
517.1010.S.001	Concrete Staining R-13-268	SF
517.1010.S.002	Concrete Staining R-13-270	SF
517.1010.S.003	Concrete Staining S-13-446	SF
517.1010.S.004	Concrete Staining S-13-448	SF
517.1010.S.005	Concrete Staining S-13-449	SF
517.1010.S.006	Concrete Staining S-13-450	SF
517.1010.S.007	Concrete Staining S-13-451	SF
517.1010.S.008	Concrete Staining Barrier Wall	SF

517.1010.S.009	Concrete Staining B-13-833	SF
517.1010.S.010	Concrete Staining R-13-272	SF
517.1010.S.011	Concrete Staining R-13-273	SF

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

41. Architectural Surface Treatment R-13-268, Item 517.1050.S.001; R-13-270, Item 517.1050.S.002; R-13-272, Item 517.1050.S.003; S-13-446, Item 517.1050.S.004; S-13-448, Item 517.1050.S.005; S-13-449, Item 517.1050.S.006; S-13-450, Item 517.1050.S.007; S-13-451, Item 517.1050.S.008; B-13-833, Item 517.1050.S.009; R-13-273, Item 517.1050.S.010.

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 not measure Architectural Surface Treatment (Structure). The department will use pay plan quantity conforming to standard spec 109.1.1.2.

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

ITEM NUMBER	DESCRIPTION	UNIT
517.1050.S.001	Architectural Surface Treatment R-13-268	SF
517.1050.S.002	Architectural Surface Treatment R-13-270	SF
517.1050.S.003	Architectural Surface Treatment R-13-272	SF
517.1050.S.004	Architectural Surface Treatment S-13-446	SF
517.1050.S.005	Architectural Surface Treatment S-13-448	SF
517.1050.S.006	Architectural Surface Treatment S-13-449	SF
517.1050.S.007	Architectural Surface Treatment S-13-450	SF
517.1050.S.008	Architectural Surface Treatment S-13-451	SF
517.1050.S.009	Architectural Surface Treatment B-13-833	SF
517.1050.S.010	Architectural Surface Treatment R-13-273	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.

42. Surface Drain Pipe Corrugated Metal Slotted 24-Inch, Item 521.2005.S.001.

A Description
This special provision describes furnishing and installing slotted corrugated metal pipe surface drain as shown on the plans, according to standard spec 521, and as hereinafter provided.

B Materials
Furnish backfill material that is grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501.2 as modified in standard spec 716. Provide QMP for class III ancillary concrete as specified in standard spec 716.

C Construction
Prior to backfilling, plug the upper end of the slotted drain as shown on the plans or as approved by the engineer.

Prior to backfill operations adjacent to the slotted area of the slotted corrugated metal pipe surface drain pipe, install timber blocks in the slots according to the details as shown on the plans. Remove any material entering the pipe at no expense to the department.

Keep the timber blocks in place until final clean up operations are completed; at which time, remove the timber blocks.

Exercise care to avoid damage to the slotted corrugated metal pipe surface drain pipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drain pipe at no expense to the department.

D Measurement
The department will measure Surface Drain Pipe Corrugated Metal Slotted (size), completed according to the contract and accepted, in place by the linear foot.

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

ITEM NUMBER	DESCRIPTION	UNIT
521.2005.S.001	Surface Drain Pipe Corrugated Metal Slotted 24-Inch	LF

Payment is full compensation for furnishing all materials; hauling and placing the pipe, including bands; making connections to existing inlets; furnishing concrete, end plug or cap; and for cleaning out and restoring site of work.
stp-521-005 (20150630)

43. Noise Barriers Double-Sided Sound Absorptive N-13-5, Item 531.0300.S.001; N-13-6, Item 531.0300.S.002.

A Description
This special provision describes designing, fabricating, transporting, and erecting composite concrete double-sided sound absorptive noise barriers according to the plans, portions of the standard specifications cited below, the department-approved installation specifications, and as hereinafter provided.

B Noise Wall System
B.1 System Pre-Qualification and Selection
The noise wall system supplied must be pre-qualified by the department. The department maintains a list of pre-qualified systems which can be viewed online at:

http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

Systems eligible for use on this project shall be pre-qualified prior to the award of this contract.

Provide the name of the selected system, and the intended fabricator to the engineer within 25 days after award of the contract. Schedule a pre-design meeting with the engineer

subsequent to award of the contract and prior to beginning design of the noise barrier. A representative of the fabricator of the noise barrier components shall attend this meeting.

B.2 Design

B.2.1 Structural and Foundation Design

The structural and foundation design of the noise barrier system shall conform to the current edition of "AASHTO LRFD Bridge Design Specifications" published by the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, NW, Suite 225, Washington, DC 20001, with the following exceptions:

Design the noise barrier to withstand wind pressure, applied perpendicular to the barrier, in each direction, of 28.5 pounds per square foot for ground mounted barriers, and 37.5 pounds per square foot for structure mounted barriers.

Design drilled shaft foundations using the Broms Method. Ignore the top 1-foot of supporting soil in the design of ground-mounted barrier foundations.

In addition to wind loads, design the bottom noise barrier panel to support the dead load (weight) of the panels directly above it and its own dead load. Assume this dead load to be distributed uniformly across the bottom panel acting as a simple beam supported at the posts.

Bottom noise barrier panels shall have a minimum amount of perimeter reinforcement of a #4 bar which shall be continuous around the corners. Reinforcing steel in the concrete core of noise barrier panels shall have a minimum clear cover of 1 inch. Clear cover does not include sound absorptive material. Design the reinforced concrete core to resist the loads without considering any composite action from other material in the panel.

Provide a neoprene bearing pad or equivalent material of ¼ inch minimum thickness between the foundation and the bottom panels. The allowable bearing stress shall not exceed 900 psi. Precast concrete pedestals placed between the foundation and bottom panels shall be reinforced if over 1'-0" high. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80.

B.2.2 Fire Hose Access Openings

Design fire hose access openings, at locations shown on the plans, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity. Detail drawings shall show the additional reinforcement and method for attaching the Fire Hydrant Location Signs to the barrier panel.

B.2.3 Barrier Profile

Unless otherwise shown on the plan or approved by the engineer, design the top of the noise barrier to be horizontal and at or above the acoustic elevation line shown on the plans. The bottom elevation of the noise barrier shall be as shown on the plans. Changes in elevation shall be accomplished by stepping sections at posts. Steps shall not exceed 3-feet

in height. All joints shall be horizontal or vertical and shall be aligned with the adjacent panels.

B.2.4 Panel Orientation
Design the panels to prevent entrapment and ponding of water. Avoid inadvertently providing areas for perching, nesting of birds or collecting of dirt and debris in the design of the noise barrier system.

B.2.5 Sound Transmission Loss (TL)
Design the noise barrier panel material to achieve a transmission loss equal to or greater than 20 decibels in all test frequency bands, as referenced in ASTM E90.

B.2.6 Noise Reduction Coefficient (NRC)
Design the noise barrier system so that the highway sides of the noise barrier panels have a minimum NRC of 0.80, as referenced in ASTM C423.

B.2.7 Design Coordination
Design the noise barrier post spacing so as not to interfere with the existing utility and drainage facilities.

Design the noise barrier post spacing so as not to interfere with proposed utility and drainage facilities shown in the plans. This includes proposed roadway lighting and ITS facilities.

For noise barriers mounted behind or near proposed retaining walls, coordinate and design the noise barrier post spacing so as to not interfere with embedded portion of the proposed retaining walls, including MSE wall soil reinforcement and tieback anchors on soldier pile and timber lagging retaining walls.

B.2.8 Weep Hole Openings
Design panels such that weep hole openings in noise wall to allow water to drain can be field installed per C.3 at locations shown on the plans.

B.2.9 Maintenance Doors
Design maintenance doors and door portals in noise walls, at locations shown on the plans, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity per B.2.1.

B.3 Materials
All materials used in the work shall conform to the requirements of the standard specifications cited below and as hereinafter specified. All required material certifications and testing are the responsibility of the contractor. All certifications and test reports shall carry the name and address of the fabrication facility where the specific material was produced.

B.3.1 Concrete Masonry

Provide grade A, A-2, 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 for concrete posts and the core component of composite concrete sound absorbing panels. Provide QMP for class II ancillary concrete as specified in standard spec 716.

B.3.2 Materials Testing – General

All test reports shall carry the name and address of the laboratory where testing was performed, and the name of the person in responsible charge of the specific tests for which data is presented. Materials tested shall be representative of materials manufactured for this specific contract. Panels tested or from which samples will be taken will be selected and appropriately marked by the engineer either at the manufacturer's plant or from panels delivered to the project at the engineer's option.

Testing as detailed below is required for each lot of material not to exceed 100,000 SF of noise barrier produced. Conduct testing on panels within the first 30,000 SF of production of each lot not exceeding 100,000 SF. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage. The first set of tests conducted for projects that do not exceed 100,000 SF shall be within the first third of the total square footage of the project. Provide the shipping record of the samples to the laboratory within five days of sampling. Commence testing as soon as practicable after sampling.

Test all materials as fabricated, including any specified finishing.

B.3.2.1 Noise Reduction Coefficient (NRC)

Test noise barrier panels according to ASTM C423, and placed according to ASTM E795, mounting type A, to determine the noise reduction coefficient (NRC) of the material. Submit to the engineer an independent laboratory test report that shows that the noise barrier panels achieve an NRC as specified in B.2.6 for the highway side of the barrier.

B.3.2.2 Long-term Durability

Test all sound absorbing composite concrete and composite concrete components for long-term durability according to ASTM C672 and the following modifications and/or requirements:

B.3.2.2.1 Test Specimens

Three specimens of a full cross section of the composite panel at least 144 square inches in face area will be selected at random from the provided composite panel as defined in B.3. Sample specimens shall be representative of the manufacturer's continuous production operation, as selected and marked by the engineer. Specimens shall be 2D-symmetric and shaped according to the testing laboratory's accommodations.

Prepare the surfaces of the sample specimen(s) for testing as follows. Brush the surfaces of the sample to remove any loose particles. Prior to testing, submerge the test specimens be submerged in water for a period of 24 hours prior to testing. Immediately following this, cover the specimens with the sodium chloride solution as stated below.

B.3.2.2.2 Test Procedure

Place samples in a 5 sided water tight container, fully submerged in a solution of sodium chloride (concentration 3% by mass). Maintain ¼-inch of sodium chloride solution above the top surface of the fully submerged specimen within the container.

Subject the submerged specimens to continuous freeze-thaw cycles as follows:

After each five cycles, remove the salt solution and particles of deteriorated concrete from the slab and collect in a watertight container. The operation is best accomplished by tilting the slab in a funnel approximately 20-inches in diameter and washing the surface of the slab with a 3% sodium chloride solution. Continue this washing until all loose particles are removed from the sample. Strain the solution through a filter and dry the residue at 221 degrees Fahrenheit to a constant mass condition. Cumulatively weigh the residue after each five cycles. The dry residue is defined as the loss of mass. Calculate the loss of mass to the nearest 0.01 pounds per square foot, not including the exposed surface of any core material on the cast or cut edges. Visually rate the surfaces according to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After each washing of each sample, re-establish the initial submerged condition with a new solution of 3% sodium chloride prior to continuing with freeze-thaw cycling.

Continue the test until 30 freeze-thaw cycles have been completed.

During the test position and support each specimen to allow free circulation of the test solution under, around, and over test pieces. Support the bottom of the specimens on blocks in a manner to facilitate movement of moisture through and around the test specimen(s).

B.3.2.2.3 Test Report

Submit to the engineer an independent testing laboratory test report which shows that all solid and composite concrete products meet or exceed the following criteria:

a. After 30 freeze-thaw cycles the test specimens shall not exhibit excessive deterioration in the form of cracks, spalls, aggregate disintegration, delamination or other objectionable features.
b. Compliance with the test requirements is based upon a loss of mass of not more than 0.2 pounds per square foot from the surface after 30 cycles of freezing and thawing.
c. The report shall include the following:
    1. Name of manufacturer.
    2. Location of production.
    3. Production description.
    4. Date product sample was cast.
    5. Commencement date of testing.
    6. Specimen identification.
    7. 5x7-inch color photographs of the test specimens before and after the 30 cycles of freeze-thaw test showing both sound absorbing faces and at least one representative side view of a cut (not cast) face, and any defects.

8. A graph of the cumulative mass loss of each specimen plotted against the number of freeze-thaw cycles for 5, 10, 15, 20, 25, and 30 freeze-thaw cycles.
9. Visual rating according to ASTM C672 Section 10.1.5, including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

B.3.3 Materials Certification - General

Provide certification of compliance or sample fabrications as noted below. All material certifications shall reference the specific facility manufacturing the material and this contract. Certification is required for each lot of material not to exceed 100,000 SF of noise barrier produced, and shall include dates of fabrication for the lot being certified. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage.

B.3.3.1 Color and Surface Texture

Supply and deliver to the engineer a 3-foot x 5-foot minimum test panel for each panel type with the specified pattern and colors. Obtain the engineer's acceptance of the panel's pattern and color prior to production of the panels required for the contract. The accepted pattern and color test panels shall remain on the project site in a readily accessible location for the duration of the project. The accepted pattern and color sample panels will be the standard for all noise barriers on the project.

Manufacture noise barrier posts of the same materials throughout the project. Shop apply coating and coloring of the post and panels.

Unless otherwise shown and provided for in the plans, wall pattern shall contain textures with relief features of sufficient depth and quantity to be distinguishable at an observation distance of 500-feet.

Panels shall have a stone pattern as detailed in the plans. The width of the stone shall vary from 4'-0" minimum to 10'-0" maximum. The final color of the stone patterned portion of the panels, per the limits shown on the plans, and all posts shall be Federal Color No. 33448. The final color of the band at the top of the panels, per the limits shown on the plans, shall be Federal Color No. 20122.

The engineer will visually inspect panels for color consistency upon arrival at the project. The panels shall have no substantial variation in color from the accepted sample panel submitted for the project. All panels with substantial color variation will be rejected and shall be removed from the project.

B.3.3.2 Structural Steel

Submit to the engineer certification of compliance, including mill certifications and heat numbers, that structural steel conforms to the properties required on the plans and shop drawings, and is galvanized after fabrication by the hot-dip process according to ASTM A123. Galvanize all steel hardware and threaded fasteners, bolts, nuts, and washers according to ASTM A153.

Shop coat all steel galvanized surfaces exposed to view with an approved paint system as hereinafter specified. Clean galvanizing surfaces to be painted according to SSPC-SP1 to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. Brush Blast clean the surfaces according to SSPC-SP7 to create a slight angular surface profile (1.0 – 1.5 mils suggested) for adhesion. Do not fracture the galvanized finish or remove any dry film thickness during these processes.

After cleaning, provide a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized surface and prepare the surface for the top coat. Apply a top coat matching the finished color specified in B.3.2. Use a pre-approved top coat that is resistant to the effects of the sun, and is suitable for use in a marine environment. Exercise care so as not to damage the painted surfaces during shipment and erection of the noise barriers.

Use one of the qualified paint sources and products given below. An equivalent system may be used with the written approval of the engineer. Supply the engineer with the product data sheets before applying any coating. The product data sheets shall indicate the mixing and thinning directions, the recommended spray nozzles and pressures, the minimum drying time for shop applied coats, and the recommended procedures for coating galvanized bolts, nuts, and washers.

Producer	Coat	Products	Dry Film Minimum Thickness (mils)	Minimum Time Between Coats (hours)
Sherwin Williams 1051 Permeter Drive, Suite 710 Schaumburg, IL 60173 (847) 330-1250	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 Co. 350 Hanley Industrial St Louis, MO 63144 (314) 644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Top	Carboline 133 LH	4	NA
Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001 (253) 850-2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

B.3.3.3 Sound Transmission Loss (TL)

Submit to the engineer certification of compliance that the sound transmission loss of the panel material, when tested according to ASTM Standard E90, achieves a transmission loss as specified in B.2.5.

B.3.3.4 Accelerated Weathering

Submit to the engineer certification of compliance that all coatings on barrier components, with the exception of structural steel and wood components comply with the following requirements when tested according to ASTM Standard G155, G153, or G152 after 2400 hours of exposure on a cement based test specimen(s):

1. No checking when rated according to ASTM D660.
2. No cracking when rated according to ASTM D661.
3. No blistering when rated according to ASTM D714.
4. No difference in adhesion between the unexposed control sample and an exposed sample when tested according to ASTM D3359, Method A.
5. No chalking less than #7 rating when rated according to ASTM D4214.
6. No color change greater than 5 NBS units when measured according to ASTM D2244, using illuminant D65 and the 1964 10-degree standard observer.

B.3.3.5 Corrosion Resistance (Salt Fog Exposure)

Submit to the engineer certification of compliance that all coated steel components, with the exception of structural steel, has a coating system that has been tested for corrosion resistance according to ASTM B117 and comply with the following requirements:

1. No checking when rated according to ASTM D660.
2. No blistering when rated according to ASTM D714.
3. No loss of adhesion when tested according to ASTM D3359 with no evidence of corrosion along the edges of the samples or along the score lines, or both, or other defects.

B.4 Project Submittal Requirements

Furnish required submittals according to the following:

B.4.1 Pre-Construction Submittals

Submit the following documents to the engineer for review by the Bureau of Structures Design Section, at least 14 calendar days prior to beginning any shop or field work:

1. Structural and foundation design calculations (1 set)

Design calculations shall be on 8½ x 11-inch sheets, neatly bound with a title sheet listing the complete project identification number and sound barrier designation. Structural and foundation calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

2. Detailed design/shop drawings (3 sets)

Design/shop drawings shall conform to the contract plans and the requirements of these special provisions. The design/shop drawings shall consist of plan and profile sheets, details, explanatory notes, erection diagrams, aesthetic treatments, and other working plans. All dimensions, sizes of material, material information and other information necessary for the complete fabrication and construction of the noise barrier shall be designated on the appropriate sheets. The design/shop drawings shall be drawn to an appropriate scale on reproducible sheets 11 x 17-inches including borders. Each sheet shall carry the complete project identification number and noise barrier designation.

Design/shop drawings shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

3. Specifications regarding installation requirements and sequence of construction, including a detailed bill of materials (1 set).

4. Detailed color plan of the aesthetic treatments and finishes for the entire noise barrier (1 set).

5. Shipping, handling, and storage plan identifying methods or practices to limit post production damage (1 set).

B.4.2 Pre-Installation Submittals
Supply and deliver to the engineer the sample panel required under Section B.3.3.1 at least 14 calendar days prior to beginning production and/or installation of job materials. Acceptance of the sample panel will be by the engineer. If the panel is not acceptable, a second panel shall be produced and submitted for acceptance. Sample panel to be representative of quality for precast panel work after acceptance. Deliver test panels to a location designated by the engineer, within 15 miles of the project corridor.

B.4.3 Payment Submittals
Submit certifications and test data as required under B.3 for all materials, including trade name of the products along with the name and address of the manufacturers.

B.4.4 Submittal Review
The engineer's review and acceptance of the drawings, calculations, and related material, submitted by the contractor, is for compliance with design intent only, and does not relieve the contractor from responsibility in regard to errors or omissions on said submittals.

The final accepted design documents and/or shop drawings will become a part of the contract. Any substitution of materials or dimensions contemplated by the contractor's submitted documents, different from materials or dimensions shown on the contract plans, shall be made only when approved by the engineer, and in such case, additional costs resulting from such substitution shall be borne by the contractor.

Ordering of materials by the contractor prior to acceptance of pertinent submittals shall be at the contractor's own risk.

C Construction

C.1 General

Construct the noise barriers at the locations shown on the plans, according to the contract specifications and design drawings and/or as directed by the engineer. Deliver all sound absorbing composite concrete components to the project site(s) as a finished component. A sound absorbing composite concrete system, which has the sound absorbing material glue-laminated or alternately affixed by a secondary adhesion method on the project site, will not be allowed.

Provide a minimum ten calendar day notice to the engineer of the date that the fabrication of the noise barrier material will commence.

Inspect all materials delivered to the construction site for proper dimensions, honeycombing, cracks, voids, surface defects, consistency in color and texture, and any other damage or imperfections, prior to installation.

If any part of the noise barrier material fails to comply with any requirements of the contract specification, the component shall either be corrected, permanently marked as unacceptable and be disposed of by the contractor or accepted at a reduced price. The decision will be made by the engineer and is dependent on the severity of the specification deviation.

Erect noise barriers to avoid conflict with any existing facilities or utilities to remain in place. Any damage caused by construction activities shall be repaired by the contractor at no cost to the department.

C.2 Fire Hydrant Location Signs

Furnish and install fire hydrant location sign(s). These shall be attached to the noise barrier at each location shown on the plans by a method as shown on the department's approved drawings. The signs shall conform and be of the type specified in the department's sign plate book, plate D9-54 and/or D9-54A.

Compensation for furnishing and placing the fire hydrant location signs shall be included in the contract price for Noise Barriers Double-Sided Sound Absorptive and no additional compensation therefore will be allowed.

C.3 Weep Hole Openings

Furnish and install weep hole openings for drainage at the locations and sized as noted on the plan. Install weep holes by drilling through the wall after erection of the noise barrier. Use 6" PVC Schedule 40 pipe sleeve conforming to ASTM D-1785. Epoxy 6" PVC Schedule 40 pipe sleeve into bored weep hole. PVC pipe sleeve shall fit snugly in cored hole through wall. Epoxy PVC pipe sleeve into bored weep hole in noise barrier. Locate and construct weep holes according to the plans and as the engineer directs. Weep holes shall be placed at the locations shown in the plans, unless approved by the engineer to adjust locations to fit field conditions. The engineer will field verify the height and location of the weep hole for positive drainage.

C.4 Name Plates

Furnish and install name plates conforming to the requirements of standard spec 506.2.4. Furnish and place one name plate on each noise barrier at the location indicated on the plans. Rigidly attach each plate to the barrier by a means approved by the engineer.

Compensation for furnishing and placing of name plates shall be included in the contract price for Noise Barriers, Double-Sided Sound Absorptive Structure and no additional compensation therefore will be allowed.

C.5 Structure Mounted Noise Barriers
Do not erect noise barriers mounted to bridge or retaining wall structures until after the concrete for bridge decks and parapets or retaining wall moment slabs and parapets have attained their specified 28-day strength.

For noise barriers mounted to moment slabs and parapets on top of MSE retaining walls, erection of the noise barrier is limited to two-thirds the height of the noise barrier acoustical line shown in the plans prior to placement of earth fill or pavement over the top of the moment slab as shown in the plans. Erection of the noise barrier in excess of two-thirds its height to the full height of the noise barrier acoustical line shown on the plans may not occur until after the earth fill or pavement structure over the top of the moment slab shown in the plans is complete.

C.6 Construction Tolerances
Install the posts and panels comprising the noise barrier plumb within ½-inch in 15-feet. Locate the posts to the line and grades as shown in the plans to within +/- ¾-inch. Align horizontal joints of adjacent panels to a vertical tolerance of ¼-inch. Where vertical adjustments are required for alignment, use a mortar base or steel shims. Galvanize and prime coat steel shims according to B.3.3.2.

D Measurement
The department will measure Noise Barriers Double-Sided Sound Absorptive (structure) by the square foot, acceptably completed, as the area the original plans show plus engineer-approved modifications to the plan quantity caused by plan corrections or revisions.

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

ITEM NUMBER	DESCRIPTION	UNIT
531.0300.S.001	Noise Barriers Double-Sided Sound Absorptive N-13-5	SF
531.0300.S.002	Noise Barriers Double-Sided Sound Absorptive N-13-6	SF

Payment is full compensation for providing noise barrier including: coloring and aesthetic treatment on panels, preparing the design drawings and calculations, furnishing and delivering sample and test panels, materials testing, furnishing materials test reports and certifications, excavation, preparing the site, constructing foundations, erecting posts and panels, and disposing of waste materials.

44. Concrete Barrier Temporary Precast Installed.

Replace standard spec 603.3.2.3 (1) with the following:

(1) Under the Concrete Barrier Temporary Precast Installed bid item, install contractor owned and department owned temporary barrier in contract-identified locations or as

the engineer directs. Also make contract-identified or engineer-directed moves that do not require trucking and reinstall at those new locations.

45. Riprap.

Replace standard spec 606.2.1 (3) with the following:

The contractor may not substitute waste concrete slabs for stone.

46. 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)

47. 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)

48. 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)

49. Drain Slotted Vane, Item 611.9900.S.

A Description
This special provision describes furnishing and installing slotted vane drain as shown on the plans, according to standard spec 611, and as hereinafter provided.

B (Vacant)

C Construction
Prior to encasing the pipe in concrete, cover the upper end of the slotted drain as shown on the plans, or as approved by the engineer.

Prior to construction operations adjacent to the slotted area of the slotted vane drain pipe, cover the slots on the top of the drain. Remove any material entering the pipe at the contractor's expense.

Exercise care to avoid damage to the slotted vane drainpipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drainpipe at contractor's expense.

D Measurement
The department will measure Drain Slotted Vane in units 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
611.9900.S	Drain Slotted Vane	Each

Payment is full compensation for furnishing all materials; hauling and placing the pipe; making connections to existing inlets; furnishing concrete masonry, end plug or cap; and cleaning out and restoring site of work.
stp-611-015 (20030820)

50. General Requirements for Storm Sewer Manholes.

Replace standard spec 611.3.4 with the following:

Steps in storm sewer manholes are not required. Center the storm sewer structure casting on the structure unless otherwise noted in the plans.

51. Crash Cushions Permanent Low Maintenance.

Complete work according to standard spec 614.

Replace standard spec 614.2.7 with the following:

Use Model SCI 100GM Crash Attenuator from Smart Cushion Innovations (SCI) Products for permanent crash cushions.

52. 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

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)

53. Sod Lawn.

Revise standard spec 631.3.5 as follows:

Change 30 days to 60 days.

Add standard spec 631.3.6 Maintenance as follows:

Provide the engineer with a letter describing the maintenance procedures, schedules and names of personnel performing the maintenance for Sod Lawn.

Maintain Sod Lawn for 60 days after placement. Maintenance includes, but is not limited to, the following: watering, mowing, weeding, protection from insects and diseases, and fertilizing to establish the Sod Lawn free of eroded and bare areas. Watering and fertilizing will be paid for under the appropriate bid items. All other items are incidental to Sod Lawn.

Begin mowing when the grass has reached a height of 3 inches, or as directed by the engineer. Mow the grass to 2 inches in height and at least twice before acceptance. Provide a mower capable of collecting the grass clippings. Dispose of grass clippings off the project site.

Keep sodded areas moist by sprinkling with water for 60 days after placement. Replace areas that the engineer determines are dead or not in healthy growing conditions as soon as conditions permit. Utilize the same Sod Lawn as originally specified. Re-sodding is considered incidental to the contract.

In order to qualify for acceptance, Sod Lawn areas shall have had two mowings before final inspection. Sod Lawn shall be well rooted, practicably free from weeds and be bright in color. Repair and/or replace, as directed by the engineer, areas which fail to meet these requirements, to provide Sod Lawn acceptable to the engineer.

Maintain re-sodded or replaced areas for an additional 30 days.

Replace standard spec 631.5 (2) with the following:

Payment for Sod Lawn, Sod Erosion Control, and Sod Erosion Control Sandy Soil is full compensation for preparing the earth bed; for maintaining and mowing the sod, and for furnishing, placing, staking, and rolling the sod. Payment also includes watering if the contract does not contain the Sod Water bid item.

54. 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 $300 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)

55. Furnishing and Planting Plant Materials.

Supplement standard spec 632.2.1 with the following:

Provide plants grown within the states of Wisconsin, Minnesota, Michigan, or parts of northern Illinois, Indiana or Ohio located within Zone 5 of the "Plant Hardiness Zone Map" produced by the United States Department of Agriculture, Miscellaneous Publication No. 1475, issued January, 1990, unless otherwise approved by the engineer.

Replace standard spec 632.2.2.8 (1) with the following:

Furnish a list of the sources from which plant materials will be obtained to the engineer. Furnish the list within 15 days of the award of the contract for fall-planted plants and before March 15 for spring-planted plants. Do not alter these lists without the engineer's approval.

Supplement standard spec 632.2.3.4 with the following:

Obtain review and approval of Planting Mixture, according to the bid item Planting Mixture, by the engineer before use on project. The engineer reserves the right to reject planting mixture that does not conform to the specifications and/or does not come with the appropriate material certificates. The engineer may require samples for USDA soil texture classification, pH, % organic matter, nutrient content, caution exchange capacity, soluble salts, and the presence of any materials deleterious to plant growth. Provide testing through a qualified testing laboratory approved by the State of Wisconsin to confirm that topsoil meets the requirements outlined in Section 632.2.3.3.

Replace standard spec 632.2.4.2 with the following:

For fertilizer in plant holes, provide water soluble fertilizer contained in a micropore slow release polyethylene packet with a three-year release. Provide packets with two ounces of fertilizer. A single two ounce packet is considered one unit. Fertilizer shall conform to the following minimum requirements:

Nitrogen, not less than ----- 16%
Phosphoric Acid, not less than ----- 8%
Potash, not less than -----8%

For trees: Use a minimum of two units and provide two units per caliper inch of tree trunk diameter. For one-half caliper measurements, round up to the next unit.

For shrubs: Use a minimum of two units and provide one unit per 12 inches of plant height or spread.

For perennials: Use a single unit per plant.

Replace standard spec 632.2.6 with the following:

Provide mulch as specified by bid item Shredded Hardwood Bark Mulch.

Replace standard spec 632.2.7 with the following:

Do not use wrapping on plant material.

Replace standard spec 632.2.9 with the following:

Provide rodent protection for trees designated on plans and as directed by the engineer. Provide rodent protection for single-stem trees of rigid plastic mesh made of recycled HDPE with an open mesh matrix ¾" by ¾" with each strand approximately 1/8" x 1/8" x 1/8". Provide products that are UV treated with a life expectancy of up to five (5) years. The product shall be at least 48 inches high. Supply the source of rodent protection to the engineer. Install rodent protection for single-stem trees according to manufacturer's written instructions and at a minimum, burying the bottom of the rodent protection 2-3 inches into the adjacent soil grades.

Provide rodent protection for multi-stemmed trees of chicken wire or other similarly rigid, matrix-material with an open mesh matrix ¾" by ¾" or less, 48 inches high. Install rodent protection for multi-stemmed trees such that the entire base of the tree is protected; circumference of rodent protection may vary based on specific characteristics of each tree. Bury the bottom 2-3 inches of the rodent protection into the adjacent soil grades.

Replace standard spec 632.2.10 with the following:

Use 18-inch soft polymer webbing strap with grommets at each of the two ends to secure wire or twine to tree. Supply source of webbing straps to the engineer.

Provide tree stabilization (staking and guying) for all trees unless directed otherwise by the engineer.

Supplement standard spec 632.3.1 (1) with the following:

Obtain approval from the engineer for any plantings between June 1 and September 1. All additional care and maintenance associated with approved plantings occurring within this timeframe, will be at no cost to the department including, but not limited to, supplemental

watering above and beyond the typical, specified landscape maintenance and care cycle schedule.

Supplement standard spec 632.3.1 with the following:

Take care not to damage or disturb adjacent finished landscape and be responsible for seeding, sodding or placing Shredded Hardwood Bark Mulch to repair any and all damage caused to adjacent landscape materials. Repairs shall be at the contractor's expense.

Replace standard spec 632.3.3 with the following:

Stake the locations of all plant holes and obtain approval of staked location from the engineer before planting.

Supplement 632.3.4 with the following:

Adequately compact the bottom of the hole to guard against settling. Tamp or water as necessary to create a condition by which plants will not settle in the planting beds. The bottom of the rootball shall be in direct contact with the bottom of the hole.

Replace standard spec 632.3.4 (2) with the following:

Excavate the plant hole to the minimum horizontal dimensions indicated in the Plant Data Table included in the plans or as the engineer directs. The minimum horizontal measurement of the plant hole is to be no less than 24 inches greater than the diameter of the ball, container, or root mass for the full depth of the planting hole for trees.

Replace standard spec 632.3.7 (2) with the following:

Place the plant in the plant hole with its more desirable face towards the most prominent view and hold in a vertical position. Remove the burlap and other wrapping materials including, but not limited to, twine, wire baskets, and plastic ribbon, from the entire root ball of B&B plants unless the engineer determines that removal of said material will be detrimental to plant stability and/or establishment. At a minimum, the wire basket must be completely removed from the top and sides of the rootball. Move and handle only by the ball or container. Set the plant so that, after settling, the plant root collar is at or 2 inches above the surrounding ground level, as specified above in 632.3.4.

Replace standard spec 632.3.18.1.2 with the following:

The plant establishment period shall extend to October 15, 2019 for all plant materials. Review all plant materials with the engineer at conclusion of the establishment period.

Replace standard spec 632.3.19.1 (9) with the following:

Remove all staking, bracing wire material, nursery tags and other plant stabilization or non-biodegradable material at the end of each growing season within the establishment period.

Review all rodent protection measures at the end of each growing season within the establishment period with the engineer.

Supplement standard spec 632.3.19.1(2) with the following:

The interval for a care cycle is 10-14 days between May 15 and October 15. There will be thirteen (13) required care cycles in a growing season.

Perform a complete and thorough spring clean-out of all planting beds that contain trees, shrubs, perennials, ornamental grasses and/or bulbs. Perform spring clean-out during the first care cycle of 2019 (between May 15 and June 1) or as soon as weather and growing season conditions permit. Do not perform spring clean-out until the ground is no longer saturated from the spring thaw; walking on saturated soil will result in compaction. Spring clean-out includes removal of past-season herbaceous material that was left standing over winter, removing any material damaged over the winter by pruning according to the language outlined in standard spec 632, removal of trash or other debris that has accumulated in planting beds, removal of leaves or other plant debris that has accumulated on the top of the mulched surface, weeding, and any and all other clean-out and maintenance operations as directed by the engineer.

Perform a complete and thorough fall clean-out of all planting beds that contain trees, shrubs, perennials, ornamental grasses and/or bulbs. Perform fall clean-out during the last care cycle of 2019 (between October 1 and October 15). Do not perform fall clean-out if the soil is saturated from rain event; wait until the soil moisture levels have gone down before performing the final bed clean-out. Fall clean-out includes, removing any material damaged during the growing season by pruning according to the language outlined in standard spec 632, removal of trash or other debris that has accumulated in planting beds, removal of leaves or other plant debris that has accumulated on the top of the mulched surface, weeding, and any and all other clean-out and maintenance operations as directed by the engineer.

Provide supplemental water during the May 15 and October 15 maintenance period as often as necessary to ensure healthy, growing, and established plant material. Coordinate supplemental water directly with the municipality so the plant material is not being overwatered or under-watered. The contractor will remain solely responsible for plant health and watering maintenance.

Apply an additional 1-2 inches of Shredded Hardwood Bark Mulch immediately prior to the end of the establishment period for planting beds containing Shredded Hardwood Bark Mulch. Work and materials are incidental to Landscape Planting Surveillance and Care Cycles bid item.

56. Signs Reflective.

Supplement standard spec 637 as follows:

In urban areas, where signs overhang a pedestrian or bike path area, provide a minimum mounting height of 8 feet to the bottom of the sign. Where secondary signs are used in urban areas, provide a minimum mounting height of 7 feet to the bottom of the secondary sign when pedestrian or parking movements occur adjacent to the sign.

R4-7 Keep Right signs are to be installed in the median island nose areas and should be located as close as practical to the beginning of the median nose.

One foot lateral offset from the edge of sign to the face of curb will be allowed at locations designated by the engineer.

57. Removing Signs (type); Removing Small Sign Supports.

Perform this work according to the pertinent requirements of standard spec 638 and as hereinafter provided.

Existing signs removed under bid item Removing Signs (type) and existing sign supports removed under bid item Removing Small Sign Supports, owned by the City of Fitchburg within their local road system and bike path system, remain the property of the City of Fitchburg.

Stockpile the disassembled materials, including signs, sign posts, and hardware (brackets, nuts, washers, bolts and other appurtenances) on the right-of-way, outside the limits of construction at a location approved by the engineer.

Notify the engineer when the sign materials are available for pick up by the City of Fitchburg. If the City of Fitchburg doesn't pick up the sign materials within a reasonable time, as determined by the engineer, dispose of the sign materials. If the City of Fitchburg reviews the sign materials and determines the sign materials aren't useful, dispose of the sign materials.

58. Blue Specific Service Signs.

Add the following to standard spec 638.3.4:

Do not remove or move blue specific service signs or their associated posts. Specific service signs are signs with logos that identify commercial entities providing gas, food, lodging, camping, or attractions. A separate contractor, Interstate Logos - Wisconsin, is responsible for these signs. Contact Interstate Logos - Wisconsin at (844) 496-9163 a minimum of 14 calendar days in advance to coordinate removing, moving, or re-installation of these signs.

The contractor is responsible for damage done to these signs due to contractor operations.
stp-638-010 (20150630)

59. Field Facilities.

Replace standard spec 642.2.1 (4) with the following:

Provide and maintain suitable interior sanitary facilities conforming to State and local health requirements, in clean and good working condition, provide a weekly cleaning service, and stock with sanitary supplies for the duration of the contract.

Supplement standard spec 642.2.2.1 (2) with the following:

Provide CAT 5 services with a minimum of six (6) CAT 5 receptacles.

Replace standard spec 642.2.2.1 (3) with the following:

Provide and maintain a plain-paper photocopier with scanner with the following characteristics:

- Uses toner, not ink.
- Has auto-feed capability.
- Can copy and scan both 8 1/2" x 11" and 11" x 17" paper.
- Can output a PDF of a copied or scanned document.

Replenish paper, toner cartridges, and other supplies before fully expended.

Add standard spec 642.2.2.1 (5) as follows:

Provide a field office having an adjacent hard surface parking facility with a minimum capacity of 16 passenger vehicles.

Replace standard spec 642.2.2.4 with the following:

Under bid item Field Office Type D, furnish a facility with a minimum interior space of 1,500 square feet including a meeting room that is at least 20 feet by 20 feet; furnish indoor sanitary facilities that are housed within, or directly adjacent to, the field office; clean, maintain, and supply the field office and sanitary facilities weekly; and equip with the following:

- Ten suitable office desks with drawers and locks.
- Ten ergonomically correct office chairs in working condition according to standard spec 642.2.2.1 (4).
- Two four-drawer file cabinets.
- Two four-shelf bookcases.
- Four 2.5 x 5 foot (minimum) tables.
- Four 4 x 8 foot (minimum) tables for the meeting room.
- Twenty, or more, folding chairs.

Add standard spec 642.3 (7) as follows:

(7) Locate the field office to be within 1 mile of the Verona Road-Williamsburg Way intersection.

Add standard spec 642.5 (4) as follows:

(4) Payment of the field office is full compensation for providing a weekly cleaning service for the field office and sanitary facilities, for providing sanitary supplies as necessary, for replenishing paper, toner cartridges, and other supplies before fully expended, for maintaining the photocopier/scanner in working order at all times and for providing and supporting CAT 5 services.

60. Nighttime Work Lighting-Stationary.

A Description

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

B (Vacant)

C Construction

C.1 General

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

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

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.
2. Specifications, brochures, and technical data of all lighting equipment to be used.
3. The details on how the luminaires will be attached.
4. Electrical power source information.
5. Details on the louvers, shields, or methods to be employed to reduce glare.
6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.
7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

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

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

C.3 Light Level and Uniformity
Position (spacing and mounting height) the luminaires to provide illumination with an average to minimum uniformity ratio of 5:1 or less throughout the work area.
Illuminate the area as necessary to incorporate construction vehicles, equipment, and personnel activities.

C.4 Glare Control
Design, install, and operate all lighting supplied under these specifications to minimize or avoid glare that interferes with all traffic on the roadway or that causes annoyance or discomfort for properties adjoining the roadway. Locate, aim, and adjust the luminaires to provide the adequate level of illumination and the specified uniformity in the work area without the creation of objectionable glare.

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

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.
2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

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

C.5 Continuous Operation
Provide and have available sufficient fuel, spare lamps, generators, and qualified personnel to ensure that the lights will operate continuously during nighttime operation. In the event of any failure of the lighting system, discontinue the operation until the adequate level of illumination is restored. Move and remove lighting as necessary.

D (Vacant)

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

61. Traffic Control Surveillance and Maintenance (project) 1206-07-75, Item 643.0200.S.001.

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, seven 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 two 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.001	Traffic Control Surveillance and Maintenance (project) 1206-07-75	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)

62. Temporary Pedestrian Surface Asphalt, Item 644.1410.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.

C Construction

Place, compact, and level a dense graded aggregate foundation before placing the surface.

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 5-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

Payment is full compensation for providing, maintaining, and removing temporary pedestrian surface.

63. 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)

64. 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)

65. Pavement Marking Grooved Epoxy 4-Inch, Item 646.0107.S.

A Description
This special provision describes providing grooved standard epoxy pavement marking.

Conform to standard spec 646 as modified in this special provision.

B Materials
Furnish 20 mils standard epoxy pavement marking from the department's approved products list. Provide AAASHTO M247 Type I bead gradation at a drop rate of 22.5 to 25.0 pounds per gallon of epoxy.

C Construction
C.1 General

Plane the grooved lines as the plans show. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

C.2 Groove Depth
Cut the groove to a depth of 60 mils ±10 mils deep from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Linear Markings
Cut the groove 1-inch wider than the width of the pavement marking.

C.4 Groove Position
Position the groove edge as the plans show. If necessary, groove a minimum of 4-inches but not greater than 12-inches from both ends of the pavement marking segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning
C.5.1 Concrete
Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with water after cutting to remove any build-up of cement dust and water slurry. Do not let slurry harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and before applying pavement marking. Clean and dry the groove before applying adhesive and placing pavement marking. Use a high-pressure air blower with at least 185 cubic feet per minute air flow and 90 psi air pressure to clean the groove.

C.5.2 Asphalt

Groove pavement five or more days after paving.

If opening an asphalt lane to traffic that is not grooved, place temporary pavement marking. For asphalt lanes not open to traffic, temporary pavement marking is not required.

If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 cubic feet per minute air flow and 90 psi air pressure to clean the groove.

D Measurement

The department will measure the Pavement Marking Grooved Epoxy bid items by the linear foot of line, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0107.S	Pavement Marking Grooved Epoxy 4-Inch	LF

Payment is full compensation for providing grooved epoxy marking; for removing existing or temporary marking; and for grooving, cleaning, and preparing the pavement surface.
stp-646-012 (20160607)

66. Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch, Item 646.0841.S; 8-Inch, Item 646.0843.S.

A Description

This special provision describes furnishing, grooving and installing preformed wet reflective pavement marking contrast tape for grooved applications as shown on the plans, according to standard spec 646, and as hereinafter provided.

B Materials

Furnish wet reflective pavement marking contrast tape and adhesive material, per manufacturer's recommendation if required, from the department's approved products list.

Furnish a copy of the manufacturer's recommendations to the engineer before preparing the pavement marking grooves.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of pavement marking contrast tape.

Plane the grooved lines according to details in the plan and per manufacturer's recommendations. Use grooving equipment with a free-floating, independent cutting head. Plane a minimum number of passes to create a grooved surface per manufacturer's recommendations.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ± 10 mils from the pavement surface or, if tined, from the high point of the tined surface. To measure the depth, the contractor may use a depth plate placed in the groove and a straightedge placed across the plate and groove, or the contractor may use a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Longitudinal Markings

Cut the groove one-inch wider than the width of the tape.

C.4 Groove Position

Position the groove edge according to plan details. Groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the tape segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with high-pressure water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the adhesive, and the pavement marking tape. Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt

Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt

Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.6 Tape Application
Apply the tape when both the air and surface temperature are 40 degrees F and rising.

Apply tape in the groove as per manufacturer's recommendations. If manufacturer's recommendations require surface preparation adhesive

1) For the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee:

- Apply SPA-60 during May 1 to September 30, both dates inclusive due to Volatile Organic Compound Limitations.

- Apply P-50 during October 1 to April 30, both dates inclusive. –

2) For the remainder counties:

    - Apply either adhesive.

Refer to the manufacturer's instructions for determining when the surface preparation adhesive is set.

Tamp the wet reflective pavement marking contrast tape with a tamper cart roller, with a minimum of a 200-lb load, cut to fit the groove. Tamp a minimum of three complete cycles (6 passes) with grooved modified tamper roller cart.

D Measurement
The department will measure Pavement Marking Grooved Wet Reflective Contrast Tape (Width) for grooved applications in length by the linear foot of tape placed according to the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF
646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for removing temporary pavement marking, if necessary.
stp-646-022 (20120615)

67. Temporary Pavement Marking.

Supplement standard spec 649.3.1 (1) with the following:

Apply temporary pavement markings that are sharp, well defined, uniformly reflectorized and within a horizontal alignment as shown on the plans or as the engineer directs. Apply temporary pavement markings within 1 inch per 50 feet of a true line or curve. Remove and replace markings with excessive variation, curvature, wiggle, or non-uniform applications, as directed by the engineer, at no cost to the department.

68. Install Conduit Into Existing Item, Item 652.0700.S.

A Description
This special provision describes installing proposed conduit into an existing manhole, pull box, junction box, communication vault, or other structure.

B Materials
Use conduit rigid non-metallic at the sizes and number of conduit detailed in the plans, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the requirements of pertinent provisions of the standard specifications.

C Construction
Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for the entering conduit(s) at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

D Measurement
The department will measure Install Conduit Into Existing System by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

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

ITEM NUMBER	DESCRIPTION	UNIT
652.0700.S	Install Conduit Into Existing Item	Each

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

stp-652-070 (20100709)

69. Electrical Service Meter Breaker Pedestal 968+35 VR, Item 656.0200.001.

Supplement standard spec 656.3.1 with the following:

(3) Before submittal to the electrical utility, contact Kyle Hemp, kyle.hemp@dot.wi.gov, (608) 246-5367, for review and approval of all applications for new electrical service installations.

70. Anchor Assemblies Light Poles on Structures, Item 657.6005.S.

A Description

This special provision describes furnishing and installing anchor bolt assemblies for light poles as shown on the plans, and as hereinafter provided.

B Materials

For each rod, furnish 4 nuts for securing the top and bottom anchor plate-templates, a leveling nut, bottom washer, top washer, and two top nuts. Do not use lock washers.

Furnish anchor rods conforming to ASTM F1554, grade 55 and Supplementary Specification S4, ASTM A563A heavy hex nuts, and ASTM F436 washers all hot-dip galvanized according to ASTM A153, class C, supplemented by ASTM F2329.

Furnish a steel top and bottom anchor plate-template as part of each anchor assembly. Provide a top template of sufficient gauge to hold the anchor rods securely in position at the top, and resist racking or twisting during the pour. Do not weld templates to anchor rods.

C Construction

Install anchor rods and templates conforming to plan details and per light standard manufacturer's recommendations.

D Measurement

The department will measure Anchor Assemblies Light Poles on Structures as a unit for each individual anchor bolt assembly acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
657.6005.S	Anchor Assemblies Light Poles on Structures	Each

Payment is full compensation for furnishing and installing the anchorages.
stp-657-060 (20161130)

71. Intelligent Transportation Systems – Conduit.

Add the following to standard spec 671.2:

671.2.4 Locate Wire
Furnish and install a No. 14 AWG stranded copper wire for future locate purposes through each conduit run. Connect the locate wire by using a wire nut at each pull box, manhole, or other access point. Alternatively, use a single wire through the access points. All material furnished under this item shall meet the requirements of standard spec 655.
stp-671-005 (20150630)

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

Standard spec 106.2 – Supply Source and Quality
Add the following to standard spec 106.2:

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

Department-Furnished Items	
50-foot Camera Pole	Ethernet Switch
Microwave Detector	Pole Mounted Cabinet
Video Detector	Camera Assembly
Wireless Antenna	Fiber Optic Cable
Termination Panels	

Contact Dean Beekman, State Traffic Operations Center (STOC), at (414) 227-2154 to obtain a copy of the manufacturer list and contact names for department-furnished equipment.

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

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

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

Standard Spec 106.3 – Approval of Materials
Add the following to standard spec 106.3:

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

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

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

1. Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.
2. Any contractor-designed structure or foundation.

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

73. Intelligent Transportation Systems – General Requirements.

A Description

A.1 General

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

Unusual aspects of this project include:

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

A.2 Surge Protection

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

B Materials

B.1 General

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

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

B.2 Outdoor Equipment

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

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

B.3 Custom Equipment

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

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

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

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

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

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

B.4 Environmental Conditions

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

1. **Vibration and Shock:** Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. Duty Cycle: Continuous
3. **Electromagnetic Radiation:** The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. Electrical Power:
    a. **Operating power:** The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.
    b. **High frequency interference:** The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.
    c. **Line voltage transients:** The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.
5. Temperature and Humidity:
    a. **Field equipment:** Equipment in the field shall meet the temperature and humidity requirements of NEMA Standard TS-2. Liquid crystal displays shall be undamaged by temperatures as high as 165 degrees F, and shall produce a usable display at temperatures up to 120 degrees F.
    b. **Equipment in Controlled Environments** shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

B.5 Patch Cables and Wiring

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

B.6 Surge Protection

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

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

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

C Construction

C.1 Thread Protection

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

C.2 Cable Installation

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

C.3 Wiring

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

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

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

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

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

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

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

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

C.4 System Operations
If the contractor's operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

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

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

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

stp-670-010 (20100709)

74. General Provision for Traffic Signals.

This general provision applies to the permanent traffic signals.

The department will provide contact information for the designated project electrician at the preconstruction meeting.

Contact the department's assigned electrician, a minimum of seven working days in advance to coordinate installation of new signal equipment including communications and non-intrusive detection devices.

The department will supply and install meter breaker pedestals for permanent traffic signal installations.

The department's assigned electrician will furnish, install, terminate, and integrate the new permanent traffic signal cabinet/controller and will terminate wiring in the cabinet.

Install and integrate all new communications equipment (fiber optic, fiber terminations, and Ethernet switches) as shown on the plans.

75. Temporary Traffic Signals for Intersections USH 18/151 and Raymond Road, Item 661.0200.001.

Append standard spec 661.2.2, Temporary Traffic Signals for Intersections, with paragraphs (3), (4), & (5) as follows:

(3) Furnish all materials and equipment as required to operate and maintain a fully functioning temporary traffic signal vehicle detection system. The following methods of temporary traffic signal vehicle detection are allowed:

- Existing inductive loops
- Video detection
- Microwave detection
- Combination of options listed above

  Furnish materials and equipment capable of providing the detection zones and functionality as shown on the plans. All methods shall provide for true presence detection. Detection equipment placement may require multiple installations and adjustments, which shall be considered incidental to the temporary traffic signal bid item.

(4) Furnish incidental materials required to install and maintain the temporary signal during all stages as shown on the plans. Incidental materials include, but are not limited to:

- Sheeting for obscuring (bagging) unused and/or existing signal heads
- R10-3E signs for all signalized pedestrian crossings. Furnish with arrow direction as appropriate.
- Signal head visibility limiting devices (if needed)

(5) Furnish street lighting equipment including arms, LED C luminaires, mounting hardware, wiring and incidentals necessary to provide lighting as shown on the temporary traffic signal plans. Aerial cables shall be rated to maintain acceptable voltage drop and span tension.

Append standard spec 661.3.1, General, with paragraph (4) as follows:

(4) Provide equipment specifications and other technical documentation to the engineer for approval 30 calendar days prior to furnishing any detection equipment. Include documentation depicting the operational characteristics of the detection method(s) proposed for each intersection. Provide verification of the detection method's ability to function correctly under the proposed site conditions, including mounting methods and coordination with temporary pavement operations.

Install, adjust, relocate, or remove detection equipment and/or detection zones for each stage of traffic operations shown in the plans, or as modified by changes in field conditions, and as directed by the engineer.

Damage to new or temporary pavement for temporary inductive loops will not be allowed.

76. Install Pole Mounted Cabinet, Item 673.0225.S.

A Description
This special provision describes installing department furnished aluminum enclosures on poles for intelligent transportation systems equipment.

B Materials
Use stainless steel bolts, nuts, and washers unless otherwise specified.

All conductors, terminals, and parts that could be hazardous to maintenance personnel shall be protected with suitable insulating material.

The cabinet will be equipped with service panels. Two panels shall be provided and mounted on the cabinet sidewalls. The left side panel shall be designated as "Input/Communications," and the right side panel shall be designated as the "Service Panel."

The service panel will be equipped with a four-outlet handi-box. Wire the handi-box to the series portion of the filtering surge protector.

Use metallic conduit, fittings, and adapters required from the underground conduit transition point to the cabinet as part of this item. A typical installation requires on 2-inch conduit. Use metallic conduit according to standard spec 652.

C Construction
Fasten the field cabinet securely onto a pole. Provide bolted stainless steel connections with lock washers, locking nuts, or other engineer-approved means to prevent the connection nuts from backing off. Isolate dissimilar materials from one another using stainless steel fittings. Make all power connections to the cabinet as specified in standard spec 656.

Drill and tap the cabinet, as necessary, to mount the terminal blocks and other attachments to the service panel, to provide an entrance on the back of the cabinet for cable from the pole mounted intelligent transportation systems equipment, and to mount the service panel to the cabinet as shown in the details. Remove all sharp edges or burrs, or both, caused by the cutting or drilling process. Seal all openings to prevent water from entering the cabinet. Mount the surge protector to the service panel.

Install metallic conduit on the exterior of the pole (for entrance to the cabinet from the ground) as shown in the plans, and according to the applicable requirements of standard spec 652.

D Measurement
The department will measure Install Pole Mounted Cabinet as each individual assembly acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
673.0225.S	Install Pole Mounted Cabinet	Each

Payment is full compensation for installing the pole mounted cabinet; for making all connections and conduit/wire entrances; and for all testing.
stp-673-010 (20100630)

77. Install Ethernet Switch, Item 675.0400.S.

A Description
This special provision describes installing an Ethernet switch, and providing all necessary associated wiring.

B Materials
The department will furnish the Ethernet switch. Provide all necessary cables between the Ethernet switch and terminal server or other device.

For switches installed in the traffic signal cabinets, contact Graham Heitz (Southwest Region Signal Operations engineer) at (608) 246-5362 with any questions regarding this bid item.

For switches installed in ITS cabinets, contact Kyle Hemp (Southwest Region ITS engineer) at (608) 246-5367 with any questions regarding this bid item.

C Construction
Install the Ethernet switch in a new or existing field cabinet. Connect it to devices as shown on the plans, or as directed by the engineer.

D Measurement
The department will measure Install Ethernet Switch by the unit, installed according to the contract, tested, and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
675.0400.S	Install Ethernet Switch	Each

Payment is full compensation for installing an Ethernet switch; furnishing all necessary incidental hardware; and making all necessary connections.

78. Fiber Optic Splice Enclosure.

Perform work according to standard spec 678 except hereinafter modified:

The department will measure Fiber Optic Splice Enclosure as one enclosure for all splices at each location called out on the plans acceptably spliced and completed.

79. Optimized Aggregate Gradation Incentive, Item 715.0710.

A Description
This special provision describes optional contractor optimized aggregate gradation, optional optimized mixture designs, and associated additional requirements for class 1 concrete used in concrete pavements. Conform to standard specification part 7 and as follows.

B Materials
B.1 Optimized Aggregate Gradation
A Job Mix Formula (JMF) contains all of the following:

- Proportions for each aggregate fraction conforming to Table 1.
- Individual gradations for each aggregate fraction.
- Composite gradation of the combined aggregates including working ranges on each sieve according to Table 2.

Submit the target JMF and aggregate production gradation test results to the engineer for review ten business days before initial concrete placement.

TABLE 1 TARANTULA CURVE GRADATION BAND

SIEVE SIZES	PERCENT RETAINED
2 in.	0
1 1/2 in.	≤5
1 in.	≤16
3/4 in.	≤20
1/2 in.	4-20
3/8 in.	4-20
No. 4	4-20
No. 8[1]	≤12
No. 16[1]	≤12
No. 30[1] [2]	4-20
No. 50 [2]	4-20
No. 100 [2]	≤10
No. 200 [2]	≤2.3

[1] Minimum of 15% retained on the sum of the #8, #16, and #30 sieves.
[2] Conform to 24-34% retained of fine sand on the #30-200 sieves.

TABLE 2 JMF WORKING RANGE

SIEVE SIZES	WORKING RANGE[1] (PERCENT)
2 in.	±5
1 1/2 in.	±5
1 in.	±5
3/4 in.	±5
1/2 in.	±5
3/8 in.	±5
No. 4	±5
No. 8	±4
No. 16	±4
No. 30	±4
No. 50	±3
No. 100	±2
No. 200	≤ 1.6

[1] Working range limits of composite gradation based on moving average of 4 tests.

Test each component aggregate once per 1,500 cubic yards during concrete production. Take samples by one of the following sampling methods:

- At the belt leading to the weigh hopper.
- Working face of the stock piles at the concrete plant if approved by the engineer.

The department will take independent QV samples using the same sampling method the contractor uses for QC sampling. QV samples may be taken by the contractor's QC personnel if witnessed by the department's QV personnel. The department will split each QV sample and retain half for all dispute resolutions. 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.

If, during concrete production, the moving average of four for any sieve fall outside the allowable JMF working range do the following:

- Notify the engineer of the test results within one business day from the time of sampling.
- Make immediate adjustments to the JMF, within the limits specified in Table 3.
- Review JMF adjustments with the engineer. Both the contractor and engineer will sign the adjusted JMF if the adjustments comply with Table 3.
- If the moving average of four falls outside the adjusted allowable working range, stop production and provide a new mix design including JMF to the engineer.

TABLE 3 ALLOWABLE JMF ADJUSTMENTS

SIEVE SIZES	ALLOWABLE ADJUSTMENT (PERCENT)
≥ No. 4	±5
No. 8 – No. 30	±4
No. 50	±3
No. 100	±2

B.2 Dispute Resolution

The department will resolve disputes as specified in standard spec 106.3.4.3.5 using QV split samples.

B.3 Sublot and Lot Size

A sublot consists of up to 1,500 cubic yards. A lot consists of two sublots.

B.4 Optimized Concrete Mixtures
The contractor may use a reduced cementitious content for concrete pavement placed if the contractor does the following:

- Use an optimized aggregate gradation as defined in this special provision.
- Conform to the additional testing requirements for flexural strength as specified in the contract special provisions.
- Submit aggregate gradation result records no more than two years old when developing the mix design.
- Determine the volume of voids in the optimized aggregates using ASTM C29.
- Download and follow the instructions tab of the Optimized Gradation and Mix Design Spreadsheet located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx
- Design an appropriate paste content based upon the Performance-based PCC Mix Design Guide located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx
- Provide a minimum Vpaste/Vvoids of 1.25. (Paste/Void ratio equals the volume of paste divided by the volume of voids.).
- Evaluate workability of trial batches by following section 6.8 of AASHTO Draft Performance Engineered Concrete Pavement Mixtures Specifications located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx
- Submit trial batch workability results when submitting the mix design.
- Submit the CP Tech center computer spreadsheet concrete mix design to the engineer for review at least three business days before producing concrete.
- Provide a minimum cement content of 520 pounds per cubic yard, except if using type I, IL, or III cement in a mix where the geologic composition of the coarse aggregate is primarily igneous or metamorphic materials, provide a minimum cement content of 660 pounds per cubic yard.
- The contractor may use class C fly ash or grade 100 or 120 slag as a partial replacement for cement. For binary mixes use up to 30% fly ash or slag. For ternary mixes use up to 30% fly ash plus slag in combination. Replacement values are in percent by weight of the total cementitious material in the mix.
- See CMM 8-70.2.2.3 for additional guidance.

C (Vacant)

D Measurement
The department will measure Optimized Aggregate Gradation Incentive by the dollar, for each combined averaged lot of QC test results meeting Table 1.

E Payment
The department will pay incentive of 3% of the contract unit price for concrete pavement under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
715.0710	Optimized Aggregate Gradation Incentive	DOL

bts-715-005 (20170123)

80. Flexural Strength for Concrete Mix Design.

This special provision describes optional testing requirements for flexural strength during the mix design process. Conform to standard spec part 7 as modified in this special provision.

Add the following to standard spec table 701-2:

TEST	TEST STANDARD
Flexural Strength of Concrete	AASHTO T97

Replace 715.2.3.1(1) with the following:

(1) Provide both compressive and flexural strength information to demonstrate the strength of the proposed mix design. Use either laboratory strength data for new mixes or field strength data for established mixes as follows:

1. Use at least 5 pairs of cylinders for compressive strength. Demonstrate that the 28-day compressive strength will equal or exceed the 85 percent within limits criterion specified in 715.5.2.
2. Use at least 5 pairs of beams for flexural strength. Demonstrate that the 28-day flexural strength will equal or exceed 650 psi.

bts-715-010 (20170123)

81. Seismograph, Item 999.1000.S.

A Description

This special provision describes furnishing a seismograph and employing trained operators to continuously monitor building vibration for buildings adjacent to retaining walls R-13-268 and R-13-270, and the west abutment of B-13-833, including any temporary walls or shoring to facilitate the construction of R-13-268, R-13-270 and B-13-833.

B Material

Use seismographs conforming to Wisconsin Department of Safety and Professional Services (SPS) 307.43, Wisconsin Administrative Code that are continuous data recorders supplied with all the accessories necessary for making vibration and noise monitoring observations.

C Construction

Conduct monitoring procedures conforming to SPS 307.44 and as follows: Take seismograph readings prior to construction activities to establish an ambient or background index.

During construction, place seismograph to monitor all vibration-inducing construction activities or as directed by the engineer. At a minimum utilize one seismograph. If more than one major construction activity per day is taking place, multiple seismographs may be required. Place the seismograph on a stable surface within 3 feet of the building/structure nearest to the construction operation. Provide data recorded for each vibration occurrence to the engineer which includes the following:

1. Identification of vibration monitoring instrument used.
2. Description of equipment used by the contractor.
3. Name of qualified observer and interpreter.
4. Distance and direction of recording station from the vibration area.
5. Type of ground at recording station and material on which the instrument is sitting.
6. Peak particle velocity and principal frequency in each component.
7. A dated and signed copy of records of seismograph readings.
8. A comparison of measured seismograph readings to maximum allowable readings identified in SPS 307.43 or as specified in this special provision.

If construction activities generate ground vibration in excess of the peak particle velocity limits as shown in SPS 307.44, stop the construction operation in progress and implement alternate construction methods to produce results within the allowable peak particle velocity limits.

D Measurement
The department will measure Seismograph 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
999.1000.S	Seismograph	LS

Payment is full compensation for furnishing and operating a seismograph(s), any operator(s), and for producing documentation reports.
stp-999-005 (20161130)

82. Crack and Damage Survey, Item 999.1500.S.

A Description
This special provision describes conducting a crack and damage survey of the residences and business located at the following (business names are subject to change):

Parcel 1 of Plat 1206-07-30
AMS Mobile Electronics
5380 King James Way
Fitchburg, WI 53719

Parcel 19 of Plat 1206-07-25
Auto Spa Car Wash
5328 Verona Road
Fitchburg, WI 53711

Parcel 28 of Plat 1206-07-25
Roughing It In Style
5262 Verona Road
Madison, WI 53711

Parcel 31 of Plat 1206-07-25
Mid Wisconsin Security, Inc.
5157 Anton Drive
Madison, WI 53719

Parcel 32 of Plat 1206-07-25
Verona Road Self Storage
5258 Anton Drive
Fitchburg, WI 53719

Parcel 33 of Plat 1206-07-25
Catholic Multicultural Center
5256 Verona Road
Fitchburg, WI 53711

Parcel 34 of Plat 1206-07-25
Chalet Ski and Patio
5252 Verona Road
Madison, WI 53711

Parcel 43 of Plat 1206-07-25
Picasso's Pizza
5266 Williamsburg Way
Fitchburg, WI 53719

This Crack and Damage Survey shall consist of two parts. The first part, performed prior to construction activities, shall include a visual inspection, photographs, and a written report describing the existing defects in the building(s) being inspected. The second part, performed after the construction activities, shall also include a visual inspection, photographs, and written report describing any change in the building's condition.

B (Vacant)

C Construction

Prior to any construction activities, thoroughly inspect the building structures for existing defects, including interior and exterior walls. Submit a written report of the inspector's name, date of inspection, descriptions and locations of defects, and photographs. The intent of the written report and photographs is to procure a record of the general physical condition of the building's interior and exterior walls and foundation. The report shall be typed on bond paper and be in text form.

The photographs shall be taken by a professional photographer capable of producing sharp, grain free, high-contrast colored pictures with good shadow details. The photographs shall be 3½ inch by 5 inch color prints, glossy, and mounted in protective storage pages with clear slip-in pockets and clear background. Each sheet shall hold four prints. The back of each photograph shall contain the following information:

ID _____
Building Location _____
View looking _____
Date _____
Photographer _____

Prior to the start of any construction activities pertinent to this survey, submit a copy of the written report and photographs to the engineer.

After the construction activities are complete, conduct another survey in the same manner, take photographs, and submit another written report to the engineer.

In lieu of photographs, a professional videographer may be hired to use a video camera capable of producing a video with the clarity required to perform this work.

D Measurement
The department will measure Crack and Damage Survey as single complete unit of work.

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

ITEM NUMBER	DESCRIPTION	UNIT
999.1500.S	Crack and Damage Survey	LS

Payment is full compensation for providing the before and after written reports, and for photographs or video.
stp-999-010 (20130615)

83. Roadway Embankment, Item SPV.0035.001.

Conform to standard spec 207 modified by this special provision.

A Description
Replace standard spec 207.1(1) with the following:

This section describes placing, in embankments and in miscellaneous backfills, material obtained under the bid items in the roadway and drainage excavation, or excavation for structure sections; and material obtained under borrow as specified in section 208 of the standard specifications and modified under these special provisions.

B Materials
Conform to standard spec 207.2.

C Construction
Conform to standard spec 207.3.

D Measurement
Replace standard spec 207.4(1) with the following:

The department will measure roadway embankment by the cubic yard acceptably completed in its final location using the method of average end areas, with no correction for curvature or settlement, except as follows:

a) The engineer and contractor mutually agree to an alternative volume calculation method;
b) The method of average end areas is not feasible.

If it is not possible to compute volumes of the various classes of roadway and drainage embankment by the method of average end areas due to erratic location of isolated deposits, the department may compute the volumes by alternative methods involving three-dimensional measurements.

The department will not measure embankment material beyond the limits of the required slopes as shown on the plans.

E Payment
Replace standard spec 207.5(1) with the following:

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.001	Roadway Embankment	CY

Payment is full compensation for forming, compacting, shaping, sloping, trimming, finishing, maintaining the embankments, and all other incidental work required under this section.

ASP-5 will be applied to this item. The Fuel Usage Factor for this item is 0.23.

84. Concrete Masonry Deck Patching, Item SPV.0035.002.

A Description
This special provision describes constructing a grade E concrete masonry deck patching course on the sawed deck preparation areas of the concrete bridge deck according to standard spec 502 and 509, as shown on the plans, and as hereinafter provided.

B (Vacant)

C Construction
Construct according to the applicable methods specified in standard spec 502 and 509.

Immediately before placing the concrete deck patching, coat the prepared surfaces with a neat cement mixture. Mix the neat cement in a water-cement ratio approximately equal to five gallons of water per 94 pounds of cement. Ensure the prepared concrete surfaces are moist without any standing water before coating with the neat cement mixture. Brush the neat cement mixture over the prepared concrete surfaces to ensure that all parts receive an even coating, and do not allow excess neat cement to collect in pockets. Apply the neat cement at a rate that ensures the cement does not dry out before being covered with the new concrete.

Place concrete according to standard spec 509 for concrete masonry overlay grade E concrete. The slump of the grade E concrete may be increased to three inches and ready-mixed concrete will be permitted. As determined by the engineer in the field, consolidate

smaller areas by internal vibration, strike them off, and finish the areas with hand floats to produce plane surfaces that conform to the grade and elevation of the adjoining surfaces. Give all deck patching areas a final hand float finish.

Cure the concrete masonry deck patching according to the requirements of standard spec 502.2.6. Before cleaning the deck surface or applying the sheet membrane waterproofing (if applicable), cure the concrete deck patching surfaces for a period of three days and ensure that the deck patching concrete has a minimum compressive strength of 3500 psi.

D Measurement

The department will measure Concrete Masonry Deck Patching by the cubic yard, acceptably completed. The department will not measure wasted concrete. The computation of the measured quantity will be based on the normal cubic yard of concrete as defined in standard spec 501.3.2.2.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.002	Concrete Masonry Deck Patching	CY

Payment is full compensation for furnishing, hauling, preparing, placing, finishing, curing, and protecting all materials.

85. Expanded Polystyrene (EPS) Geofoam, Item SPV.0035.003.

A Description

This special provision describes designing, supplying and constructing block-molded expanded polystyrene (EPS) for use as a geofoam geosynthetic product (EPS-geofoam) as a lightweight fill material over the precast box culvert C-13-115.

B Materials

B.1 EPS Geofoam Blocks

B.1.1 Composition

All EPS-block geofoam shall consist entirely of expanded polystyrene. At the discretion of the molder, the EPS-geofoam may consist of some mixture of virgin raw material and recycled EPS material. Only post industrial recycled material (regrind) is permitted and shall not exceed 10 percent of the total raw material used.

B.1.2 Physical Properties

EPS geofoam shall conform to the requirements of ASTM D6817 for density, compressive resistance, flexural strength, elastic modulus, oxygen index, and water absorption.

B.1.3 Dimensional Tolerances

The dimensions of each block shall not deviate from the theoretical block dimensions by more than 0.5 percent.

The corner or edge formed by any two faces of an EPS block shall be perpendicular, i.e., form an angle of 90 degrees. The deviation of any face of the block from a theoretical perpendicular plane shall not exceed 0.12 inch over a distance of 20 inches. Any one face of a block shall not deviate from planarity by more than 0.2 inches when measured using a straightedge with a length of 10 feet.

B.1.4 Seasoning

All EPS-block geofoam shall be adequately seasoned prior to shipment to the project site. For the purposes of this Special Provision, seasoning is defined as storage in an area suitable for the intended purpose as subsequently defined herein for a minimum of 72 hours at normal ambient room temperature after an EPS block is released from the mold. Seasoning shall be done within a building or other structure that protects the EPS blocks from moisture as well as ultraviolet (UV) radiation. The area in which EPS blocks are stored for seasoning shall also be such that adequate space is allowed between blocks and such that positive air circulation and venting of the structure are provided so as to foster the outgassing of blowing agent and trapped condensate from within the blocks. The engineer shall be allowed to inspect the structure(s) to be used for seasoning upon request and during normal business days and hours. The molder or primary molder may request a shortened seasoning period if the EPS blocks are seasoned within an appropriate heated storage space and the molder or primary molder demonstrates to the satisfaction of the engineer that the alternative seasoning treatment produces blocks that equal or exceed the quality of blocks subjected to the normal 72-hour seasoning period.

B.1.5 Marking

Each block shall be clearly marked with the following information:

a. Manufacturer if more than one manufacturer is supplying material for the job.
b. Lot number of the production run that produced the block.
c. Date the block was produced.
d. Piece number if special sized blocks are produced. The piece number shall be coordinated to the block layout plan described in section C.2.3.1.

B.1.6 Storage and Handling

At all stages of manufacturing, shipment, and construction, the EPS blocks shall be handled in a manner so as to minimize physical damage to the blocks. No method of lifting or transporting the blocks that creates dents or holes in the block surfaces or losses of portions of the block shall be allowed.

If the EPS blocks are to be stockpiled at the project site until placement, a secure storage area shall be designated for this purpose. The storage area shall be away from any heat source or construction activity that produces heat or flame. In addition, personal tobacco smoking shall not be allowed in the storage area. EPS blocks in temporary on-site storage shall be secured with sandbags and similar “soft” weights to prevent their being dislodged by wind. The blocks shall not be covered in any manner that might allow the buildup of heat beneath the cover. The blocks shall not be

trafficked by any vehicle or equipment. In addition, foot traffic by persons shall be kept to a minimum.

EPS blocks that are anticipated to be exposed to sunlight for more than six months shall be covered with an opaque material to prevent ultraviolet light degradation. Remove material that is exposed for more than six months.

Protect the EPS blocks from: organic solvents such as acetone, benzene, and paint thinner; petroleum based solvents such as gasoline and diesel fuel; and open flames.

B.1.7 Certification
Furnish third party certification that the material meets the requirements of this specification and ASTM D6817.

Testing of physical properties specified above shall be performed on samples of material delivered to the site at a frequency of 1 test for every 1000 CY of material delivered with the first test being performed on the first 100 CY of material placed. At least one test must be performed for each lot of material delivered to the site. Submit copies of the test reports to the engineer on the day the material is delivered. The results shall indicate the lot number(s) of the material tested and must match the material delivered.

B.1.8 Field Verification
A minimum of 1 percent of the blocks shall be checked for dimensional tolerances and apparent density in the field immediately prior to being incorporated into the work.

The contractor will provide and maintain a suitable scale to weigh the blocks onsite at all times during which blocks are being placed. Submit a current calibration for the scale. Measure the dimensions and record the weight in the presence of the State's inspector. Make all measurements and compute apparent density according to ASTM D1622.

B.1.9 Mechanical Connectors
Connectors shall be galvanized steel multi-barbed connectors as recommended by the manufacturer. Each connector shall have a lateral holding strength of at least 60 lbs when tested with an EPS15 Geofoam.

B.1.10 Termite Treatment
All EPS-blocks shall be treated by the manufacturer with a tested and proven termite treatment for layered and below grade applications and minimum 3-year field exposure. The termite treatment agent shall be an EPA registered material. Submit certification for the termite application material.

B.1.11 Gasoline Resistant Geomembrane (GRG)
GRG must be a reinforced or unreinforced tri-polymer or EVOH barrier membrane manufactured from LLDPE with and EVOH barrier layer, polyvinyl chloride (PVC), ethylene interpolymer alloy and polyurethane, or a comparable polymer combination.

GRG must confine spilled liquid hydrocarbons including gasoline, diesel fuel, kerosene, hydraulic fuel, methanol, ethanol, mineral spirits, and naptha in both the liquid and vapor phases. GRG must cover and closely conform to 90-degree edges and corners of EPS blocks.

GRG must comply with the following:

Physical Property	ASTM Designation	Acceptance Value
Unleaded Gasoline Permeability	D814	0.0 oz./sf max. per 24 hours
Thickness	D5199	30 mils minimum
Grab Tensile Strength (1" grip, 4"x8" sample)	D751	310 lbf minimum in each direction
Elongation at Break	D751	504 percent minimum
Puncture Resistance	D4833	190 lbf minimum
Cold Crack Resistance (1" mandrel, 4 hours)	D2138	Pass at -30 Deg. F
Factory Produced Seams, Bonded Width	D 751	2" minimum
Factory Produced Seams, Shear Strength	D751	59 lbf minimum
Field Produced Seams, Vapor Tight Seal	D5641	Pass

C Construction

C.1 Design Requirements

Design the EPS Geofoam embankment according to the dimensions and grades shown on the plans. Design the embankment according to the following standards:

ASTM D6817, "Standard Specification of Rigid Cellular Polystyrene Geofoam"

ASTM D7180, "Standard Guide for Use of Expanded Polystyrene (EPS) Geofoam in Geotechnical Projects"

NCHRP Report 529, "Guideline and Recommended Standard for Geofoam Applications in Highway Embankments"

NCHRP Web Document 65, "Geofoam Applications in the Design and Construction of Highway Embankments"

Contractor's design shall consider lateral stability, global stability, compressive resistance and other design criteria as required by the design references above.

C.2 Submittals

Before starting construction of the EPS Geofoam Fill, submit design calculations and design details completed by a professional engineer experienced in the design of geofoam embankments. Submit information and drawings that show the proposed

block layout and construction details as listed below. Submitted items must be approved by the engineer prior to placement of blocks. Submit the following information to the engineer for review at least 60 days prior to the intended installation date:

a. Complete design calculations for the proposed type of EPS and embankment geometry.
b. Product Data
c. Shop Drawings, including Block Layout, Construction Sequence, Installation Instructions and Facing Connection details
d. Verification Samples
e. Manufacturer's Certificates
f. Quality Assurance (Manufacturer's Qualifications)

C.2.1 Product Data

Manufacturer's data sheets on each product to be used, including:

a. Preparation instructions and recommendations.
b. Storage and handling requirements and recommendations.
c. Installation methods.

C.2.2 Shop Drawings

Submit Shop Drawings showing the following:

a. Profile and section view of the proposed embankment.
b. Block Layout
c. Construction Sequence
d. Installation Instructions
e. Location and type of connectors.
f. Ballasting or guying techniques.
g. Placement sequence and methods.

C.2.3.1 Block layout

The block layout shall indicate the size, type, location and orientation of all EPS blocks. The block layout shall conform to the following requirements:

a. Within a given layer of blocks, the longitudinal axes of all blocks must be parallel to each other.
b. Within a given layer of blocks, the vertical joints between the adjacent ends of blocks within a given row of blocks must be offset to the greatest extent practicable relative to blocks in adjacent rows.
c. The longitudinal axes of blocks for layers above and/or below a given layer must be perpendicular to the longitudinal axes of blocks within that given layer.

C.2.3.2 Construction sequence: Submit a detailed construction sequence for the blocks indicating any other construction items that must be accomplished before, during and after placement of the EPS blocks.

C.2.3.3 Installation instructions: Submit an installation plan that includes handling instructions, spike plate installation instructions, facing connector installation

instructions, temporary ballasting or support requirements, and any other installation details recommended by the manufacturer.

C.2.4 Manufacturer's Certificates:
Submit Manufacturer Certificates which certify proposed products meet or exceed the following:

a. Manufacturer's test reports showing the physical properties and standards for the products specified as tested according to ASTM D 7557.
b. Manufacturer's Certificate of Compliance for the first 100 CY and for every 1500 CY thereafter of Geofoam before product is delivered to the site.
c. Computer generated stress-strain data and the accompanying curves from compressive testing. Curves and/or data shall clearly indicate the stress at 1 percent strain and the modulus of elasticity.
d. Each delivery shall have the compression test data for each lot attached with the delivery paperwork.
e. Certificate of Compliance shall include current inspection reports showing that the manufacturer is in compliance with a UL follow-up service program for both flame and physical properties.

C.2.5 Quality Assurance
Manufacturer Qualifications: A minimum of 5 years documented experience in the manufacture of lightweight, geo-synthetic fill. Manufacturer must also have a UL classification in category BRYX. Manufacturer must also maintain a UL classification in category QORW that ensures physical properties according to ASTM D 6817. Third-party certifications that only include ASTM C 578 physical properties will not be considered as an alternative equal and will be rejected.

C.2.6 Subgrade Preparation
Place a granular base layer below the bottom course of blocks. The subgrade surface on which the EPS blocks will be placed shall be sufficiently planar (i.e., smooth) prior to the placement of the first block layer. The required smoothness is defined as a vertical deviation of no more than 0.5 in. over any 10 ft. distance. There shall be no debris of any kind on the subgrade surface when EPS blocks are placed. The subgrade shall not be frozen and there shall be no standing water or accumulated snow or ice on the subgrade within the area where EPS blocks are placed at the time of block placement.

C.2.7 Placement of EPS Geofoam Blocks
Install according to manufacturer's instructions and to the lines, grades and locations shown on the approved block layout plan.

The surface of a layer of EPS-Geofoam blocks to receive additional blocks shall be constructed with a variation in surface tolerance of no more than 0.5 inches in any 10-foot interval.

Blocks shall not be placed above blocks in which ice has developed on the surface. All blocks shall accurately fit relative to adjacent blocks. No gaps greater than 0.75 inches will be allowed on vertical joints.

Place blocks so that they comply with the layout requirements in C.2.3.1.

Blocks may be field cut using a hot wire. Methods of cutting that produce individual beads or dust such as saws or other abrasive cutters are not permitted.

Install mechanical spike plate connectors per the manufacturer's instructions as each block is placed.

The manufacturer of the EPS blocks shall provide a qualified installation technician to be on the site during the installation of the initial layers of blocks to advise the contractor of the procedures to be followed. The contractor, along with the EPS manufacturer shall work closely with the installation technician to assure that a satisfactory end product is being achieved.

C.2.9 Gasoline Resistant Geomembrane (GRG)
Fabricate the GRG to size for each area of the EPS geofoam application. Install the GRG free of wrinkles and as tight to the surface as possible. A certified installer shall weld the GRG seams in order to seal the EPS structure within the GRG. Lapping of GRG is only allowed at locations approved by the engineer.

C.2.9 Protection
The surfaces of the EPS blocks shall not be directly traversed by any vehicle or construction equipment during or after placement of the blocks. Because of the light unit-weight of the geofoam fill, provide temporary weighting and/or guying as necessary until all the blocks are built into a homogeneous mass, and the soil cover is in place.

Protect blocks in place from heat; flame; organic solvents such as acetone, benzene, and paint thinner; and petroleum based solvents such as gasoline and diesel fuel.
Repair or replace any block damaged prior to backfilling with soil.

D Measurement
The department will measure Expanded Polystyrene (EPS) Geofoam by the cubic yard, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.003	Expanded Polystyrene (EPS) Geofoam	CY

Payment is full compensation for furnishing, fabricating, transporting, storing and placing EPS geofoam blocks, and spike connectors; and for designing and supplying all required submittals.

86. Excavation Special, Item SPV.0035.004.

A Description

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

This work includes excavation, segregating, temporarily stockpiling (as required), loading, hauling, and reuse within the project or disposing of excavated materials containing low concentrations of petroleum contained in the soil and/or low concentration of metal and poly aromatic hydrocarbon fill materials, the reuse location that is approved by the department and the Wisconsin Department of Natural Resources (WDNR).

A.2 Notice to the Contractor – Contaminated Soil and Groundwater Locations

The department completed testing for soil and groundwater contamination for locations within this project where excavation is required.

Low-level petroleum contaminated soil is present at the following locations from historical re-use:

1. Station 970+00 VR to 972+00 VR from 50 feet left of the reference line to the construction limits (North corner of the Raymond Road & Verona Road Intersection).
2. Station 96+50 RW to 99+00 RW from 25 feet left of the reference to the construction limits (North corner of the Raymond Road & Verona Road Intersection).

Contaminated soils and/or groundwater and/or underground storage tanks (USTs) may be encountered at other locations within the construction limits. If contaminated soils and/or groundwater and/or USTs are encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer and the environmental consultant. Contaminated soil and/or groundwater at other locations shall be managed by the contractor under this contract. USTs will be removed by others.

For further information regarding previous investigation and remediation activities at these sites contact:

Name:	Daniel Haak
Address:	TRC Environmental Corporation
	708 Heartland Trail, Suite 3000, Madison, WI 53717
Phone:	(608) 826-3628
Fax:	(608) 826-3941
e-mail:	dhaak@trcsolutions.com

A.3 Coordination

Coordinate work under this Contract with the environmental consultant retained by the department:

Consultant:	TRC Environmental Corporation
Contact:	Mr. Dan Haak
Address:	708 Heartland Trail, Suite 3000, Madison, WI 53717
Phone:	(608) 826-3628
Fax:	(608) 826-3941
e-mail:	dhaak@trcsolutions.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be segregated for reuse along the project corridor or hauled to the bioremediation facility;
3. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil from the bioremediation facility if soil is found to not be suitable for reuse.
5. Coordinating abandonment or protection of groundwater monitoring wells along the project corridor.
6. Identifying contaminated groundwater to be pumped for treatment and disposal (if dewatering is necessary). Coordinating groundwater characterization and approval for disposal of contaminated water.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Also notify the environmental consultant at least three calendar days prior to commencement of excavation activities in each of the contaminated areas.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated areas. Perform excavation work in each of the contaminated areas on a continuous basis until excavation work is completed. Do not transport contaminated soil or pump contaminated groundwater offsite without prior approval from the environmental consultant.

A.4 Protection of Groundwater Monitoring Wells

Groundwater monitoring wells may be present within the construction limits. Protect all groundwater monitoring wells to maintain their integrity. If required by the environmental consultant, notify the environmental consultant if groundwater monitoring wells are encountered. Adjust well that do not conflict with utilities, structures, curb and gutter, etc. to be flush with the final grade. For wells that conflict with the previously mentioned items,

notify the environmental consultant, and coordinate with the environmental consultant, or for wells that require abandonment, the abonnement or adjustment of the wells by others.

Coordinate with the environmental consultant to ensure that the environmental consultant is present to abandon and/or document the location of the groundwater monitoring well during excavation activities.

A.5 Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of contaminated material. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR's concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding the investigations, including waste characterization within the project limits, contact Jennifer Grimes with the department, at (608) 884-1147.

A.6 Health and Safety Requirements

Supplement standard spec 107.1 with the following:

During excavation activities, expect to encounter soil contaminated with elevated levels of metals, gasoline diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer prior to the start of work.

B (Vacant)

C Construction

Supplement standard spec 205.3 with the following:

The environmental consultant will periodically examine excavated soil during excavations in the areas of known petroleum or soil contamination within the construction limits.

Control operations in the contaminated areas to minimize the quantity of contaminated soil excavated and to ensure that excavations do not extend beyond the minimum required to construct utilities and highway improvements unless expressly directed to do so by the engineer.

The environmental consultant will periodically evaluate soil excavated from the contaminated areas to determine if the soil will require offsite disposal at a DNR approved landfill or can be beneficially re-used on-site under highway pavements, behind retaining

walls, or in back-slopes with at a minimum 6-inch thick clean soil cover. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

On the basis of the results of such field-screening, the material will be designated for disposal as follows:

- Excavation Common consisting of clean soil and/or clean construction and demolition fill (such as clean soil, boulders, concrete, reinforced concrete, bituminous pavement, bricks, building stone, and unpainted or untreated wood), which under NR 500.08 are exempt materials, or
- Low-level contaminated material for reuse as fill within the construction limits, or
- Contaminated soil for off-site treatment and disposal at the WDNR-licensed landfill, or
- Potentially contaminated for temporary stockpiling and additional characterization prior to disposal

Some material may require additional characterization prior to disposal. Provide for the temporary stockpiling of up to 200 cubic yards of contaminated soil on-site that require additional characterization. Construct and maintain a temporary stockpile of the material according to NR 718.05(3), including, but not limited to, placement of the contaminated soil/fill material on an impervious surface and covering the stockpile with impervious material to prevent infiltration of precipitation. The department's environmental consultant will collect representative samples of the stockpiled material, laboratory-analyze the samples, and advise the contractor, within ten business days of the construction of the stockpile, of disposal requirements. The stockpiled material shall be disposed either at the WDNR-licensed disposal facility by the contractor or, if characterized as hazardous waste, by the department. As an alternative to temporarily stockpiling contaminated soil/fill material that requires additional characterization, the contractor has the option of suspending excavation in those areas where such soil is encountered until such time as characterization is completed.

When material is encountered outside the above-identified limits of known contamination that appears to have been impacted with petroleum or chemical products, or when other obvious potentially contaminated materials are encountered or material exhibits characteristics of industrial-type wastes, such as fly ash, foundry sand, and cinders, or when underground storage tanks are encountered, suspend excavation in that area and notify the engineer and the Environmental Consultant.

Groundwater may be present within the construction limits. Water generated during dewatering operations (if necessary) is expected to be permitted to discharge to the surface except in the contaminated areas. If dewatering of perched groundwater or stormwater is required, allow stormwater to settle for 24 hours after a rain event, after which the water

shall be managed as uncontaminated dewatering, unless the environmental consultant has evidence that the water will require treatment and/or off-site disposal.

Contaminated groundwater generated from dewatering activities within the contaminated areas may exceed the surface water discharge limits for petroleum compounds specified in the DNR's "General Permit to Discharge under the Wisconsin Pollutant Discharge Elimination System" for "Contaminated Groundwater from Remedial Action Operations" (WPDES Permit No. WI-0046566-5), Table 3.1.

Pump contaminated water that exceeds surface water discharge limits, as determined by environmental consultant, into temporary holding tanks provided by others or an alternative discharge point as determined by the environmental consultant, as necessary to complete construction. Allow contaminated water encountered, but not requiring removal as a standard course of construction, to remain in-place and do not manage according to this special provision.

The environmental consultant will coordinate approval of contaminated water hauling and disposal. Only pump contaminated groundwater if the environmental consultant is on-site.

Discharging contaminated groundwater to any location other than that approved and provided by the environmental consultant, is at the contractor's cost. If the contractor chooses alternate discharge, at the contractor's cost, obtain DNR concurrence on any dewatering plans, and provide and operate any and all treatment and discharge equipment required.

Employ construction methods and techniques in a manner that will minimize the need for dewatering, and if dewatering is required, minimize the volume of water generated. Take measures to limit groundwater, surface water, and precipitation from entering and exiting excavations in the areas of contamination. Such measures, which may include berming, ditching, or other means, shall be maintained until construction of utilities in the areas of contamination are complete.

Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statues, judiciary decisions, and regulations of the State of Wisconsin.

D Measurement

The department will measure Excavation Special in volume by the cubic yard, acceptably completed.

Volume will be computed using the method of average end areas and as specified in standard spec 205.4.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.004	Excavation Special	CY

Payment is full compensation for excavating, segregating, hauling, temporary stockpiling (as required), and reuse; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; and for dewatering of soils prior to transport, if necessary.

87. Abandon Existing Sanitary Sewer – Slurry, Item SPV.0035.600.

A Description

This work consists of abandoning sanitary sewer pipe with slurry as shown in the plans and hereinafter provided.

B Materials

Provide slurry conforming to Type A Slurry Mix as specified in Article 301.9 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

C Construction

Provide replacement sanitary sewers and laterals or appropriate bypass pumping prior to abandoning sanitary sewer pipe. These items are not included in this bid item.

Sawcut and remove the ends of the sanitary sewer pipe to be abandoned as necessary to complete the abandonment. The sawcut and removal is incidental to this bid item.

Maintain service in all existing sewers until the replacement sewers or appropriate bypasses, approved by the engineer, have been installed, at which time bulkheads or plugs may be placed.

Plug the downstream end of the sanitary sewer pipe to be abandoned. Fill the entire pipe with concrete slurry. Provide vent holes, as directed by the City of Fitchburg, to verify the slurried pipe is free of air voids.

D Measurement

The department will measure Abandon Existing Sanitary Sewer - Slurry by the cubic yard of abandon existing sanitary sewer pipe - slurry, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.600	Abandon Existing Sanitary Sewer - Slurry	CY

Payment is full compensation for sawing and removing sanitary sewer pipe; for maintaining service; for all bulkheads and plugs; for all slurry; for providing any vent holes and cleanup. Replacement sanitary sewer pipe and laterals or appropriate bypass pumping are not included in this bid item.

88. Utility Line Opening (ULO), Item SPV.0060.001.

A Description
This work consists of excavating to uncover utilities for the purpose of determining elevation and potential conflicts as shown on the plans or as directed by the engineer.

B (Vacant)

C Construction
Perform the excavation in such a manner that the utility in question is not damaged.

Perform the utility line openings as soon as possible and at least ten 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. Provide utility line openings with a trench up to 10 feet long as measured at the trench bottom, and of any depth required to locate the intended utility.

Notify the utility engineers or their agents of this work a minimum of three working days prior to the work so they may be present when the work is completed. Do not perform utility line openings without the approval of the engineer.

D Measurement
The department will measure Utility Line Opening (ULO) as each individual ULO, 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.0060.001	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 asphaltic pavement removal necessary to facilitate utility line openings will be considered part of or paid for under Utility Line Openings. Replacement pavement, concrete curb, gutter, and sidewalk items will be considered separate from Utility Line Openings and will be measured and paid for separately.

89. Maintenance and Removal of Crash Cushions Temporary Left In Place by Others, Item SPV.0060.002.

A Description

This special provision describes maintaining and removing temporary crash cushions left in place by others according to standard spec 614.

Crash cushions temporary left in place by others remain the property of the department upon completion of the contract.

B Materials

Furnish any replacement materials for the temporary crash cushions left in place by others according to standard spec 614.2.

C Construction

Maintain the crash cushions temporary left in place by others for the duration of the project and remove the temporary crash cushion according to standard spec 614.3.4, including relocated temporary crash cushions.

Remove and return the crash cushions temporary left in place by others to a location within 5 miles of the project as determined by the engineer when the crash cushions are no longer needed on the project.

D Measurement

The department will measure Maintenance and Removal of Crash Cushions Temporary Left In Place by Others as each individual crash cushion location 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.0060.002	Maintenance and Removal of Crash Cushions Temporary Left In Place by Others	Each

Payment is full compensation for maintaining and removing the crash cushions; for returning the crash cushions to a site within 5 miles of the project when the crash cushions are no longer needed on the project; and for removing and disposing of all materials that are replaced.

Relocating temporary crash cushions left in place by others will be paid separately.

90. Relocate Crash Cushion Temporary Left In Place By Others, Item SPV.0060.003.

A Description
This special provision describes removing and relocating temporary crash cushions according to standard spec 614 and as hereinafter provided.

B (Vacant)

C Construction
Remove or re-anchor department owned temporary crash cushions according to the applicable sections of standard spec 614.3.

Store temporary crash cushions on site while not in use.

D Measurement
The department will measure Relocate Crash Cushion Temporary Left In Place By Others as each individual relocate crash cushion temporary left in place by others, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.003	Relocate Crash Cushion Temporary Left In Place By Others	Each

Payment is full compensation for removing, loading, hauling, and storing; and for furnishing replacement parts, assembling, and installing.

91. Department Owned Crash Cushion Temporary, Item SPV.0060.004.

A Description
This special provision describes loading, transporting, delivering, installing, and maintaining department owned crash cushion temporary according to standard spec 614 and as hereinafter provided.

Department owned crash cushion temporary will remain the property of the department upon completion of the contract.

B Materials
Furnish any installation or replacement materials for the department owned crash cushion temporary according to the crash cushion manufacturer's specifications and with the pertinent requirements of standard spec 614.2.

Department owned crash cushion temporary consist of the following:

1. One crash cushion with 6 bays (3 QuadGuard II cartridges, 3 QuadGuard I cartridges and a QuadGuard I nose cartridge)
2. Three crash cushions with 5 bays (3 QuadGuard II cartridges, 2 QuadGuard I cartridges and a QuadGuard I nose cartridge)
3. Three crash cushions with 2 bays (2 Hex-Foam II cartridges and a Hex-Foam II nose cartridge)

C Construction

Load, transport, and deliver department owned crash cushion temporary to the project from a stored location within 5 miles of the project.

Install and maintain department owned crash cushion temporary according to the pertinent requirements of standard spec 614.3.4.

D Measurement

The department will measure Department Owned Crash Cushion Temporary as each individual department owned crash cushion temporary, 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.0060.004	Department Owned Crash Cushion Temporary	Each

Payment is full compensation for loading, transporting, delivering and installing; for providing foundation pads, transitions, and backup blocks; and for maintenance including furnishing and installation of any replacement parts and reassembly.

92. Maintenance of Permanent Crash Cushions Placed by Others, Item SPV.0060.005.

A Description

This special provision describes maintaining permanent crash cushions within the project limits placed by others for the duration of the project according to standard spec 614.

Permanent crash cushions placed by others remain the property of the department upon completion of the contract.

B Materials

Furnish any replacement materials for the permanent crash cushions placed by others according to the pertinent requirements of standard spec 614.2.

C Construction

Maintain the permanent crash cushion according to standard spec 614.3.4.

D Measurement
The department will measure Maintenance of Permanent Crash Cushions Placed by Others as each individual maintenance of permanent crash cushions placed by others, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.005	Maintenance of Permanent Crash Cushions Placed by Others	Each

Payment is full compensation for maintaining the permanent crash cushions; and for furnishing any replacement materials.

93. Pipe Bollard, Item SPV.0060.006.

A Description
This special provision describes furnishing and installing pipe bollards at locations as detailed in the plans and as hereinafter provided.

B Materials
Fabricate pipe bollards from schedule 80 galvanized steel pipe.

Provide concrete according to standard spec. section 501 conforming to Grade A, A-FA, A-S, A-T, A-IS, A-IP, and A-IT.

C Construction
Paint the pipe bollards as specified in standard spec 517.2.4, color black.

Paint the pipe bollards according to standard spec 517.3. For the portion of the pipe bollard that will be fully encased in concrete, apply only the zinc-rich primer as specified in 517.3.1.7.2.

Excavate to the depth shown on the plans. Remove water or other foreign material from the excavation and inside the pipe before placing concrete. Place concrete in the excavation and inside pipe in a continuous operation at a rate that will not cause air pockets. The concrete may not have cold joints. Fill the pipe completely with concrete and consolidate to a depth as great as practicable with a mechanical vibrator or by other engineer-approved method.

Protect the pipe bollards from damage to the paint during transportation, storage, placement and concrete placement. Repair any damaged paint according to standard spec 517.3.

D Measurement
The department will measure Pipe Bollard as each individual pipe bollard, 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.0060.006	Pipe Bollard	Each

Payment is full compensation for providing pipe, concrete, and paint; for excavation; for placing concrete within the pipe and for the footing; for backfilling and disposing of surplus materials; and for repairs to the paint system.

94. Posts Round Tubular Steel 2-Inch 12-FT, Item SPV.0060.007; Reflective 10-FT, Item SPV.0060.008; Reflective 12-FT, Item SPV.0060.009.

A Description
Perform work according to the applicable provisions of standard spec 634, as shown in the plans, and as hereinafter provided.

B Materials
Provide 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. Provide a 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. Also, 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 Posts Round Tubular Steel 2-Inch (Reflective) (Size) as each individual posts round tubular steel 2-inch, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.007	Posts Round Tubular Steel 2-Inch 12-FT	Each
SPV.0060.008	Posts Round Tubular Steel 2-Inch Reflective 10-FT	Each
SPV.0060.009	Posts Round Tubular Steel 2-Inch Reflective 12-FT	Each

Payment is full compensation for providing, 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.

95. Precast Sign Post Base, Item SPV.0060.010.

A Description

This special provision describes constructing and installing precast sign post bases at locations shown on the plans and as hereinafter provided. Sign bases located within concrete pavement will be furnished and installed by the City of Madison.

B Materials

Furnish all materials for the work that meet the requirements for the class of materials named.

Specific reference is made to the following sections of the standard specifications:

Concrete Masonry	Standard spec 501
Steel Reinforcement	Standard spec 505

Provide concrete masonry of a minimum 3,200-psi strength in 28 days. Provide the 2-inch x 24-inch +1/3-inch insert meeting the requirements of ASTM Designation 120 A53 Fed Spec P404, Schedule 40 untreated pipe 2-inch diameter, with a galvanized rigid conduit coupling installed.

C Construction

Contact Phil Nehmer, City of Madison Traffic Engineering, at (608) 267-1960 two weeks prior to installing signs within concrete limits.

The City of Madison will furnish and install sign post bases for posts located within concrete limits.

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.

Upon request and a seven day advance notice from the contractor, the engineer will establish and stake the location for sign post bases. The City of Madison Traffic Engineering Division Staff will verify all sign post base locations prior to installation.

Coat the treads of the pipe and coupling in the base with graphite 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.

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 precast sign post base, 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.0060.010	Precast Sign Post Base	Each

Payment is full compensation for furnishing all materials; for the manufacturing of the sign post base; and for hauling, handling and installing the sign post base; and for backfilling.

96. Covering Signs, Item SPV.0060.011.

A Description
This special provision describes covering traffic control signs at locations shown on the plans.

Perform the work according to the applicable provisions of standard spec 643.

B Materials
Furnish sheet aluminum sign covers and other materials according to standard spec 643.2.9.5.

C Construction
Cover signs according to standard spec 643.3.8.2. The sign cover will remain upon completion of the contract.

D Measurement
The department will measure Covering Signs as each individual covering signs, 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.0060.011	Covering Signs	Each

Payment is full compensation for providing full or partial sign covers, as specified in the plans or directed by the engineer; and for repairing and replacing damaged signs.

97. Flexible Tubular Marker Post and Base, Item SPV.0060.013.

A Description
This special provision describes providing flexible tubular marker posts and bases according to standard spec 643.

B Materials
Provide new flexible tubular marker posts and bases.

When attaching flexible tubular marker bases to asphaltic pavement, attach the base with an epoxy adhesive according to standard spec 643.2.5.2. Provide asphaltic adhesive according to standard spec 643.2.5.2 when attaching flexibule tubular marker bases to concrete.

C Construction
Construct flexible tubular marker posts and bases according to standard spec 643.3.4 at the locations shown on the plans.

The flexible tubular marker posts and bases will remain upon completion of the contract.

D Measurement
The department will measure Flexible Tubular Marker Post and Base as each individual flexible tubular marker post and base, 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.0060.013	Flexible Tubular Marker Post and Base	Each

Payment is full compensation for providing and installing flexible tubular marker posts and bases.

The flexible tubular marker posts and bases become the property of the department upon completion of the contract.

98. Gates Chain Link 8-FT Polymer-Coated, Item SPV.0060.014.

A Description

This special provision describes providing black polymer-coated chain link gates four feet in height and eight feet in width. Perform work according to the applicable provisions of standard spec 616, as detailed in the plans, and hereinafter provided.

B Materials

Furnish general materials according to standard spec 616.2.1. Furnish chain link gates according to standard spec 616.2.3 and that are polymer-coated.

Furnish a polymer-coating that is dense and impervious and is black in color conforming to the color requirements of ASTM F934. Provide a polymer-coating that is applied without voids, tears or cuts. Roughness, bubbles, blisters, or flaking in the polymer-coating will not be accepted.

B.1 Fabric

Provide a polymer-coating fused and adhered to the zinc coated fabric, including tension wire and fabric fasteners, conforming to the requirements of ASTM F668, Class 2b and meeting the following testing requirements:

Thickness of Polymer-Coating:	ASTM F668
Adhesion:	ASTM F668
Accelerated Aging Test:	ASTM F668, D1499
Mandrel Bend Test:	ASTM F668

B.2 Framework

Provide polymer-coating over the zinc-coated framework, including all posts, bracing and other framework components conforming to the requirements of ASTM F1043 and meeting the following testing requirements:

Thickness of Polymer-Coating:	ASTM E376
Adhesion:	ASTM F1043
Accelerated Aging Test:	ASTM F1043, D1499

B.3 Fittings

Provide polymer-coating over the zinc-coated fittings, including all post caps, clamps, adapters, catches, hinges, plugs, lock apparatus, rods, bands, and other fittings, conforming to the requirements of ASTM F626 and meeting the following testing requirements:

Thickness of Polymer-Coating:	ASTM F626
Adhesion:	ASTM F1043
Accelerated Aging Test:	ASTM F1043, D1499

Provide post caps that fit tightly over posts to prevent moisture intrusion.

B.4 Submittals
Submit certification of compliance with material specifications. Provide material certification and test documentation for fabric, framework, fittings and hardware that shows that all materials meet or exceed the specifications and the tests indicated. Provide the name, address and phone number of the manufacturer, and the name of a contact person

C Construction
Install the chain link gate according to the applicable provisions of standard spec 616.3 and as recommended by the manufacturer.

Inspect the polymer-coated gate upon delivery to the project site and repair or replace damaged components at no additional cost to the department. Store chain link gate materials off the ground to prevent damage.

Repair minor damage to the polymer-coated areas as recommended by the manufacturer. Provide the engineer with a copy of the manufacturer's recommended repair procedure and materials needed, prior to repairing minor damage to the polymer-coated areas. The engineer will review the repairs, and if not acceptable to the engineer, replace damaged components at no additional cost to the department.

D Measurement
The department will measure Gates Chain Link 8-FT Polymer-Coated as each individual gates chain link 8-FT polymer-coated, 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.0060.014	Gates Chain Link 8-FT Polymer-Coated	Each

Payment is full compensation for furnishing, inspecting, storing and installing polymer-coated chain link gate; for repairing and providing the engineer with the procedure and materials needed; for replacing damaged components; for providing concrete; and for disposing of surplus or damaged materials.

99. Decorative Medallion, Item SPV.0060.015.

A Description
Construct a concrete decorative medallion, as detailed in the plans and as hereinafter provided.

B Materials
The City of Fitchburg will supply the decorative medallion form liner. Contact Cory Horton, at (608) 270-4260, of the City of Fitchburg, at least 30 business days before form

liner is needed. The form liner remains the property of the City of Fitchburg upon completion of its use.

The contractor, at contractor expense, is responsible for having the form liner repaired or replaced by the manufacturer if any damage to the form liner occurs while in the contractor's possession.

Use a release agent that is compatible with the form liner and coloring materials.

C Construction

Construct the decorative medallion as shown on the plans.

Prepare a sample panel of the decorative medallion measuring a minimum of 42-inches x 42-inches and constructed to demonstrate workmanship in the use of the form liner. Prepare the concrete surfaces of the sample panel using the same materials and in the same manner as proposed for the decorative medallion. Cure the test panel of the decorative medallion using the same methods and materials as the decorative medallion. Staining the sample panel is included under separate bid item Medallion Concrete Staining Multi-Color. The sample panel, once completed including the stain and no longer needed for the project, shall be stored securely on site for pick up by the City of Fitchburg.

Apply form release according to the manufacturer’s recommendations.

Attach the form liner to the forms according to the manufacturer's installation instructions.

After removing the form liner, clean for additional uses. Upon completion of use, clean the form liner and contact the City of Fitchburg to pick up the sample panel and form liner.

D Measurement

The department will measure Decorative Medallion as each individual decorative medallion, 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.0060.015	Decorative Medallion	Each

Payment is full compensation for obtaining the form liner from the City of Fitchburg; for constructing and curing the sample panel; for constructing, curing and installing the decorative medallion; removing the form liner; protecting the form liner; cleaning the form liner; and coordinating pick up of the form liner and sample panel with the City of Fitchburg.

For Decorative Medallion on bridge, the department will pay separately for concrete masonry and bar steel reinforcement under the bid items Concrete Masonry Bridges and Bar Steel Reinforcement HS Coated Bridges as specified in standard spec 502.

100. Medallion Concrete Staining Multi-Color, Item SPV.0060.016.

A Description

Furnish and apply a multi-color concrete stain to the exposed concrete form lined decorative medallion surface, as shown on the plans, and as hereinafter provided.

B Materials

B.1 Mortar

Use mortar for sack rubbing the concrete surfaces according to standard spec 502.3.7.5 or use one of the following products:

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

Provide mortar containing one of the following acrylic bonding admixtures mixed and applied according to the 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

Furnish, prepare, apply, cure, and store all materials according to 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.1 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.2 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 45° F or higher, or as given by the manufacturer.

C.3 Test Areas
Prior to applying stain to the medallion, apply the stain to a sample panel measuring a minimum of 42-inches x 42-inches and constructed to demonstrate workmanship in the use of the form liner and stain. The sample panel is included under separate bid item Decorative Medallion. Match or exceed the stain manufacturer's minimum recommended curing time or 28 days, whichever is greater, prior to staining. Submit color samples to the department prior to staining the sample panel. Prepare the concrete surfaces of the sample panel and apply stain using the same materials and in the same manner as proposed for the medallion. Do not apply stain to the medallion until the department approves the test panel.

C.4 Surfaces to be Coated
Apply each stain color to the specific area of the form lined decorative medallion surface according to the staining pattern provided in the plans.

D Measurement
The department will measure Medallion Concrete Staining Multi-Color as each individual medallion concrete staining multi-color, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.016	Medallion Concrete Staining Multi-Color	Each

Payment is full compensation for furnishing and applying the coloring system; for preparing the concrete surface; and for staining the sample panel.

101. Relocate Apron Endwalls for Underdrain, Item SPV.0060.048.

A Description
This special provision describes removing and relocating apron endwalls for underdrain according to standard spec 612.

B (Vacant)

C Construction
Remove existing apron endwalls for underdrain from existing underdrain.

Store apron endwalls for underdrain in a safe location and replace any damaged apron endwalls for underdrain at no cost to the department.

Install existing apron endwalls for underdrain according to standard spec 612.3.8.

D Measurement
The department will measure Relocate Apron Endwalls for Underdrain as each individual relocate apron endwalls for underdrain, 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.0060.048	Relocate Apron Endwalls for Underdrain	Each

Payment is full compensation for removing, storing, and installing existing endwalls; for replacing damaged endwalls; and for disposing of surplus materials.

102. Inlet Covers Type 2X3-FT, Item SPV.0060.049; DW, Item SPV.0060.050.

A Description
Perform work according to the applicable provisions of standard spec 611 and as detailed in the plans.

B Materials
Furnish inlet covers that are traversable by vehicle and bicycle traffic and rated for traffic loading.

For Type 2X3-FT inlets, provide open grates for drainage for a 2 foot by 3 foot opening in an inlet or manhole.

C Construction
For Type 2X3-FT inlets, provide a detailed plan, stamped by a licensed professional engineer in the State of Wisconsin, indicating the methods and materials required to secure the inlet covers and grates to the inlet frames for traffic loading.

D Measurement
The department will measure Inlet Covers Type (size) as each individual inlet covers type (size), 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.0060.049	Inlet Covers Type 2X3-FT	Each
SPV.0060.050	Inlet Covers Type DW	Each

Payment is full compensation for furnishing inlet covers, including frames, grates or lids; for a detailed plan, stamped by a licensed professional engineer in the State of Wisconsin; for securing type 2X3-FT inlet covers; and for installing.

103. Cover Plates, Item SPV.0060.051.

A Description
This special provision describes furnishing and installing cover plates at manholes, inlets and similar structures.

B Materials
Provide a 0.50-inch minimum thickness steel plate that extends, at a minimum, to the outside edge of the concrete structure.

C Construction
Install the cover plate to the structure securely using stainless steel anchors. Do not cover the plate until the engineer examines the installation.

D Measurement
The department will measure Cover Plates as each individual cover plates, 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.0060.051	Cover Plates	Each

Payment is full compensation for furnishing all materials; and for hauling, handling and installing the cover plate.

The steel plate becomes the property of the department upon completion of the contract work.

104. Concrete Cutoff Wall, Item SPV.0060.052.

A Description
Perform work according to the applicable provisions of standard spec 504 and as detailed in the plans.

B Materials
Provide concrete according to the applicable provisions of standard spec 504 and as detailed in the plans. Provide high strength galvanized steel adhesive anchors and washers according to the applicable provisions standard spec 502.2.12 and as detailed in the plans.

C Construction
Drill bolt holes in the locations shown on the plans after the concrete in the concrete cutoff wall is cured and use adhesive anchors to secure the endwall to the cutoff wall. Maintain existing drainage and provide any dewatering necessary for the work.

D Measurement
The department will measure Concrete Cutoff Wall as each individual concrete cutoff wall 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.0060.052	Concrete Cutoff Wall	Each

Payment is full compensation for furnishing all excavation and preparation; for providing all equipment and materials, including concrete, reinforcing steel, and adhesive anchors; for placing, finishing, protecting, and curing; for maintaining drainage and dewatering; for disposing of surplus excavation material; and for restoring the work site.

105. Covering and Locating Storm Sewer, Item SPV.0060.053.

A Description
This special provision describes how various sized storm sewer pipe stubs and buried manhole castings will be covered to prevent sediment from infiltrating into the storm sewer system and then located. The locations of covering and locating storm sewer are shown on the plans. Perform locating work according to the applicable provisions of section 650 of the standard spec.

B Materials
Furnish storm sewer stub covers made of a polyethylene film and plywood. Provide a polyethylene film meeting the following requirements:

Property Requirements	**Value**	**Test Method**
Tensile Strength, min.	40 lbf	ASTM D7003
Grab tensile strength, min.	50 lbf	ASTM D7004
Elongation at Breat, min.	400%	ASTM D7003
Hydrostatic Resistance	32 psi	ASTM D751
Permeability	0.058 g/100in ^{2}/day	ASTM E96 Pro. B

Provide plywood with a minimum thickness of 3/4-inch at storm sewer pipe stub locations.

C Construction
Completely cover the storm sewer openings with one continuous piece of polyethylene film. Cover a minimum of one foot of the stub length or one foot of the structure height with the polyethylene film and secure the polyethylene film to the storm sewer pipe stub or storm sewer structure.

Place a sheet of plywood to cover the opening of the storm sewer stub. Provide one continuous sheet and extend the plywood sheet a minimum of 2 inches beyond the outside diameter of the pipe on all sides. Place the plywood tight to the fabric or polyethylene and the storm sewer stub and secure the plywood as necessary to prevent movement or separation from the pipe while backfilling the trench.

Place the manhole casting to cover the opening of the storm sewer structure.

After construction of a storm sewer pipe stub or a storm sewer manhole, that is to be covered, is completed locate the stub or the manhole casting to within 0.02 feet horizontally (providing project utilized coordinates) and the top of the stub to within 0.02 feet vertically (utilizing the project vertical datum).

Provide a copy of the horizontal and vertical location of the top of storm sewer stub or storm sewer casting to the engineer that references the structure number the stub is connected to and the structure number of the structure the stub will be connected to in the future or the storm sewer structure itself. Provide a paper and electronic copy of the information in a table format acceptable to the engineer.

D Measurement

The department will measure Covering and Locating Storm Sewer as each individual covering and locating storm sewer, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.053	Covering and Locating Storm Sewer	Each

Payment is full compensation for furnishing all specified materials; for delivering, assembling; and for locating, preparing and delivering the horizontal and vertical locations of the top of the storm sewer.

106. Storm Sewer Tap, Item SPV.0060.054.

A Description

This special provision describes tapping various sized storm sewer pipes into existing structures, including manholes or inlets, or other pipes at locations shown on the plans.

Perform the work according to the applicable provisions of standard spec 607 and standard spec 611, and as hereinafter provided.

B (Vacant)

C Construction
Tap into the existing structure to allow the pipe to be flush with the interior wall of the existing pipe or structure.

All necessary temporary shoring needed for construction of this item will not be paid for separately but will be included in this item of work.

D Measurement
The department will measure Storm Sewer Tap as each individual storm sewer tap, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.054	Storm Sewer Tap	Each

Payment is full compensation for providing all materials, including saw cuts, for excavating; for removing concrete; for providing and removing sheeting and shoring, making connections to new or existing facilities, and for cleaning out.

107. Manhole C4755, Item SPV.0060.055; C4757, Item SPV.0060.056.

A Description
This special provision describes providing storm sewer manholes and junction chambers.

B Materials
Furnish materials conforming to standard spec 611 and plan details.

C Construction
Provide shop drawings for the details of the reinforcing steel to the engineer.

Do not place reinforcing until engineer has reviewed the reinforcing shop drawing.

Construct according to standard spec 611 and plan details.

Maintain existing drainage patterns, provide any dewatering and provide materials necessary for temporary connections to existing storm sewer.

Provide all temporary shoring needed for construction of this item. Temporary shoring will be paid for separately.

D Measurement
The department will measure Manhole (type) as each individual manhole acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.055	Manhole C4755	Each
SPV.0060.056	Manhole C4757	Each

Payment is full compensation for providing all materials, including all concrete masonry, steel reinforcing, temporary sewer connections, and other fittings; for all excavating, dewatering, and maintaining drainage during the work; for backfilling, disposing of surplus material, and for cleaning out and restoring the work site, and all incidentals necessary to complete the contract work except that the department will pay for covers, including frames, grates and lids, and temporary shoring separately.

108. Inlet Covers, Flat Temporary, Item SPV.0060.057.

A Description

Perform work according to the applicable provisions of standard spec 611 and as detailed in the plans.

B Materials

Furnish inlet covers according to the pertinent requirements of standard spec 611. Provide open grates for drainage, traversable by vehicle and bicycle traffic, and rated for traffic loading.

C Construction

Provide a detailed plan, stamped by a licensed professional engineer in the State of Wisconsin, indicating the methods and materials required to secure the inlet covers and grates to the inlet frames for traffic loading.

Adjust and set the grade of the inlet cover to meet the final surface of the temporary pavement for traffic lanes. Secure inlet covers to the inlet or inlet frame.

Remove the temporary inlet cover once no longer needed in the temporary traffic lanes.

D Measurement

The department will measure Inlet Covers, Flat Temporary as each individual inlet covers, flat temporary, 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.0060.057	Inlet Covers, Flat Temporary	Each

Payment is full compensation for furnishing inlet covers, including frames, grates or lids; for a detailed plan, stamped by a licensed professional engineer in the State of Wisconsin;

for all necessary bolting; for providing all other required materials and for installing and adjusting each inlet cover; and for removing and disposing of inlet cover.

109. MSE Wall Sleeve Type 1, Item SPV.0060.058; Type 13, Item SPV.0060.059; Temporary Signal Pole, Item SPV.0060.060; Type 10, Item SPV.0060.061.

A Description

Furnish and install a corrugated steel pipe sleeve in the reinforced earth zone of mechanically stabilized earth (MSE) retaining walls and other locations shown in the plans. Perform work according to pertinent portions of standard specs 520 and 521, the plans, and as hereinafter provided.

B Materials

Provide MSE wall sleeve pipes meeting the requirements of standard spec 521.2 for corrugated steel pipe. Provide a 21-inch pipe sleeve for the MSE Wall Sleeve Type 1. Provide a 42-inch pipe sleeve for the MSE Wall Sleeve Type 13. For the MSE Wall Sleeve Temporary Signal Pole, provide a pipe sleeve size as required by contractor to accommodate temporary traffic signal poles with adequate size to grout or backfill the annular space around the pole. Provide a 30-inch pipe sleeve for the MSE Wall Sleeve Type 10.

C Construction

Set the sleeve within 1 inch of the required position indicated on the plans prior to placing the reinforced earth. Brace the sleeve to maintain position within 2 inches of required position as backfilling proceeds. Place soil reinforcing straps around the sleeve.

D Measurement

The department will measure MSE Wall Sleeve (type) as each individual MSE wall sleeve (type), 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.0060.058	MSE Wall Sleeve Type 1	Each
SPV.0060.059	MSE Wall Sleeve Type 13	Each
SPV.0060.060	MSE Wall Sleeve Temporary Signal Pole	Each
SPV.0060.061	MSE Wall Sleeve Type 10	Each

Payment is full compensation for furnishing and installing the MSE wall sleeve.

110. Loop Detector Splice, Item SPV.0060.100.

A Description

This special provision describes furnishing and installing splice kits on new loop wire in pull boxes as shown on plans and as herein provided, for the purpose of sealing the loop wire for future connection.

B Materials

Furnish Loop Detector Splice that is according to the pertinent requirements of standard spec 655.

C Construction

Make splices as soon as possible after wires as specified in Loop Detector Wire are installed, but after all required testing of the Loop Detector Wire. Follow the manufacturer's recommended installation procedures.

D Measurement

The department will measure Loop Detector Splice as each individual loop detector splice, 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.0060.100	Loop Detector Splice	Each

Payment is full compensation for furnishing and installing loop detector splice, mechanical connection, and splice kit.

111. Pull Box Non-Conductive 24x36-Inch, Item SPV.0060.101; Pull Box Non-Conductive 24x42-Inch, Item SPV.0060.102.

A Description

Perform work according to the applicable provisions of standard spec 653 and as detailed in the plans.

B Materials

Provide pull boxes, frames, and lids made of non-conductive material suitable for Tier 15 loading, as specified in ANSI/SCTE 77.

Provide pull boxes, frames, and lids made of non-conductive materials.

Provide each cover with the logo "WISDOT COMMUNICATIONS" for communications pull boxes and "ELECTRIC" for traffic signal and lighting pull boxes, imprinted on it from the manufacturer.

Provide one (1) 24-inch length of #6 reinforcing steel.

C Construction
Install pull boxes at the locations shown on the plans. Extend pull boxes, as necessary, using the same material as the pull box and as shown in the construction details. Saw extensions parallel to the extension ring. Excavate, place coarse aggregate drain material, and backfill.

Drive reinforcing steel, vertically, on the north side of the pull box.

D Measurement
The department will measure Pull Box Non-Conductive (Size) as each individual pull box non-conductive, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.101	Pull Box Non-Conductive 24x36-Inch	Each
SPV.0060.102	Pull Box Non-Conductive 24x42-Inch	Each

Payment is full compensation for providing and installing all materials including coarse aggregate; for excavating, backfilling, and disposing of surplus materials; for extending the pull box; and for conduit extensions less than 10 feet long including fittings. The department will pay separately for engineer-directed pull box drain duct under the Conduit Rigid Nonmetallic bid items as specified in standard spec 652.5.

112. Fiber Tracer Marker Post, Item SPV.0060.103.

A Description
This special provision describes providing and installing a fiber tracer marker post as specified in standard spec 671, as shown on the plans, and as hereinafter provided.

B Materials
Furnish fiber tracer marker post constructed from high-impact polycarbonate, with stainless steel hardware, five standard terminals, terminal enclosure for cathodic protection, an anchor bar, white and orange in color, fade resistant, ultraviolet stable, a minimum of 62 inches long, 3.5 inch outside diameter, vandalism resistant, and labeled with WARNING FIBER OPTIC CABLE BELOW on the top of the marker molded into the marker and not separately surface applied.

Furnish conduit rigid non-metallic 1-inch for connection into the communications vault.

C Construction
Provide installation at locations shown on the plans and as directed by the engineer. Install so that marker cannot be pulled out or removed manually.

Install conduit rigid non-metallic 1-inch into the communications vault. Connect locate wire to fiber tracer maker post terminal. Follow all manufacturer's recommended installation procedures.

D Measurement
The department will measure Fiber Tracer Marker Post as each individual fiber tracer marker post, 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.0060.103	Fiber Tracer Marker Post	Each

Payment is full compensation for providing and installing all materials, making all connections, restoration of ground to original condition including any topsoil, seed, fertilizer, mulch or sod; and for disposing of any surplus materials.

113. Remove Wireless Antenna, Item SPV.0060.104.

A Description
This special provision describes removing or storing an existing wireless antenna and cable, as specified in standard spec 651, 652, 655, and 670, as shown on the plans, and as provided hereinafter.

B (Vacant)

C Construction
Contact Graham Heitz, Southwest Region Traffic Operations engineer, (608) 246-5362 at least seven working days prior to removing the antenna.

Prior to removing, the engineer shall determine if the antenna is fully functional. If the antenna is not functional, contact the Southwest Region Traffic Operations engineer.

Remove the antenna where shown on the plans. Store the antenna for installation later in the project, or for pick up by the department, as determined by the Southwest Region Traffic Operations engineer. Re-installation of the antenna is paid for separately. Three antenna are anticipated to be picked up by the department.

Storage of the materials prior to reinstallation is the responsibility of the contractor. Store materials at a secure indoor location.

Remove and dispose of existing cable, unless otherwise indicated by the Southwest Region Traffic Operations engineer.

Any materials to be reinstalled which are lost or damaged during removal, transport, or storage shall be repaired or replaced by the contractor at the expense of the contractor, or

will be repaired or replaced by the engineer at the expense of the contractor, as determined by the engineer.

D Measurement
The department will measure Remove Wireless Antenna as each individual removing, salvaging and storing of the antenna, 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.0060.104	Remove Wireless Antenna	Each

Payment is full compensation for coordination with the department, for removing or storing wireless antenna, and removing and disposing of wire.

114. Relocate Wireless ITS Bluetooth Detector, Item SPV.0060.105.

A Description
This special provision describes relocating an existing wireless ITS Bluetooth detectorwith onboard cellular modem, solar panel and solar panel mounting hardware, as specified in standard specs 651, 670, 674, and 675, as shown on the plans, and as provided hereinafter.

B (Vacant)

C Construction
Contact Kyle Hemp Southwest Region ITS engineer, (608) 246-5367 at least seven working days prior to relocating the wireless ITS Bluetooth detector.

Perform a field review of existing wireless ITS Bluetooth detector and notify the department of any damaged or non-operating equipment. Any equipment that is determined to have been damaged while being relocated shall be replaced in kind at contractor's expense.

The wireless ITS Bluetooth detector shall be removed, transported and reinstalled in the same day.

Relocate the wireless ITS Bluetooth detector as indicated on the plans and according to the manufacturer's recommendations. Mount the antenna to maximize signal strength.

D Measurement
The department will measure Relocate Wireless ITS Bluetooth Detector as each individual relocate wireless ITS Bluetooth detector, 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.0060.105	Relocate Wireless ITS Bluetooth Detector	Each

Payment is full compensation for removal, transporting, and installation of the wireless ITS Bluetooth detector and cellular modem, furnishing and installing all necessary hardware, and making all necessary connections.

115. Remove Non-Intrusive Detection, Item SPV.0060.107.

A Description

This special provision describes removing and storing an existing non-intrusive detector and cable, as specified in standard spec 651, 652, 655, and 670, as shown on the plans, and as hereinafter provided.

B (Vacant)

C Construction

Contact Graham Heitz, Southwest Region Traffic Operations engineer, (608) 246-5362 at least seven working days prior to removing the detector.

Prior to removing, the engineer shall determine if the detector is fully functional. If the detector is not functional, contact the Southwest Region Traffic Operations engineer.

Remove the detector and associated wiring where shown on the plans. Store the detector for installation later in the project, or for pick up by the department, as determined by the Southwest Region Traffic Operations engineer. Re-installation of the detector is paid for separately. Five detectors are anticipated to be picked up by the department.

Storage of the materials prior to reinstallation is the responsibility of the contractor. Store materials at a secure indoor location.

Remove and dispose of existing cable, unless otherwise indicated by the Southwest Region Traffic Operations engineer.

Any materials to be reinstalled which are lost or damaged during removal or storage shall be repaired or replaced by the contractor at the expense of the contractor, or will be repaired or replaced by the department at the expense of the contractor, as determined by the engineer.

D Measurement

The department will measure Remove Non-Intrusive Detection as each individual removing and storing the detector, 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.0060.107	Remove Non-Intrusive Detection	Each

Payment is full compensation for coordination with the department, for removing, storing detector, and removing and disposing of wire.

116. Install Wireless Antenna, Item SPV.0060.108.

A Description

This special provision describes installing a department-furnished wireless antenna and supplying and installing new cable, as specified in standard spec 651, 652, 655, and 670, as shown in the plans, and as provided hereinafter.

B Materials

The department will furnish the antenna unless an existing antenna is stored by the contractor. Contact Graham Heitz (Southwest Region Traffic Operations engineer) at (608) 246-5362 at least seven working days prior to installation of the antenna.

Provide mounting hardware and fasteners for mounting to poles as shown on the plans.

Furnish CAT 5 or 6, outdoor rated 24 AWG Ethernet cables between the antenna and cabinets as shown on the plans.

C Construction

Contact the Southwest Region Traffic Operations engineer at least seven working days prior to installing the antenna.

Mount the antenna as indicated in the plans. Install cable and make connections between the antenna and cabinet/devices as shown in the plans, or as directed by the engineer.

D Measurement

The department will measure Install Wireless Antenna as each individual installed wireless antenna and cable, 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.0060.108	Install Wireless Antenna	Each

Payment is full compensation for coordination with the department, for furnishing and installing hardware, fasteners, installing the antenna, furnishing and installing all necessary hardware and cabling and making all necessary connections.

117. Install Non-Intrusive Detection, Item SPV.0060.109.

A Description

This special provision describes installing a department-furnished non-intrusive detector (video or microwave) and supplying and installing new cable, as specified in standard spec 651, 652, 655, and 670, as shown on the plans, and as provided hereinafter.

B Materials

The department will furnish the detector, Ethernet extenders, and all mounting equipment. Contact Graham Heitz, Southwest Region Traffic Operations engineer at (608) 246-5362 at least seven working days prior to installation of the detector.

For fish-eye lens video detectors and short-range microwave detectors, furnish CAT 5 or 6, outdoor rated 24 AWG Ethernet cables between the detector, the Ethernet extenders, and cabinets as shown on the plans.

For long-range microwave detectors, the department will furnish the cable.

C Construction

Mount the detector as indicated on the plans. Install cable and make connections between the detector, Ethernet extenders, and cabinet/devices as shown in the plans, or as directed by the engineer.

The department's assigned project electrician will supply the contractor with the detection equipment on-site and oversee the installation. The department will terminate and integrate the detection system in the traffic signal cabinet.

Install the detectors and necessary cabling to signal supports to provide the needed detection as indicated on the plans and according to the on-site discretion of the department and equipment specifications.

D Measurement

The department will measure Install Non-Intrusive Detection as each individual installed detector and cable, 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.0060.109	Install Non-Intrusive Detection	Each

Payment is full compensation for coordination with the department, for furnishing and installing hardware, fasteners, installing the detector, furnishing and installing all necessary hardware and cabling and making all necessary connections.

118. Relocate Existing City-Owned Lighting Cabinet, Item SPV.0060.150.

A Description
This special provision describes relocating an existing City-owned lighting cabinet as shown on the plans and as hereinafter provided.

B Materials
Provide materials for installing existing lighting cabinet mounting stand, including but not limited to, concrete footings and backfill.

Provide circuit breaker in the existing meter breaker pedestal as shown on the plans to power existing lighting cabinet at its new location.

C Construction
Contact the City of Fitchburg Department of Public Works, (608) 270-4260, at least seven days prior to de-energizing any lighting cabinets on the City of Fitchburg lighting systems.

Remove existing lighting cabinet, mounting stand, mounting stand concrete footings, and all wiring associated with cabinet according to standard specification 204 and as shown on the plans. Disconnect underground conduit system from lighting cabinet and cap conduit, unless otherwise approved by the engineer or the City.

Place equipment on blocks between removal and installation at the new location shown on the plans, so as not to be in direct contact with the ground. Protect cabinet interior from moisture. Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged piece.

Install existing lighting cabinet at new location shown on the plans with new concrete footings for mounting stand. Install circuit breaker in the existing meter breaker pedestal as shown on the plans to power existing lighting cabinet. Install lighting branch circuits from existing lighting cabinet at new location as shown on the plans to repower existing lighting.

D Measurement
The department will measure Relocate Existing City-Owned Lighting Cabinet as each individual relocate existing city-owned lighting cabinet, 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.0060.150	Relocate Existing City-Owned Lighting Cabinet	Each

Payment is full compensation for removing lighting cabinet, cabinet base, and all wiring; for salvaging and disposing of surplus material; for relocating lighting cabinet; for work in

existing meter breaker pedestal; for mounting stand concrete footing; and for coordinating with the City of Fitchburg.

119. Remove Existing City-Owned Lighting Cabinet, Item SPV.0060.151.

A Description
This special provision describes removing or disposing of existing city-owned lighting cabinets and wiring according to the plans and as hereinafter provided.

B (Vacant)

C Construction
Contact the City of Fitchburg Department of Public Works, (608) 270-4260, at least seven days prior to de-energizing any lighting cabinets on the City of Fitchburg lighting systems.

Remove existing lighting cabinet, cabinet base, and all wiring associated with cabinet according to standard specification 204 and as shown on the plans. Disconnect underground conduit system from light cabinet base and cap conduit, unless otherwise approved by the engineer or the city. Coordinate equipment to be recovered by the city with the city. Properly dispose of any equipment the city chooses not to recover.

Place equipment on blocks between removal and recovery by the city so as not to be in direct contact with the ground. Protect cabinet interior from moisture. Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged equipment.

Notify the engineer when the items are available for recovery by the City of Fitchburg.

D Measurement
The department will measure Remove Existing City-Owned Lighting Cabinet as each individual remove existing city-owned lighting cabinet, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.151	Remove Existing City-Owned Lighting Cabinet	Each

Payment is full compensation for removing lighting cabinet, cabinet base, and all wiring; for disposing of surplus material; for stockpiling recoverable equipment and materials; and coordinating with the City of Fitchburg.

120. Remove Existing City-Owned Light Pole Assembly, Item SPV.0060.152.

A Description
This special provision describes removing or disposing of existing city-owned light poles, pedestals, transformer bases, arms, luminaires, and wiring as shown on the plans and as hereinafter provided.

B (Vacant)

C Construction
Contact the City of Fitchburg Department of Public Works, (608) 270-4260, at least seven days prior to removing any lighting equipment on the City of Fitchburg lighting systems.

Remove existing light poles, pedestal/transformer bases, wiring within light poles and between light poles and/or lighting cabinets being removed, arms, and light fixtures according to standard specification 204 and as shown on the plans. Disconnect underground conduit system from light pole base and cap conduit, unless otherwise approved by the engineer or the city. Coordinate equipment to be recovered by the city with the city. Properly dispose of any equipment the city chooses not to recover.

Place equipment on blocks between removal recovery by the city so as not to be in direct contact with the ground. Protect equipment from moisture. Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged piece.

Notify the engineer when items are available for pick up by the City of Fitchburg.

D Measurement
The department will measure Remove Existing City-Owned Light Pole Assembly as each individual remove existing city-owned light pole assembly, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.152	Remove Existing City-Owned Light Pole Assembly	Each

Payment is full compensation for removing light poles, including fixtures, transformers, pedestal bases, wiring and conduit; for disposing of surplus material; for stockpiling recoverable equipment and materials; and coordinating with the City of Fitchburg.

121. Relocate Existing Pull Box, Item SPV.0060.153.

A Description
This special provision describes relocating an existing pull box as shown on the plans and as hereinafter provided.

B Materials
Provide non-conductive pull box extension according to Pull Box Non-Conductive (size) to match existing pull box material as needed.

Provide one 24-inch length of #6 reinforcing steel.

C Construction
Excavate the existing non-conductive pull box and any pull box extensions. Temporarily cap conduits that previously entered existing pull box until they are extended and terminated in the existing pull box at its new location.

Install pull box at new location shown on the plans. Install pull box extension, as necessary, as shown in the construction details. Saw extensions parallel to the extension ring. Excavate, place No. 2 coarse aggregate drain material according to standard spec 501, and backfill.

Drive reinforcing steel, vertically, on the north side of the pull box.

D Measurement
The department will measure Relocate Existing Pull Box as each individual relocate existing pull box, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.153	Relocate Existing Pull Box	Each

Payment is full compensation for excavating pull box; for temporary conduit caps; for providing and installing all materials including coarse aggregate; for excavating, backfilling, and disposing of surplus materials; for providing non-conductive pull box extension; for providing reinforcing steel; and for conduit extensions less than 10 feet long including fittings.

122. Interim Lighting Williamsburg Way, Item SPV.0060.154.

A Description
This special provision describes providing, maintaining, and removing an interim lighting system to power and control the permanent lighting on the C, G, and H Ramps at Williamsburg Way as shown on the plans. Provide the interim lighting according to the applicable provisions of standard spec 655, 656, 659 and as provided herein.

B Materials
Furnish lighting control cabinet, temporary control cabinet base, and all hardware required to install a complete underground electrical system for the duration that interim lighting is required as shown on the plans. Provide a cabinet with a Corbin #2 door lock, 3-point latch

handle, and provisions for padlocking. Lighting control cabinet shall contain at a minimum 20-amp circuit breakers, lighting contactors, quantity and number of poles as required, surge protective device, photocell, and relay logic as required to energize all associated luminaires from dusk to dawn.

Provide the electrical service for the interim lighting control system according to the requirements of the applicable electric utility. Provide an affidavit to the electrical utility in a timely manner so the electric utility can schedule service turn on. If required, install the electrical service.

Submit a certificate of compliance from the contractor or company that wired the cabinet certifying that the cabinet and equipment conform to the contract. Submit copies to the region and to the department electrical engineer. Demonstrate to the engineer that the lighting control cabinet functions as intended and the installation conforms to the contract.

C Construction

Perform work according to the WSEC. Provide and install electric service, lighting control cabinet, and control cabinet base as shown on the plans. Request an inspection of the complete interim lighting system. Make this request to the engineer at least five working days before the requested inspection. Department region electrical personnel will perform the inspection. The engineer will not grant turn on approval until the contractor corrects discrepancies.

Provide a primary and backup contact assigned to and qualified to maintain interim lighting systems. Submit names, addresses, and telephone numbers of contact persons to the engineer and the region. Also post contact information on interim lighting control cabinets and cover with weatherproof material.

Upon acceptance of the connection to the permanent lighting cabinet, switch control of the associated lighting over to the permanent lighting cabinet (L13-0867). Remove control cabinet, temporary control cabinet base, and incidental materials. Upon deactivation of the control cabinet, call the electric utility immediately for the interim electric service disconnect.

Respond within four hours of notification to provide corrective action to any emergency such as, but not limited to, knockdowns and control equipment failures. If equipment becomes damaged or faulty beyond repair, replace it within one working day.

D Measurement

The department will measure Interim Lighting Williamsburg Way, as a single lump sum unit for each system 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.0060.154	Interim Lighting Williamsburg Way	LS

Payment is full compensation for providing, operating, maintaining, and repairing the complete interim installation; and for removal. Payment also includes providing replacement equipment and all utility charges for installation, disconnection, and all energy service charges while the interim system is required.

123. Remove Existing Department-Owned ITS Pole Assembly, Item SPV.0060.155.

A Description
This special provision describes removing and disposing of existing department-owned ITS poles and pedestal/transformer bases as shown on the plans and as hereinafter provided.

B (Vacant)

C Construction
Remove and dispose of existing ITS poles and pedestal/transformer bases according to standard spec 204, and as shown on the plans.

D Measurement
The department will measure Remove Existing Department-Owned ITS Pole Assembly as each individual remove existing department-owned ITS pole assembly, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.155	Remove Existing Department-Owned ITS Pole Assembly	Each

Payment is full compensation for removing ITS poles and pedestal/transformer bases; and for disposing of removed materials.

124. Fire Hydrants, Item SPV.0060.600.

A Description
This work consists of furnishing and installing hydrants according to Section 7 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

B Materials
Furnish materials according to Section 7.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

Field verify heights of proposed hydrants. Order hydrants accordingly so that the bury line, when hydrant is installed, will be within 0.2 feet of ground level.

C Construction
Install hydrants according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition, unless otherwise shown or specified.

Locations of fire hydrants may need to be field adjusted prior to installation to avoid conflicts. Field adjusting fire hydrants is included in the cost of the fire hydrant.

Hydrant leads with less than 6.5 feet of cover shall be insulated per specifications. Installing bends in hydrant lead in order to install hydrant at correct elevation is prohibited.

D Measurement
The department will measure Fire Hydrants as each individual fire hydrants, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.600	Fire Hydrants	Each

Payment is full compensation for providing and installing the fire hydrant, hydrant flag, hydrant extensions, thrust blocking, restraints, stainless steel bolts, support blocks, bedding, cover, clear stone, polywrap, continuity straps, and paint; for making connection; for excavation, dewatering, backfilling with granular backfill, compaction, bracing, shoring, disposal of surplus excavated material, protection and support of existing utilities; field adjustments, chlorination, testing and cleanup.

125. Remove and Reuse Existing Hydrant, Item SPV.0060.601.

A Description
Work under this item includes removing and storing or legal disposal of existing fire hydrant as identified in the plans or as directed by the City of Fitchburg.

B Materials
Provide all materials necessary to complete the work associated with this item according to Section 7.2 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

C Construction
Complete all work associated with this item according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

Remove hydrant only after the connected existing water main section has been abandoned, removed, or isolated.

Reinstall hydrants at locations indicated on plans. Locations of hydrants may need to be field adjusted prior to installation to avoid conflicts. Field adjusting hydrants is included in the cost of Remove and Reuse of Existing Hydrant.

Hydrant leads with less than 6.5 feet of cover shall be insulated per specifications. Installing bends in hydrant leads in order to install hydrant at correct elevation is prohibited.

D Measurement

The department will measure Remove and Reuse Existing Hydrant as each individual Remove and Reuse existing hydrant, 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.0060.601	Remove and Reuse Existing Hydrant	Each

Payment is full compensation for disassembly, removal and storage of the existing fire hydrant; for installing the fire hydrant; for provision and installation of hydrant flag, hydrant extensions, thrust blocking, restraints, stainless steel bolts, support blocks, bedding, cover, clear stone, polywrap, continuity straps, and paint; for excavating, dewatering, backfilling with granular backfill, compacting, bracing, shoring, and restoring the site; for disposing of surplus materials; for protection of existing utilities; and for field adjustments, chlorination, testing and cleanup.

126. Water Valve, 6-Inch, Item SPV.0060.602; 8-Inch, Item SPV.0060.603; 10-Inch, Item SPV.0060.604; 12-Inch, Item SPV.0060.605.

A Description

This work consists of furnishing and installing water valves according to Section 7 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition. Proposed valves associated with live taps, as indicated on the plans, are not included in this item.

B Materials

Furnish materials according to Section 7.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

Provide granular backfill according to Granular Backfill for Water Main.

C Construction

Install water valves according to section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

D Measurement
The department will measure Water Valve, (size) as each water valve (size), acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.602	Water Valve, 6-Inch	Each
SPV.0060.603	Water Valve, 8-Inch	Each
SPV.0060.604	Water Valve, 10-Inch	Each
SPV.0060.605	Water Valve, 12-Inch	Each

Payment is full compensation for providing and installing any water valve, stabilizer, valve box, bedding, cover, restraints, stainless steel bolts, support block, valve nut extension (if needed, extensions will be provided by the city), and continuity straps; for excavation, dewatering, backfilling with granular backfill, compaction, bracing and shoring; for all valve box adjustments; for disposal of surplus excavated material, protection and support of existing utilities and cleanup.

127. Adjust Existing Valve Box, Item SPV.0060.606.

A Description
Adjust Existing Valve Box consists of adjusting and extending all existing water valve boxes within the project limits to a ¼ inch below finished grade.

B (Vacant)

C Construction
Adjust water valve box according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

Excavate and expose the existing water valve box to the depth needed to adjust the valve box to finished grade and depth necessary to replace all broken valve box sections. Extensions for additional depth and/or replacement may be required and are included in this item. Backfill and compact according to the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition. Leave all valve boxes centered over the valve operating nut and free of dirt and debris.

D Measurement
The department will measure Adjust Existing Valve Box as each individual adjust existing valve box, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.606	Adjust Existing Valve Box	Each

Payment is full compensation for provision and installation of replacement valve box sections and covers; for excavating, backfilling with granular backfill, adjusting valve box to ¼ inch below finished grade, compacting and restoring disturbed areas.

128. Remove Existing Valve Box, Item SPV.0060.607.

A Description
Work under this item includes abandoning of water valve boxes no longer in service, as indicated in the plans or as directed by the City of Fitchburg.

B (Vacant)

C Construction
Complete all work associated with this item according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

After the existing water main has been abandoned, complete all work associated with this bid item.

Place the valve in the closed position prior to abandoning the box and completely remove the valve box. Where complete removal of the existing water valve box is not possible, remove the box to a point 2-feet below the subgrade elevation and fill the valve box with slurry.

D Measurement
The department will measure Remove Existing Valve Box as each individual remove existing valve box, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.607	Remove Existing Valve Box	Each

Payment is full compensation for backfilling with granular backfill; for compaction; for closing valve and removing any valve box; for cutting valve box 2-feet below subgrade and filling valve box to remain with slurry in cases where it is not possible to remove valve box to existing valve; and for disposing of surplus materials.

129. Connect to Existing Water Main, Item SPV.0060.608.

A Description
This special provision describes providing a cut-in connection to existing water main as indicated in the plans or as directed by the City of Fitchburg according to Section 7 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

B Materials
Provide all materials necessary for completion of this work according to Section 7.2 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

C Construction
Provide a water-tight cut-in connection at the locations shown on the plans according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

Provide water main flushing according to Section 7.4 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition

D Measurement
The department will measure Connect to Existing Water Main as each individual connect to existing 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.0060.608	Connect to Existing Water Main	Each

Payment is full compensation for making all connections, disposing of surplus materials and for providing a water main flushing.

130. Abandon Existing Water Main, Item SPV.0060.609.

A Description
Work under this item includes abandonment of water main no longer in service, as indicated in the drawings or as directed by the City of Fitchburg according to Section 7 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

B Materials
Provide all materials necessary for completion of this work according to Section 7.2 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

C Construction
Complete all work associated with this item according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

D Measurement
The department will measure Abandon Existing Water Main as each individual abandon existing 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.0060.609	Abandon Existing Water Main	Each

Payment is full compensation for abandonment of existing water main; for provision and installation of ductile iron plugs and caps, bedding, cover, restraints and blocking for water main to be abandoned; for excavation, dewatering, backfilling with granular backfill, compaction, bracing, shoring, disposal of surplus excavated material, protection and support of existing utilities and cleanup.

131. Temporary Water Main Connection, Item SPV.0060.610.

A Description
This special provision describes providing a temporary water connection to the existing water main. A temporary connection is needed to provide temporary water service due to the staging and phasing of the water main construction as part of the overall project. Proposed temporary water connections must be authorized by City of Fitchburg prior to installation in order to be considered for payment. Provide at least two working day notice to City of Fitchburg prior to performing any temporary connections.

B Materials
Furnish all materials needed for the temporary connection according to Section 7.2 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition. Materials may include but are not limited to; fittings, valves, pipe extensions and granular backfill. No previously used temporary water main connection materials may be permanently installed in the water system without written authorization from the City of Fitchburg.

Provide granular backfill according to Granular Backfill for Water Main.

C Construction
Provide a water-tight temporary connection at the locations to be determined and approved by the City of Fitchburg according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition. The temporary water connection work includes any, pipe abandonment, pipe removal, any cut-in connections and/or any cut-off and caps associated with the temporary connection.

After a safe sample on the new water main section has been obtained a connection to the existing water main can occur and all water service laterals can be reconnected. Coordinate all temporary connections with the City of Fitchburg.

D Measurement
The department will measure Temporary Water Main Connection as each individual temporary water main 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.0060.610	Temporary Water Main Connection	Each

Payment is full compensation for provision and installation of temporary connections; for excavation, dewatering, backfilling, compacting, and bracing and shoring; for removal and disposal of temporary water main connections; for disposing of surplus materials, and protection and support of existing utilities and cleanup. Permanent connection to an existing water main will be paid under bid item Connect to Existing Water Main. Granular Backfill for Water Main will be paid separately.

132. Sanitary Sewer Structure, 4-Foot Diameter, Item SPV.0060.611.

A Description
Work under this item includes installing Sanitary Sewer Structures at the depths and locations shown on the plan.

B Materials
Furnish materials according to Section 8.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

C Construction
Install sanitary sewer structures according to section 8.3 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

Maintain the flow of wastewater at all times during installation of the new sanitary sewer structure and when connecting pipes to the new structure. All bypass pumping, temporary piping, and/or temporary connections, which are required to maintain the flow of wastewater throughout construction, are included with this bid item.

Place concrete benches and flowlines as directed by the City of Fitchburg.

Complete testing of new sanitary sewer structure according to Section 8.4 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

D Measurement
The department will measure Sanitary Sewer Structure, 4-Foot Diameter as each individual sanitary sewer structure, 4-foot diameter, 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.0060.611	Sanitary Sewer Structure, 4-Foot Diameter	Each

Payment is full compensation for providing and installation of sanitary sewer structure, water tight sanitary sewer pipe connections, flowlines, concrete benches, castings, adjusting rings, chimney seal, bedding, and cover; for furnishing and installing all temporary bypass pumping and connections; for furnishing all connections to existing pipes; for excavation, dewatering, backfilling with granular backfill, compaction, bracing and shoring; for removal of all utilities to be abandoned within the location of the sanitary sewer structure; for disposal of surplus excavated material, protection and support of existing utilities, testing, televising and cleanup.

133. Remove Existing Sanitary Sewer Structure, Item SPV.0060.612.

A Description
This special provision describes removing sanitary sewer access structures as shown on the plans. The work includes storing and disposing of the resulting materials and backfilling the trenches with granular backfill.

B Materials
Provide granular backfill according to Granular Backfill for Sanitary Sewer. Furnishing and placing granular backfill in the void created by the structure removal is included with this bid item.

C Construction
Remove sanitary sewer access structures according to Section 8.3 the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

Plugging sewer mains and laterals that are connected to existing sanitary sewer structure to be removed is included with the removal of the structure. This is applicable to sewer plugs only. Concrete slurry of an entire sanitary sewer main or lateral under a proposed or existing roadway is paid for separately under Abandon Existing Sanitary Sewer - Slurry.

Store castings for recovery by the City of Fitchburg. Notify the engineer when the castings can be recovered by the city. Dispose of the castings the city deems unrecoverable.

D Measurement
The department will measure Remove Existing Sanitary Sewer Structure as each individual remove existing sanitary sewer 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.0060.612	Remove Existing Sanitary Sewer Structure	Each

Payment is full compensation for removing existing sanitary sewer structure; for excavation and plugging sewer mains and laterals; for excavation, dewatering, backfilling with granular backfill, compaction, bracing and shoring; for storing the casting; for disposal of surplus materials; for protection and support of existing utilities, and for restoring the site.

134. Sanitary Sewer Lateral Electronic Marker, Item SPV.0060.613.

A Description
Work under this item includes installing sanitary sewer lateral electronic marker according to Section 8 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

B Materials
Furnish materials according to Section 8.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

C Construction
Install sanitary sewer lateral electronic marker according to Section 8.3 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

D Measurement
The department will measure Sanitary Sewer Lateral Electronic Marker as each individual sanitary sewer lateral 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.0060.613	Sanitary Sewer Lateral Electronic Marker	Each

Payment is full compensation for provision and installation of sanitary sewer lateral electronic marker; for excavation, backfill with granular material, and compaction.

135. Reconstruct Bench and Flowlines, Item SPV.0060.614.

A Description
Work under this item includes the removal and replacement of the existing sewer structure's bench and flowline(s) as indicated in the drawings, or as required by the City of Fitchburg, to restore the bench and flowline after completion of a connection as described under Connect to Existing Sanitary Sewer Structure.

B Materials
Furnish concrete materials according to Section 8.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition

C Construction
Notify the City of Fitchburg 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 Fitchburg.

Complete all work associated with this item as directed by the City of Fitchburg. Remove existing bench and flowlines, as needed and 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 flowlines, 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.0060.614	Reconstruct Bench and Flowlines	Each

Payment is full compensation for disposing of surplus materials; for removal of existing benches and flowlines; for providing concrete and for finishing the benches and flowlines.

136. Install Existing Sanitary Sewer Structure M-4, 4-Foot Diameter, Item SPV.0060.615.

A Description
Work under this item includes installing Sanitary Sewer Structures at the depths and locations shown on the plan using a city furnished sanitary sewer access structure.

B Materials
Furnish materials according to Section 8.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition. City of Fitchburg will provide sanitary sewer access Structure M-4 which includes concrete base, barrel section and top. Furnish casting, adjusting rings, and chimney seal.

C Construction
Install sanitary sewer structures according to section 8.3 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

Maintain the flow of wastewater at all times during installation of the new sanitary sewer structure and when connecting pipes to the new structure. All bypass pumping, temporary

piping, and/or temporary connections, which are required to maintain the flow of wastewater throughout construction, is included with this bid item.

Place concrete benches and flowlines as directed by the City of Fitchburg.

Complete testing of new sanitary sewer structure according to Section 8.4 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

D Measurement
The department will measure Install Existing Sanitary Sewer Structure M-4, 4-Foot Diameter as each individual sanitary sewer Structure M-4, 4-foot diameter, 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.0060.615	Install Existing Sanitary Sewer Structure M-4, 4-Foot Diameter	Each

Payment is full compensation for installation of sanitary sewer structure, water tight sanitary sewer pipe connections, flowlines, concrete benches, castings, adjusting rings, chimney seal, bedding, and cover; for furnishing and installing all temporary bypass pumping and connections; for furnishing all connections to existing pipes; for excavation, dewatering, backfilling with granular backfill, compaction, bracing and shoring; for removal of all utilities to be abandoned within the location of the sanitary sewer structure; for disposal of surplus excavated material, protection and support of existing utilities, testing, televising and cleanup.

137. Reconstruct Existing Sanitary Sewer Structure M-5, Item SPV.0060.616.

A Description
Work under this item includes the removal of the existing sanitary sewer access Structure M-5 bottom section and replacement with a city provided bottom section, and re-use of existing concrete barrel sections, top section, and casting to align with improvements as indicated in the drawings or as required by the City of Fitchburg.

B Materials
Furnish all materials according to Section 8.2 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition. The City of Fitchburg will provide concrete bottom section of sewer access Structure M-5. The structure will be delivered to the site by the city.

C Construction
Remove and salvage existing adjustment rings, casting, concrete top section, and barrel sections as necessary to remove and install new concrete bottom section to reach the final proposed alignment and grade on the plans or as directed by the City of Fitchburg.

Adjustment ring heights exceeding 9 inches will not be allowed.

D Measurement
The department will measure Reconstruct Existing Sanitary Sewer Structure M-5 as each individual reconstruct existing sanitary sewer Structure M-5, 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.0060.616	Reconstruct Existing Sanitary Sewer Structure M-5	Each

Payment is full compensation removing and replacing the concrete bottom section of sanitary sewer access Structure M-5 and rebuilding the structure as indicated on the plans; for excavation, dewatering, backfilling with granular backfill, compaction, bracing and shoring; for disposal of surplus excavated material and existing concrete bottom section, protection and support of existing utilities, and cleanup.

138. Connect to Existing Sanitary Sewer Structure, Item SPV.0060.617.

A Description
Work under this item includes connecting new sanitary sewer laterals or sanitary sewer pipe to an existing structure and connecting an existing lateral or main to a new structure.

B Materials
Provide Kor-n-Seal flexible connector, or approved equal, in the cored 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 sanitary sewer structure with a Kor-n-Seal flexible connector, or approved equal, according to the City of Fitchburg 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) that matches the existing pipe's diameter to reconnect the existing sanitary sewer pipe or lateral. The PVC (SDR-26) sanitary sewer pipe is included with this bid item.

Placing benches and flowlines in existing sanitary sewer structures is paid separately under bid item Reconstruct Bench and Flowlines.

The pouring and construction of concrete benches and flowlines in new sanitary sewer access structures for the inlet or outlet pipes is not included in this bid item and is included with the bid item Sanitary Sewer Structure.

The downstream pipe connection to a Sanitary Sewer Structure is considered incidental to the Sanitary Sewer Structure.

D Measurement
The department will measure Connect to Existing Sanitary Sewer Structure as each individual connect to existing sanitary sewer 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.0060.617	Connect to Existing Sanitary Sewer Structure	Each

Payment is full compensation for connecting sanitary mains and for providing and installing all water tight connectors; for coring through manhole and bench; and for providing and installing PVC (SDR-26) pipe connections.

139. Baseline CPM Progress Schedule, Item SPV.0060.700; CPM Progress Schedule Updates and Accepted Revisions, Item SPV.0060.701.

Replace standard spec 108.4 with the following:

108.4 Critical Path Method Progress Schedule
108.4.1 Software
Use the latest version of Oracle (Primavera) Project Manager (P6) version 7.0 or newer to prepare the Initial Work Plan Schedule, Baseline CPM Progress Schedule, and all Monthly CPM Updates.

108.4.2 Personnel
Designate a Project Scheduler who will be responsible for scheduling the Work and submit for department approval a professional resume describing a minimum of three years of developing and managing specific CPM scheduling experience on major (interstate) highway reconstruction projects or projects of similar size and complexity. This includes recent experience using Oracle P6 software.

108.4.3 Definitions
The department defines terms used in standard spec 108.4 as follows:

Activity
A task, event or other project element on the schedule, during the course of the project that contributes to completing the project. Activities have a description, scheduled (or actual) start and finish dates, duration and one or more logic ties.

Critical Path
The longest continuous path of activities through the project that has the least amount of total float. In general, a delay on the critical path will extend the scheduled completion date.

Critical Path Method (CPM)
A network based planning technique using activity durations and the relationships between activities to mathematically calculate a schedule for the entire project.

Construction Activity
Construction activities are discrete work activities performed by the contractor, subcontractors, utilities, or third parties within the project limits.

CPM Progress Schedule
A Critical Path Method (CPM) Progress Schedule is a network of logically related activities. The CPM schedule calculates when activities can be performed and establishes the critical or longest continuous path or paths of activities through the project.

Data Date
The earliest work period after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "as-planned."

Department's Preliminary Construction Schedule
The department's schedule for the contract work, developed during design, and provided to the contractor for informational purposes only.

Float
Float, as used herein, is the total float of an activity; i.e., it is the amount of time between the date when an activity can start (the early start), and the date when an activity must start (the late start). In cases where the total float of an activity has a different value when calculated based on the finish dates, the lower (more critical) value will govern.

Forecast Completion Date
The completion date(s) predicted by the latest accepted CPM Update, which may be earlier or later than the contract completion date(s), depending on progress.

Fragnet
A group of logically-related activities, typically inserted into an existing CPM schedule to model a portion of the project, such as the work associated with a change order or delay impact.

Initial Work Plan Schedule
The Initial Work Plan (IWP) Schedule is a time-scaled CPM schedule showing detailed activities for the first 90 calendar days of work and summary level activities for the remainder of the project.

Intermediate Milestone Date
A contractually required date for the completion of a portion of the work, so that a subsequent portion of the work or stage of traffic phasing may proceed.

Master Program Schedule
The department's schedule for the overall I-39/90 Corridor Management Program, including intermediate milestone dates contract completion dates and codes.

Procurement Activity
Procurement activities are activities of duration reflecting contractor preparation and submittal of material submittals, department approval of material submittals, material fabrication durations, and material delivery durations.

Work Breakdown Structure (WBS)
A framework for organizing the activities that makes up a project by breaking the project into successively greater detail by level. A WBS organizes the project work. It does not address the sequencing and scheduling of project activities.

108.4.4 Department's Preliminary Construction Schedule
The department's Preliminary Construction Schedule was developed during the design phase of the contract. Its purpose was to illustrate work areas per Stage/Phase of construction. Durations and resource availability are department estimates only. Contractor is solely responsible for its use of means and methods and as such is fully responsible for determining durations based on own estimate of production and available resources. The suggested use of the department's Preliminary Construction Schedule is ease of identification of work availability during each Stage/Phase and the logical relationship between the Stages/Phases. The Preliminary Construction Schedule reflects one possible approach to completing the work, consistent with the traffic phasing requirements and the interim/final completion date(s) contained in the contract. The logic contained in the Preliminary Construction Schedule is not intended to alter or supplement contract requirements for the phasing of the work, but to reflect those requirements. Any reliance on the department's Preliminary Construction Schedule is at the sole risk of the contractor.

108.4.5 Contractor's Scheduling Responsibilities
The CPM Schedule shall be a tool capable of forward planning and monitoring the Project. The schedule will further be used as a communication tool between the contractor and the department. It will be used to illustrate the plan, develop what-if scenarios, and analyze impacts. The accuracy and completeness of the CPM Schedule will benefit both the contractor and the department. The CPM schedule is the contractor's committed plan to complete all work within the completion deadlines.

The contractor shall submit to the department initial and monthly update schedules, each consistent in all respects with the time and order of work requirements of the contract. The project work shall be executed in the sequence indicated on the current accepted schedule. Schedules shall show the order in which the contractor proposes to carry out the work with logical links between activities, and calculations made using the critical path method to determine the controlling operation or operations. The contractor is responsible for assuring that each schedule shows a coordinated plan for complete performance of the work. Schedule the Work in the manner required to achieve the completion date and intermediate milestone dates specified in the Prosecution and Progress Special Provision.

Contactor project management personnel shall actively participate in the schedule development, the monthly updating of progress, and all schedule revisions throughout the entire duration of the contract. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate schedule.

108.4.6 Submittals

108.4.6.1 Initial Work Plan Schedule

Submit an Initial Work Plan (IWP) Schedule consisting of the following:

1. Provide a detailed plan of activities to be performed during the first 90 calendar days of the contract. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.
2. Provide activities as necessary to depict administrative work, including submittals, reviews, material procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar days (20 business days).
3. Provide activities as necessary to depict third-party work related to the contract.
4. Provide summary activities for the balance of the project beyond the first 90 calendar days of the project. Summary activities may have durations greater than 28 calendar days (20 business days).
5. Submit the IWP Schedule, including the P6 native data file (XER) and an electronic file (PDF). Submit the P6 native data file (XER) and an electronic file (PDF) to the following DOT email boxes; DOTDTSDSWMEGASCHEDULERS@dot.wi.gov and I39project@dot.wi.gov.
6. Following department receipt of the IWP Schedule, allow ten business days for department review and return of comments. Within five business days of receiving the IWP Schedule, the department will schedule a workshop for the contractor to present the IWP Schedule and to answer questions raised during the department's review. Provide formal responses to the comments and resubmit the IWP Schedule as necessary. A notice to proceed will not be issued until the engineer accepts the IWP Schedule. The department will use the IWP Schedule to monitor the progress of the work until the Baseline CPM Progress Schedule is accepted.
7. Submit an updated version of the IWP Schedule on a bi-monthly basis (every other week) until the engineer accepts the Baseline CPM Progress Schedule. With each update, include actual start dates, completion percentages, and remaining durations

for activities started but not completed. Include actual finish dates for completed activities.

108.4.6.2 Baseline CPM Progress Schedule

Within ten business days of receiving an approved IWP Schedule, as required in the contract, submit a Baseline CPM Progress Schedule and written narrative consisting of the following:

1. Develop the Baseline CPM schedule. The Baseline CPM is the contractor's committed plan to complete the Work within the time frames required to achieve the contract completion date and intermediate milestone dates. The department will use the schedule to monitor the progress of the work. Include the following:

   1.1 Provide a detailed plan of activities to be performed during the entire contract duration, including all administrative and construction activities required to complete the work as described in the contract documents. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.

   1.2 Provide activities as necessary to depict administrative work, including submittals, reviews, material procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar days (20 business days).

   1.3 Provide activities as necessary to depict third-party work related to the contract. Third-party work activities may include but is not limited to Railroads, Utilities, Real Estate and local government agencies.

   1.4 Make allowance for specified work restrictions, non-working days, time constraints, calendars, and potential or approved weather delays; reflect involvement and reviews by the department; and coordination efforts with adjacent contractors, utility owners, and other third parties.

   1.5 With the exception of the Project Start Milestone and Project Completion Milestone, all activities must have predecessors and successors. Predecessors and successors shall not be linked to the same activity with different relationship types. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish- to-Finish relationship with succeeding activities. Do not use Start-to-Finish relationships. Do not use Finish-to-Start relationships with a lag or overlap unless the engineer accepts requested exceptions. Include and discuss request for exceptions in the schedule narrative provided with each schedule submittal.

   1.6 Schedule activities shall include the following:

a. A clear and legible description. The use of abbreviations shall be limited. Descriptions shall include an action verb describing the work performed, a basic description of the materials used, and, where applicable, a general location of the work.
b. Codes for Contract ID / WisDOT Project ID, Responsibility, Stage, and Area. The department may provide additional codes for use within department reporting.
c. Activities shall carry a single Responsibility assignment.

1.7 Schedule all intermediate milestones in the proper sequence and input as either a "Start on or After" or "Finish on or Before" date. Do not use other constraint types, within the software, without prior approval by the engineer. Do not apply date constraints on any work tasks without prior approval by the engineer. Provide predecessors and successors for each intermediate milestone as necessary to model each Stage of the Work. Unless the engineer accepts a requested exception, the schedule shall encompass all the time in the contract period between the starting date and the specified completion date.

1.8 Develop and submit an anticipated cash-flow curve for the project within the P6 application, based on the Baseline CPM schedule by assigning cost values to selective work tasks within the CPM schedule that total the value of the contract.

1.9 Provide budgeted quantities consistent with the bid quantities on selective construction tasks within the CPM schedule. The engineer will provide a summarized list of 30 generalized quantity items that will be identified and applied by the contractor using the P6 software application.

2. Provide an electronic PDF of the CPM schedule depicting the CPM network. Organize the logic diagram by grouping related activities, based on the activity codes in the CPM.

3. Provide a written narrative with the Baseline CPM explaining the planned sequence of work, as-planned critical path, critical activities for achieving intermediate milestone dates, traffic phasing, and planned labor and equipment resources. Use the narrative to further explain:

3.1 The basis for activity durations in terms of production rates for each major type of work (number of shifts per day and number of hours per shift), and equipment usage and limitations.

3.2 Use of constraints.

3.3 Use of calendars.

3.4 Estimated number of adverse weather days on a monthly-basis.

3.5 Scheduling of permit and environmental constraints, and coordination of the schedule with other contractors, utilities, and public entities.

4. Submit the Baseline CPM schedule including the P6 native data file (XER) and an electronic file (PDF). Submit the P6 native data file (XER) and an electronic file (PDF) to the following dot email boxes; DOTDTSDSWMEGASCHEDULERS@dot.wi.gov and I39project@dot.wi.gov.

Within ten business days of receiving the Baseline CPM schedule, the department will schedule a workshop, review the submittal, and return review comments.

Within five business days after the Baseline CPM scheduling workshop, the department will either accept the contractor's Baseline CPM schedule or provide additional comments. Within five business days, address the department's comments and resubmit a revised Baseline CPM, including formal responses to the department's review comments. If the engineer requests justifications for activity durations provide information that may include

estimated labor, equipment, unit quantities, and production rates used to determine the activity duration.

The engineer will accept the Baseline CPM based solely on whether the schedule is complete as specified in this section and meets the requirements of the contract. The engineer's acceptance of the schedule does not modify the contract and does not relieve the contractor from meeting the contract requirements.

The department will not consider requests for contract time extensions as specified in 108.10 or additional compensation for delay specified in standard spec 109.4.7 until the department accepts the Baseline CPM schedule.

108.4.6.3 Monthly CPM Schedule Updates

Submit CPM Schedule updates on a monthly basis after acceptance of the Baseline CPM Schedule. With each CPM Schedule update, include the following:

1. Actual start dates, completion percentages, and remaining durations for activities started but not completed, and actual finish dates for completed activities, through the final acceptance of the project.
2. Additional activities as necessary to depict additions to the contract by changes and logic revisions as necessary to reflect changes in the contractor's plan for prosecuting the work.
3. Include a narrative report that includes a brief description of monthly progress, changes to the critical path from the previous update, sources of potential delay, work planned for the next 30 calendar days, and all changes to the CPM Schedule. Changes to the CPM Schedule include the addition or deletion of activities, changes to activity descriptions, original durations, relationships, overlap (lag/lead), constraints, calendars, or previously recorded actual dates. Justify changes to the CPM Schedule in the narrative by describing associated changes in the planned methods or manner of performing the work or changes in the work itself.
4. Submit each CPM Schedule update; including the P6 native data file (XER) and an electronic file (PDF) on three separate CD-ROM's. Submit the P6 native data file (XER), the electronic file (PDF), responses to the DOT review comments, and the progress schedule update narrative to the following dot email boxes; DOTDTSDSWMEGASCHEDULERS@dot.wi.gov and I39project@dot.wi.gov.
5. Within ten business days of receiving each CPM Schedule update, the engineer will provide formal review comments and schedule a meeting, if necessary, to address comments raised in the department's review. Address the department's comments and resubmit a revised CPM Schedule update within five business days after the department's request.

108.4.6.4 Three-Week Look-Ahead Schedules

Submit Three-Week Look-Ahead Schedules on a weekly basis after NTP. The schedule shall be prepared by computer. Provide three hard copies (11" x 17") to the engineer. With each Three-Week Look-Ahead include:

1. Activities underway and as-built dates for the past week.

2. Actual as-built dates for completed activities through final acceptance of the project.
3. Planned work for the upcoming three-week period.
4. The activities of the Three-Week Look-Ahead schedule shall include the activities underway and critical RFIs and submittals, based on the CPM schedule. The Three-Week Look-Ahead may also include details on other activities not individually represented in the CPM schedule.
5. On a weekly basis, the department and the contractor shall agree on the as-built dates depicted in the Three-Week Look-Ahead schedule or document any disagreements. Use the as-built dates from the Three-Week Look- Ahead schedules for the month when updating the CPM schedule.

108.4.6.5 Weekly Production Data

Provide estimated and actual weekly production curves for items of work on a weekly basis for applicable items of work as requested by the department including but not limited to the following:

1. Provide data on the following items by the units specified:

1.1 Underground Facilities – LF per week

1.2 Retaining Walls – SF per week

- MSE Walls
- Other Wall Types

1.3 Bridge Construction

- Foundation Pile – EACH per week
- Foundation/Substructure Concrete – CY per week
- Structural Steel Girders – EACH per week
- Prestressed Concrete Girders – EACH per week
- Deck Formwork – SF per week

1.4 Roadway Excavation – CY per week

1.5 Roadway Embankment – CY per week

1.6 Roadway Structural Section

- Grading/Subgrade Preparation – SY per week
- Base Material Placement – TON per week
- Base Material Subgrade Preparation – SY per week
- Asphaltic Base – TON per week
- Asphaltic and HMA Pavements – TON per week
- Concrete Pavement – SY per week
- Concrete Pavement – CY per week

1.7 Finishing Items – SY per week

Note: Base material shall include all breaker run, base aggregate, subbase items or other base items included in the contract. Provide production information for each individual base material item.

2. For each item, indicate the actual daily production for the past week and the anticipated weekly production for the next week. Also include cumulative production curves showing the production information for each item to date.

3. Submit the data in an electronic spreadsheet format at the same time the Three-Week Look-Ahead is submitted. On a weekly basis, the department and the contractor shall agree on the production data or document any disagreements.

108.4.7 Progress Review Meetings

After completing the weekly submittal of the Three-Week Look-Ahead Schedules and production data, attend a weekly progress review meeting to review the submittals with the department. At the meeting, address comments as necessary, and document agreement or disagreement with the department.

After submitting the monthly update and receiving the engineer's comments, attend a job-site meeting, as scheduled by the engineer, to review the progress of the schedule. At that meeting, address comments as necessary, and document agreement or disagreement with the department. The monthly meeting will be coordinated to take place on the same day and immediately before or after a weekly meeting, whenever possible.

108.4.8 CPM Progress Schedule Revisions

A CPM Progress Schedule Revision may be submitted, prior to the next CPM Monthly Update, if necessary due to changes in the Work or project conditions as authorized by the engineer. Prepare the CPM Revision in the same format as required for CPM Monthly Updates, including justification for changes to the schedule. The process for comment and acceptance of a CPM Revision will be the same as for CPM Monthly Updates. If the CPM Revision is accepted, prepare the next monthly update based on the revised CPM. If the CPM Revision is rejected, prepare the next monthly update based on the previous month's update.

The engineer will monitor the progress of the work and may request revisions to the CPM schedule. Revise the schedule as requested by the engineer, and submit a CPM Progress Schedule Revision within ten business days of the request. The process for comment and acceptance of a CPM Revision will be the same as for CPM Monthly Updates. The engineer may request that the contractor revise the CPM schedule for one or more of the following reasons:

1. The forecast completion date is scheduled to occur more than 14 calendar days after the contract completion date.

2. An intermediate milestone is scheduled to occur more than 14 calendar days after the date required by the contract.

3. The engineer determines that the progress of the work differs significantly from the current schedule.

4. A contract change order requires the addition, deletion, or revision of activities that causes a change in the contractor's work sequence or the method and manner of performing the work.

108.4.9 Documentation Required for Time Extension Requests

The information below is to be applied in compliance with Standard Specifications 108.9 and 108.10 and does not replace the above mentioned specifications. To request a time extension to an intermediate milestone date or the contract completion date associated with changes to the work, provide a narrative document separate from the monthly schedule update narrative document that specifically details the work added or deleted and the other activities affected and or impacted based on the latest accepted CPM Monthly Update. For added work including impact delay activities, submit a proposed fragnet of activities to be added or revised in the CPM schedule, indicating how the fragnet is to be tied to the CPM schedule.

To request a time extension to an intermediate milestone date or the contract completion date associated with delays to the work, provide a narrative detailing the affected activities and the cause of the delay, based on the latest accepted CPM Monthly Update. Requests for time extensions due to delays shall meet the following criteria:

1. For requests to extend the contract completion date, include a detailed description of how the delay, or additional work, affected the project's critical path, based on the latest accepted CPM Monthly Update.

2. For requests to extend an intermediate milestone date, include a description of how the delay, or additional work, affected the controlling (longest) path to the milestone, based on the latest accepted CPM Monthly Update.

3. The department and the contractor agree that the float is not for the exclusive use or financial benefit of either party. Either party has the full use of the float on a first come basis until it is depleted.

108.4.10 Measurement for CPM Progress Schedule

The department will measure Baseline CPM Progress Schedule for each required submittal acceptably completed.

The department will measure CPM Progress Schedule Updates and Accepted Revisions for each required submittal acceptably completed.

108.4.11 Payment for CPM Progress Schedule

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.700	Baseline CPM Progress Schedule	Each
SPV.0060.701	CPM Progress Schedule Updates and Accepted Revisions	Each

Payment is full compensation for furnishing all work required under these bid items. The department will pay the contract unit price for the Baseline CPM Progress Schedule after the department accepts the schedule. Thereafter, the department will pay the contract unit price for each monthly CPM Progress Schedule update acceptably completed. The department will pay the contract unit price for CPM Revisions, if the department accepts the revision. The department will not pay for proposed revisions that are not accepted.

Failure to provide satisfactory schedule submittals within the times specified will result in liquidated damages being assessed and may result in the department managing to the contractor's latest accepted schedule until such time as the contractor submits an updated or revised schedule.

If the contractor does not provide satisfactory progress schedule submittals, updates and revisions, within the time specified by these specifications, the department will assess liquidated damages. The department will deduct the amount of $500 per calendar day due to the contractor for every calendar day that the submission of the Initial Work Plan Schedule, Baseline CPM Progress Schedule, Revised CPM Progress Schedule, and the Monthly Progress Schedule is delinquent.

If the Initial Work Plan Schedule, Baseline CPM Progress Schedule, Revised CPM Progress Schedule, and the Monthly Progress Schedule update submittals are not received by the department within 10 business days after the submittal time specified, the department will only make progress payments for the value of materials, as specified in standard spec 109.6.3.2.1, until the schedule is submitted.
(1/5/2017)

140. Street Sweeping, Item SPV.0075.001.

A Description

This special provision describes removing dirt and dust particles from the roadway using a street sweeper periodically during the project as directed by the engineer.

B Materials

Provide a mechanical, vacuum-assisted or regenerative street sweeper capable of collecting debris within an enclosed collection bin or hopper and disposing of the debris.

C Construction

Remove debris from the roadway using the street sweeper periodically during the project as directed by the engineer.

Provide logged hours of street sweeping to the engineer for approval on a weekly basis.

D Measurement
The department will measure Street Sweeping by the hour that the street sweeper is on the project picking up and removing debris from the roadway, 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.0075.001	Street Sweeping	HRS

Payment is full compensation for furnishing necessary equipment and logged hours.

141. Concrete Curb & Gutter 32-Inch Special, Item SPV.0090.001; 56-Inch Special, Item SPV.0090.002; 4-Inch Sloped 5-Foot Type A, Item SPV.0090.003; 24-Inch Type A, Item SPV.0090.004.

A Description
Perform work according to the applicable provisions of standard spec 601, as detailed in the plans, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Concrete Curb & Gutter (type) in length by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.001	Concrete Curb & Gutter 32-Inch Special	LF
SPV.0090.002	Concrete Curb & Gutter 56-Inch Special	LF
SPV.0090.003	Concrete Curb & Gutter 4-Inch Sloped 5-Foot Type A	LF
SPV.0090.004	Concrete Curb & Gutter 24-Inch Type A	LF

Payment is full compensation for furnishing all foundation excavation and preparation; all special construction required at driveway and alley entrances, or curb ramps; for providing all materials, including concrete, expansion joints, and reinforcement tie bars unless specified otherwise; for placing, finishing, protecting, and curing; for sawing joints; and for disposing of surplus excavation material, and restoring the work site. However, if the

contract provides a bid item for excavation, then the department will pay for excavation required for this work as specified in the contract.

142. Fence Chain Link 4-FT Polymer-Coated, Item SPV.0090.005; 6-FT Polymer-Coated, Item SPV.0090.006.

A Description

This special provision describes providing black polymer-coated chain link fence four feet or six feet in height. Perform work according to the applicable provisions of standard spec 616, as detailed in the plans, and hereinafter provided.

B Materials

Furnish general materials according to standard spec 616.2.1. Furnish chain link fence according to standard spec 616.2.3 and that is polymer-coated.

Furnish a polymer-coating that is dense and impervious and is black in color conforming to the color requirements of ASTM F934. Provide a polymer-coating that is applied without voids, tears or cuts. Roughness, bubbles, blisters, or flaking in the polymer-coating will not be accepted.

B.1 Fabric

Provide a polymer-coating fused and adhered to the zinc coated fabric, including tension wire and fabric fasteners, conforming to the requirements of ASTM F668, Class 2b and meeting the following testing requirements:

Thickness of Polymer-Coating:	ASTM F668
Adhesion:	ASTM F668
Accelerated Aging Test:	ASTM F668, D1499
Mandrel Bend Test:	ASTM F668

B.2 Framework

Provide polymer-coating over the zinc-coated framework, including all posts and bracing, conforming to the requirements of ASTM F1043 and meeting the following testing requirements:

Thickness of Polymer-Coating:	ASTM E376
Adhesion:	ASTM F1043
Accelerated Aging Test:	ASTM F1043, D1499

B.3 Fittings

Provide polymer-coating over the zinc-coated fittings, including all post caps, clamps, adapters and other fittings, conforming to the requirements of ASTM F626 and meeting the following testing requirements:

Thickness of Polymer-Coating:	ASTM F626
Adhesion:	ASTM F1043
Accelerated Aging Test:	ASTM F1043, D1499

Provide end post caps and line post caps that fit tightly over posts to prevent moisture intrusion.

B.4 Submittals
Submit certification of compliance with material specifications. Provide material certification and test documentation for fabric, framework, fittings and hardware that shows that all materials meet or exceed the specifications and the tests indicated. Provide the name, address and phone number of the manufacturer, and the name of a contact person

C Construction
Install the chain link fence according to the applicable provisions of standard spec 616.3 and as recommended by the manufacturer.

Inspect the polymer-coated fence upon delivery to the project site and repair or replace damaged components at no additional cost to the department. Store chain link fence materials off the ground to prevent damage.

Repair minor damage to the polymer-coated areas as recommended by the manufacturer. Provide the engineer with a copy of the manufacturer's recommended repair procedure and materials needed, prior to repairing minor damage to the polymer-coated areas. The engineer will review the repairs, and if not acceptable to the engineer, replace damaged components at no additional cost to the department.

D Measurement
The department will measure Fence Chain Link (size) Polymer-Coated in length by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.005	Fence Chain Link 4-FT Polymer-Coated	LF
SPV.0090.006	Fence Chain Link 6-FT Polymer-Coated	LF

Payment is full compensation for furnishing, inspecting, storing and installing polymer-coated chain link fence; for repairing and providing the engineer with the procedure and materials needed; for replacing damaged components; for providing concrete; and for disposing of surplus or damaged materials.

143. Salvage Concrete Barrier Precast, Item SPV.0090.007.

A Description
This provision describes salvaging existing on-site department-owned concrete precast barrier on the project.

B (Vacant)

C Construction
Remove and stockpile the existing on-site department-owned concrete precast barrier on the project to a location within 5 miles of the project site, at a location as directed by the engineer.

D Measurement
The department will measure Salvage Concrete Barrier Precast in length by linear foot, acceptably complete.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.007	Salvage Concrete Barrier Precast	LF

Payment is full compensation for removing, hauling, and stockpiling.

144. MGS Guardrail Relap, Item SPV.0090.008.

A Description
This provision describes removing previously placed MGS Guardrail 3 rail and relapping the rail at locations shown in the plans, according to standard spec 614.3.2.2.

B (Vacant)

C Construction
Remove MGS Guardrail 3 rail from guardrail posts previously installed. Reinstall MGS Guardrail 3 rail according to standard spec 614.3.2.2, and the revised traffic direction.

Replace any guardrail posts or offset blocks damaged during the removal or reinstallation process at no cost to the department.

D Measurement
The department will measure MGS Guardrail Relap in length by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.008	MGS Guardrail Relap	LF

Payment is full compensation for removing and reinstalling rail; and for replacing damaged guardrail posts or offset blocks.

145. Sawing Pavement Deck Preparation Areas, Item SPV.0090.009.

A Description
This special provision describes sawing the boundaries of the existing concrete on the bridge deck that has been sounded and marked for deck preparation by the engineer. These boundaries will be at least 2-inches and not greater than 6-inches outside of the marked unsound or disintegrated areas of concrete.

B (Vacant)

C Construction
Make saw cuts, a minimum of 1-inch in depth, at the locations marked.

Use a diamond blade for sawing that will allow the concrete to be sawed dry. Upon completion of the sawing, remove the dust deposits from the deck.

D Measurement
The department will measure Sawing Pavement Deck Preparation Areas in length by the linear foot, acceptably completed.

Cuts made beyond the limits marked in the field will not be measured for payment.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.009	Sawing Pavement Deck Preparation Areas	LF

Payment is full compensation for making all marked saw cuts.

146. Salvage Modular Block Retaining Wall, Item SPV.0090.010.

A Description
This special provision describes removing and salvaging existing modular block retaining walls and reinstalling the retaining walls at the same location, or as the engineer directs, to the limits shown on the plans.

B Materials
Salvage and reuse the existing materials. Provide geotextile fabric type R according to the standard spec 645.

C Construction
Remove and salvage existing retaining wall materials. Remove any existing geotextile fabric that may exist behind the retaining wall and dispose of it.

Stockpile and store retaining wall blocks until they are ready to be reinstalled.

Replace any removed geotextile fabric that was removed according to standard spec 645.3. Reinstall retaining wall at the existing location without damage to the retaining wall blocks. Replace any damaged retaining wall blocks at no expense to the department.

D Measurement
The department will measure Salvage Modular Block Retaining Wall in length by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.010	Salvage Modular Block Retaining Wall	LF

Payment is full compensation for removing retaining wall from existing location; for stockpiling and storage of salvaged retaining wall blocks; for furnishing and installing geotextile fabric; for reinstalling retaining wall; for replacement of damaged installations and disposing of surplus materials; and for restoring the work site.

147. Concrete Barrier Special Type A, Item SPV.0090.011; Type B, Item SPV.0090.012; Type C, Item SPV.0090.013; Type D, Item SPV.0090.014; Transition S42C-S56C, Item SPV.0090.015.

A Description
Perform work according to the applicable provisions of standard spec 603 and as detailed in the plans.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Concrete Barrier Special (type) in length by the linear foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.011	Concrete Barrier Special Type A	LF
SPV.0090.012	Concrete Barrier Special Type B	LF
SPV.0090.013	Concrete Barrier Special Type C	LF
SPV.0090.014	Concrete Barrier Special Type D	LF
SPV.0090.015	Concrete Barrier Special Transition S42C-S56C	LF

Payment is full compensation for furnishing all foundation excavation and preparation; for providing all materials, including concrete, expansion joints, and reinforcement tie bars unless specified otherwise; for placing, finishing, protecting, and curing; and for disposing of surplus excavation material, and restoring the work site. However, if the contract provides a bid item for excavation, then the department will pay for excavation required for this work as specified in the contract.

148. Concrete Barrier Temporary Precast Delivered - Department Owned, Item SPV.0090.016.

A Description

This special provision describes delivering department owned concrete barrier temporary precast according to standard spec 603.

B (Vacant)

C Construction

Deliver department owned temporary barrier to worksites within the project. Delivering department owned temporary barrier includes pick up, haul, and delivery of department owned temporary barrier, located within five miles of the project, to worksites within the project.

Concrete Barrier Temporary Precast Delivered - Department Owned remains the property of the department upon project completion.

D Measurement

The department will measure Concrete Barrier Temporary Precast Delivered - Department Owned in length by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.016	Concrete Barrier Temporary Precast Delivered - Department Owned	LF

Payment is full compensation for pick up, haul, and delivery of department owned concrete barrier temporary precast.

149. Pipe Underdrain 6-Inch with Geotextile Fabric and Aggregate, Item SPV.0090.050.

A Description

This special provision describes providing and placing pipe underdrain, geotextile fabric, and aggregate as shown on the plans and hereinafter provided.

B Materials

B.1 Pipe Underdrain

Provide Pipe Underdrain 6-Inch according to standard spec 612.2.

B.2 Geotextile Fabric

Provide Geotextile Fabric Type, DF Schedule B according to standard spec 645.2.1 and 645.2.4.

B.3 Aggregate

Provide coarse aggregate size No. 1 conforming to standard spec 501.2.5.4.

C Construction

Construct the Pipe Underdrain 6-Inch with Geotextile Fabric and Aggregate in locations shown on the plans and according to standard specs 612.3.1, 612.3.3, 612.3.5 and 645.3.4.

D Measurement

The department will measure Pipe Underdrain 6-Inch with Geotextile Fabric and Aggregate in length by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.050	Pipe Underdrain 6-Inch with Geotextile Fabric and Aggregate	LF

Payment is full compensation for providing and placing all materials, including pipe underdrain, geotextile fabric, aggregate, backfill, connections, fittings, and caps or plugs; for furnishing all excavating, recompacting, disposing of surplus material, and restoring the work site.

150. Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 53x83-Inch, Item SPV.0090.051.

A Description

Perform 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 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV (size) 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.0090.051	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 53x83-Inch	LF

Payment is full compensation for providing all materials; for all excavating except rock excavation; for forming the foundation; providing and removing sheeting and shoring; for laying pipe and sealing joints, and making connections to new or existing fixtures; for joint ties; for backfilling, for providing granular backfill material, including bedding material; for cleaning out; and absent the pertinent contract bid items, for restoring the work site.

151. Storm Sewer Pipe PVC 6-Inch, Item SPV.0090.052; 10-Inch, Item SPV.0090.053; 18-Inch, Item SPV.0090.054.

A Description

This special provision describes furnishing and installing Poly Vinyl Chloride (PVC) storm sewer pipe.

B Materials

Provide solid-wall PVC storm sewer pipe and fittings meeting the requirements of ASTM D 3034.

Provide pipe and fittings having a standard dimension ratio of 26 or 35.

Assemble solvent cement joints using solvent cement obtained from the pipe manufacturer, which conforms to the requirements of ASTM D2564.

The assembled joint must pass the performance tests as required in ASTM D3212.

Provide ASTM D3034 SDR-26 pipe for storm sewer mains deeper than 12 feet.

C Construction

Install PVC storm sewer pipe according to the applicable provisions of standard spec 520, at the alignment and grades shown on the plans.

Install pipe fittings according to the manufacturer's recommendation.

D Measurement

The department will measure Storm Sewer Pipe PVC (size) 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.0090.052	Storm Sewer Pipe PVC 6-Inch	LF
SPV.0090.053	Storm Sewer Pipe PVC 10-Inch	LF
SPV.0090.054	Storm Sewer Pipe PVC 18-Inch	LF

Payment is full compensation for providing all materials, including fittings; for all excavating except rock excavation; for forming the foundation; providing and removing sheeting and shoring; for laying pipe and sealing joints, and making connections to new or existing fixtures; and for backfilling, for providing granular backfill material, including bedding material.

152. Water Main, 6-Inch, Item SPV.0090.600; 8-Inch, Item SPV.0090.601; 10-Inch, Item SPV.0090.602; 12-Inch, Item SPV.0090.603.

A Description

This special provision describes furnishing and installing water main (size) according to Section 7 of the City of Fitchburg Standard Specification for Public Works Construction – Latest Edition.

B Materials

Furnish materials according to Section 7.2 of the City of Fitchburg Standard Specification for Public Works Construction – Latest Edition.

Provide granular backfill according to Granular Backfill for Water Main.

C Construction

Install water main according to section 7.3 of the City of Fitchburg Standard Specification for Public Works Construction – Latest Edition.

Remove all abandoned or existing material located in the new water main alignment.

D Measurement

The department will measure Water Main (Size) in length as linear foot of water main (size), acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.600	Water Main, 6-Inch	LF
SPV.0090.601	Water Main, 8-Inch	LF
SPV.0090.602	Water Main, 10-Inch	LF
SPV.0090.603	Water Main, 12-Inch	LF

Payment is full compensation for provision and installation of water main , fittings, bends, tees, appurtenances, bedding, cover restraints, thrust blocking, and polywrap; for furnishing all special connections to existing mains; for excavation; dewatering, backfilling, compaction, bracing and shoring; for removal of all utilities abandoned within the new water main alignment; for disposal of surplus excavated material, protection and support of existing utilities, chlorination and testing and cleanup. Granular Backfill for Water Main will be paid separately.

153. Granular Backfill for Water Main, Item SPV.0090.604.

A Description
This special provision describes furnishing and placing granular backfill over the water main and copper water services along the entire length of the pipe.

B Materials
Provide granular backfill according to section 209, grade 2, of the standard spec.

C Construction
Place granular backfill for water main and copper water services according to all applicable provisions of Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

D Measurement
The department will measure Granular Backfill for Water Main in length by the linear foot, acceptably completed. Measurement is along the centerline of the installed water main or copper water service and includes the length through bends, tees, valves, curb stops, and fire hydrants.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.604	Granular Backfill for Water Main	LF

Payment is full compensation for provision of granular backfill material for open cut installations; and for disposal of surplus excavated material.

154. Insulation, Item SPV.0090.605.

A Description
This special provision describes furnishing and installing polystyrene insulation to insulate water main and sanitary sewer according to Section 7 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

B Materials
Provide materials according to Section 7.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

C Construction
Install water main and sanitary sewer insulation according to Section 7.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition

Provide water main and sanitary sewer insulation at locations where there is less than 6.5 feet of cover to finished grade, where shown on the plans, and as directed by the engineer or City of Fitchburg.

D Measurement
The department will measure Insulation in length by the linear foot, acceptably completed. Measurement is along the centerline of the installed water main and sanitary sewer and includes the length through bends and tees.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.605	Insulation	LF

Payment is full compensation for providing and installation of 4-inch thick by 8 foot by 4 foot sheets of polystyrene.

155. Sanitary Sewer Pipe, 8-Inch Item SPV.0090.606; 10-Inch, Item SPV.0090.607; 15-Inch, Item SPV.0090.611.

A Description
This special provision describes furnishing and installing sanitary sewer pipe at the alignment and grades shown on the plan according to Section 8 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

All sections of the sanitary sewer main are required to pass a low pressure air test, mandrel test, and a visual inspection via televising as specified in Section 8 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition. Costs associated with the testing and televising of the gravity sanitary sewer main are included in the contract unit price bid for this item.

B Materials
Furnish materials according to Section 8.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

Provide granular backfill according to Granular Backfill for Sanitary Sewer.

C Construction
Install sanitary sewer pipe and fittings according to section 8.3 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

Maintain the flow of wastewater at all times during installation of the new sanitary sewer pipe and when connecting pipes to the new structure. All bypass pumping, temporary piping, and/or temporary connections, which are required to maintain the flow of wastewater throughout construction, is included in this bid item.

Remove all abandoned or existing material located in the new sanitary sewer alignment.

Complete testing and televising of new sewer pipes according to Section 8.4 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

D Measurement
The department will measure Sanitary Sewer Pipe, (Size) in length by the linear foot, acceptably completed.

Sanitary Sewer Pipe, (Size) will be measured through sanitary sewer structures, between the center of structures. Sanitary Sewer Pipe (Size) not terminating at a sanitary sewer structure will be measured to the end of pipe. Deductions from the measured 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.0090.606	Sanitary Sewer Pipe, 8-Inch	LF
SPV.0090.607	Sanitary Sewer Pipe, 10-Inch	LF
SPV.0090.611	Sanitary Sewer Pipe, 15-Inch	LF

Payment is full compensation for providing and installation of sanitary sewer pipe, fittings, accessories, bedding, and cover; for furnishing and installing all temporary bypass pumping and connections; for furnishing all connections to existing pipes and structures; for excavation, dewatering, backfilling, compaction, bracing and shoring; for removal of all utilities abandoned within the sanitary sewer pipe alignment; for disposal of surplus excavated material, protection and support of existing utilities, jetting sanitary sewer pipe, testing, televising and cleanup. Granular Backfill for Sanitary Sewer will be paid separately.

156. Granular Backfill for Sanitary Sewer, Item SPV.0090.608.

A Description
This special provision describes furnishing and placing granular backfill over the sanitary sewer pipe and sanitary sewer laterals along the entire length of the pipe.

B Materials
Provide granular backfill according to standard spec 209, grade 2.

C Construction

Place granular backfill for sanitary sewer pipe and sanitary sewer laterals according to Section 8.3 of the City of Fitchburg Standard Specifications for Public Works Construction - Latest Edition.

D Measurement
The department will measure Granular Backfill for Sanitary Sewer in length by the linear foot, acceptably completed.

Measurement is along the centerline of the installed sanitary sewer pipe or sanitary sewer lateral and includes the length through wyes and couplings.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.608	Granular Backfill for Sanitary Sewer	LF

Payment is full compensation for provision of granular backfill material for open cut installations; and for disposal of surplus excavated material.

157. Trenchless Steel Casing Pipe, 24-Inch, Item SPV.0090.609.

A Description
This special provision describes installing sanitary sewer main with engineered spacers within steel casing pipe by trenchless technology.

B Materials
Provide granular backfill according to Granular Backfill for Sanitary Sewer.

Provide all materials necessary to install sanitary sewer within steel casing pipes via trenchless technology. Provide steel casing pipe, sized to provide a minimum of 24-inch inside diameter casing for a 10-inch sanitary sewer pipe. Provide steel casing pipe adequately sized to allow for complete installation of the carrier pipe to the elevations and slopes shown in the plans. Oversizing of the casing pipe to allow for installation is at the discretion of the contractor and is included in this item.

Provide steel casing pipes meeting the following standards:

- ASTM specification A139 Grade B or AWWA specification C200
- Outside diameter as specified by the contractor
- Not coated or cathodically protected, no hydrostatic testing required
- 0.3750” minimum thickness for 24-inch diameter casing
- Specified minimum yield strength, SMYS, of at least 35,000 psi
- New and unused pipe
- Straight and round pipe
- Beveled ends for butt welding

Provide two-piece stainless steel pipe spacers meeting the following requirements:

- Stainless Steel Band
    - 8-inches wide stainless steel with 2-inch wide glass reinforced polymer runners
    - 14 Gauge (0.074-inch) thickness
    - 100 percent 304 Stainless Steel
- Polyvinylchloride (PVC) liner
    - Thickness: 0.090-inches
    - Hardness: Durometer "A" 85-90
    - Dielectric Strength: 60,000 V min. (1/8" Surge Test), 58,000 V min. (Step-by-step test)
    - Water Absorption: 1 percent maximum
    - Functional Temperature Range: -40°F to 170°F
- Risers
    - 10 Gauge (0.135") thickness
    - 100% 304 Stainless Steel, MIG welded to the band
- Hardware
    - 8-inch stainless steel band with 6 studs, 12 nuts and washers
    - Threaded Studs: 5/16-inch - 18-inch x 2 1/2-inch 304 stainless steel or plated
    - Hex Nuts: 5/16-inch hex nuts
    - Washers: 5/16-inch SAE 2330

Provide sanitary sewer carrier pipes meeting the requirements of Sanitary Sewer Pipe, 10-Inch.

Provide pre-manufactured synthetic rubber casing/carrier end seals with stainless steel bands.

Provide sand or limestone screenings conforming to Article 502.1 (d) of the City of Madison Standard Specification for Public Works Construction - Latest Edition.

Provide Type B Slurry mix conforming to Article 301.9 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

C Construction

Submit the following documents to the engineer and the City of Fitchburg for approval prior to ordering of materials and the start of construction:

- Certificate of compliance for the steel casing pipe
- Pipe loading calculations for steel casing pipe
- Sieve analysis and material specification for sand or limestone screenings for filling of annular space between carrier pipe and casing pipe
- Material specification for casing spacers and end seals
- Casing spacer design and layout plan
- Boring and receiving pits excavation and soil retention design and plan
- Site security plan

- Design and mix for slurry and installation plan for filling voids between casing pipe and surrounding soil

Excavate the boring and receiving pits according to Article 201.2 of the City of Madison Standard Specifications for Public Works Construction-Latest Edition. All shoring and temporary shoring is included with the installation of trenchless steel casing pipe, 24-inch.

Water jacking for excavation of the soil is not allowed. At a minimum, extend trenchless construction to limits of the casing shown on the plans. Trenchless limits may be extended at the contractors' discretion, and as approved by the City of Fitchburg. Extension for contractor's convenience shall not constitute additional payment under this bid item.

For casing pipe installation, excavate the bore hole to match the outside diameter of the casing pipe. In soft, unstable soil, maintain auger within the casing pipe and do not extend auger past the end of the casing to minimize creation of a void between the casing and surrounding soil. Fill any voids between casing pipe and surrounding soil with slurry.

Connect adjacent lengths of steel casing pipe by continuous, circumferential, field butt welding according to AWWA C206. Provide connections that are straight and true, and watertight in the existing groundwater conditions. Any sections of casing pipe that need to be cut or welded due to staging or traffic control contraints are included with the installation of trenchless steel casing pipe, 24-inch.

Prior to installing the carrier pipe inside of the casing pipe, install spacers per manufacturer's recommendations at maximum eight foot spacing and within two feet of both ends of the casing pipe. Install carrier pipe inside of the casing pipe to line and grade shown in the drawings. Install sand or limestone screenings into the annular space between the carrier pipe and casing pipe up to the spring line of the carrier pipe to provide bedding under the carrier pipe, as directed by City of Fitchburg. Install end seals at each end of the casing pipe per manufactures instructions.

Contractor is solely responsible for any damage created by thrust and lateral earth pressures created by the installation process. Protect existing utilities in or around the boring and receiving pit areas.

D Measurement

The department will measure Trenchless Steel Casing Pipe, 24-Inch in length, by the linear foot, acceptably completed.

Measurement will be made on a straight line from one end of the steel casing pipe to the other, measured at the invert.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.609	Trenchless Steel Casing Pipe, 24-Inch	LF

Payment is full compensation for dewatering and maintaining storm water ditching/piping, excavation, shoring of boring and receiving pits; for provision and installation of the steel casing pipe via trenchless technology, provision and installation of the carrier pipe inside of the casing pipe with casing spacers, and filling of annular space between carrier pipe and casing pipe; for provision and installation of end seals on the finished installation; for all welding; for backfilling, dewatering, excavations, compaction, disposal of excess materials, and restoration of the site; for protection or replacement of existing structures and utilities, and site security. Granular Backfill for Sanitary Sewer will be paid separately.

158. Sanitary Sewer Lateral, 4-Inch, Item SPV.0090.610.

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, providing all required fittings, couplings, and bends, backfilling and compacting the trenches and restoring the work site as provided on the plans. This work also consists of locating, identifying, and abandoning "inactive" laterals.

B Materials

Furnish materials according to Section 8.2 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

Provide granular backfill according to Granular Backfill for Sanitary Sewer.

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 sanitary sewer laterals and fittings according to section 8.3 of the City of Fitchburg Standard Specifications for Public Works Construction – Latest Edition.

The use of 45-degree bends is not permitted except for connecting to a wye at the sanitary sewer main. Bends of 22.5 degrees or less may be used, provided they are separated by at least two feet of straight pipe. Provide new lateral pipe having equal diameter to existing sanitary sewer lateral pipe.

Couple the junction of a new lateral pipe to an existing lateral pipe as required in the field by the City of Fitchburg. Sawcut the existing main to accommodate a clean joint for the installation of the couplings. Place the coupling as directed by the City of Fitchburg.

Remove all abandoned or existing material located in the new sanitary sewer lateral alignment.

D Measurement
The department will measure Sanitary Sewer Lateral, in length by the linear foot, acceptably completed.

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.0090.610	Sanitary Sewer Lateral, 4-Inch	LF

Payment is full compensation for provision and installation of any sanitary sewer lateral, fittings, accessories, bedding, and cover; for furnishing all connections to existing laterals, sanitary sewer pipes, and structures; for determining whether laterals are "active", "inactive", or abandoned, and the exact location and size of "active" lateral reconnections; for excavation, dewatering, backfilling, compaction, bracing and shoring; for removal of all utilities abandoned within the sanitary sewer lateral alignment; for disposal of surplus excavated material, protection and support of existing utilities, testing and cleanup. Granular Backfill for Sanitary Sewer will be paid separately.

159. Open Cut Steel Casing Pipe, 24-Inch, Item SPV.0090.612; 30-Inch, Item SPV.0090.613.

A Description
This special provision describes installing sanitary sewer main with engineered spacers within steel casing pipe by open cutting.

B Materials
Provide granular backfill according to Granular Backfill for Sanitary Sewer.

Provide all materials necessary to install sanitary sewer within steel casing pipes via open cutting. Provide steel casing pipe, sized to provide a minimum of 24-inch inside diameter casing for a 10-inch sanitary sewer pipe or to provide a minimum of 30-inch inside diameter casing for a 15-inch sanitary sewer pipe. Provide steel casing pipe adequately sized to allow for complete installation of the carrier pipe to the elevations and slopes shown in the plans. Oversizing of the casing pipe to allow for installation is at the discretion of the contractor and is included in this item.

Provide steel casing pipes meeting the following standards:

- ASTM specification A139 Grade B or AWWA specification C200
- Outside diameter as specified by the contractor
- Not coated or cathodically protected, no hydrostatic testing required
- Minimum thickness for casing:
  - 0.3750" minimum thickness for 24-inch diameter casing
  - 0.5000" minimum thickness for 30-inch diameter casing

- Specified minimum yield strength, SMYS, of at least 35,000 psi
- New and unused pipe
- Straight and round pipe
- Beveled ends for butt welding

Provide two-piece stainless steel pipe spacers meeting the following requirements:

- Stainless Steel Band
    - 8-inches wide stainless steel with 2-inch wide glass reinforced polymer runners
    - 14 Gauge (0.074-inch) thickness
    - 100 percent 304 Stainless Steel
- Polyvinylchloride (PVC) liner
    - Thickness: 0.090-inches
    - Hardness: Durometer "A" 85-90
    - Dielectric Strength: 60,000 V min. (1/8" Surge Test), 58,000 V min. (Step-by-step test)
    - Water Absorption: 1 percent maximum
    - Functional Temperature Range: -40°F to 170°F
- Risers
    - 10 Gauge (0.135") thickness
    - 100% 304 Stainless Steel, MIG welded to the band
- Hardware
    - 8-inch stainless steel band with 6 studs, 12 nuts and washers
    - Threaded Studs: 5/16-inch - 18-inch x 2 1/2-inch 304 stainless steel or plated
    - Hex Nuts: 5/16-inch hex nuts
    - Washers: 5/16-inch SAE 2330

Provide sanitary sewer carrier pipes meeting the requirements of Sanitary Sewer Pipe, 10-inch or 15-Inch.

Provide pre-manufactured synthetic rubber casing/carrier end seals with stainless steel bands.

Provide sand or limestone screenings conforming to Article 502.1 (d) of the City of Madison Standard Specification for Public Works Construction - Latest Edition.

C Construction

Submit the following documents to the engineer and the City of Fitchburg for approval prior to ordering of materials and the start of construction:

- Certificate of compliance for the steel casing pipe
- Pipe loading calculations for steel casing pipe
- Sieve analysis and material specification for sand or limestone screenings for filling of annular space between carrier pipe and casing pipe
- Material specification for casing spacers and end seals
- Casing spacer design and layout plan
- Site security plan

For casing pipe installation, all shoring and temporary shoring is included with the installation of open cut steel casing pipe, (size).

Connect adjacent lengths of steel casing pipe by continuous, circumferential, field butt welding according to AWWA C206. Provide connections that are straight and true, and watertight in the existing groundwater conditions. Any sections of the casing pipe that need to be cut or welded due to staging or traffic control constraints is included with the installation of open cut steel casing pipe, (size).

Prior to installing the carrier pipe inside of the casing pipe, install spacers per manufacturer's recommendations at maximum eight foot spacing and within two feet of both ends of the casing pipe. Install carrier pipe inside of the casing pipe to line and grade shown in the drawings. Install sand or limestone screenings into the annular space between the carrier pipe and casing pipe up to the spring line of the carrier pipe to provide bedding under the carrier pipe, as directed by City of Fitchburg. Install end seals at each end of the casing pipe per manufactures instructions.

Contractor is solely responsible for any damage created by thrust and lateral earth pressures created by the installation process. Protect existing utilities in or around the boring and receiving pit areas.

D Measurement

The department will measure Open Cut Steel Casing Pipe, (Size) in length, by the linear foot, acceptably completed.

Measurement will be made on a straight line from one end of the steel casing pipe to the other, measured at the invert.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.612	Open Cut Steel Casing Pipe, 24-Inch	LF
SPV.0090.613	Open Cut Steel Casing Pipe, 30-Inch	LF

Payment is full compensation for dewatering, excavation, shoring, temporary shoring; for provision and installation of the steel casing pipe including any welds or cuts to the casing pipe, provision and installation of the carrier pipe inside of the casing pipe with casing spacers as described, and filling of annular space between carrier pipe and casing pipe; for installing end seals on the finished installation; for excavations, for installing grout between the casing pipe and surrounding soil, dewatering, backfilling, compaction, disposal of excess materials, and restoration of the site; for protection or replacement of existing structures and utilities, and site security. Granular Backfill for Sanitary Sewer will be paid separately.

160. Research and Locate Existing Property Monuments, Item SPV.0105.001.

A Description

This special provision describes researching and locating existing property monuments located within permanent easement and temporary easement areas, within the construction limits that may be lost or disturbed by construction operations, as directed by the engineer, and as hereinafter provided.

This provision does not relinquish the contractor of his responsibility under standard spec 107.11.

B (Vacant)

C Construction

Prior to construction, research, locate and document the adjacent property monuments located within permanent easement and temporary easement areas. Tie the located property monuments in with coordinates accurate to 1:3000 and tied to at least two adjacent witness markers that will not be disturbed by any project.

Prepare a property monument location map showing the type of monuments originally found with their coordinates. A legible tax map or right-of-way plat is acceptable as a base map for the property monument location map. Provide a copy of the property monument location map to the engineer.

All work under this item is to be performed by, or under the direction of, a land surveyor registered in the State of Wisconsin.

After construction is completed property monument locations will be verified and reset, if necessary, under the item titled "Verify and Replace Existing Property Monuments".

D Measurement

The department will measure Research and Locate Existing Property Monuments as a single 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.0105.001	Research and Locate Existing Property Monuments	LS

Payment is full compensation for furnishing all research, field survey, locating, and recording of field data necessary to locate and determine coordinates for existing property monuments within the construction limits prior to construction; furnishing a registered land surveyor; and for preparing, annotating and delivering the property monument location map to the engineer.

161. Verify and Replace Existing Property Monuments, Item SPV.0105.002.

A Description

This special provision describes verifying the location of, and replacing existing property monuments, which were previously located under the item "Research and Locate Existing Property Monuments", that are determined to be lost or disturbed, as directed by the engineer, and as hereinafter provided.

This provision does not relinquish the contractor of his responsibility under standard spec 107.11.

B Materials

Provide replacement property monuments that are one-inch inside diameter by 24-inch long iron pipe or ¾-inch diameter iron rod or rebar that are 24 inches long in locations outside of pavement areas, a Berntsen Steel Nail Marker for placement in asphalt pavement, or a Berntsen BP1 Brass Marker with anchoring plug for placement in concrete pavement.

C Construction

After construction is completed, verify the location of all property monuments previously located under the item "Research and Locate Existing Property Monuments". Replace or reset as necessary, any property monuments that are lost or disturbed.

Prepare a property monument location map showing the type of monuments originally found, and the type of replacement monument used to replace or reset the lost or disturbed monuments, with their coordinates. A legible tax map or right-of-way plat is acceptable as a base map for the property monument location map. The property monument location map is to explicitly state that the replaced or reset monuments are not being certified as an actual property monument, only that evidence of a property monument was found and reset. Provide a copy of the property monument location map to the engineer and the county surveyor.

All work under this item is to be performed by, or under the direction of, a land surveyor registered in the State of Wisconsin.

D Measurement

The department will measure Verify and Replace Existing Property Monuments as a single 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.0105.002	Verify and Replace Existing Property Monuments	LS

Payment is full compensation for furnishing all survey work necessary to verify the location of all property monuments previously located under the item "Research and Locate

Existing Property Monuments"; replacing or resetting, as necessary, property monuments that are lost or disturbed from their original location; furnishing property monuments; furnishing a registered land surveyor; and for preparing, annotating and delivering the property monument location map.

162. Construction Staking Supplemental Features, Item SPV.0105.003.

A Description
Preform work according to standard spec 650 and as hereinafter 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. Set additional construction stakes as necessary to establish location and grade, including points of change in alignment and grade according to the plans, details, and for conformance with ADAAG. Staking includes, but is not limited to, curb ramps, driveway curb cuts, stormwater ponds, bioretention basins, stormwater outlet control structures, traffic control paint lines, traffic control temporary concrete barrier, sawcuts, silt fence or other erosion control features, and rip rap limits. Locate stakes to within 0.02 feet horizontally and establish the grade elevation to within 0.01 feet vertically.

D Measurement
The department will measure Construction Staking Supplemental Features as a single complete lump sum unit of work, completed according to the contract 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.0105.003	Construction Staking Supplemental Features	LS

Payment is full compensation for locating and setting all construction stakes and for relocating and resetting damaged or missing construction stakes.

163. Remove Traffic Signals Verona Road & Raymond Road, Item SPV.0105.100; Verona Road & Williamsbug Way, Item SPV.0105.101; Verona Road & CTH PD, Item SPV.0105.102.

A Description
This special provision describes removing existing traffic signals at the intersection of Verona Road and Raymond Road, Verona Road and Williamsburg Way, and Verona Road and CTH PD. Specific removal items are noted in the plans.

B (Vacant)

C Construction
Arrange for the de-energizing of the traffic signals with the department's assigned electrician after receiving approval from the engineer that the existing traffic signals can be removed.

Notify the Southwest Region Traffic engineer at least three working days prior to the removal of the traffic signals. Complete the removal work immediately following shut down of this equipment.

Dispose of all traffic signal equipment including the underground signal cable, internal wires and street lighting cable.

The Southwest Region traffic signal department will remove the cabinet. Notify the department when the cabinet is ready for removal.

D Measurement
The department will measure Remove Traffic Signals, (location) as a 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.0105.100	Remove Traffic Signals Verona Road & Raymond Road	LS
SPV.0105.101	Remove Traffic Signals Verona Road & Williamsburg Way	LS
SPV.0105.102	Remove Traffic Signals Verona Road & CTH PD	LS

Payment is full compensation for coordination with the department; for removing traffic signals, and for disposing of surplus materials.

164. EVP Detector Verona Road & Raymond Road, Item SPV.0105.103.

A Description
This special provision describes installing Emergency Vehicle Preemption (EVP) detection at the location shown on the plans and as provided hereinafter.

B Materials
The department will furnish the EVP detectors, polybracket, and cable. Contact Graham Heitz (Southwest Region Traffic Operations engineer) at (608) 246-5362 at least seven working days prior to installation of the detectors.

Card rack and discriminator equipment will be supplied the department.

C Construction
Mount detectors on the mast arms and signal poles as shown on the plans.

Mount the EVP detector just above the upper traffic signal mast arm bracket, positioning the polybracket above the traffic signal mast arm. Install the cable from the traffic signal control cabinet to the EVP detector. Include a six foot loop of cable in the pull box nearest the mounting pole. Contact Graham Heitz at least seven working days prior to EVP detector testing and allow three days for scheduling of test and final acceptance.

The department will install and terminate the card rack and discriminator equipment in the cabinet.

D Measurement
The department will measure EVP Detector Verona Road & Raymond Road as a single 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.0105.103	EVP Detector Verona Road & Raymond Road	LS

Payment is full compensation for mounting and installing EVP detector, polybracket, and cable, including hardware; and for coordination with the department for delivery and installation of department furnished components.

165. Relocate ITS Camera Pole Assembly, Item SPV.0105.104.

A Description
This special provision describes removing, storing, and reinstalling the existing camera and pole assembly at the intersection of US 18/151 and CTH PD as shown on the plans.

B Materials
Reuse camera and mounting bracket, camera cable, cabinet, and wood pole.

Where possible, salvage and reuse riser conduit and fittings, weather heads, guy wire, span wire, tether wire, messenger wire, mounting hardware, intermediate support posts, and electrical wire. Do not reuse ground rod or grounding cable. For other materials that cannot be salvaged, provide the materials as part of this bid item including all other necessary materials to make the aerial service connection as shown on the plans.

Provide electrical conduit and wiring and circuit breakers in existing meter breaker as necessary with an amperage capacity of 50 Amps as shown on the plans.

Furnish grounding electrodes that are solid rod with a minimum 8-foot length and 5/8-inch diameter made of copper clad type or engineer-approved equal. Furnish a separate 6 AWG stranded bare copper wire to run up the pole to attach equipment for grounding purposes.

C Construction

Contact Kyle Hemp, Southwest Region ITS engineer, (608) 246-5367 within ten working days of removing or reinstallation of the camera pole assembly.

Prior to removing and relocating equipment, the engineer or delegated representative shall determine if equipment is fully functional. If the equipment is not functional, contact the Southwest Region ITS engineer.

Relocate equipment in a manner that minimizes camera feed disruption to less than 48 consecutive hours.

Install aerial service between wood pole and existing meter breaker pedestal at nearby lighting cabinet as shown on the plans.

Install wood poles, intermediate support posts, tether wire, messenger wire, tether wire hardware, messenger wire hardware, guy wire, span wire, guy wire hardware, and span wire hardware, riser conduit, banding, underground conduit, and required connection into existing meter breaker pedestal at existing lighting cabinet. Restore ground to original condition using seed, mulch and fertilizer, as required.

Attach all electrical service wires to the span wire or messenger wire, at 3-foot or less intervals with 4 wraps of a manufacturer recommended adhesive tape or UV resistant, outdoor rated nylon lock fasteners. Install wires in continuous lengths without splices in any cable run.

Install tether wire 15 feet to 17 feet above any bike path and 17 feet to 19 feet above any roadway.

Install one 50 A circuit breaker in existing meter breaker pedestal, as needed.

Drive a grounding electrode vertically into the ground outside the wood pole. Exothermically weld copper wire to the grounding electrode, run to, and terminate at a grounding lug inside equipment on the pole.

Coordinate with Southwest Region ITS engineer a minimum of ten working days prior to connecting into existing meter breaker pedestal service in the adjacent lighting cabinet at the location shown on the plans.

Properly dispose of any unused mounting and wiring material that was removed.

D Measurement

The department will measure Relocate ITS Camera Pole Assembly, as a single 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.0105.104	Remove ITS Camera Pole Assembly	LS

Payment is full compensation for removing, storing, and reinstalling ITS Camera Pole Assembly components; supplying and installing all necessary wiring and mounting equipment, disposing of surplus material; and for coordinating with the department.

166. Interim Traffic Signals for Intersections USH 18/151 and Williamsburg Way, Item SPV.0105.200; Interim Traffic Signals for Intersections USH 18/151 and CTH PD, Item SPV.0105.201.

A Description

This special provision describes furnishing, installing, and maintaining a long term duration interim traffic signal installation at the location as shown on the plans. Perform all work according to section 661 of the standard spec and as hereinafter provided.

B Materials

Provide all materials according to the plans and standard spec 661.2 and as hereinafter provided.

B.1 Interim Traffic Signal Requirements

Furnish and maintain all traffic signal equipment through all stages of construction. Depending on the stage, the contractor or department will furnish, install, and operate the controller/cabinet and detection as follows:

<u>USH 18/151 and CTH PD</u>

- Furnish, install, and operate the traffic signal controller/cabinet and non-intrusive detection for stages 3 through 6.
- The department will furnish, install, and operate the traffic signal controller/cabinet and furnish and operate the non-intrusive detection beginning with stage 7 through the remainder of the contract.

<u>USH 18/151 and Williamsburg Way</u>

- Furnish, install, and operate the traffic signal controller/cabinet and non-intrusive detection for stages 3 through 6.
- The department will furnish, install, and operate the traffic signal controller and furnish and operate the non-intrusive detection in stage 7.
- Furnish, install, and operate the traffic signal controller/cabinet and non-instrusive detection at the east and west intersections during stage 8.
- The department will furnish, install, and operate the traffic signal controller/cabinet and furnish and operate the non-intrusive detection after stage 8 through the remainder of the contract.

Coordinate directly with the department's assigned project electrician for all activities associated with this bid item which require modifications to department furnished traffic signal control cabinets. The department will provide contact information for the designated project electrician at the preconstruction meeting. Contact the department at least 30 working days prior to the scheduled installation of all department operated interim traffic signals, and ten working days prior to all subsequent changes in operation. Contact Chris Fredrick at 608-884-7130 in advance of the preconstruction meeting with any questions regarding this bid item.

For the final stage of the interim traffic signals at each intersection, furnish equipment and materials suitable for a multi-year interim traffic signal installation capable of operations over winter. Furnish new permanent traffic signal heads as part of this bid item when shown on permanent signal poles and arms at both the east and west Williamsburg Way intersections. Permanent signal poles and arms are paid for under separate bid items as shown on the plans.

All contractor furnished materials that are installed for the final stage of the interim traffic signals at each intersection shall become the property of the department upon completion of the contract.

B.2 Non-Intrusive Detection

For stages 3 through 6 (both intersecitons), and stage 8 (east and west Williamsburg Way intersections), furnish all materials and equipment required to operate and maintain a fully functioning interim traffic signal vehicle detection system. The following methods of interim traffic signal vehicle detection are allowed:

- Existing inductive loops
- Video detection
- Microwave detection
- Combination of options listed above

Furnish materials and equipment capable of providing the detection zones and functionality as shown on the plans. All methods shall provide for true presence detection. Detection equipment placement may require multiple installations and adjustments, which shall be considered included in this bid item.

B.3 Microwave Detection, Video Detection and Radio Communications

For stage 7 and final stage operations, the department will furnish microwave sensors, detector cards, video cameras, radio communications equipment and mounting hardware. All required cabling, remaining hardware, fasteners and wiring connections necessary to install and integrate these items shall be furnished under separate bid items in this contract. Contractor furnished materials become the property of the department upon completion of this contract.

B.4 Emergency Vehicle Preemption

Furnish emergency vehicle preemption equipment including mounting hardware, wiring, cabinet equipment, and incidentals necessary to provide traffic signal preemption as shown

on the interim traffic signal plans. Re-use the existing emergency vehicle preemption detectors for installation with the interim traffic signals at the CTH PD and Williamsburg Way intersections. Furnish equipment for pole mounting, or span wire mounting as required to allow for line-of-sight placement with emergency vehicle emitters during all stages of construction.

B.5 Interim Signal Cabinet Base

For stage 7 and final stage operations, furnish interim signal cabinet base platforms, stringers and post material from green-treated lumber rated for direct contact with the ground, as shown on the plans. Furnish galvanized fasteners.

B.6 Street Lighting

Furnish street lighting equipment including arms, LED C luminaires, mounting hardware, wiring, controls, and incidentals necessary to provide lighting as shown on the interim traffic signal plans. Lighting cables shall be rated to maintain acceptable voltage drop and span tension.

B.7 General Materials

Furnish all materials required to install and maintain the interim traffic signals during all stages as shown on the plans. General materials include, but are not limited to:

- Sheeting for obscuring (bagging) existing signals
- R10-3E signs for all signalized pedestrian crossings. Furnish with arrow direction as appropriate.
- Signal head visibility limiting devices (if needed)
- Hardware for span wire mounting of EVP detectors (if needed)
- Materials for integrating interim signal heads, and aerial cabling to permanent signal infrastructure (Williamsburg Way stage 7 through post-stage only)
- Conduit, fittings, pull boxes, and cabling for integrating interim signals with segments of permanent signal conduit and structure conduits

Signal mounting hardware for mounting to permanent signal poles during stage 7 through the final stage of construction at Williamsburg Way is paid for under a separate bid item.

Regulatory signs such as R5-1, R1-1F, R4-7, R3-4 are to be placed with the interim traffic signals throughout all stages of construction at locations determined by the contractor and are paid for separately under the traffic control signs bid item.

C Construction

C.1 General

Construct the interim traffic signals according to the plans and standard spec 661.3 and as hereinafter provided.

Arrange for monthly inspections with the engineer to review the height of the span wire above the roadways to ensure that the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway as provided in the plans. Make all height adjustments within 24-hours of an inspection. Notify the engineer in writing upon

completion of all necessary adjustments. Maintain a written log to properly document the date of each monthly inspection, the heights above the roadway, the roadway clearance after adjustments have been made and acceptance by the engineer.

Inspections can be more frequent than monthly as directed by the engineer.

Ensure that all pedestrian buttons are placed in conformance with ADA requirements.

C.2 Non-Intrusive Detection
For stages 3 through 6 (both intersecitons), and stage 8 (east and west Williamsburg Way intersections), provide equipment specifications and other technical documentation to the engineer for approval 30 calendar days prior to furnishing any detection equipment. Include documentation depicting the operational characteristics of the detection method(s) proposed for each intersection. Provide verification of the detection method's ability to function correctly under the proposed site conditions, including mounting methods and coordination with temporary pavement operations.

Install, adjust, relocate, or remove detection equipment and/or detection zones for each stage of traffic operations shown in the plans, or as modified by changes in field conditions, and as directed by the engineer. This includes adjustments necessary for both contractor-furnished and department-furnished non-intrusive detection.

Damage to new or temporary pavement for temporary inductive loops will not be allowed.

C.3 Microwave Detection, Video Detection and Radio Communications
For stage 7 and final stage operations, the department's assigned project electrician will supply the contractor with detection and communications equipment and oversee the installation, integration, and all subsequent changes in operation. All required work necessary to install and integrate these items shall be completed under separate bid items in this contract. Modifications to traffic signal cabinets, completing wiring terminations, programming and testing will be provided by the department.

C.4 Emergency Vehicle Preemption
Install emergency vehicle preemption equipment as shown on the interim traffic signal plans. Adjust locations of emergency vehicle preemption detectors throughout the stages of construction as needed to allow for line-of-sight placement with emergency vehicle emitters. This item includes removal of the existing emergency vehicle preemption detectors at the CTH PD and Williamsburg Way intersections, and reinstallation as part of the interim traffic signals as shown on the plans.

C.5 Interim Signal Cabinet Base
Construct and install the base according to the plans at a location shown in the plans.

C.6 Street Lighting
Install poles, arms and LED C luminaires as shown on the plans. Re-orient the luminaires throughout the stages of construction as needed to illuminate the active travel lanes and pedestrian crossings.

C.7 Integration with Permanent Signal Conduits
Install conduits, fittings, pull boxes, and cabling according to standard spec, and as shown on the plans for the final stage signal operation. Integrate segments of the permanent signal conduit system for use with interim signal cabling. All connections to permanent signal conduits and pull boxes shall be approved by the engineer.

C.8 Operational Transfer
All contractor furnished materials that are installed for the final stage of the interim traffic signals at each intersection shall become the property of the department upon completion of the contract and approval of the engineer.

D Measurement
The department will measure Interim Traffic Signals For Intersections (Location) as a single lump sum unit for each intersection acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.200	Interim Traffic Signals For Intersections USH 18/151 and Williamsburg Way	LS
SPV.0105.201	Interim Traffic Signals For Intersections USH 18/151 and CTH PD	LS

Payment is full compensation for furnishing, installing, operating, and maintaining the traffic signal equipment; and for providing the equipment from the final stage of the interim traffic signals at each intersection to the department upon completion of the contract.

167. Salt Storage Shed, Item SPV.0105.500.

A Description
The work under this item consists of furnishing and installing a complete salt storage shed structure, including attached lean-to, and all associated items described herein. All items needed to construct the salt storage shed, including attached lean-to, are included in the lump sum bid item, unless otherwise noted herein. Complete this work according to the plans, the special provision as hereinafter provided, and the applicable sections of the standard spec. If there is a conflict in the requirements of this special provision and the standard spec, the stricter standard shall apply.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Salt Storage Shed as a single complete lump sum unit of work, completed according to the contract 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.0105.500	Salt Storage Shed	LS

Payment is full compensation for designing the building (including rooms 101 and 102); for concrete foundation and walls, architectural surface treatment, roof, and all other accessory items specified herein, including but not limited to, miscellaneous metals, pipe bollards, concrete stoops, concrete slab on grade for the lean-to, concrete transformer pad, 10-inch concrete slab (16'x12'), fire barrier, doors, windows, siding, exhaust fans, lighting, electrical and decorative cupolas and other accessories; and construction staking for the structure; for obtaining necessary permits, for performing all required testing, for providing electrical service; and for furnishing manufacturer's warranties.

Site work including clearing, excavation, backfill, asphaltic pavement, and base course (including asphalt pavement inside building 101), site light pole assembly near the driveway, and other site related items will be paid for separately. See also, PART 2 - RELATED WORK.

PART 1 – GENERAL

1.01 Description

Provide design and construction for a permanent pre-engineered building, weather tight, and suitable for the bulk storage of salt with an attached storage lean-to. The building design shall meet or exceed the performance, dimensional criteria, and other requirements of this specification.

1.02 Quality Assurance (See also, PART 4 - TECHNICAL SPECIFICATIONS)

Provide materials designed for use in a corrosive environment for room 101. Contractor is responsible for all products, components, accessories, and methods used in constructing the building.

The minimum printed code standard requirements for material quality, fabrication, and installation procedures shall be met or exceeded, for applicable methods employed in the building design.

1.03 Submittals (See also, PART 4 - TECHNICAL SPECIFICATIONS)

Furnish the following information as proof of conformity to design and performance criteria requirements of this specification. The information (for both submittal phases, below) shall be stamped with the registration seal of an Architect or a professional engineer, licensed in the state of Wisconsin and bearing the original stamp and signature of such Architect or professional engineer.

A. Furnish a complete set of properly certified design drawings, indicating in detail all features of the proposed building.

B. Include the following information at a minimum in the building submittal:
   1. Complete design calculations for building and foundation work.
   2. For prefabricated structures: original working drawings, or copies of complete fabrication and erection drawings, material lists, and detailed erection instructions.
   3. Foundation work: detailed drawings for preparation and construction.

C. Product Data: For each type of building component.

D. Shop Drawings as follows (this list is a minimum listing and does not limit the shop drawings to be provided):
   1. Concrete Foundations
   2. Steel Reinforcement
   3. Metal Plates and Fasteners
   4. Wood Products
   5. Roofing System
   6. Flashings
   7. Doors and Frames
   8. Electrical and Lighting
   9. Ventiliation Equipment
   10. Site Work
   11. Accessories

E. Provide Operation and Maintenance Manuals for all equipment installed in the building including but not limited to: overhead doors and operators, exhaust fans, and electrical systems. Refer to PART 4, Division 1, Section 01300 of this specification for operation and maintenance manual requirements.

1.04 Code Compliance

Design and build the structure in conformance with all applicable codes. Consult the state of Wisconsin website for information on all adopted codes and other ordinances. The governing building code is the Wisconsin Commercial Building Code, which adopted by reference the 2009 International Building Code and companion codes. Complete design plan approval from the Wisconsin Department of Safety and Professional Services (WDSPS) is required prior to commencing construction. Complete the Application for Review (Form SBD-118), submitting properly stamped and signed drawings, calculations and any other required documentation to WDSPS for plan review. Instructions and submittal requirements are provided on the WDSPS website. The final building review submittal will be classified as a "Miscellaneous Structural Review" submittal. Pay all fees associated with the WDSPS plan submittal and resubmittals as required by WDSPS. WDSPS has indicated that all parts of the design will require a scheduled review and approval prior to any construction and the scheduled review process may take approximately 8 weeks from the time the application is submitted. An initial plan review for the salt storage shed has been completed by the WDSPS as Transaction ID No. 2894671. The WDSPS Site ID No. is 834889 for this project. A variance allowing for a single exit door from the structure, room 101, as shown

on the plans has been approved by WDSPS under Transaction ID No. 2894873. Future WDSPS plan submittals should reference these ID numbers. The initial plan review by WDSPS shall not to be considered relevant for the contractor's design. The contractor is responsible for the complete design and all WDSPS approvals and associated fees.

PART 2 – RELATED WORK

This section identifies work that is not included in the Salt Storage Shed bid item and is paid separately as part of other contract bid items.

2.01 Earthwork and Foundation Excavation

Perform excavation for building footings according to the WisDOT standard specifications and recommendations in the geotechnical report available from the department. Note that over-excavation and backfill may be required in some areas of the building footprint. After completing the excavation for footings, the department's Regional Soils engineer will review the site to determine if the subgrade is suitable for the intended loads. Allow the Regional Soils engineer two working days to perform the review.

2.02 Building Floor

Coordinate Hot Mix Asphalt pavement and base installation within room 101 with the building construction.

2.03 Final Grading and Restoration

Perform all work related to final grading and site restoration according to the site plans and applicable specifications.

2.04 Site Light Pole Assembly

A. Provide light pole assembly according to the standard specifications as follows:
   1. Light fixture shall be Luminaires Utility LED C (WisDOT bid item number 659.1125). Light fixture shall be controlled by integral photocell.
   2. Light pole shall be Type 5 Aluminum (WisDOT bid item number 657.0322) with breakaway transformer base (WisDOT bid item number 657.0255) and Type 5 concrete base (WisDOT bid item number 654.0105). Construct concrete base according to WisDOT standard detail drawing 9C2-7.
   3. Light fixture shall be mounted on an 8-foot luminaire arm (WisDOT Bid item number 657.0615).

B. Install light pole assembly according to WisDOT standard detail drawing 9E1-14d.

PART 3 – DESIGN CRITERIA & PRODUCTS

3.01 Building Design and Performance Criteria

A. General

Design the building to provide a gambrel style roof design as provided by Advanced Storage Technology, Inc., Wheeler, Inc., Bulk Storage, Inc. or equivalent that satisfies the requirements herein.

B. Dimensional Requirements for Building
Room 101 Width: 80-feet (inside)
Room 101 Length: 160-feet (inside)
Room 101 Vertical Side Wall Height: 12-feet above finished floor, minimum.
Room 102 Width: 25-feet, 4-inches (outside)
Room 102 Length: 72-feet (outside)

C. Building Structural Requirements
Provide a rigid, self-supporting structure comprised of standard building framing components, or an approved building system of integrated structural components, complete with necessary foundations which are designed to securely and permanently support roof and wall construction. Design building to meet or exceed the following minimum structural design criteria:
1. Ground Snow Load: 40 PSF
2. Lateral Wind Load: 90 mph, Exposure C
3. Net Allowable Soil Bearing Pressure: 2,000 PSF
4. Seismic Design Category: A

D. Building Products: Meet the minimum required standards for the products listed below.
1. Concrete:
Provide concrete with a minimum compressive strength of 4,000 psi according to section 501 of the WisDOT standard specifications and section 03300 of PART 4 - TECHNICAL SPECIFICATIONS. Provide reinforcing steel according to section 505 of the WisDOT standard specifications. Provide epoxy coating on wall reinforcement. Footing reinforcement may be uncoated. Provide QMP for class III ancillary concrete as specified in section 716 of the standard specifications.
2. Preservative Treated Wood:
   a. Comply with applicable American Wood Preserver's Association (AWPA) requirements.
   b. Kiln dry all lumber to a maximum moisture content of 19 percent before treatment.
   c. Treat all above-ground lumber exposed to weather, or directly in contact with salt, with water-borne preservatives for above-ground use, complying with AWPA-LP-2 (CCA .40).
   d. All wood components with a nominal thickness of 2-inches or less shall have a moisture content not to exceed 19 percent when installed.
3. Metal Plates and Fasteners:
   a. Design metal plates and fasteners used in the building (truss bearing plates, shear plates, truss gusset plates, joist hangers, nails, bolts, nuts, washers, screws, etc.) that are in direct contact with salt, or that are exposed to an atmosphere containing salt, to resist corrosion due to such contact or exposure.

b. Provide products meeting the following specific requirements (if used in the building):
Truss bearing plates, bolts, and washers: stainless steel
Truss gusset plates: galvanized steel, epoxy-coated
Joist hangers: triple-zinc coated
Nails attached to CCA or CDX lumber: galvanized

E. Interior Space

1. Provide unobstructed interior space in room 101 to allow filling of the storage area to full capacity, and to allow unimpeded loading of truck-spreader vehicles with front-end loading equipment. Provide the entire interior floor area free of columns or roof supports of any type.

2. Minimum Center Clearance Room 101: Provide a 30-foot clear height at the center of the building width. Maintain this clear height for a minimum width of 20 feet, centered on the entranceway and running the length of the structure.

3. Room 102: Design concrete floor slab edge details to accommodate embedded poles and to allow movement between the concrete and the poles.

F. Concrete Wall Construction Room 101

1. Design the concrete wall to resist the weight (i. e., forces) of salt and sand assuming the following loading conditions:
   a. Salt and sand will be stored to a contained height of twelve feet (12') against the concrete wall.
   b. The salt and sand will further slope upwards and away from the concrete wall toward a peak or ridge in the center of the building at an anticipated 32-degree angle of repose.
   c. The resulting horizontal force created against the concrete wall is anticipated to be 0.72 times the weight of the sand and salt.
2. Design the concrete wall to resist a salt and sand load of 100 pounds per cubic foot, to resist a horizontal impact load of 250 pounds.
3. Materials
   a. Provide epoxy coated reinforcement bars in any concrete used above grade.
   b. Provide textured form liner above finished grade on exterior face of walls. Form liner pattern shall be a coursed limestone pattern with 15-inch courses matching the form liner pattern used on the Verona Road retaining walls in this contract and as shown in the plans. Provide form liner according to the Architectural Surface Treatment special provision.
   c. Use forms with surface treatment and accessories as required to achieve properly formed and cured concrete walls with minimal number of joints and a clean surface finish on interior face of concrete walls.
   d. Apply protective surface treatment coating to the interior surfaces of the concrete wall according to section 502.3.13.2 of the standard

specifications. Furnish a product from the department's approved products list for Concrete Protective Surface Treatment.

4. Execution:
   a. Provide concrete according to Section 501 of the standard specifications.
   b. Follow the requirements in Section 501 of the standard specifications for cold weather concreting as applicable and the requirements in Section 501 of the standard specifications for hot and cold weather concreting as applicable.
   c. Unless adequately protected, do not place concrete during rain, sleet, or snow.
   d. Damaged concrete, as determined by the engineer, must be removed and replaced at the contractor's expense.

G. Upper End Wall Construction

Provide an end wall system, above the level of the concrete wall within room 101, and from the grade to the eave within room 102, with board and batten style vinyl siding, applied over APA rated 5/8" CDX plywood sheathing. Design end wall to resist applicable wind loading and to support the doors and other attachments as required.

H. Fire Barrier

Provide a 2-hour rated fire barrier separating rooms 101 and 102. Design and construct the fire barrier according to IBC 707. Provide all components and accessories for a UL-listed rated assembly.

I. Vinyl Siding

1. Provide vinyl siding product meeting the following reference standards:
   ASTM D3679-Rigid Poly Vinyl Chloride (PVC) Siding
   ASTM D4226-Impact Resistance of Rigid Poly Vinyl Chloride Building Products
2. Submittals - Provide product data and selection samples to department
3. Warranty – Furnish siding and accessories carrying a manufacturer warranty against defects for a minimum of 50 years. Warranty shall include materials and labor and shall not be prorated.
4. Style - Provide 7-inch board and batten style vertical siding.
5. Properties:
   a. Tensile Strength (psi): 6600.
   b. Deflection Temperature (°F) @ 264 psi: 165.
   c. Modulus of Elasticity (psi): 435,000.
   d. Izod Impact (ft-lbs./in. Notch): 4.0.
   e. Hardness (Durometer Shore D): 78.0.
   f. Coefficient of Expansion (in./in/°F): 3.2×10^{-5}.
   g. Chemical Resistance Properties: Excellent
   h. Flame Spread Index: 20.0.
   i. Smoke Density Developed: 405.

6. Provide siding with minimum thickness of 0.046 inches constructed of 100% polyvinyl chloride with embossed woodgrain pattern.
7. Accessories - Provide 6-inch wide trim piece around border and around windows and openings.
8. Color - Provide color samples to department for final color selection. The color scheme is intended to be red siding and white trim.
9. Fasteners - Provide corrosion-resistant galvanized steel nails.
10. Installation - Install siding according to manufacturer's instructions. Provide gaps for expansion as recommended by manufacturer.
11. Protection - Maintain surfaces in clean condition. Replace damaged components.
12. Paint unfinished exterior trim (if applicable) with two (2) coats of alkyd primer and two (2) coats of acrylic latex paint, according to manufacturer's recommendations and section 09900 of PART 4 - TECHNICAL SEPCIFICATIONS.

J. Doors
1. Overhead Coiling Door - Provide one unobstructed rectangular entrance opening, nominal dimensions to be 30-feet high by 20-feet wide.
   a. Provide an exterior mounted overhead coiling door with electric motor operation and all operating hardware, controls and supports.
   b. Design door for 20 pounds per square foot minimum wind load. Supply and install all head and jamb framing and blocking as required by door manufacturer.
   c. Construct door of 20 gauge steel slats galvanized according to ASTM A653.
   d. Bottom Bar - Provide bottom bar comprised of two galvanized steel angles bolted back to back with minimum 1/8 inch thickness.
   e. Guides - Provide guides consisting of three galvanized structural steel angles with minimum thickness of 3/16 inch. Provide full height PVC weather seals contacting both interior and exterior surface of the curtain to minimize air flow.
   f. Counterbalance - Provide counterbalance torsion springs housed in a steel pipe barrel supporting the curtain with a deflection limited to 0.03 inches per foot of width. Design counterbalance for a minimum of 20,000 cycles.
   g. Enclosure - Provide hood designed for exterior mount with minimum 24 gauge galvanized steel finished to match door. Provide internal baffle to inhibit air infiltration.
   h. Electric Door Operator - Provide 480 volt, three-phase continuous duty motor with instant reverse and automatic reset thermal overload. Provide motor size as recommended by overhead door manufacturer. Motor shall be totally enclosed non-ventilated type. Provide operator with a brake that is spring-set and solenoid released and able to stop and hold curtain in any position. Provide PVC pushbutton control station (open/close/stop) rated NEMA 4X and radio transmitter/receiver unit with remote controller. Provide electric sensing edge to stop and reverse

the door upon contacting an object while closing. Control system shall use a heavy-duty reversing contactor, electrically and mechanically interlocked. System shall accommodate connection of sensing edge and control stations. Electrial controls and devices shall be rated NEMA 7 and be suitable for corrosive environment. All devices and controls shall be provided by door manufacturer and be powered from control panel transformer provided with the unit.

i. Finishes - Provide UV-resistant powder coated white finish on curtain and hood. Provide factory applied rust inhibitive primer compatible with field paint to all components not powder coated.
j. Installation - Provide all required casing materials. Install door according to manufacturer's instructions and standards. Upon completion of installation, adjust operating controls, and lubricate door according to manufacturer's recommendations.

2. Overhead Sectional Door
   a. Provide door with electric motor operation and all operating hardware, controls and supports.
   b. Provide door with total air leakage through the doorway opening at a wind velocity of 15 mph with 0.08 cfm per square foot or less according to ASTM E283.
   c. Provide thermally insulated door nominal 2 inches thick, ribbed, embossed panels with 0.016-inch-thick G90 galvanized steel faces according to ASTM A653 and polyurethane core. Provide a thermal break between exterior and interior faces with joint seals between sections, jamb seals, top seal, and a U-type threshold gasket. Provide a 2-inch minimum track of 14 gauge galvanized steel. Provide springs rated at 10,000 cycles. Do not provide an interior slide lock. Accpetable products include Wayne Dalton Thermospan 200, Overhead Door Corporation Thermacore 592, or equal.
   d. Electrical Components - Provide drawbar center type, 1/2 horsepower, 480 volts, three phase. Operator shall be equipped with quick release equipment for manual operation in case of emergency or power failure. Provide one interior NEMA 12 3 button control station for each door, open/close/stop, 24 volt circuit. Provide each door with electric operator having infrared optoelectronic sensors mounted maximum 6 inches above the floor to stop and reverse the door upon sensing an object while closing. Provide manufacturer's mounting adapters. Sensors shall be powered from the electric operator and monitored according to UL 325:2010. Sensors shall have visible LEDs to indicated power and proper alignment and shall utilize self adjusting light intensity. Sensors shall be constructed of polypropylene and rated NEMA 4X. Sensors shall be as manufactured by Vitector Model OSE with 50 feet of factory provided cable, or equal. Sensors shall be tested with the electric operator to comply with UL 325:2010. Provide 2, 3 channel remote radio control transmitters with open, close, stop functions. Also provide 1 NEMA 1 radio receiver for each door operator. Receiver shall have three isolated contacts; open, close, and stop. Transmitter shall be Pulsar

Model 733 and receiver shall be Pulsar Model 831-J as manufactured by Allstar Corporation. Antennae for receivers shall be mounted on outside of exterior wall above each door.

e. Finishes - The exterior face shall be primed with a baked on polyester primer and finished with a baked on polyester finish coat, color white. The interior face shall be primed and finish coated with baked on polyester, color white. All other ferrous surfaces, except galvanized surface and working parts of machinery, shall receive one shop coat of rust inhibitive metal primer. Primer shall be compatible with paint system. Those areas that will become inaccessible after installation shall be finish painted as specified in Section 09900 of PART 4 - TECHNICAL SEPCIFICATIONS.

f. Installation - Provide all required casing materials. Install door according to manufacturer's instructions and standards. Upon completion of installation, adjust operating controls and springs, and lubricate door according to manufacturer's recommendations.

3. Fiberglass Service Door - Provide 3'-0" x 7'-0" fiberglass door according to the following specifications. Color shall be white.
   a. Materials - Construct door from corrosion-resistant resign with light-stabilizing additives and a minimum glass fiber to resin ratio of 40 percent. Anchor door frame with stainless steel anchors and fasteners.
   b. Construction - Minimum door thickness is 1 3/4 inches. Construct with polyurethane foam core and FRP face sheets molded in one continuous piece. Provide minimum 15 mil gel-coated surface. Provide 1 1/2 inch square stiles and rails from pultruded fiberglass tubes. Provide polymer blocking for all hardware reinforcing.
   c. Frame - Provide one-piece pultruded FRP frame with minimum 1/4-inch wall thickness. Provide jamb to head joints mitered and reinforced with FRP clips and stainless steel fasteners. Provide 15 mil gel coat finish to match door.
   d. Frame Profile - 5 3/4 inches deep, 2 inch wide face, with 5/8 inch high stop. Provide 4-inch head frame.
   e. Hardware - Provide mortises and reinforced polymer blocking for all hardware. Provide locksets and latchsets with stainless steel finish. Acceptable products include Schlage L Series, or equal to match Dane County master key system. Provide removable core brass 6-pin or 7-pin cylinders for all locksets and latchsets.
   f. Hinges - Provide stainless steel Stanley FBB 191, Hager BB 1191, or equal butt hinges with full mortise, ball bearing, nonferrous, nonrising loose pin and flat bottom tip. Provide three hinges per door.
   g. Provide stainless steel kickplates and weather stripping. Kick plates shall be Rockwood, or equal, 6 inches high. Kick plate width shall be 2 inches less than door width. Doors shall be weatherstripped with Reese DS75, National Guard Products, Inc. 156, or equal, weatherstripping. Provide Reese 323C, Pemko 315AN, or equal, sweeps; and Reese S425A, Pemko 171A, or equal, thresholds.

h. Keying - Key door to match Dane County Highway Department master key. Provide two keys per lock.

4. Steel Door and Frames
   a. Provide thermally-insulated doors hollow full flush, 1 3/4 inch thick, 16 gauge steel sheet according to ANSI/SD1 100 with polyurethane core rigid reinforcing full thickness. Doors shall be fully-sealed, continuously-welded construction with all surface welds, joints, and seams filled and ground smooth. Tops and bottoms of doors shall be completely closed with 16 gauge channels. Outside edges of doors shall be flush without depressions. No inverted channels will be allowed. Mortise, reinforce, drill, and tap doors to receive hardware. Reinforcement shall be welded within the stiles and rails. Reinforce top rails to accommodate closers on either side and reinforce bottom for kickplate. Acceptable products are Ceco Imperial, Curries 707 Series, or equal.
   b. Hardware - Provide mortises and reinforced polymer blocking for all hardware. Provide locksets and latchsets with stainless steel finish. Acceptable products include Schlage L Series, or equal to match Dane County master key system. Provide removable core brass 6-pin or 7-pin cylinders for all locksets and latchsets. Locksets and latchsets shall have 2 3/4 inch backset. Strikes shall be curved lip. Doors shall have temporary construction cylinders. Provide permanent cylinders at project completion. Door closers shall be LCN Series 1460 for exterior doors or equal. Provide aluminum finish on closers. Provide full covers. Door closers are LCN. (H Hold Open).
   c. Frames - Steel door frames shall be made of 14 gauge, cold-rolled, prime-quality steel according to ANSI/SD1 100. Fabricate frames as welded unit, 2 inches by 5 3/4 inches, with hardware reinforcement plates welded in place. Provide anchors appropriate to wall type.
   d. Hinges - Provide stainless steel Stanley FBB 191, Hager BB 1191, or equal butt hinges with full mortise, ball bearing, nonferrous, nonrising loose pin and flat bottom tip. Provide three hinges per door.
   e. Provide stainless steel kickplates and weather stripping. Kick plates shall be Rockwood, or equal, 6 inches high. Kick plate width shall be 2 inches less than door width. Doors shall be weatherstripped with Reese DS75, National Guard Products, Inc. 156, or equal, weatherstripping. Provide Reese 323C, Pemko 315AN, or equal, sweeps; and Reese S425A, Pemko 171A, or equal, thresholds.
   f. Keying - Key door to match Dane County Highway Department master key. Provide two keys per lock.
   g. Finish - Doors and frames shall receive one coat of rust inhibitive, shop applied primer paint. Primer paint must be compatible with field-paint system specified. Frames shall be finish-painted as specified in Section 09900–Painting prior to installation. This includes back sides of door frames. Color shall be white.
   h. Installation - Install doors according to ANSI/SD1 100. Coordinate installation of doors with installation of frames, hardware, glass and

glazing, and field painting. Hang doors allowing for expansion and contraction at time of setting. Set all hardware according to templates as supplied by hardware supplier. Cover all exposed hardware until completion of painting and finishing. Examine hardware at completion; test, oil, grease, and adjust for smooth and unhindered operation.

K. Windows

1. Provide exterior extruded aluminum window frames conforming to the following reference standards:
    a. AAMA 101–Specifications for Aluminum Prime Windows and Sliding Glass Doors.
    b. ASTM E283–Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.
    c. ASTM E330–Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
    d. ASTM E331–Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
    e. ASTM B221–Aluminum-Alloy Extruded Bar, Rod, Wire, Shape, and Tube.
    f. AAMA 608.1–Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum.
2. Design and size components to withstand a minimum static air pressure difference of 90 psf according to ASTM E330.
3. Limit member deflection to 1/175 with full recovery of glazing materials.
4. Limit air leakage through assembly to 0.10 cfm/min/sq ft. of wall area measured at a reference differential pressure across assembly of 6.24 psf as measured according to ASTM E283.
5. Water leakage: None when measured according to ASTM E331 with a test pressure difference of 10 psf.
6. Exterior window frames shall be 2-inch-deep extruded aluminum, according to ASTM B221, with thermobreak.
7. Acceptable products include the following, or equal:
    a. Kawneer Sealair 8225T Isolock, Fixed Windows.
    b. Oldcastle Signature Series 12P Fixed Windows.
8. Aluminum extrusions shall be not less than 0.125 inches thick.
9. All fabrication and erection fasteners shall be 18-8 stainless steel.
10. Unless shown otherwise, provide 0.040-inch aluminum sill plates on exterior of window. Finish shall match window.
11. Permit internal drainage weep holes and channels to migrate moisture to exterior. Provide internal drainage of glazing spaces to exterior through weep holes.
12. Nominal window height and length for all windows shall be as shown in the plans. Contractor shall measure and field verify all openings and coordinate sizes with window supplier.

13. Finish on all exposed aluminum shall be 7070 Liquid Polyvinylidene Fluoride Organic Coating, conforming to AAMA 605.2. Color to be white.
14. Frames shall be securely attached to concrete wall as recommended by the window manufacturer.

L. Glazing
1. Work includes glass and glazing for windows according to GANA–Glass Association of North America.
2. Spandrel glass shall be fully tempered, 1/4-inch thick, Vari-Tran shadow box spandrel by Interpane Glass Company, Virsapan by Viracon, or equal. Color to be dark gray.
3. Glazing system shall consist of a polyisobutylene-butyl tape, liquid polymer sealant, and vinyl roll-in strip. Acceptable products include the following, or equal:
   a. Tremco Vision Strip System.
   b. General Electric Silglaze.
4. Accessories such as setting blocks, clips, etc., shall be provided to properly set glass.
5. Obtain sizes from work at the site or from the manufacturer of work into which the materials will be set. Responsibility for the correctness of measurements shall be by contractor.
6. Comply with "Glazing Manual" by Glass Association of North America (GANA), except as specifically recommended otherwise by manufacturers of the glass and glazing materials.
7. Completed installation shall be water- and airtight.

M. Pipe Bollards

Furnish and install fourteen pipe bollards (six interior and eight exterior), minimum six inches (6") in diameter and eight feet (8') in length, consisting of Schedule 80 galvanized steel structural pipe, filled with concrete. Furnish grade A, A-FA, A-S, A-T, A-IS, or A-IP concrete within the pipe bollard according to Section 501 of the standard specifications. Form concrete crown at top of bollard. Embed pipes in concrete footings, and paint white with a 3-coat epoxy paint system (primer plus two finish coats). Paint the entire length of the pipe.

N. Roofing System (General)
1. Type: prefabricated or site-built, complete with all necessary accessories, fastening devices, trim, and flashings.
2. Drainage: positive slope; no standing water.
3. Strength: comply with structural criteria specified in Section 3.01.C.
4. Wind Resistance: 60 psf (uplift).
5. Compatibility: all materials to be physically and chemically compatible with each other and with adjacent building components.
6. Products:
   a. Metal Roofing - 29 gauge (or heavier) galvanized coated steel panels, with color matched fasteners, carrying a manufacturer's warranty of at least 30 years for labor and materials. Roofing color to be dark gray.

Acceptable products are GrandRib 3 Plus by Fabral with Enduracote finish, Stormproof by MBCI with Signature 200 paint system, Max Rib by McElroy with siliconized polyester paint system, or equivalent.

b. Roofing Underlayment - Roofing base shall be 30-pound synthetic underlayment such as Titanium, GAF, or equivalent underlayment product as recommended by metal roofing manufacturer.
c. Sheathing - APA rated, minimum 5/8-inch thick nominal, CDX plywood roof sheathing. Metal roofing attached directly to trusses will not be accepted.
d. Sheathing Clips - Provide nylon H-Clips between roof sheathing.
e. Trim - Provide metal rake trim at all edges and slope changes.
f. Roof Ridge Vents - Provide suitable openings located at or near the highest point of the roof to provide a minimum ratio of 1 square inch of free air area for each 55 square feet of building floor area. Color to match adjacent roofing materials.

See also, PART 4 - TECHNICAL SPECIFICATIONS, Division 15 of this specification.

O. Fire Extinguishers
Provide dry-chemical-type, multi-purpose 10-pound-capacity fire extinguishers at locations shown on plans. Fire extinguishers shall be UL-approved for Class A, Class B, and Class C fires. Provide units conforming to NFPA 10 requirements for portable fire extinguishers. Install according to manufacturer's instructions. Place extinguishers in brackets mounted so the handle is at 48 inches above the finished floor.

P. Cupolas
Provide 48 inch square decorative FRP or prefinished steel cupola. Color shall be White.

Q. Haymow Door
Provide decorative haymow door of proportions shown on plans. Construct decorative haymow door of exterior grade engineered wood materials painted to match the adjacent red siding. Provide 6-inch wide engineered wood siding trim painted white.

R. Concrete Stoop
Provide 5-foot x 6-foot concrete stoops as shown on the plans.

3.02 Installation and Erection

A. Provide all required foundations and supports at the required elevations on properly prepared subgrade, as required for the erection of the building.

B. Provide foundation size and depth as required to resist frost action.

C. Provide the complete building and required appurtenances conforming to the performance requirements of these specifications.

3.03 Mechanical and Electrical

Provide mechanical and electrical work according to PART 4 - TECHNICAL SPECIFICATIONS.

PART 4 – TECHNICAL SPECIFICATIONS

Technical specifications that apply to the Salt Storage Shed item include:

DIVISION 1 - GENERAL REQUIREMENTS
- Section 01090 Reference Standards and Definitions
- Section 01300 Submittals
- Section 01600 Materials and Equipment
- Section 01700 Contract Closeout

DIVISION 3 - CONCRETE
- Section 03100 Concrete Formwork
- Section 03200 Concrete Reinforcement
- Section 03300 Cast-In-Place Concrete

DIVISION 5 - METALS
- Section 05500 Metal Fabrications
- Section 05560 Anchor Bolts and Post-Installed Anchors

DIVISION 7 - THERMAL AND MOISTURE PROTECTION
- Section 07900 Caulking and Sealants

DIVISION 9 - FINISHES
- Section 09900 Painting

DIVISION 15 - MECHANICAL
- Section 15195 Piping and Equipment Identification
- Section 15860 HVAC Fans
- Section 15910 Ductwork Accessories
- Section 15940 Air Outlets and Inlets

DIVISION 16 - ELECTRICAL
- Section 16110 Conduit
- Section 16120 Wire
- Section 16130 Boxes
- Section 16141 Wiring Devices
- Section 16412 Surge Protective Devices (SPD)
- Section 16420 Electrical Service System
- Section 16440 Disconnect Switches
- Section 16460 Transformers
- Section 16470 Panelboards

Section 16480 Motor Control
Section 16500 Lighting
Section 16940 Controls and Instrumentation

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01090
REFERENCE STANDARDS AND DEFINITIONS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
1. Reference Standards:
a. Throughout the contract documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish methods for workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
b. Where materials or workmanship are required by the contract documents to meet or exceed the specifically named code or standard, it is contractor's responsibility to provide materials and workmanship which meet or exceed that specifically named code or standard.
c. It is also contractor's responsibility, when so required by the contract documents, to deliver to engineer all required proof that the material or workmanship, or both, meet or exceed the requirements of the specifically named code or standard.
2. Definitions:
a. A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the plans which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated thereon.
b. Certain terms used in the contract documents are defined generally in this section to supplement definitions in Section 101 of the WisDOT Standard Specifications.
c. Definitions and explanations of this section are not necessarily either complete or exclusive.

1.02 QUALITY ASSURANCE

A. Familiarity with Pertinent Codes and Standards:
1. It is contractor's responsibility to verify the requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements.

2. When required by individual sections of these specifications, obtain a copy of each pertinent code or standard and maintain the copies at the job site during submittals, planning, and progress of the work until Substantial Completion of the work is attained.

B. Overlapping or Conflicting Requirements:
   1. Where compliance with two or more industry standards or sets of requirements are specified, and the overlapping of those standards or requirements establishes different or conflicting minimums or levels of quality, the most stringent requirement (which is generally recognized to be also be the most costly) is intended and will be enforced, unless more detailed language written directly into contract documents clearly indicates that a less stringent requirement is acceptable.
   2. Refer all uncertainties to engineer for decision before proceeding.

1.03 REFERENCE STANDARDS

A. Applicable standards of the construction industry are made a part of the contract documents by reference as if copied directly into the contract documents, or as if published copies were bound herewith.
B. Standards referenced directly in the contract documents or by governing regulation, have precedence over nonreferenced standards which are recognized in industry for applicability to the work.
C. Nonreference standards are hereby defined to have no particular applicability to the work except as a general measurement of whether the work complies with standards recognized in the construction industry.
D. References to the WisDOT Standard Specifications for Highway and Structure Construction may be referred as the WisDOT Standard Specifications, the Standard Specifications, the Standard Specification, the standard specifications, the standard specification or the standard spec. All references are interchangeable and have the same meaning.
E. Reference standards and codes listed in these specifications may include, but are not necessarily limited to, standards or codes published by the following agencies and organizations:

   1. AA — Aluminum Association
      1525 Wilson Boulevard, Arlington, VA 22209
   2. AAMA — American Architectural Manufacturer's Association
      1827 Walden Office Square Suite 550, Schaumberg, IL 60173-4268
   3. AASHTO — American Association of State Highway & Transportation Officials
      444 North Capitol Street NW Suite 249, Washington, DC 20001
   4. ACI — American Concrete Institute
      38800 Country Club Drive, Farmington Hills, MI 48331-3439

5.	AI	Asphalt Institute 2696 Research Park Drive, Lexington, KY 40511-8480
6.	AISC	American Institute of Steel Construction One East Wacker Drive Suite 700, Chicago, IL 60601-1802
7.	AISI	American Iron and Steel Institute 25 Massachusetts Avenue NW Suite 800, Washington, DC 20001
8.	ANSI	American National Standards Institute 25 West 43rd Street, New York, NY 10036
9.	APA	American Plywood Association 7011 South 19th, Tacoma, WA 98466-5333
10.	API	American Petroleum Institute 1220 L Street NW, Washington, DC 20005-4070
11.	ARI	Air-Conditioning & Refrigeration Institute 4100 North Fairfax Drive Suite 200, Arlington, VA 22203
12.	ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers 1791 Tullie Circle NE, Atlanta, GA 30329
13.	ASME	American Society of Mechanical Engineers Two Park Avenue, New York, NY 10016-5990
14.	ASSE	American Society of Sanitary Engineering 901 Canterbury Suite A, Westlake, OH 44145
15.	ASTM	ASTM International 100 Barr Harbor Drive, West Conshohoken, PA 19428-2959
16.	AWI	Architectural Woodwork Institute 46179 Westlake Drive Suite 120, Potomac Falls, VA 20165-5874
17.	AWPA	American Wood Protection Association P.O. Box 361784, Birmingham, AL 35236-1784
18.	AWS	American Welding Society 8669 Doral Boulevard Suite 130, Doral, FL 33166
19.	AWWA	American Water Works Association 6666 West Quincy Avenue, Denver, CO 80235
20.	BHMA	Builder's Hardware Manufacturers Association 355 Lexington Avenue 15th floor, New York, NY 10017

21. BIA	Brick Industry Association 1850 Centennial Park Drive Suite 301, Reston, VA 20191
22. CRSI	Concrete Reinforcing Steel Institute 9333 North Plum Grove Road, Schaumburg, IL 60173
23. EJMA	Expansion Joint Manufacturers Association 25 North Broadway, Tarrytown, NY 10591
24. FM	FM Global FM Global Corporate Offices, 270 Central Avenue, Johnston, RI 02919
25. FTI	Facing Tile Institute Box 8880, Canton, OH 44711
26. GA	Gypsum Association 6525 Belcrest Road Suite 480, Hyattsville, MD 20782
27. GANA	Glass Association of North America 800 SW Jackson Street Suite 1500, Topeka, KS 66612-1200
28. ICC	International Code Council 500 New Jersey Avenue NW 6th Floor, Washington, DC 20001
29. IES	Illuminating Engineering Society 120 Wall Street, Floor 17, New York, NY 10005-4001
30. MIL	Military Specifications Naval Publications and Forms Center 5801 Tabor Avenue, Philadelphia, PA 19120
31. NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt Road Building C Suite 312, Glen Ellyn, IL 60137
32. NCMA	National Concrete Masonry Association 13750 Sunrise Valley Drive, Herndon, VA 20171-4662
33. NECA	NECA National Electrical Contractors Association 3 Bethesda Metro Center Suite 1100, Bethesda, MD 20814
34. NEMA	National Electrical Manufacturers Association 1300 North 17th Street Suite 1752, Rosslyn, VA 22209
35. NFPA	National Fire Protection Association 1 Batterymarch Park, Quincy, MA 02169-7471

36. NIST	National Institute of Standards and Technology (U.S. Department of Commerce), 100 Bureau Drive, Stop 1070 Gaithersburg, MD 20899-1070
37. NRCA	National Roofing Contractors Association 10255 West Higgins Road Suite 600, Rosemont, IL 60018-5607
38. NSF	National Sanitation Foundation International P.O. Box 130140, 789 North Dixboro Road, Ann Arbor, MI 48113-0140
39. OSHA	Occupational Safety & Health Administration 200 Constitution Avenue NW, Washington, DC 20210
40. PCA	Portland Cement Association 5420 Old Orchard Road, Skokie, IL 60077
41. PCI	Prestressed Concrete Institute 200 West Adams Street Suite 2100, Chicago, IL 60606
42. SAE	Society of Automotive Engineers SAE World Headquarters 400 Commonwealth Drive, Warrendale, PA 15096-0001
43. SDI	Steel Deck Institute P.O. Box 25, Fox River Grove, IL 60021
44. SDI	Steel Door Institute 30200 Detroit Road, Westlake, OH 44145-1987
45. SIGMA	Sealed Insulating Glass Manufacturers Assoc. 401 North Michigan Avenue Suite 2400, Chicago, IL 60611
46. SJI	Steel Joist Institute 234 Cheves Street, Florence, SC 29501
47. SMACNA	Sheet Metal and Air Conditioning Contractor's National Association 4201 Lafayette Center Drive, Chantilly, VA 20151-1219
48. SSPC	Society for Protective Coatings 40 24th Street 6th Floor, Pittsburgh, PA 15222-4656
49. TCA	Tile Council of America 100 Clemson Research Boulevard, Anderson, SC 29625
50. UL	Underwriters Laboratories 333 Pfingston Road; Northbrook, IL 60062

1.04 SUBMITTALS

A. For the department's records, submit copies of permits, licenses, certifications, inspection reports, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

1.05 DEFINITIONS

A. Indicated:
    1. The term “indicated” is a cross-reference to details, notes, or schedules on the plans, to other paragraphs or schedules in the specifications and to similar means of recording requirements in the contract documents.
    2. Where terms such as “shown,” “noted,” “scheduled,” and “specified” are used in lieu of “indicated”, it is for the purpose of helping the reader locate cross-reference, and no limitation is intended except as specifically noted.

B. Approve (or Words of Similar Nature):
    1. Where used in conjunction with engineer's response to submittals, requests, applications, inquiries, reports, and claims by contractor, the meaning of the term “approve” will be held to the limitation of engineer's responsibilities and duties as specified in section 105 of the standard spec.
    2. In no case will “approval” by engineer be interpreted as a release of contractor from responsibility to fulfill requirements of the contract documents.

C. Minimum Requirements:
    1. Indicated requirements are for a specific minimum acceptable level of quality or quantity, as recognized in the industry.
    2. Actual work must comply with (or within specified tolerances) or exceed minimums.
    3. Refer uncertainties to engineer before proceeding.

D. Abbreviations: Abbreviations, where not defined in the contract documents, will be interpreted to mean the normal construction industry terminology.

PART 2–PRODUCTS
(Vacant)

PART 3–EXECUTION
(Vacant)

SECTION 01300
SUBMITTALS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Whenever possible throughout the contract documents, the minimum acceptable quality of workmanship and materials has been defined either by manufacturer's name and catalog number or by reference to recognized industry standards.
   2. To facilitate contractor's understanding of the design intent, procedures have been established for advance submittal of design data and for its review or rejection by engineer.
   3. The type of submittal requirements specified in this section include shop drawings, product data, samples, and other miscellaneous work related submittals.

B. Related work described elsewhere: More detailed requirements for submittals are described in other sections of these specifications for some materials and equipment. They are to be considered additional requirements to supplement the requirements specified in this section.

C. Definitions: "Electronic Submittal" is defined as any submittal transmitted electronically to engineer for review.

1.02 IDENTIFICATION OF SUBMITTALS

A. Completely identify each submittal and resubmittal by showing at least the following information:
   1. Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
   2. Name and location of project and identification number.
   3. Plan sheet number and specifications section number to which the submittal applies.
   4. Include the date of each submittal or resubmittal.

1.03 GROUPING OF SUBMITTALS

A. Unless otherwise specifically permitted by engineer, make all submittals in groups containing all associated items so that information is available for checking each item when it is received.

B. Partial submittals may be rejected as not complying with the provisions of the contract documents.

1.04 TIMING OF SUBMITTALS

A. Make all submittals far enough in advance of scheduled dates of installation to provide required time for reviews, for securing necessary approval, for possible revision and resubmittal, and for placing orders and securing delivery.

1.05 SHOP DRAWINGS

A. Shop drawings shall include specially prepared technical data for this project including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements, and similar information not in standard printed form for general application to a range of similar projects. Shop drawings shall be submitted for all manufactured or fabricated items. See individual technical sections for special requirements.

B. Make all shop drawings accurately to scale and sufficiently large to show all pertinent aspects of the item and its method of connection to the work.

C. Shop drawings shall be checked, approved, and stamped by contractor before transmittal to engineer for review and approval.

D. Submit shop drawings following the electronic submittal procedure described below. If electronic submittal is impossible, contractor may request engineer to review hard copy submittals on a limited basis. Engineer may request to review hard copy submittals on a limited basis for submittals that are over 100 pages in length. If engineer agrees to or requests hard copy submittal review, submit six color copies of shop drawings and descriptive data to engineer for approval. Three copies of these will be returned to contractor if approved. If shop drawings are not approved or if they are stamped “Approved as Noted-Resubmit,” two corrected copies will be returned to contractor for use in resubmittal. If contractor desires more than three approved copies, submitted quantity shall be increased accordingly.

E. Shop drawings shall be submitted in 3-tab report covers, binder clips, or large envelopes.

F. Shop drawings submitted to engineer will be reviewed and stamped “Approved,” “Approved as Noted,” “Approved as Noted-Resubmit,” or “Not Approved,” resubmit the above number of corrected shop drawings for all shop drawings stamped “Approved as Noted-Resubmit” and “Not Approved” and will continue this process until shop drawings are stamped “Approved” or “Approved as Noted.” If drawings are stamped “Approved as Noted-Resubmit,” fabrication may proceed according to the marked-up shop drawings. Installation shall not proceed until shop drawings have been resubmitted and stamped “Approved” or “Approved as Noted.”

G. If shop drawings are stamped “Approved as Noted” or “Approved as Noted-Resubmit” and contractor does not agree with revisions or cannot conform with revisions, fabrication shall not proceed and shop drawings shall be resubmitted with explanation of contractor’s position.

H. All shop drawings used for construction site activities shall bear the "Approved" or "Approved as Noted" stamp of engineer.

I. Arrangements may be made between contractor and engineer to provide additional copies of "Approved" shop drawings for field activity purposes.

J. Electronic Submittal Procedures:

1. Shop drawing and product data submittals shall be transmitted to engineer in electronic (PDF) format.
2. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
3. The electronic submittal process is not intended for color samples, color charts, or other physical material samples. It is also not intended for providing requests for information to the engineer. Those processes should occur as specified elsewhere or as agreed to with the engineer.
4. Review and apply electronic stamp certifying that the submittal complies with the requirements of the contract documents including verification of manufacturer/product, dimensions and coordination of information with other parts of the work.
5. Engineer review comments will be sent to contractor via e-mail.
6. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of contractor.
7. Electronically submitted shop drawings shall follow the following format:
    a. Filenames for the shop drawing submittals shall follow a XXXXX.YYY-Z. Description convention where XXXXX is the specification section number, YYY is the submittal number, .Z is the resubmittal number, and description is a short description of what the submittal includes. Submittals shall be consecutively numbered in direct sequence of submittal. Resubmittals shall be consecutively numbered with the first submittal numbered with an -0 and the first resubmittal numbered with a -1.
        1) Example file name: 03200.016-1. Concrete Reinforcement. This would be the first revision of the sixteenth submittal and contain information on concrete reinforcement.
    b. All files shall be delivered in PDF format with a minimum resolution of 300 dpi unless otherwise requested by engineer. Scanned in material shall be scanned in color and any markings made in red. Pages shall be rotated to the appropriate position for easy reading on a computer monitor such that the majority of text is vertical.
    c. Files shall be delivered without security features activated.
    d. Shop Drawings shall be transmitted as individual files. Files combined into a zip file are acceptable. All pages of one submittal should be contained in one file.

e. The file shall open to a cover page containing, at a minimum, the following information:
    1) Contractor's stamp.
    2) Name, e-mail, and telephone number of the individual who may be contacted for further information.
    3) Project number.
    4) Submittal number.
    5) Submission date, if resubmittal, all previous submission dates.
    6) Index detailing contents and the total number of pages in the submittal.

K. Obtain any and all copyright permission associated with conversion of shop drawing information to electronic format.

L. Shop drawings shall include verification that the item meets applicable codes and standards such as NFPA 30, ASTM, OSHA, and others.

1.06 COLORS AND PATTERNS

A. Unless the precise color and pattern is specifically described in the contract documents, whenever a choice of color or pattern is available in a specified product, submit accurate color charts and pattern charts to engineer for review and selection.

B. Unless all available colors and patterns have identical wearing capabilities and are identically suited for the installation, completely describe the relative capabilities of each.

1.07 SAMPLES AND FIELD MOCKUPS

A. Provide samples and field mockups where specified or as requested by the engineer.

B. Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the work will be judged.

C. Samples shall be of sufficient size and quantity to clearly illustrate the functional characteristics of the product and full range of color, texture, and pattern.

D. Samples shall have labels firmly attached, bearing the following information:
    1. Name of project.
    2. Description of product and finish.
    3. Name of contractor.
    4. Trade name and number of product.
    5. Standards met by the product.

E. Approval of samples must be obtained prior to proceeding with any work affected by material requiring sample approval.

F. Samples, unless otherwise noted, become the property of the department.

G. In situations specifically approved by engineer, the retained sample may be used in the construction as one of the installed items.

H. Field Mockups:
    1. Erect field mockups at the project site in a location acceptable to engineer.
    2. When accepted by engineer, the mockup will become the basis for comparison of the actual work.
    3. Remove mockup at conclusion of the work if it was not incorporated into the work.

1.08 PRODUCT DATA

A. Provide product data as required to supplement shop drawings.
B. Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information to illustrate a material, product, or system for some portion of the work.
C. Collect required product data into one submittal for each unit of work or system.
D. Include manufacturer's standard printed recommendations for application and use, compliance with standards, performance characteristics, wiring and piping diagrams and controls, component parts, finishes, dimensions, required clearances, and other special coordination requirements.
E. Mark each copy of standard printed data to identify pertinent products, models, options, and other data.
F. Supplement manufacturer's standard data to provide information unique to the work.

1.09 RESUBMISSION REQUIREMENTS

A. Make any corrections or changes in the submittals required by engineer.
B. Shop Drawings and Product Data:
    1. Revise initial drawings or data and resubmit as specified for initial submittal.
    2. Itemize in a cover letter any changes which have been made other than those requested by engineer.

1.10 MANUFACTURER'S DIRECTIONS

A. Manufactured articles, materials, and equipment shall be stored, commissioned, operated, applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, unless specified to the contrary.
B. Wherever specifications call for work to be performed or materials to be installed according to the manufacturer's printed instructions or directions, furnish copies as required for shop drawings of those instructions or directions to engineer before installing the material or performing the work.

1.11 MAINTENANCE MANUAL

A. Prior to substantial completion of the work, furnish to engineer four complete copies of a maintenance manual for all equipment furnished.
B. The manuals shall include manufacturer's instructions for maintenance and operation for each item of mechanical and electrical equipment. Manuals shall be specific for the equipment as installed; provide project specific inserts as required. Manuals shall contain: operation instructions, lubrication schedules, types and quantities, preventative maintenance program, spare parts list, parts lists, I.D. No. and exploded views, assembly instructions, parts supplier location, trouble shooting and startup procedures and, where applicable, test data and curves.
C. All sheets shall have reduced dimensions as described for shop drawings. Only one copy shall be submitted in a 3-ring binder or 3-tab report cover, and the remaining copies shall be furnished in 3-tab report covers, binder clips, or large envelopes.
D. Each maintenance manual shall include a completed equipment maintenance summary form for each type and size of equipment being furnished that requires power, lubrication, or maintenance. Equipment Summary forms are located at the end of this section.

PART 2–PRODUCTS
(Vacant)

PART 3–EXECUTION
(Vacant)

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EQUIPMENT MAINTENANCE SUMMARY FORM(1)

Equipment No.:

_____

_____

_____

_____

Specification Section: _____

Equipment Name: _____

Building Name: _____ Room No.: _____

Plant Location: _____

Manufacturer: _____

Address: _____

Phone: _____

Service Representative: _____

Address: _____

Phone: _____ Fax: _____

Make: _____ Model: _____

Serial No.: _____ Type: _____

Size: _____ _____

Equipment Speed: _____

Capacity: _____

Operating Range: _____

Material: _____

Alarms: _____

_____

_____

Drive Ratio: _____

Motor Speed: _____ Service Factor: _____

Volts: _____ Phase: _____ hp: _____ Efficiency: _____

Motor Type: _____

Motor Sensors: _____

Motor Manufacturer: _____

Model: _____ Motor Frame: _____

Insulation Class: _____ FLA: _____ LRA: _____

(1) Complete as applicable; attach supplementary pages as necessary.

Maintenance Requirements
(Use additional sheets if more space is needed.)

LUBRICATION

Item	Lubricant	Supplier	Estimated Frequency	Annual Quantity

PREVENTIVE MAINTENANCE

Item	Action	Frequency	Reference

SUGGESTED MINIMUM SPARE PARTS LIST

Manufacturer	Part No.	Quantity Unit	Description

The following information is included in O&M Manual:

Check or mark N/A

Recommended installation, adjustment, calibration, and troubleshooting.

Complete internal and connection wiring diagrams.

Complete parts lists, by generic title and identification number, with exploded views of each assembly.

Disassembly, overhaul, and reassembly instructions.

Recommended prestart checks.

Recommended start procedure.

Recommended shutdown procedure for both short and long term.

Recommended operating precautions that include safety for personnel and equipment.

Recommended standing maintenance procedure.

SECTION 01600
MATERIALS AND EQUIPMENT

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Delivery, handling, storage and protection of all material and equipment required to complete the Work as specified herein.
B. Related Sections and Divisions: Specific requirements for the handling and storage of material and equipment are described in other sections of these specifications.

1.02 PRODUCTS

A. Components required to be supplied in quantity within a specification section shall be the same, and shall be interchangeable.
B. When any construction deviations from the plans and/or specifications are necessary to accommodate equipment supplied by contractor result in any additional costs, such additional costs shall be borne by contractor.
C. Each major component of equipment shall bear a nameplate giving the name and address of the manufacturer and the catalogue number or designation.

1.03 TRANSPORTATION AND HANDLING

A. Materials, products and equipment shall be properly containerized, packaged, boxed, and protected to prevent damage during transportation and handling.
B. Do not overload any portion of the structure in the transporting or storage of materials.
C. Do not damage other construction by careless transportation, handling, spillage, staining or impact of materials.
D. Provide equipment and personnel to handle products, including those provided by OWNER, by methods to prevent soiling and damage.
E. Handle product by methods to avoid bending or overstressing. Lift large and heavy components only at designated lift points.

1.04 DELIVERY AND RECEIVING

A. Arrange deliveries of products according to the progress schedule, allowing time for observation prior to installation.
B. Coordinate deliveries to avoid conflict with the work and conditions at the site; work activities of other contractors; limitations on storage space, and availability of personnel and handling equipment.

C. Deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.
D. Clearly mark partial deliveries of component parts of equipment to identify equipment and contents to permit easy accumulation of parts and to facilitate assembly.
E. Immediately on delivery, inspect shipment to assure:
    1. Product complies with requirements of contract documents and reviewed submittals.
    2. Quantities are correct.
    3. Accessories and installation hardware are correct.
    4. Containers and packages are intact and labels legible.
    5. Products are protected and undamaged.

1.05 STORAGE AND PROTECTION

A. General: Store products, immediately on delivery, according to manufacturer's instructions, with all seals and labels intact and legible.

B. In enclosed storage:
    1. Provide suitable temporary weather tight storage facilities as may be required for materials that will be damaged by storage in the open.
    2. Maintain temperature and humidity within ranges stated in manufacturer's instructions.
    3. Provide ventilation for sensitive products as required by manufacturer's instructions.
    4. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
    5. Store solid materials such as insulation, tile, mechanical and electrical equipment, fittings, and fixtures under shelter, in original packages, away from dampness and other hazards.
    6. Store liquid materials away from fire or intense heat and protect from freezing.

C. At exterior storage:
    1. Store unit materials such as concrete block, steel, pipe, conduit, door frames, and lumber off ground, out of reach of dirt, water, mud and splashing.
    2. Store tools or equipment that carry dirt outside.
    3. Store large equipment so as not to damage the work or present a fire hazard.
    4. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet material and provide ventilation to avoid condensation.
    5. Completely cover and protect any equipment or material which is prime coated or finish painted with secured plastic or cloth tarps. Store out of reach of dirt, water, mud and splashing.

6. Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.
7. Provide surface drainage to prevent erosion and ponding of water.
8. Prevent mixing of refuse or chemically injurious materials or liquids.
9. Cover aggregates such as sand and gravel in cold wet weather.
10. Remove all traces of piled bulk materials at completion of work and return site to original or indicated condition.

1.06 MAINTENANCE OF STORAGE

A. Periodically inspect stored products on a scheduled basis.
B. Verify that storage facilities comply with manufacturer's product storage requirements, and verify that manufacturer required environmental conditions are maintained continually.
C. Verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes is acceptable under requirements of contract documents.
D. Perform scheduled maintenance of equipment in storage as recommended by the manufacturer. A record of the maintenance shall be kept and turned over to engineer when the equipment is installed.

1.07 INSTALLATION REQUIREMENTS

A. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the respective manufacturers, unless otherwise specified.
B. After installation, protect all materials and equipment against weather, dust, moisture, and mechanical damage.
C. Be responsible for all damages that occur in connection with the care and protection of all materials and equipment until completion and final acceptance of the work by department. Damaged material and equipment shall be immediately removed from the site.

1.08 EQUIPMENT AND MATERIAL MANUFACTURER WARRANTIES

A. Warranties shall be non-prorated, include all parts and labor, and be in written form. Warranties shall specifically exclude buyer's indemnification language. Warranty language shall not eliminate manufacturer’s responsibility for sizing of the equipment. During warranty period, manufacturer shall be responsible for any travel expenses, outside contractor fees, and rental equipment fees associated with providing warranty service. Warranties shall not exclude normal wear items. Manufacturer shall pay expenses incurred for repairs and parts replacement not made by manufacturer if manufacturer’s response is not within 72 hours of notification by department. Warranty language shall be provided with the shop drawings.

PART 2–PRODUCTS
(Vacant)

PART 3–EXECUTION
(Vacant)

SECTION 01700
CONTRACT CLOSEOUT

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Closeout procedures.
   2. Final cleaning.
   3. Adjusting.
   4. Project record documents.
   5. Warranties.
   6. Spare parts and maintenance materials.

1.02 CLOSEOUT PROCEDURES

A. Provide submittals to engineer that are required by governing or other authorities.
B. Comply with contract and complete the following before requesting engineer's observation of the work or designated portion thereof for substantial completion.
   1. Submit executed warranties, workmanship bonds, maintenance agreements, inspection certificates, and similar required documentation for specific units of work, enabling department's unrestricted occupancy and use.
   2. Submit record documentation, maintenance manuals, tools, spare parts, keys, and similar operational items.
   3. Complete final cleaning, touch-up work of marred surfaces, and remove temporary facilities and tools.

1.03 FINAL CLEANING

A. Completely clean the inside and outside of the building (including all rooms) and the construction site at the completion of the work.
B. Clean areas of the building in which painting and finishing work is to be performed just prior to the start of this work and maintain these areas in satisfactory condition for painting and finishing. This cleaning includes:
   1. Removal of trash and rubbish from these areas.
   2. Broom cleaning of floors.

3. Removal of any plaster, mortar, dust, and other extraneous materials from finish surfaces, including but not limited to exposed structural steel, miscellaneous metal, masonry, concrete, mechanical equipment, piping, and electrical equipment.

C. In addition to the cleaning specified above and the more specific cleaning that may be required in various technical sections of the Specifications, prepare the project for occupancy by a thorough cleaning throughout, which shall include the following:
   1. Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.
   2. Clean equipment and fixtures with cleaning materials appropriate to the surface and material being cleaned.
   3. Replace filters of operating equipment.
   4. Clean debris from roofs and drainage systems.
   5. Clean site; sweep paved areas, rake clean landscaped surfaces.
   6. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.04 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.05 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents to record actual revisions to the work:
   1. Plans.
   2. Specifications.
   3. Addenda.
   4. Change orders and other modifications to the contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by department.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by addenda and modifications.

F. Record Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish floor datum.

2. Measured horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of the work.
4. Field changes of dimension and detail.
5. Details not on original plans.

1.06 WARRANTIES

A. Provide manufacturer warranties beyond project one-year warranty as required by technical sections and as follows.
B. Submit manufacturer warranty information as follows:
    1. Provide notarized copies.
    2. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers, and provide Table of Contents and assemble in three-ring binder with durable cover.
    3. Submit with request for certificate of Substantial Completion.
    4. For items of work delayed beyond date of Substantial Completion, provide updated submittal within ten days after date of acceptance as start of warranty period.

PART 2–PRODUCTS
(Vacant)

PART 3–EXECUTION
(Vacant)

DIVISION 3 - CONCRETE

SECTION 03100
CONCRETE FORMWORK

PART 1–GENERAL

1.02 SUMMARY

A. Work Included:
    A. Forms for cast-in-place concrete.
    B. Form accessories.
    C. Openings for other work.
    D. Form stripping.
B. Applicable provisions of Division 1 shall govern work in this section.
C. Complete work according to section 502 of the standard specs.

1.03 DESIGN

A. All formwork shall comply with ACI 347 and ACI 301.
B. Contractor shall assume the responsibility for the complete design and construction of the formwork.

1.04 SUBMITTALS

A. Submit shop drawings according to Section 01300–Submittals for form ties, form coatings, architectural surface treatment, and any other form accessories.

PART 2–PRODUCTS

2.01 FORMS

A. Forms shall be of wood, plywood, steel, fiberboard lined, or other approved materials which will produce concrete which meets the specified requirements. The type, size, quality, and shape of all materials of which the forms are made are subject to the review of engineer.
B. Caution shall be exercised in the use of wood or composition forms or form liner to be certain that no chemical reaction will take place which causes a damaging effect on the concrete surface.

2.02 FORM TIES–NONREMOVABLE

A. Internal wall ties shall contain positive stops at the required wall thickness. The exterior clamp portions of the tie shall be adjustable in length. Ties shall have cones where concrete is to remain exposed. Ties shall provide a positive disconnection on both ends 1 to 1 1/2 inches inside the finished face of the concrete.
B. The use of wood spacers and wire ties are not permitted.

2.03 FORM COATINGS

A. Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds.

PART 3–EXECUTION

3.01 CONSTRUCTION

A. Forms shall conform to the shape, line, grade, and dimensions as shown on the drawings. They shall be mortar-tight and sufficiently rigid to prevent displacement or sagging between supports and shall support the loads and pressures without deflection from the prescribed lines. They shall be properly

braced or tied together so as to maintain position and shape. Spacing of ties shall be recommended by the tie manufacturer.

B. Formwork and finished concrete construction shall meet the tolerances specified in ACI 117.

C. Architectural surfaces and surfaces to be fitted with equipment shall be formed to match the shape intended.

D. When forms are placed for successive concrete placement, thoroughly clean concrete surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets.

E. Provide inserts and provide openings in concrete form work to accommodate work of other trades. Verify size and location of openings, recesses, and chases with the trade requiring such items. Securely support items to be built into forms.

F. Bevel wood inserts for forming keyways (except in expansion joints where inserts shall have square edges), reglets, recesses, and the like to assure ease of removal. Inserts shall be securely held in place prior to concrete placement. Unless otherwise shown, chamfer strips shall be placed in the angles of the forms to provide 3/4-inch bevels at exterior edges and corners of all exposed concrete.

G. The forms shall be oiled with a field-applied commercial form oil or a factory-applied nonabsorptive liner. Oil shall not stain or impede the wetting of surfaces to be cured with water or curing compounds. The forms shall be coated prior to placing reinforcing steel. Oil on reinforcement will not be permitted.

H. All form surfaces shall be thoroughly cleaned, patched, and repaired before reusing and are subject to review of engineer.

3.02 FORM REMOVAL

A. Supporting forms and shoring shall not be removed until the member has acquired sufficient strength to support its own weight and the construction live loads on it.

B. All form removal shall be accomplished in such a manner that will prevent injury to the concrete.

C. Forms shall not be removed before the expiration of the minimum times as stated below or until the concrete has attained its minimum 28-day design strength as confirmed by concrete cylinder tests, unless specifically authorized by engineer.

1. Wall and vertical faces: 24 hours.
2. Columns: 24 hours.

SECTION 03200
CONCRETE REINFORCEMENT

PART 1–GENERAL

1.01 SUMMARY

A. Work includes providing complete, in-place, all steel and fibers required for reinforcement of cast-in-place concrete as shown on the drawings.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

C. Comply with pertinent provisions of Section 505 of the WisDOT Standard Specifications and Section 01300–Submittals.

1.03 PRODUCT HANDLING

A. Delivery:
   1. Deliver reinforcement to the job site bundled, tagged, and marked.
   2. Use metal tags indicating bar size, lengths, and other information corresponding to markings shown on placement diagrams.
B. Storage: Store reinforcement at the job site on blocks and in a manner to prevent damage and accumulation of dirt and excessive rust.

PART 2–PRODUCTS

2.01 MATERIALS

A. Provide high-strength bar steel reinforcement according to Section 505 of the WisDOT Standard Specifications.
B. Reinforcement supports including bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement in place shall be:
   1. Wire bar-type supports complying with CRSI recommendations, unless otherwise indicated.
   2. For slabs on grade, supports with sand plates, or horizontal runners where base material will not support chair legs.
   3. For exposed-to-view concrete surfaces or where the concrete surface will be exposed to weather or moisture, where legs of supports are in contact with forms, supports with either hot-dipped galvanized or plastic protected legs.
   4. When supports bear directly on the ground and it is not practical to use steel bar supports, precast concrete blocks may be used to support only the bottom lift of reinforcement. The precast blocks must be solid, be of an equal or higher strength than the concrete being placed, must provide adequate support to the reinforcement, and be of proper height to provide

specified reinforcing cover. The use of face bricks, hollow concrete blocks, rocks, wood blocks, or other unapproved objects will not be permitted.

C. Fibrous Reinforcing:
   1. Fibrous concrete reinforcement shall be Fibermesh 300 by Propex Concrete Systems, PSI Fiberstrand F by Euclid Chemical Company, or equal.
   2. Reinforcement shall be 100% virgin polypropylene fibrillated, multi-length graded fiber containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.
   3. Physical Characteristics:
      a. Specific Gravity: 0.91.
      b. Fiber Length: Multidesign gradation.

2.02 FABRICATION

A. General:
   1. Fabricate reinforcing bars to conform to required shapes and dimensions with fabrication tolerances which comply with CRSI Manual.
   2. In case of fabricating errors, do not rebend or straighten reinforcement in a manner that will injure or weaken the material.
   3. Unless otherwise shown on the drawings, all end hook dimensions shall conform with "ACI Standard Hooks."

B. Reinforcement with any of the following defects shall be deemed unacceptable and will not be permitted in the work:
   1. Bar lengths, depths, and bends exceeding specified fabrication tolerances.
   2. Bend or kinks not indicated on drawings or final shop drawings.
   3. Bar with reduced cross section because of excessive rusting or other cause.

PART 3–EXECUTION

3.01 INSPECTION

A. Examine the substrate, formwork, and the conditions under which concrete reinforcement is to be placed.
B. Correct conditions detrimental to the proper and timely completion of the work.
C. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General:
   1. Comply with the specified standards for details and methods of placing reinforcement and supports.
   2. Clean reinforcement to remove loose rust, mill scale, earth, and other materials which reduce or destroy bond with concrete.

B. Placing Reinforcement:
   1. All reinforcing shall be placed according to the drawings and with shop drawings stamped and approved by engineer.
   2. Position, support, and secure reinforcing against displacement by formwork, construction, or concrete placement operations.
   3. Support reinforcing by metal chairs, runners, bolsters, spacers, and hangers as needed.
   4. Unless otherwise shown on the drawings, the reinforcement is to be so detailed and placed as to allow the following concrete protection:
      a. Three inches of cover where the concrete is placed directly against ground.
      b. Two inches of cover where the concrete is placed in forms but is to be exposed to weather, liquid, or the ground.
   5. Reinforcement shall be positioned within ±3/8-inch for members with depth to tension reinforcing from compression face less than or equal to 8 inches. Tolerance shall be ±1/2 inch for members with depth to tension reinforcing from compression face greater than 8 inches. Tolerance on dimension between adjacent bars in slab and wall reinforcing mats shall be 1 inch. Secure against displacement by anchoring at the supports and bar intersections with wire or clips.
   6. Bars shall be securely tied at all intersections except where spacing is less than 1 foot in each direction when alternate intersections shall be tied. To avoid interference with embedded items, bar spacing may be varied slightly if acceptable to engineer. Tack welding of reinforcing will not be permitted.
   7. Set wire ties so that twisted ends are directed away from exposed concrete surfaces.
   8. If reinforcing must be cut because of openings or embedded items in the concrete, additional reinforcing must be provided adjacent to the opening at least equal in cross sectional area to that reinforcing which was cut, and it shall extend a minimum of 36 bars diameters beyond the opening on each side or as shown on the drawings. At sumps or depressions in slabs, bars shall be bent and/or extended under sumps or depressions.
   9. Wall reinforcing mats shall be secured in a vertical plane by providing clearance from forms with bar supports and by using Z-shaped bars at ±4 feet on center wired between two mats of steel, spacing and staying both of them. Nails shall not be driven into the forms to support reinforcement and neither shall wire for this purpose come in contact with the forms. Alternate top transverse bars in slab shall be supported by individual bar chairs at approximately 3-foot 0-inch centers. Bottom longitudinal bars shall be supported by continuous bar chairs at approximately 4-foot 0-inch centers.
   10. If carrier bars are to be used, provide reinforcing bars for this purpose in addition to the reinforcing called for by the drawings and specifications.

C. Reinforcement Supports:
   1. Strength and number of supports shall be sufficient to carry reinforcement.

2. Do not place reinforcing bars more than 2 inches beyond the last leg of any continuous bar support.
3. Do not use supports as bases for runways for concrete-conveying equipment and similar construction loads.

D. Welded Wire Fabric:
1. Install welded wire fabric in as long of lengths as practicable.
2. Lap adjoining pieces at least one full mesh.
3. Fabric shall be supported with bar supports.

E. Splices:
1. Provide standard reinforcement splices by lapping ends, placing bars in contact, and tightly wire tying.
2. Lap splices in reinforcing shall be provided as shown on the drawings. Where lap splice lengths are not shown on the drawings, provide Class B, Category 1 lap splices according to ACI 318.

F. Embedded Items:
1. Allow other trades to install embedded items as necessary.
2. Particularly after bottom layer of reinforcing is placed in slabs, allow electrical contractors to install conduit scheduled for encasement in slabs prior to placing upper layer of reinforcing.

G. Fibrous Reinforcing:
1. Fibrous concrete reinforcing shall be used in all slab-on-grade concrete in room 102.
2. Add fibers at a minimum rate of 1.5 pounds per cubic yard.
3. Mix concrete in strict accordance with reinforcement manufacturer's recommendations.

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
1. All cast-in-place concrete as shown except as noted otherwise.
2. Expansion joint fillers, bonding agents, patching mortars, curing compounds, nonshrink grout, floor sealer, and other related items and accessories.

B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

A. Submit shop drawings according to Section 01300–Submittals.
B. Submit concrete mix information required by Standard Specification Sections 501 and 502.

PART 2–PRODUCTS

2.03 CONCRETE MIX

A. Provide concrete conforming to Standard Specification Section 501.

2.04 JOINT FILLER

A. Provide preformed joint filler according to Section 502.2.7 of the Standard Specifications.

2.05 PATCHING ADDITIVE

A. Acceptable manufacturers include MasterEmaco® A 660 by BASF, Sonocrete by Sonneborn Contech Co., or equal.

2.06 NONSHRINK GROUT

A. Acceptable manufacturers include Dayton Superior, Master Builders, or equal. Grout shall be nonshrink, nonmetallic and shall achieve a strength of 7,500 psi in 28 days.

2.07 CURE–SEAL HARDENER

A. Penetrating sealer for interior building floors shall be Ashford Formula by Curecrete Chemical Company, Inc., TK-Kure & Seal WB by TK Products, or equal.

PART 3–EXECUTION

3.01 MIXING

A. Ready-mixed concrete shall be batched, mixed, and delivered according to Standard Specifications Sections 501 and 502.

3.02 JOINTS

A. Place all joints as shown on the drawings or specified herein. If approved by engineer, contractor may, at his own expense, place construction joints in addition to and at places other than those shown on the drawings. Unless otherwise shown, all joints shall be straight, truly vertical or horizontal, and proper methods shall be employed to obtain this result.

B. Where joints are not shown on the drawings or specified elsewhere, contractor shall provide joints as follows:
   1. Walls shall have vertical joints at 60 feet on center maximum but not more than 15 feet from corners or intersections and shall have horizontal joints at 15 feet on center maximum.
   2. Slabs shall have joints at 20 feet on center maximum in each direction.

3.03 EMBEDDED ITEMS IN CONCRETE

A. All sleeves, inserts, anchors, and embedded items required for adjoining work or for its support shall be placed prior to concreting.
B. All contractors whose work is related to the concrete or must be supported by it shall be given ample notice and opportunity to introduce and/or furnish embedded items before the concrete is placed.
C. Embedded items shall be positioned accurately and supported against displacement. Reinforcing bars shall clear embedded items a minimum of 2 inches.

3.04 PLACING CONCRETE

A. Place concrete according to Section 502.3.5 of the WisDOT Standard Specifications.

3.05 CURING

A. Cure concrete according to Section 502.3.8 of the WisDOT Standard Specifications.

3.06 HOT WEATHER CONCRETING

A. When the atmospheric temperature exceeds 80°F during concrete placement, follow hot weather concreting requirements in Section 501.3.8.2 of the WisDOT Standard Specifications.

3.07 COLD WEATHER CONCRETING

A. Conditions of this section shall apply, in addition to all other sections of the specifications, when placing concrete in cold weather. Cold weather is defined as air temperature below 40°F.
B. Provide cold weather protection according to Secton 502.3.9 of the WisDOT Standard Specifications.

3.08 FINISHING

A. Flat Work:
   1. Floated Finish: Place, consolidate, strike off, and level concrete eliminating high spots and low spots. Do not work concrete further until it is ready for floating. Begin floating with a hand float, a bladed power

float equipped with float shoes, or a powered disk float when the bleed water sheen has disappeared and the surface has stiffened sufficiently to permit the operation. Immediately refloat the slab to a uniform texture.

2. Hard Troweled Finish: Float concrete surface, then power trowel the surface. Hand trowel the surface smooth and free of trowel marks. Continue hand troweling until a ringing sound is produced as the floor is troweled.
3. Tolerance for concrete floors shall be 1/4 inch within 10 feet in any direction. Straight edge shall be furnished by contractor.
4. Broom or Belt Finish: Immediately after concrete has received a floated finish, give the concrete surface a coarse transverse scored texture by drawing a broom or burlap belt across the surface.
5. The above finishes shall be used in the following locations:
   a. Hard Troweled Finish: Building floors.
   b. Broom or Belt Finish: Exterior slabs and sidewalks.

B. Formed Surfaces: Provide finish according to Section 502.3.7 of the WisDOT Standard Specifications.

3.09 LOADING OF CONCRETE STRUCTURES

A. No concrete structure or portion thereof shall be loaded with its design load until the concrete has obtained its specified 28-day compressive strength. This shall include but not be limited to vertical live load, equipment loading, water loading, groundwater loading, and backfill load. Concrete strength at time of loading shall be determined by testing field-cured concrete cylinders.

B. Extreme care shall be taken to ensure that construction loads do not exceed design loading of the structure.

3.10 NONSHRINK GROUT

A. Nonshrink, nonmetallic grout shall be used for filling recesses and pockets left for equipment installation and for setting of base plates. The material used shall be approved by engineer. Store, mix, and place the nonshrinking compound as recommended by the manufacturer. The minimum compressive strength shall be 5,000 psi at age seven days and 7,500 psi at age 28 days.

3.11 TESTING AND SAMPLING

A. Test concrete according to Section 716 QMP Ancillary Concrete of the WisDOT Standard Specifications.

3.12 CURING AND SEALING INTERIOR BUILDING FLOORS

A. Install cure-seal hardener product according to manufacturer’s instructions. Apply only to those floors noted to be sealed in the finish schedule.

B. Where product will be used for moist curing, sealing and hardening, apply to new concrete as soon as the concrete is firm enough to walk on after troweling. Where product will be used for sealing and hardening only, surface must be

free of dust, dirt, laitance, curing compounds, and any material that would inhibit the penetration of the product. In some instances, the floor may need to be stripped and neutralized before application.

C. Spray on at rate of 200 square feet per gallon.
D. Keep surfaces wet with cure-seal hardener for minimum soak-in period of 30 minutes, without allowing drying out or becoming slippery. In hot weather, slipperiness may appear before the 30-minute time period has elapsed. If that occurs, apply more cure-seal hardener as required to keep entire surface in a nonslippery state for the first 15 minutes. For the remaining 15 minutes, mist the surface as needed with water to keep the material in a nonslippery state.
E. After this period, when treated surface becomes slippery, lightly mist with water until slipperiness disappears.
F. Wait for surface to become slippery again and then flush entire surface with water removing all residue of cure-seal hardener.
G. Squeegee surface completely dry, flushing any remaining slippery areas until no residue remains.
H. Wet vacuum or scrubbing machines may be used to remove residue, provided manufacturer's instructions are followed.
I. Protect installed floors until chemical reaction process is complete; at least 3 months.
J. Clean up spills immediately and spot-treat stains with good degreaser or oil emulsifier.
K. Protection and cleaning of floors are the responsibility of contractor until final completion. Replace concrete that becomes stained because of improper precautions or lack of cleaning.

DIVISION 5 - METALS

SECTION 05500
METAL FABRICATIONS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Shop-fabricated carbon steel, including overhead door sills and pipe bollards.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 DESIGN REQUIREMENTS

A. All fabrications shall meet applicable code requirements including OSHA.

1.03 SUBMITTALS FOR REVIEW

A. Comply with pertinent provisions of Section 01300–Submittals.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, sections, elevations, and details where applicable.
C. Mill Test Reports: Submit indicating structural strength and composition.
D. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

1.04 QUALITY ASSURANCE

A. Fabricate steel members according to AISC Code of Standard Practice.
B. Welders Certificates: Certify welders employed on the work, verifying AWS qualification within the previous 12 months.

1.05 QUALIFICATIONS

A. Qualify welding processes and welding operators according to AWS *Standard Qualifications Procedures*.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver all materials to job site properly marked to identify the structure for which it is intended and at such intervals to ensure uninterrupted progress of the work. Marking shall correspond to markings indicated on the shop drawings.
B. Store all members off the ground using pallets, platforms, or other supports.
C. Do not store materials on the structure in a manner that might cause distortion or damage to the members of the supporting structures.
D. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to department.

PART 2–PRODUCTS

2.01 MATERIALS–CARBON STEEL

A. Steel Sections:
   1. ASTM A36 (channels, angles, plates).
   2. Pipe: ASTM A53, Grade B.
   3. Silicon content of steel members to be hot-dipped galvanized shall be in the range of 0 to 0.04%. Submit mill test reports confirming compliance.
B. Plain Washers: Round carbon steel complying with FS FF-W-92.
C. Bolts and Nuts: ASTM A307 Grade A, or galvanized to ASTM A153 for galvanized components for exterior use and where built into exterior walls.
D. Lock Washers: Helical spring-type carbon steel complying with FS FF-W-84.
E. Welding Electrodes: Comply with AWS D1.1. E70XX electrodes for carbon steel. For ASTM A992 steel and any other steel with 50 ksi or greater yield

strength, use only E7018 or other E70XX electrodes specifically permitted by AWS D1.1.

F. Select fasteners for the type, grade, and class required.

2.02 FABRICATION

A. Fabrication and Assembly:
   1. Fabricate items of structural steel according to AISC Specifications and as indicated on the approved shop drawings.
   2. Properly mark and match-mark materials for field assembly and for identification as to structure and site for which intended.
   3. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.
   4. Where finishing is required, complete the assembly, including welding of units, before start of finishing operation.
   5. Provide finish surfaces of members exposed in the final structure free of markings, burrs, and other defects.

B. Connections:
   1. Bolts and washers of all types and sizes shall be provided for completion of all field erection.
   2. Comply with AWS Code for procedures, appearance, and quality of welds used in correcting welded work.
   3. Assemble and weld built-up sections to produce true alignment of axes without warp.
   4. Welding shall be done by the shielded arc process.
   5. All welds shall be chipped, ground smooth, and primed immediately after fabrication.

C. Workmanship:
   1. Use materials of size and thickness shown or, if not shown, of size and thickness to produce strength and durability in the finished product.
   2. Work to dimensions shown or accepted on the shop drawings using proven details of fabrication and support.
   3. Form exposed work true to line and level, with accurate angles and surfaces, and with straight sharp edges.
   4. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing works.
   5. Cap all open ends of pipe and structural tubing.
   6. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush; match and blend with adjoining surfaces.
   7. Provide for anchorage of the type shown. Coordinate with supporting structures. Fabricate and space the anchoring devices to provide adequate support for intended use.
   8. Cut, reinforce, drill, and tap miscellaneous metal work as indicated to receive hardware and similar items.

2.03 FINISHES

A. Galvanizing:
   1. All items, except piping designated to be galvanized, shall be hot-dipped galvanized according to ASTM Specification A123 and A153. Piping shall be hot-dipped galvanized according to ASTM A53. Furnish a Certificate of Compliance stating that the galvanizing complies with ASTM Specifications and Standards and all other applicable requirements specified herein.
   2. Fabrication of items to be galvanized shall be according to ASTM A143, A384, and A385. Structural steel shall be fabricated generally according to Class 1 guidelines as shown in *Recommended Details for Galvanized Structures* as published by the American Hot Dip Galvanizer's Association, Inc.
   3. Galvanized items shall be handled, transported, and stored to prevent damage or staining to the coating. Maintain adequate ventilation and continuous drainage.
   4. Silicon content for steel to be hot-dipped galvanized shall be in the range of 0 to 0.04%.
   5. Steel work shall be precleaned utilizing a caustic bath, acid pickle and flux, or shall be blast cleaned and fluxed. In either case, all surface contaminants and coatings shall be removed.
   6. All welding shall be performed according to the American Welding Society publication D19.0-72, *Welding Zinc Coated Steel*. All uncoated weld areas shall be touched up.

PART 3–EXECUTION

3.01 EXAMINATION

A. Correct conditions detrimental to the proper and timely completion of the work.
B. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Furnish setting drawings, diagrams, templates, instructions, and directions for installation of anchorages such as concrete inserts, anchor bolts, and miscellaneous items having integral anchors which are to be embedded in concrete construction.
B. Coordinate delivery of such items to project.
C. Clean and strip primed steel items to bare metal where site welding is required.

3.03 FIELD WELDING

A. Comply with AWS Code for procedures of manual shielded metal arc welding (steel, stainless steel) and gas metal arc welding (aluminum), appearance and quality of weld made, and methods in correcting welding work.

3.04 TOUCH-UP PAINTING

A. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting according to Section 09900–Painting.

3.05 GALVANIZING REPAIR

A. Areas damaged by welding, flame-cutting, or during handling, transport, or erection shall be repaired by one of the following methods whenever damage exceeds 3/16 inch in width.
   1. Cold Galvanizing Compound:
      a. Surfaces to be reconditioned with zinc-rich paint shall be clean, dry, and free of oil, grease, and corrosion products.
      b. Areas to be repaired shall be power disc-sanded to bright metal. To ensure that a smooth reconditioned coating can be effected, surface preparation shall extend into the undamaged galvanized coating.
      c. Touch-up paint shall be an organic cold-galvanized compound having a minimum of 94% zinc dust in the dry film.
      d. The paint shall be spray- or brush-applied in multiple coats until a dry film thickness of 8 mils minimum has been achieved. A finish coat of aluminum paint shall be applied to provide a color blend with the surrounding galvanizing.
      e. Coating thickness shall be verified by measurements with a magnetic or electromagnetic gauge.
   2. Zinc-Based Solder:
      a. Surfaces to be reconditioned with zinc-based solder shall be clean, dry, and free of oil, grease, and corrosion products.
      b. Areas to be repaired shall be wire-brushed.
      c. Heat shall be applied slowly and broadly close to but not directly onto the area to be repaired. The zinc-based solder rod shall be rubbed onto the heated metal until the rod begins to melt. A flexible blade or wire brush shall be used to spread the melt over the area to be covered. The zinc-based solder shall be applied in a minimum thickness of 2 mils.
      d. Coating thickness shall be verified by measurements with a magnetic or electromagnetic gauge.

3.06 SCHEDULE

A. The following schedule is a list of principal items only. Refer to Drawing details for items not specifically scheduled.

B. Pipe Bollard: Steel pipe, concrete-filled, crowned cap, as detailed-galvanized and field finish paint according to Division 9.
C. Door Frames for Overhead Door Openings: Sill angle sections-galvanized finish.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 07900
CAULKING AND SEALANTS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Caulking and sealants on the project, including primers and backer rod material.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

A. Submittals shall comply with provisions of Section 01300–Submittals.
B. Submit copies of manufacturer warranty.

1.03 WARRANTY

A. Caulked joints shall be weathertight and guaranteed watertight by installer for 2 years from installation.
B. Provide manufacturer's 5-year product warranty.

PART 2–PRODUCTS

2.01 CAULK–GENERAL

A. Caulk for applications in all locations except floor joints shall be a one-part polyurethane sealant.
B. Acceptable products include the following, or equal:
   1. Masterseal NP1 by BASF Construction Chemicals, LLC.
   2. Vulkem 116 by Tremco, Inc. (exterior applications only).
   3. Dymonic 100 by Tremco, Inc.

2.02 CAULK–FLOOR JOINTS

A. Caulk for floor joints shall be a one-part, self-leveling, polyurethane sealant.
B. Acceptable products include the following, or equal:
   1. SL1 by BASF Construction Chemicals, LLC.
   2. Vulkem 45 SSL by Tremco, Inc.

2.03 ACCESSORIES

A. Backer rod shall be flexible, closed-cell polyethylene rod stock sized to be under at least 25% compression when positioned in the joint. In shallow joints and where backer rod is not used, polyethylene bond breaker tape shall be used. It is essential that the caulk bond to the side of the joint but not to the base of the joint.
B. Primer(s) shall be used where required by the manufacturer for the specific product(s) used and the specific application(s) intended. Specific product(s) shall be as recommended by the manufacturer.
C. Cleaning fluid shall be methyl ethyl ketone (MEK), methyl isopropyl ketone (MIK), or similar solvent material which will not etch or mar metal finishes and shall be the product of a nationally recognized manufacturer, of type expressly recommended for use with the caulking or sealant compound used.

PART 3–EXECUTION

3.01 INSTALLATION

A. Seal completely all joints around entire perimeter of all openings in all exterior walls (inside and outside faces), including joints at all exterior doors, windows, louvers, sills, and elsewhere as noted on the drawings and as necessary to seal all open joints in the building in a complete manner. Joints in exterior walls shall be caulked in a completely weathertight manner. Joints between interior walls and concrete ceilings and other interior joints shall be caulked as indicated on the drawings. Caulking not specified in other sections shall be performed under this heading.
B. All caulking shall be done according to manufacturer's specifications. Allow minimum 28-day curing period for concrete, grout, or mortar prior to caulking unless requested otherwise. Caulking work shall be done before the final coat of paint is applied except at moving joints which shall be finish painted before caulking or caulking shall be protected during painting. All caulking shall occur only when the temperature is above 40°F.
C. Joints shall be thoroughly cleaned and primed before caulking according to manufacturer's instructions. Unless otherwise shown, joints shall be square in cross section 1/2-inch by 1/2-inch and shall comply with manufacturer's joint width/depth ratio limitations.
D. Backer rod shall be used in all openings 3/4 inches or more in depth and shall be tightly packed to completely fill the space to 1/2-inch back of face. The 1/2-inch shall then be filled with caulking compound.
E. Caulking shall be done by hand gun. Compound shall be driven into joint grooves with sufficient pressure to force out all air and fill joint grooves solidly. Caulking where exposed shall be free of wrinkles and shall be uniformly smooth.
F. At completion of caulking, clean off all excess material from adjoining surfaces and material. Entire installation shall be left in a perfect appearing weathertight condition.

DIVISION 9 - FINISHES

SECTION 09900
PAINTING

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Surface preparation and application of paints and coatings.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

A. Submittals shall be according to provisions of Section 01300–Submittals.
B. Shop primer proposed for use shall be submitted with all material and equipment submittals. All shop primers shall be of the same generic type and quality as those specified herein.
C. Submit two copies of manufacturer's Material Safety Data Sheets (MSDS) for each type of paint with each shop drawing submittal. MSDS sheets shall be posted at the construction site at all times painting is in progress.
D. Substitution submittals shall include performance test data, as certified by a qualified testing laboratory, for the ASTM tests specified in this Section.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Materials shall be delivered to the site in original containers with labels intact and seals unbroken.
B. Drop cloths shall be used in all areas where painting is done to fully protect other surfaces.
C. Oily rags and waste must be removed from the building each night or kept in an appropriate metal container.

1.04 ENVIRONMENTAL REQUIREMENTS

A. Contractor shall dry-heat, dehumidify, and ventilate to obtain painting conditions recommended by the paint manufacturer during surface preparation, application, and cure.
B. Relative humidity conditions as specified by the paint manufacturer's data sheet shall be adhered to. This includes times in which supplemental heat is used. Supplemental heat shall be indirect-fired hot air furnaces or electric heat. Open-flame heaters shall not be used.

C. No unprotected, unheated exterior painting shall be undertaken when damp weather appears probable, nor when the temperature of the substrate is below 55°F, unless approval in writing is received from the paint manufacturer.

1.05 COLOR SELECTIONS

A. Provide color charts for all coatings being used on the project. Provide draw down samples of colors provided on the drawings for department's final approval.
B. Provide a summary sheet at the completion of the project listing the finish paint products used and the manufacturer's color identification for each item painted. This summary sheet should be submitted to engineer for review.

PART 2–PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. All materials required for painting shall be types and quality as manufactured by Tnemec Company, Inc., Sherwin Williams Company, International Devoe, Carboline, or equal, unless noted otherwise in the schedule.
B. Where thinning is necessary, only the products of the manufacturer furnishing the paint will be allowed. All such thinning shall be done strictly according to the manufacturer's instructions.
C. Paint and paint products of Tnemec Company and Sherwin Williams, listed in the following specifications, are set up as standard of quality.

PART 3–EXECUTION

3.01 SURFACE PREPARATION

A. General:
    1. All surfaces to be painted shall be prepared as specified herein and by the manufacturer's published data sheet and label directions. The objective shall be to obtain a uniform, clean, and dry surface.
    2. No field painting shall be done before the prepared surfaces are observed by engineer. Surfaces painted without such observation shall be abrasive-blast-cleaned and repainted.
B. Ferrous Metal:
    1. All ferrous metal to be primed in the shop shall have all rust, dust, and mill scale, as well as all other foreign substances, removed by abrasive blasting. Cleaned metal shall be primed or pretreated immediately after cleaning to prevent new rusting.
    2. All ferrous metals not primed in the shop shall be abrasive-blasted in the field prior to application of the primer, pretreatment, or paint.
    3. Abrasive blasting of metals in the shop shall be according to SSPC-SP6 Commercial Blast Cleaning.
    4. Solvent cleaning according to SSPC-SP1 shall precede all abrasive-blasting operations.
    5. Prior to finish coating, all primed areas that are damaged shall be cleaned and spot-primed.

C. Galvanized: Where galvanized items are not submerged or buried, they shall be cleaned with nonhydrocarbon solvent cleaner (such as Clean N Etch, or equal) according to SSPC-SP1 and shall be abrasive-blasted according to SSPC-SP16 Brush-Off Blast Cleaning.

3.02 APPLICATION

A. All materials shall be used as specified by the manufacturer's published data sheets and label directions.
B. No paint shall be applied on a wet or damp surface and in no case until the preceding coat is dry and hard. Each coat shall be allowed to dry according to manufacturer's data sheets before the next coat is applied.
C. Drying time shall be construed to mean "under normal conditions." Where conditions are other than normal because of the weather or because painting must be done in confined spaces, other drying times will be necessary.
D. Additional coats of paint shall not be applied, nor shall units be returned to service until paints are thoroughly dry and cured.
E. Steel that will be inaccessible in the completed work shall receive the final coat before enclosure.
F. Paint shall be applied to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, or other surface imperfections will not be acceptable. Tops and bottoms of walls and areas that are "cut-in" by brush prior to rolling shall have a uniform appearance in comparison with adjoining surfaces.
G. Concrete block walls shall be back-rolled to achieve a pinhole-free surface coat.
H. Crevices and other hard-to-apply areas shall be back-rolled/back-brushed in conjunction with application of the first field coat of primer or intermediate coat.

3.03 FIELD QUALITY CONTROL

A. Examination of work on the site by the manufacturer's representative shall be performed when requested by engineer.

3.04 CLEANING

A. All stains and marks shall be removed from all surfaces upon completion of the work.

3.05 SCHEDULE

A. General:
    1. At the completion of the project, all painted surfaces which have been damaged shall be repainted or touched-up.
    2. See the drawings for an additional reference for areas to be painted.
    3. Products listed first are Tnemec and second are Sherwin Williams.

B. New Work:
   1. All new work done by all trades shall be painted by contractor according to the following schedule and according to paint manufacturer's recommendation. It is the intent of these specifications that all non-galvanized ferrous metal items scheduled for painting be shop-primed. If items are not shop-coated, surfaces shall be prepared and painted in the field as specified. If any items of new construction are not listed, contractor shall request paint system from engineer, and the items shall be painted as part of this Contract without additional cost.
   2. Interior concrete floors: See Section 03300 for sealed concrete floors.
   3. Interior concrete block walls: One filler coat of Epoxoblock WB 1254, Kem Cati-Coat HS, and two coats HB Tneme-Tufcoat 114, Pro Industrial Water Based Epoxy B73-300.
   4. Steel:
      a. One shop coat of N69-1255 Hi-Build Epoxoline, Macropoxy 646 Beige as primer.
      b. Touch-up primer prior to finish coat, and either:
         (1) Two coats of N69 Hi-Build Epoxoline II, Macropoxy 646 for interior surfaces; or
         (2) One coat of N69 Hi-Build Epoxoline II, Macropoxy 646; and one coat of 1074 Endura-Shield, Acrolon 218HS for exterior surfaces.
         (3) First field coat shall be applied prior to installation to surfaces inaccessible after installation including back sides of door frames. See Division 8 for factory-applied door primers.
   5. Doors delivered with nonepoxy primers:
      a. Degrease per SSPC-SP1.
      b. Lightly hand-sand per SSPC-SP2.
      c. Apply one coat 135-1255 Chembuild Beige, Macropoxy 646 Beige.
      d. Apply two finish coats as follows:
         (1) Two coats of N69 Hi-Build Epoxoline II, Macropoxy 646 for interior surfaces, or
         (2) One coat of N69 Hi-Build Epoxoline II, Macropoxy 646, and one coat of 1074 Endura-Shield, Acrolon 218HS for exterior surfaces.

C. Coverage:
   1. Dry mil thickness shall conform to those specified. Mil test measurement shall conform to SSPC Steel Structures Painting Manual. Dry Film Thickness (DFT) shall be verified according to SSPC-PA2.
   2. The coatings listed will provide the mil thickness given when applied at the coverages listed. Upon the request of engineer, such surfaces shall be checked by the painter with a calibrated mil thickness gauge and any deficiencies found in the film shall be remedied by additional coat(s) at the expense of contractor.
   3. On masonry, application rates will vary according to surface texture; however, in no case shall the manufacturer's stated coverage rate be exceeded. On porous surfaces, it shall be the painter's responsibility to

achieve a protective and decorative pinhole-free finish either by decreasing the coverage rate or by applying additional coats of paint.

4. Coverages reflect manufacturer's recommendations using spray application techniques. Where brushing or rolling is specified or performed at the discretion of the painter, one additional coat, minimum, will be required to achieve total DFT thickness as specified and recommended by the manufacturer.

D. Colors: Colors are provided on the drawings.

DIVISION 15 - MECHANICAL

SECTION 15195
PIPING AND EQUIPMENT IDENTIFICATION

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Perform all work required to furnish and install equipment, pipe, and with supplementary items necessary for proper installation as specified herein, or shown on the drawings. Contractor shall identify including, but not limited to, all equipment, valves, piping, ductwork, and dampers.

B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

A. Submit shop drawings and product data according to provisions of Section 01300–Submittals.

PART 2–PRODUCTS

2.01 NAMEPLATES

A. Type "A" Nameplates:
Use: Fans.
Size: 4-inch by 4-inch.
Material: 3-layer laminated Micarta.
Background Color: Black.
Character Color: White.
Character Size: 1 1/4 inches.
Engraving: Equipment label.
Mounting Location: Equipment–Top wireway.

B. Type "B" Nameplates:
Use: Identify control stations, CO and NOx sensors, etc.
Size: 3/8-inch by 2-inch.

Material: 3-layer laminated Micarta.
Background Color: Black.
Character Color: White.
Character Size: 1/8 inch.
Engraving: Control station number or equipment controlled.
Mounting Location: Device front at top.

PART 3–EXECUTION

3.01 INSTALLATION

A. Installation shall meet or exceed all applicable federal, state, and local requirements and referenced standards and conform to code and ordinances of authorities having jurisdiction.
B. Degrease and clean surfaces to receive nameplates.
C. Install nameplates parallel to equipment lines.
D. Affix nameplates with stainless steel screws or sticky-back adhesive.
E. Affix labeling tags with permanent bonding cement or locking wire ties. Provide 3/8-inch hole to accommodate wire tie.
F. Prepare and install neatly typed directions in all panels, including existing panels, where work is done under this Contract.

SECTION 15860
HVAC FANS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Sidewall propeller fans.
   2. Ceiling or cabinet fans.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

A. Submit under provisions of Section 01300–Submittals.
B. Submittal shall include fan-specific performance curves showing airflow, head, and motor horsepower.

1.03 QUALITY ASSURANCE

A. Fans shall bear AMCA-certified rating seals.

1.04 DELIVERY, STORAGE AND HANDLING

A. All fans shall be stored and handled according to manufacturer's instructions.
B. Motors, shafts, and bearings shall be protected from weather and dust.

PART 2–PRODUCTS

2.01 SIDEWALL PROPELLER FANS

A. Provide a complete direct drive, sidewall, propeller exhaust fan with wall-mount collar, backdraft damper, and housing necessary to mount a louver. Provide an OSHA-approved fan guard provided by the fan manufacturer. Fans shall be UL listed.
B. Fans shall be four-bladed axial type. Propellers shall be aluminum blades riveted to a steel hub mounted on a galvanized steel panel. Propellers shall be statically and dynamically balanced.
C. Fan shaft shall be ground, polished, and mounted in permanently lubricated, sealed, sleev bearings. Bearings shall be rated for 200,000 hours at maximum speed.
D. Fan panel shall have prepunched mounting holes, formed flanges and welded corners, and deep-formed venture. Panel shall be one-piece galvanized steel.
E. Motor shall be NEMA-approved ball bearing type.
F. Each fan and motor combination shall be capable of delivering 110% of air quantity scheduled at scheduled static pressure. The motor furnished with the fan shall not operate into the motor service factor when operating under these conditions.
G. Provide an aluminum wire bird guard on the fan's discharge.
H. Provide baked-enamel finish. Color to be white.

2.02 CEILING FANS OR CABINET FANS

A. Fans shall have acoustically insulated housings and shall have maximum sound level rating not to exceed 4.0 sones according to AMCA Bulletin 300-74. Fans shall bear the AMCA-certified ratings and seal for air capacity, sound, and UL label.
B. Unit shall be equipped with integral chatter proof backdraft damper.
C. Fans shall have centrifugal wheel with inlet perpendicular to grille. Ceiling grille shall be aerodynamically designed and shall provide 80% free area.
D. Terminal box shall be furnished with cord, plug, and receptacle inside housing. Entire fan, motor, and wheel assembly shall be removable without disturbing the housing. Motor speed shall not exceed 1,100 rpm.
E. Fan shall be mounted on vibration isolators furnished by fan manufacturer.
F. Manufacturer shall furnish line voltage internally-mounted variable speed controller for fan. Controller shall be used for balancing only and shall be inaccessible to room occupants unless otherwise indicated on the drawings.

2.03 SIDEWALL PROPELLER FANS - FIBERGLASS

A. Provide a complete direct drive fiberglass wall ventilator manufactured by Hartzell or approved equal with the fan packaged, completely assembled, and ready to install.
B. The fan housing with outlet fan orifice shall be a one-piece design deep box, flanged on the intake end, with motor base plate and vertical base supports all of solid fiberglass and resin. The fiberglass propeller shall be a die formed airfoil design of cloth mat and woven roving using a polyester resin with 3% antimony oxide added to achieve a Class I flame spread rate of below 25 per ASTM E84 and NFPA Code 91.
C. Fan construction shall conform to ASTM Standard D4167 for fiber reinforced plastic fans and blowers. Provide a propeller hub with an aluminum casting insert for secure attachment to the shaft.
D. Provide a totally enclosed air over type motor. The maximum service temperature is 104 F for standard Class F insulation.
E. Mount with Type 304 stainless steel hardware.
F. The fan assembly shall be dynamically balanced.
G. Fan performance shall be based on AMCA accredited test laboratory according to AMCA Standard 210 and AMCA Standard 300. Fans shall be licensed to bear the AMCA Certified Air Performance Rating Seal.
H. Provide the following accessories:
    1. Mounting Flange - Fiberglass bonded to the orifice end of the unit with same face drilling as inlet flange box.
    2. Guards - Inlet and outlet guards, OSHA approved.
    3. Boot - Fiberglass boot for mounting a shutter with a panel fan.
    4. Shutter - Fiberglass end pivoted damper.

PART 3–EXECUTION

3.01 INSTALLATION

A. Install according to manufacturer’s instructions and drawings.
B. Provide all mounting hardware and accessories necessary to complete installation.
C. Provide flexible duct connections on inlet and outlet of all fans.
D. Drawings and specifications are based on the scheduled manufacturer and model number. Pay for the cost of any changes because of substitutions or alternates of other manufacturers or model numbers. Pay all costs for revisions of drawings by engineer. Any changes shall be coordinated and provided at no additional cost to the department.
E. Installation of all equipment furnished under this Contract shall be supervised by a qualified representative of the equipment manufacturer. All equipment shall be placed in operation, and operators shall be trained to the satisfaction of the department by a qualified representative of the equipment manufacturer. The department may videotape training presentations given by manufacturer’s

representatives. Final payment for various items of equipment will not be made by the department until the equipment is operating to their satisfaction.

SECTION 15910
DUCTWORK ACCESSORIES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Flexible duct connections.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

A. Submit under provisions of Section 01300–Submittals.
B. Damper submittals shall include actual pressure drop, free area, and torque requirements for each type of damper provided.

1.03 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01700–Contract Closeout.
B. Record actual locations of access doors, fire dampers, flexible duct connections, dampers, and screens.

PART 2–PRODUCTS

2.01 FLEXIBLE DUCT CONNECTIONS

A. Flexible duct connections in unrated spaces shall be neoprene-coated glass fabric. Fabric shall be suitable for continuous operation up to 200°F. Fabric shall have zero leakage at ±10 inches water column.

PART 3–EXECUTION

3.01 INSTALLATION

A. Provide flexible connections immediately adjacent to equipment in ducts associated with fans and motorized equipment. Metal-to-metal gap shall be approximately 4 inches.

SECTION 15940

AIR OUTLETS AND INLETS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Louvers.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

A. Submit under provisions of Section 01300–Submittals.
B. Submittal shall include a louver schedule that includes louver model, screen type, louver size, finish type, free area, face velocity, and pressure drop for each louver.

1.03 QUALITY ASSURANCE

A. Performance of air terminals shall be according to ADC 1062.
B. Louvers shall be tested and certified according to AMCA 500 and shall bear the AMCA seal.

PART 2–PRODUCTS

2.01 LOUVERS (EXTRUDED ALUMINUM)

A. Blades and frame shall be extruded aluminum 6063-T5 alloy and 0.08 inch thickness.
B. Blades shall be 37 degree drainable type spaced at 4 inches on center. Louver shall be capable of a velocity of 1,007 fpm with no water penetration. Performance shall include AMCA-certified air and moisture penetration data and louver shall bear the AMCA seal. Vertical and horizontal mullions and connections between panels shall not be exposed.
C. Provide channel frame unless noted otherwise on the drawings.
D. Provide screen on louver according to louver schedule on drawings. All fastenings shall be stainless steel or aluminum according to louver schedule on drawings.
E. Louver free area shall be equal to or greater than attached ductwork and damper free area.
F. Louvers shall be furnished with 3 coats of 70% Kynar 500 finish with custom color selected by the department. Submit manufacturer's standard color chart with shop drawings.

PART 3–EXECUTION

3.01 INSTALLATION

A. Install louvers according to manufacturer's recommendations and drawing details.

DIVISION 16 - ELECTRICAL

SECTION 16110
CONDUIT

PART 1–GENERAL

A. All conduit 12'-0" above finished grade and higher in room 102 and all conduit in room 101 shall be heavy wall rigid, Schedule 80 PVC.
B. All conduit in earth shall be heavy wall rigid, Schedule 80 PVC. All conduit within six feet of a building shall be PVC coated rigid steel conduit.
C. All conduit between 0'-0" and 12'-0" above finished grade in room 102 shall be rigid aluminum.
D. All conduit protruding from concrete slabs and all conduit in Class I, Division 2 locations shall be PVC coated rigid steel. PVC coated rigid steel conduit shall be internally and externally hot dipped galvanized rigid metal conduit with hot dipped galvanized threads and PVC coating. PVC coating shall be UL Listed with rigid metal conduit, and PVC coating shall have external 40 mil thickness with an internal 2 mil urethane coating.
E. All conduit used for equipment connections shall be liquid-tight flexible metal conduit. Liquid-tight flexible metal conduit shall be electro-galvanized single strip steel with integral grounding conductor continuously enclosed within the entire length of the convolutions. The flexible PVC jacket shall be sunlight-resistant, flame-retardant, and resistant to damage from mild acids. Conduit shall be rated for installation in Class I, Division 2, Groups C and D locations. Fittings shall be stainless steel, UL listed with thermoplastic elastomer sealing gasket. A minimum of 18 inches of flexible conduit shall be installed for each motor. Liquid-tight flexible metal conduit shall be installed in such a manner that liquids tend to run off the surfaces and not drain toward the fittings.
F. All conduit shall be UL listed for the application where being used. All conduit shall be minimum 3/4" size.
G. Conduits shall be attached to building surfaces and not suspended unless installed in a strut channel-type conduit rack. Individual conduits shall not be suspended. Clevis hangers are not allowed. Run conduits grouped and parallel or perpendicular to construction.
H. Conduits shall not be run in slabs-on-grade or structural topping slabs. Conduit attached to building surfaces shall be spaced out to avoid rust and/or corrosion using fittings approved for the use.

I. Use back-straps on all conduit or mount conduit with strut channel straps, or equal.
J. Watertight hubs shall be used in all locations.
K. All conduit installed below grade shall be buried a minimum of 2 feet with sand backfill.
L. All conduit below floor slabs shall be buried a minimum of 1 foot below slab.
M. All supporting devices shall be PVC, unless noted otherwise.
N. All runs of flexible conduit to equipment and devices shall be as short as practicable, of the same size as the conduit it extends, and with enough slack to reduce the efforts of vibration to a minimum.
O. Provide conduit expansion-deflection fittings in all conduit runs where movement perpendicular to axis of conduit may be encountered.
P. Provide EYS seal fittings and seal with potting compound according to the NEC in Class I locations.

SECTION 16120
WIRE

PART 1–GENERAL

A. All power wiring shall be stranded copper, type XHHW-2, no smaller than 12 AWG. All control wiring shall be type THHN, no smaller than 14 AWG.
B. Provide insulated, silicone-filled spring wire connectors with plastic caps for 8 AWG conductors or smaller. Connectors shall be silicon-filled safety connectors.
C. Spring wire connectors shall only be allowed in junction, outlet, or switch boxes. Spring wire connectors are not allowed for terminating of motor conductors.
D. All feeder cable connections to motor leads up to 600 volts shall be insulated and sealed with factory engineered kits.
E. Motor connection kits shall consist of one hole copper compression lugs for 6 AWG and larger, split bolt connector for 8 AWG and smaller, and motor lead pigtail splice kit. Individual components shall be as follows: 1. Split bolt connectors shall be for use with copper conductors only. 2. Lug size shall be selected based on motor and feeder wire sizes installed. 3. Pigtail splice kit shall consist of one-hole lug cover, locking pin, silicone grease, and mastic sealing strip. Kit shall be selected based on motor, feeder, and lug sizes installed. No splices will be allowed unless approved by the engineer.
F. Provide preprinted adhesive or heat shrink-type wire numbering labels at all terminations.
G. Wire numbering preprinted on the conductor, flag-type labels, and individual wraparound numbers (e.g., Brady labels) are not acceptable.

SECTION 16130
BOXES

PART 1–GENERAL

A. All pull and junction boxes shall be cast of aluminum to match conduit installation. Pull and junction boxes where used with PVC conduit shall be PVC or FRP.
B. All boxes attached to building surfaces shall be spaced out to avoid rust and/or corrosion.
C. All boxes shall be on 1-inch standoffs.

SECTION 16141
WIRING DEVICES

PART 1–GENERAL

A. Receptacles:
    A. All receptacles shall be 20 ampere, 125 volt, NEMA 5-20R, Industrial specification grade, straight blade, 3-wire, duplex, grounded outlets unless otherwise noted.
    B. Receptacles shall be mounted vertically. GFI receptacles shall have integral ground fault current interrupter.
    C. GFI receptacles shall not be series wired. Provide NEMA 4X while-in-use cover for all receptacles. Mounting height for all receptacles shall be 48 inches above finished floor.
    D. For the salt conveyor, provide a UL-listed twist-lock 50-amp, 480-volt, 3-phase receptacle in cast box with gasketed cover.
B. Wall Switches:
    A. All light switches shall be industrial specification grade, snap switch, 20 amperes, 277 volts, number of poles as shown on the drawings.
    B. All light switches shall have NEMA 4X weatherproof toggle switch covers.
    C. Mounting height for all light switches shall be 48 inches above finished floor.

SECTION 16412
SURGE PROTECTIVE DEVICES (SPD)

PART 1–GENERAL

A. Branch panel surge protective device shall provide effective energy surge diversion for application in ANSI/IEEE C62.41-2002 location Category B3. Testing shall be per ANSI/IEEE C62.45-2002 using ANSI/IEEE C62.41 Category B3 waveforms and amplitudes.

B. The system individual unit shall be UL listed under UL1449, latest edition, Standard for Surge Protective Devices (SPD).
C. Surge ratings shall be permanently affixed to the SPD. Surge protective device shall be MOV type.
D. The maximum surge current capacity shall be at least 160 kA per phase.
E. The surge life (8/20 microsecond waveform) shall be at least 6 kA for 10,000 occurrences or 10 kA at 20 kV for 16,000 occurrences. SPD shall have a nominal discharge rating (In) of 10 kA.
F. Unit shall provide maximum ANSI/UL 1449 VPRs for 480Y/277 volt systems.
   A. L-N = 1500 V.
   B. L-G = 1500 V.
   C. N-G = 1200 V.
   D. L-L = 2500 V.

SECTION 16420
ELECTRICAL SERVICE SYSTEM

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Utility Company.
   2. Secondary service characteristics.
   3. Definitions.
   4. Sequencing, scheduling.
   5. Underground electric service.
B. Applicable provisions of Division 1 shall govern work in this section.

1.02 UTILITY COMPANY

A. The utility company is Alliant Energy. Contact Jeff Nelson, (608) 845-1148, before beginning any work on the electrical service system.

1.03 SECONDARY SERVICE CHARACTERISTICS

A. The secondary service will be 277/480-volt, 4-wire, three-phase for combined lighting and power.

1.04 DEFINITIONS

A. Service: As defined in the NEC, Article 100.
B. Primary Voltage: Above 600 volts.
C. Secondary Voltage: 600 volts and below.

1.05 SEQUENCING, SCHEDULING

A. Provide electrical service system, except the Utility Company will provide:
B. Duct from terminal pole to building.
C. Conduit from the terminal pole to building.
D. Transformer.
E. Cable from transformer to CT cabinet (CT cabinet provided by contractor).
F. Current transformers and potential transformers (installed by contractor in contractor provided CT cabinet).
G. Meter (installed by contractor in contractor provided meter socket).
H. Metering wiring.

1.06 UNDERGROUND ELECTRICAL SERVICE

A. Provide complete underground electrical service except for items furnished and installed by the Utility Company.

PART 2–PRODUCTS
(Vacant)

PART 3–EXECUTION

3.01 INSTALLATION

A. Provide concrete for transformer base according to Section 03300 with minimum 3,000 psi concrete and according to Utility Company requirements.

SECTION 16440
DISCONNECT SWITCHES

PART 1–GENERAL

A. All manual motor switches for 120V or 240V motors on circuits 20 amps or less shall be specification grade snap switch as specified above.
B. Nonfusible disconnect switches shall be NEMA KS 1; heavy-duty, quick-make, quick-break, load interrupter enclosed knife switch with externally-operable handle interlocked to prevent opening front cover with switch in "On" position. A defeater shall be provided to bypass this interlock. Handle lockable in "Off" position.

SECTION 16460
TRANSFORMERS

PART 1–GENERAL

A. Transformers shall be dry-type, ANSI/NEMA ST 20; factory-assembled, air-cooled, two-winding, ventilated transformers; ratings as shown on the plans. Transformers shall be DOE 2016 Efficiency rated.
B. Transformers shall include copper windings, with winding taps as follows: two at +2 1/2% FCAN and four at -2 1/2% FCBN.
C. Transformers shall be suitable for wall mounting. Transformers installed outdoors shall be provided wih NEMA Type 3R enclosure with weather shield. Provide lifting eyes or brackets. Set transformers plumb and level. Mount transformers on vibration isolating pads suitable for isolating the transformer noise from the building structure.
D. Transformers shall include engraved metal nameplate from manufacturer with transformer connection data.
E. Use liquidtight flexible metal conduit, 3 feet maximum length, for connections to transformer case. Make conduit connections to side panle or bottom of enclosure only. Provide grounding as required by code.

SECTION 16470
PANELBOARDS

PART 1–GENERAL

A. Lighting panelboards shall be 120/208 volt, three phase, 30 circuit, having an interrupt rating of 22 kAIC, 200 amp rated with 100 amp Main Circuit Breaker. Provide subfeed lugs in panelboards where shown on the drawings. Power panels shall be 480 volt, three phase, 18 circuit, having an interrupt rating of 22 kAIC, 100 amp rated with 100 amp Main Circuit Breaker. Panelboard shall have individually mounted main circuit breaker, branch mounted main circuit breakers are not allowed.
B. Panelboards shall have copper bussing. All circuit breakers shall be bolt-on type. Panel shall have separate ground and neutral buss bars.
C. Panelboards located outdoors shall be provided in stainless steel NEMA 4X enclosures.
D. Balance load on panelboards so phases are balanced to within 15% of each other. Reconnect or redistribute circuits and/or circuit breakers to achieve balanced condition. Submit ammeter readings for all panelboard feeders indicating normal operating load and phase balance.
E. Provide typewritten panel schedule in panelboards.

SECTION 16480
MOTOR CONTROL

PART 1–GENERAL

A. Combination starters shall include magnetic motor starter, overload relay, molded case circuit breaker, and control devices inside a single enclosure, type as shown on the plans.
B. Combination starters shall be factory assembled, wired, and tested. All internal wiring shall be color-coded and numbered, and each wire shall be terminated on terminal strips.
C. Motor circuit protectors shall be NEMA AB 1, circuit breakers with integral instantaneous magnetic trip in each pole.
D. Nonfusible switch assemblies shall be NEMA KS 1; heavy-duty, quick-make, quick-break, load interrupter enclosed knife switch with externally-operable handle interlocked to prevent opening front cover with switch in "On" position. A defeater shall be provided to bypass this interlock. Handle lockable in "Off" position.

SECTION 16500
LIGHTING

PART 1–GENERAL

A. Interior Type A Light Fixtures
   1. Interior (Type A) light fixtures shall be 226 watt, 120 volt, 28,000 lumen, 4000K color temperature, LED fixtures with stainless steel latches and corrosion resistant finish, manufactured by Metalx model VT4LED-LD4-28-DR-120V-L840-ED-3-WL-SSL, Lusio model WD1-UL-8M-40-CLAC-CRM-120-10V-CORDN, Albeo model ABH3-0-3-V-47-1-N-V-23-K-D-W, or approved equal.
   2. Fixture shall have internal fusing.
   3. Fixture shall be corded with twist-lock receptacle style connection.
   4. Fixture shall be UL listed for wet locations.
B. Exterior Type B Light Fixtures
   1. Exterior (Type B) light fixtures shall be 46 watt, 120 volt, 4000 lumen, 4000K color temperature Type 3 medium distribution, enclosed LED fixtures, manufactured by Cree model SEC-EDG-3M-WM-04-E-UL-BZ-350-P-40K, McGraw-Edison model GWC-AE-01-LED-El-T3, GE model EWN-A-1-A3-5-40-3-N-F, or approved equal.
   2. Fixture shall have internal fusing. Fixture shall be UL listed for wet locations.
   3. Fixture shall have integral photocell.
   4. Provide mounting hardware as necessary for mounting locations shown on the drawings.

C. Exterior Type C Light Fixtures
   1. Exterior (Type C) light fixtures shall be 90 watt, 120 volt, 8000 lumen, 4000K color temperatue Type 3 medium distributon, enclosed LED fixtures, manufactured by Cree model SEC-EDG-3M-WM-08-E-UL-BZ-350-P-40K, McGraw-Edison model GWC-AE-02-LED-El-T3, GE model EWN-A-1-C3-5-40-3-N-F, or approved equal.
   2. Fixture shall have internal fusing. Fixture shall be UL listed for wet locations.
   3. Fixture shall have integral photocell.
   4. Provide mounting hardware as necessary for mounting locations shown on the drawings.

D. Emergency Lighting Uninterruptible Power Supplies (UPS)
   1. UPS input shall be 120/277 Vac, 60 Hz, three-wire (Switched Hot, Common, Unswitched Hot) plus ground. Input shall be protected by circuit breaker sized for UPS load.
   2. UPS output shall be 120/277 Vac, 60 Hz, two-wire plus ground, suitable for use with LED fixtures. Output shall be protected by circuit breaker sized for UPS load.
   3. UPS battery shall be sealed lead calcium. Battery shall be sized appropriately to provide 90 minutes of run time for 91% of rated output lumens.
   4. UPS watt output rating shall be 250W as required for loads indicated on the plans.
   5. UPS shall be equipped with self-diagnostic circuitry. Circuitry shall check different operating parameters during initial start-up, normal standby, and diagnostic stages. If a fault is detected, the fault indicator shall flash to alert maintenance personnel.
   6. UPS shall automatically initiate a diagnostic cycle every 28 days to test emergency operation. The self-diagnostic circuitry shall not utilize the lighting loads to cycle and test the unit battery. Instead, a built-in resistive load shall be used, thereby eliminating emergency lamp illumination during diagnostic testing.
   7. UPS shall be capable of providing emergency illumination to switched and unswitched lamps. UPS shall monitor the reference voltage from the line (unswitched) side of the control device. In the event the reference voltage is lost the UPS shall power the connected lamps regardless of control device position.
   8. UPS shall be capable of being mounted a maximum of 1000 feet from the emergency fixtures.
   9. UPS shall be UL 924 lsited and meet NFPA 101 requirements.
   10. Inverter module and battery shall be housed in a NEMA 1 enclosure.
   11. Three-year manufacturer warranty on all UPS components shall be included (except batteries).

SECTION 16940
CONTROLS AND INSTRUMENTATION

PART 1–GENERAL

A. Gas Sensors
   1. Carbon monoxide sensors shall receive 24VDC input power and output shall be 4-20 mA. Operating range shall be 0 to 125 ppm with an accuracy of 2.5% of reading. Provide LCD display of concentration sensed and two SPDT Form 1C contacts rated for 1 amp.
   2. Nitrogen dioxide sensors shall receive 24VDC input power and output shall be 4-20 mA. Operating range shall be 0 to 125 ppm with an accuracy of 2.5% of reading. Provide LCD display of concentration sensed and two SPDT Form 1C contacts rated for 1 amp.
   3. Provide 120VAC to 24VDC power supplies sized as required to power sensors.

B. Exhaust Fan EF-01 Controls:
   A. Provide a junction box with an "Off"-"Auto" selector switch for control of exhaust fan EF-01 as shown on the drawings.
      1. In "Off" mode, the exhaust fan shall be inoperable.
      2. In "Auto" mode, Exhaust Fan EF-01 shall operate as follows. There shall be an operator adjustable "off time" (0-6 hours) and "on time" (0-60 minutes) time delays which shall cycle the fan on and off. When the CO or NO2 concentration in the Storage Lean-to rise above the limits below, the exhaust fan shall run and the timers described above shall be reset. When the CO level falls below the limit of 35 PPM or the NO2 level falls below the limit of 1 PPM, the timed on-off sequence shall resume, beginning with the off time.
   B. Provide time delay and control relays as required.

C. Relays:
   A. Relays for motor control circuits, hard-wired control logic, and for loads less than 10 amps shall be general purpose, industrial square base relays. Relays shall be DPDT or 3PDT as required, DIN-rail mounted with screw terminal base socket, 120 Vac, with a 15A, ¾ HP minimum contact rating. Operating life shall be 10 million cycles. Relay shall include On-Off flag type or LED indicator and shall be UL listed.

168. Swing Gate, Item SPV.0105.502.

A Description
This special provision describes furnishing and installing a double leaf swing gate at locations as detailed in the plans and as hereinafter provided.

B Materials
Fabricate swing gate from schedule 80 steel pipe or tubular steel sections. Provide receiver post for each gate leaf to restrain gate in the open position. Galvanize all steel members, hardware, and accessories used in construction of swing gate.

Provide nuts, bolts and washers hot dip galvanized according to ASTM A153.

Provide concrete for footings according to standard spec. section 501 conforming to Grade A, A-FA, A-S, A-T, A-IS, A-IP, and A-IT.

C Construction
Provide heavy duty contractor-designed gate system of the size and configuration shown on the plans.

Galvanize the steel frame and posts according to ASTM A123.

Set gate posts in concrete footings of size and depth as required by gate manufacturer. Provide 4-foot minimum footing depth.

Excavate footings to the required depth. Remove water or other foreign material from the excavation before placing concrete.

Provide reflective sheeting tape according to standard spec section 637.2.2.2 around gate members at the locations shown on the plan. Provide alternating red and white diagonals on the reflective tape.

D Measurement
The department will measure Swing Gate as single complete lump sum unit of work, completed according to the contract 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.0105.502	Swing Gate	LS

Payment is full compensation for providing steel frame, hinges, receiver post, hardware, concrete, and reflective tape; for excavation; for installation; for placing concrete footing; and for backfilling and disposing of surplus materials.

169. Bioretention Basin, Item SPV.0105.503.

A Description
This special provision describes constructing and maintaining bioretention basins as shown on the plans and as hereinafter provided.

B Materials

B.1 Engineered Soil

(1) Provide soil consisting of a mixture of sand and compost. Design the mix to approximate the following percentages, by volume.

Engineered Soil Component	Percentage Composition (By Volume)
Mineral ($Si0_2$) Sand	80%
Compost	20%

(2) Provide sand meeting the gradation requirements of standard spec 501.2.5.3.4. Provide sand consisting of mineral sand that is at least 97% $Si0_2$. Substitutions, such as calcium carbonated sand, dolomitic sand, manufactured sand or stone dust will not be allowed. Wash the sand to remove clay and silt particles and drain prior to mixing.

(3) Provide compost meeting the requirements of Wisconsin Department of Natural Resources Specification S100, Compost.

(4) Provide engineered soil mix free of rocks, stumps, roots, brush or other material over 1 inch in diameter. Do not mix materials with the engineered soil that may be harmful to plant growth or prove a hindrance to planting or maintenance.

(5) Provide engineered soil mix with a pH between 5.5 and 8.0 and with adequate nutrient content to meet plant growth requirements. Provide documentation of the pH level of the engineered soil to the engineer prior to use at the site.

B.2 Pea Gravel

Provide pea gravel meeting the specifications of ASTM standard C33 02a Size Number 8.

B.3 Geotextile Fabric, Type DF

Provide Geotextile Fabric, Type DF, schedule B according to standard spec 645.

B.4 Backfill Course Aggregate No. 1

Provide Backfill Course Aggregate No. 1 according to standard spec 501.2.5.4.4.

B.5 Pipe Underdrain 6-Inch

Provide Pipe Underdrain 6-Inch according to standard spec 612. Provide connections and fittings capable of attaching the Pipe Underdrain 6-Inch to the vertical clean-out.

B.6 Vertical Clean-Out and Pipe Cap

Provide 6-inch corrugated steel pipe culverts according to standard spec 521. Provide a fire resistant metal pipe cap capable of being mechanically attached to the 6-inch corrugated steel pipe and capable of opening, closing and being secured when closed. The use of adhesive or epoxy to attach the cap to the pipe is not allowed. Provide connections and fittings capable of attaching the vertical clean-out to the Pipe Underdain 6-Inch.

C Construction

C.1 Construction Site Stabilization

Prevent construction site runoff from disturbed areas from entering the bioretention basin. Divert runoff from pervious areas from the basin until the pervious areas have undergone final stabilization. Final stabilization is the condition achieved on pervious areas when uniform perennial vegetative cover has been established with a density of at least 70 percent.

C.2 Suitable Weather

Suspend basin construction during periods of rainfall or snowmelt. Maintain suspension of basin construction if ponded water is present or if residual soil moisture contributes significantly to the potential for soil smearing, clumping or other forms of compaction.

C.3 Geotextile Fabric, Type DF

Place Geotextile Fabric, Type DF according to standard spec 645.3.4.

C.4 Compaction Avoidance

Minimize compaction and smearing of the soils beneath the floor and side slopes of the bioretention area, and compaction of the soils used for backfill in the soil planting bed. During site development, cordon off the area dedicated to the bioretention basin to prevent access by equipment. Acceptable equipment for constructing the bioretention basin includes excavation hoes, light equipment with turf type tires, marsh equipment or wide-track loaders.

C.5 Compaction Remediation

If compaction occurs at the base of the bioretention basin refracture the soil to a depth of at least 12 inches. If smearing occurs, correct the smeared areas of the interface by roto-tilling.

C.6 Placement and Settling of Engineered Soil

(1) Prior to placement in the bioretention basin, premix the engineered soil and provide a moisture content low enough to prevent clumping and compaction during placement.

(2) Place the engineered soil in multiple lifts, each approximately 8 to 12 inches in depth.

(3) Methods to induce mild settling of the engineered soil bed, as needed to prepare a stable planting medium and to stabilize the ponding depth, may be utilized, such as overfilling engineered soil. Vibrating plate-style compactors may not be used to induce settling.

C.7 Pipe Underdrain 6-Inch

Install Pipe Underdrain 6-Inch according to standard spec 612.

C.8 Vertical Clean-Out and Pipe Cap

Install vertical clean-out and pipe cap according to standard spec 521 and as recommended by the manufacturer.

D Measurement
The department will measure Bioretention Basin as a single complete lump sum unit of work, completed according to the contract 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.0105.503	Bioretention Basin	LS

Payment is full compensation for all materials; including pea gravel, engineered soil, backfill course aggregate size no.1, geotextile fabric, pipe underdrain, vertical clean-out, pipe cap, connections, and fittings; and for all excavating, backfilling, stockpiling and disposing of surplus material.

170. Removing Erosion Control Items Left In Place By Others, Item SPV.0105.504.

A Description
This special provision describes removing erosion control items left in place by others within the right-of-way of the project, at the salt storage shed, and hereinafter provided.

B (Vacant)

C Construction
Remove erosion control items left in place by others, including but not limited to, sand bags, erosion bales, silt fence, inlet protection, temporary ditch checks, culvert pipe checks, tracking pads, and rock bags according to the applicable provisions of standard spec 628.3 and as directed by the engineer.

Dispose of all erosion control items off the project right-of-way in a manner acceptable to the engineer. Minimize disturbance to restored areas during removal operation. Remove any accumulated sediment, reshape areas of removals, fill sumps and trenches, dispose of excess materials, and topsoil, fertilize, seed, mulch or erosion mat the affected areas as directed by the engineer.

D Measurement
The department will measure Removing Erosion Control Items Left In Place By Others as a single 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.0105.504	Removing Erosion Control Items Left In Place By Others	LS

Payment is full compensation for removing erosion control items left in place by others including disposal of sediment; reshaping areas; filling sumps and trenches; disposal of excess materials; and for restoration of areas disturbed or removed including all topsoil, seed, fertilizer, mulch or erosion mat necessary to accomplish the restoration. Restoration items are not paid separately; they are included in this bid item.

171. Construction Staking Water Main, Item SPV.0105.600.

A Description
Preform 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. Locate stakes to within 0.02 feet of the true horizontal position at 50 intervals along the water main, and to establish the grade elevations within 0.01 feet of the true vertical position.

Place additional intermittent stakes as necessary to provide staking information at critical areas such vertical and horizontal bends, tees, valves, hydrants, water services locations. Determine offsets in conjunction with contractor requirements.

Provide cut sheets to the engineer and City of Fitchburg and contractor for elevation reference.

D Measurement
The department will measure Construction Staking Water Main 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.0105.600	Construction Staking Water Main	LS

Payment is full compensation for locating and setting all construction stakes and providing cut sheet information; and for relocating and resetting damaged or missing construction stakes.

172. Construction Staking Sanitary Sewer, Item SPV.0105.601.

A Description
Preform 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. 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 along the sanitary sewer main and lateral locations.

Provide cut sheets to the engineer and City of Fitchburg and contractor for elevation reference.

D Measurement
The department will measure Construction Staking Sanitary Sewer 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 unity price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.601	Construction Staking Sanitary Sewer	LS

Payment is full compensation for locating and setting all construction stakes and providing cut sheet information; and for relocating and resetting damaged or missing construction stakes.

173. Water for Seeded Areas, Item SPV.0120.001.

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 60 days after seed placement or as the engineer directs. Apply water

in a manner to preclude washing or erosion. The topsoil shall not be left un-watered for more than three consecutive calendar days during this 60-day period unless the engineer determines that it is excessively wet and does not require watering. The equivalent of one inch of rainfall per week shall be considered the minimum.

D Measurement

The department will measure Water for Seeded Areas by volume by the thousand gallon units (MGAL), acceptably completed.

Provide volume by metering devices or from tanks of known capacity. Report volumes to the engineer daily. Unreported daily volumes may not be considered for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0120.001	Water for Seeded Areas	MGAL

Payment is full compensation for furnishing, hauling, and applying the water.

174. Temporary Curb Ramp Detectable Warning Field, Item SPV.0165.001.

A Description

This special provision describes providing, maintaining, and removing temporary curb ramp detectable warning fields at locations shown on the plans, or as the engineer directs.

B Materials

Furnish yellow cast iron detectable warning fields from the department's approved products list. Utilize cast iron detectable warning fields when the temporary curb ramp and detectable warning field will remain during and throughout the winter traffic pattern as provided in the construction staging plans or when the temporary curb ramp is used when snow is anticipated.

Furnish yellow surface applied detectable warning fields from the following manufacturers:

1. ADA Solutions, Inc.
2. Alert Tile
3. Armor Tile
4. Approved equal

Cast iron detectable warning fields are not considered surface applied.

Utilize surface applied detectable warning fields for other temporary curb ramp locations when snow is not anticipated.

Furnish surface applied detectable warning fields according to the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and having a minimum slip resistance coefficient of 0.80 wet and dry. Maintain the minimum slip resistance throughout construction. Provide a certification of the slip resistance to the engineer for approval prior to installation that includes the anticipated duration the slip resistance can be maintained under normal use conditions.

Test the slip resistance of the surface applied detectable warning fields according to ASTM F 609-05 and AASHTO Draft T4-33 Part 9 as directed by the engineer throughout construction.

C Construction

Provide detectable warning fields conforming to the standard details for permanent curb ramps. Match the width of the facility leading to the curb ramp. Conform to the requirements of the detectable warning field manufacturer and the current ADAAG.

Maintain the detectable warning field, throughout the duration of the stage, or stages, to be compliant with the ADAAG and the manufacturer's specifications.

Remove detectable warning fields as the construction staging plans provide, or as the engineer directs.

D Measurement

The department will measure Temporary Curb Ramp Detectable Warning Field 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.0165.001	Temporary Curb Ramp Detectable Warning Field	SF

Payment is full compensation for providing cast iron or surface applied detectable warning fields; maintaining and testing the detectable warning fields; and for removing cast iron or surface applied detectable warning fields.

175. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-268, Item SPV.0165.002; R-13-270, Item SPV.0165.003; R-13-272, Item SPV.0165.004; R-13-273, Item SPV.0165.009.

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. The contractor may obtain the CMM from the department's web site at:

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

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Concrete Panel Mechanically Stabilized Earth Wall systems (Concrete Panel MSE Walls). Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the concrete panels shall be furnished to the engineer at least 14 days prior to the start of panel production.

The department maintains a list of pre-approved Concrete Panel MSE Wall systems. 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 opening 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 project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the Concrete Panel MSE Wall shall be in compliance with the *AASHTO LRFD Bridge Design Specifications 6th Edition 2012*, (AASHTO LRFD) 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 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. Where walls or wall sections intersect with an included angle of 130 degrees or less, a vertical corner element separate from the standard panel face shall abut and interact with the opposing standard panels. The corner element shall have ground reinforcement connected specifically to that panel and shall be designed to preclude lateral spread of the intersecting panels. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf 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 Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided on the wall plans. If the contractor utilizes an angle of internal friction greater than 30 degrees for the design, external stability checks at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks are required to be analyzed by the contractor.

The design of the Concrete Panel MSE 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 panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. 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.

Facing panels shall be designed according to AASHTO LRFD 11.10.2.3. The Facing panels shall also be designed to resist compaction stresses that occur during the wall erection. The minimum thickness of the facing panel shall be 5.5 inches. The surface area of a standard single panel cannot exceed 60 square feet. The maximum height of a standard panel shall be 5 feet. The top and bottom panels may exceed 5 foot in height based on site topography subject to the approval by the Structures Design Section. The design of the steel reinforcement within the panels shall be based on one-way bending action. Design the wall panels and joints between panels to accommodate a maximum differential settlement of 1 foot over a 100-foot length, unless the plans indicate other.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. 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 31 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 18 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

All soil reinforcement required for the reinforced soil zone shall be connected to the face panels. The reinforcement and the reinforcement/facing connection strength shall be designed to resist maximum factored reinforcement loads according to AASHTO LRFD Section 11.10.6. Facing connection strength shall be defined as the resistance factor times the failure load, or the load at 0.5 inch deformation times 0.9, whichever is less. The nominal long term design strength in steel reinforcement and connections shall be based upon assumed conditions at the end of the design life.

Soil reinforcement shall be prefabricated into single or multiple elements before galvanizing. Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. 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 MSE wall shall be 1 foot 6 inches, or as given on the contract plan. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad. The leveling pad's steps shall keep the bottom of the wall within one half the panel heights of the minimum embedment i.e. the minimum embedment plus up to one half the height of one panel. Additional embedment may be detailed by the contractor, but will not be measured for payment.

Wall facing panels shall be installed on concrete leveling pads. The minimum cross section of the leveling pad shall be 6-inches deep by 1-foot wide.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All certifications related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing shall consist of modular precast concrete face panels produced by a wet cast process, and have cast-in-place concrete pads or footings. The concrete panels shall have a minimum strength of 4000 psi at 28 days. The concrete for the panels shall be air entrained, with an air content of 6% +/- 1.5%. All materials for the concrete mixture for the panels shall meet the requirements of standard spec 501. The panel edges shall be configured so as to conceal the joints. The detail shall be a shiplap, tongue and groove or other detail adequate to prevent vandalism or ultraviolet light damage to the backside of the wall joint covering. Joints between panels shall be no more than 0.75 inch. Use full wall height slip joints at points of differential settlement when detailed on the plan. Horizontal joints must be provided with a compressible bearing material to prevent concrete to concrete contact.

A minimum of two bearing pads shall be used per panel. The allowable bearing stress shall not exceed 900 psi. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80, or high- density polyethylene pads with a minimum density of 0.034 lb/in^3 according to ASTM 1505.

An 18-inch wide geotextile shall be used on the back face of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile Fabric, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

B.3.2 Sample Panel
Provide sample wall panels with the textures and relief features as provided on each structure plan.

Supply and deliver to the engineer a 5-foot x 5-foot minimum sample panel for each panel type, demonstrating all wall components, for each structure with the specified pattern and colors for each structure. Prepare concrete surfaces of the sample panels and apply the stain using the same materials and in the same manner as proposed for each structure. Obtain the engineer's acceptance of the panel's texture and pattern prior to production of the panels required for the contract. The accepted pattern and color test panels shall remain on the project site in a readily accessible location for the duration of the project. The accepted pattern and color sample panels will be the standard for the wall panels for each structure. Continue to provide test panels until accepted by the engineer.

The engineer will visually inspect panels for consistency upon arrival at the project. The panels shall have no substantial variation from the accepted test panel submitted for the project. All panels with substantial variation will be rejected and shall be removed from the project.

B.3.3 Backfill
Furnish and place backfill for Concrete Panel MSE Walls as shown on the plans and as hereinafter provided. Place backfill in a zone extending horizontally from the back face of the wall facing to 1 foot minimum 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. The same backfill material must be used for the entire wall height, from the leveling pad to top of finished reinforced earth zone, for each stage of wall construction. For the purposes of this special provision, a stage is defined as constructing a full-height portion of wall along the wall alignment, not staging wall construction up the height of the wall. Horizontal changes in backfill strata up the height of the wall will not be allowed.

In addition to gradation requirements hereinafter provided, backfill material within the reinforced zone shall meet the following requirements.

Test	Method	Value (Galvanized)	Value (Aluminized Type 2)
pH	AASHTO T-289	5.0-10.0	5.0 – 9.0
Sulfate content	AASHTO T-290	200 ppm max.	
Chloride content	AASHTO T-291	100 ppm max.	
Electrical Resistivity	AASHTO T-288	3000 ohm-cm min.	1500 ohm-cm min.
Organic Content	AASHTO T-267	1.0% max.	
Angle of Internal Friction	AASHTO T-236*	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2.)	

*If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM 5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1" material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests (except Angle of Internal Friction test), are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. All certified report of test results shall be less than 6 months old and performed by a certified independent laboratory.

B.3.2.1 Wall Backfill Type A

For typical wall backfill, provide and 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.

B.3.2.2 Wall Backfill Type B

If the project schedule is such that the wall must be constructed during freezing weather, the engineer may allow use of alternate wall backfill materials. The alternate wall backfill materials will only be utilized when approved by the engineer. Alternate Wall Backfill, Type B shall comply with the requirements for Coarse Aggregate No.1 as given in 501.2.5.4.4 of the Standard Specifications. The alternate wall backfill must consist of crushed stone or crushed gravel.

For Alternate Wall Backfill, Type B, provide material conforming to the following gradation requirements as per WisDOT Standard Specifications for Highway and Structure Construction.

Sieve Size	Percentage by Weight Passing
	Size No. 1 Coarse Aggregate, Standard spec 501.2.5.4.4
1”	100
¾”	90-100
3/8”	20-55
#4	0-10
#8	0-5

When Alternate Wall Backfill Type B (Coarse Aggregate No.1) is used in the reinforced zone as backfill, as required for construction during freezing weather, a geotextile shall be placed to separate the Alternate Wall Backfill Type B from the retained soil. If the wall is constructed in stages where portions of wall backfill consist of Wall Backfill Type A and adjacent portions consist of Alternate Wall Backfill Type B (Coarse Aggregate No.1), a geotextile must also be placed at the interface of and between the two different backfill materials for the entire height of the backfill to prevent migration of finer soil. The geotextile shall also be placed on top of the Alternate Wall Backfill Type B to provide separation from the fill above the wall reinforced zone. Adjoining sections of geotextile should be overlapped by a minimum of 12 in. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile Fabric, Type DF, Schedule B. Where geotextile is used it cannot be placed directly on top of wall reinforcement and it must be placed at one-half of the backfill lift thickness over the reinforcement.

Do not alternate wall backfill types along the height of the wall. Sloping of the Alternate Wall Backfill Type B from the top of the reinforced earth zone down to the leveling pad is acceptable as required for staging and as approved by the engineer. The section C.2 compaction requirements must be satisfied for this interim condition. Temporary shoring return walls, such as wire face MSE walls, are acceptable as approved by the engineer.

B.3.4 Soil Reinforcement

All steel portions of the wall system exposed to earth shall be galvanized. All soil reinforcement and attachment devices shall be carefully inspected to ensure they are true

size and free from defects that may impair the strength and durability. Soil reinforcement shall be galvanized or aluminized Type 2. Galvanized soil reinforcement shall be according to AASHTO M 111 or ASTM A641. Aluminized soil reinforcement shall be according to ASTM A463 Aluminized Type 2-100, SS, Grade 50, Class 2. Design of galvanized soil reinforcement shall be according to Section 11.10.6.4.2 of the current AASHTO LRFD Specifications. The design life of steel soil reinforcements shall comply with AASHTO LRFD. Aluminized soil reinforcement shall be limited 16 years of steel protection. Aluminized steel shall only be used on soil reinforcement elements and shall not be used on facing connections or any other steel portion of the wall system. Steel soil reinforcement shall be prefabricated into single or multiple elements before galvanizing.

B.3.5 Miscellaneous

For cast in place concrete cap or 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.

Use a wall leveling pad that consists of 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 leveling pad concrete as specified in standard spec 716, Class III Concrete.

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.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall panels, 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 panels. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the panels.

C.2 Compaction

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf), or as modified as follows. If the gradation of the granular backfill is such that the P-200 material is less than 7% and the P-40 is less than 30%, a one-point Proctor test can be conducted in place of the 5-point Proctor. To complete this one-point test, compact the sample at a moisture content of 6%, then compute the actual (as-tested) sample moisture after completion of the test. Use Method B or D, and perform this test without removing oversize particles and without correction for coarse particles, as per AASHTO T224. The one-point as-tested moisture content represents the optimum moisture, and the measured one-point density represents the maximum wet density of the material. From these values, the maximum dry density can be computed.

If the engineer allows and approves use of alternate wall backfill material, the compaction of Alternate Wall Backfill Type B (Coarse Aggregate No.1) should be performed with at least three passes of a vibratory compactor in two mutually perpendicular directions (at least 6 passes total), such that with additional compactive effort, no further densification is obtained as visually determined by the engineer. If additional densification is observed after three passes in the two directions, then the material must be re-compacted until no further visual densification is observed. The initial three passes of the compactor must be in the direction parallel to the wall alignment followed by the three passes in the direction perpendicular to the wall alignment. Density testing is not required for Alternate Wall Backfill Type B.

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the panels.

A minimum of 3 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 panel facing and other associated elements according to the wall manufacturer's construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing.

The MSE reinforcement shall lay horizontally on the top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstructions in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

C.3.2 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.

C3.3 Panel Tolerances

As backfill material is placed behind a panel, maintain the panel in its proper inclined position according to the supplier specifications and as approved by the engineer. The supplier shall specify the back batter so that the final position of the wall is vertical. Vertical tolerances and horizontal alignment tolerances shall not exceed ¾-inch when measured along a 10-foot straight edge. The maximum allowable offset in any panel joint shall be ¾-inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed ½-inch per 10 feet of wall height. Erect the precast face panels to ensure that they are located within 1 inch from the contract plan offset at any location to ensure proper wall location at the top of the wall. Provide a ¾-inch joint separation between all adjacent face panels to prevent direct concrete-to-concrete contact. Maintain this gap by the use of bearing pads and/or alignment pins. Failure to meet this tolerance shall cause the engineer to require the contractor to disassemble and re-erect the affected portions of the wall. In addition, imperfect molding, honeycombing, cracking or severe chipping of panels shall be cause of panel rejection.

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 (ACT-NUC) perform field density and field moisture content testing. The HTCP Level I Grading Technician, Level I Aggregate Technician, or Assistant Certified Aggregate Technician (ACT) must also be present to document and confirm the required number of passes of the compaction equipment for the Alternate Wall Backfill Type B during wall backfill placement and compaction activities.

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

C.4.3 Equipment

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

Furnish nuclear gauges from the department's approved product list at http://www.atwoodsystems.com/materials. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D 6938 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

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

C.4.4 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 data into the applicable materials reporting system (MRS) software within five business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within ten 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 density testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing. Density testing is not required for Alternate Wall Backfill Type B.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2000 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

Observe the compaction and densification process for the Alternate Wall Backfill Type B. The material must be compacted using the minimum number of passes of the compaction equipment until no further densification is obtained as visually determined. Provide documentation that the compaction met the required number of passes of the compaction equipment for the Alternate Wall Backfill Type B.

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 two 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 ten 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.

(6) The department will also provide personnel to be onsite and confirm the required number of passes of the compaction equipment for the Alternate Wall Backfill Type B during wall backfill placement and compaction activities on a random basis. This work does not relieve the contractor of the responsibility to observe and document fill placement and compaction as required in C.4.2 and C.4.4.

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 E 178 to evaluate potential statistically outlying data.

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

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

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils engineer two working days to review the foundation.

D Measurement

The department will measure Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP by the square foot acceptably completed, measured as the vertical area within the pay limits the contract plans show. No other measurement of quantities shall be made in the field. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.002	Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-268	SF
SPV.0165.003	Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-270	SF
SPV.0165.004	Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-272	SF
SPV.0165.009	Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-273	SF

Payment is full compensation for supplying a design and shop drawings; supplying sample panels; 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 (Type A or Type B), backfilling, compacting, developing/ completing/ documenting the quality management program, and performing compaction testing. Any temporary return walls, such as a wire face MSE wall, required to facilitate construction of a portion of wall with Backfill Type B is incidental to this bid item.

Parapets, railings, abutment bodies and other items above the wall cap or coping will be paid for separately. Vehicle barrier and its support will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively. (20150824)

176. Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP, Item SPV.0165.005.

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.

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. The contractor may obtain the CMM from the department's web site at:

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

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Temporary Wire Faced Mechanically Stabilized Earth Wall systems (Temporary Wire Faced MSE Walls). 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 name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract.

The department maintains a list of pre-approved Temporary Wire Faced MSE Wall systems. 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 opening 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 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 Wire Faced MSE Walls shall be in compliance with the *AASHTO LRFD Bridge Design Specifications 6th Edition 2012*, (AASHTO LRFD) 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 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. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf 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 Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided in the wall plans.

The design of the Temporary Wire Faced MSE Walls 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 panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. 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.

The wall facings shall be designed according to AASHTO 11.10.2.3. A fine metallic screen and a geotextile filter fabric shall be used at the front face of the wall to retain the fines of the soil mass.

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 8 feet. The soil reinforcement shall be the same length from the bottom to the top of the wall. All soil reinforcement layers shall be connected to wire facing panels. 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 24 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 12 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

The nominal long term design strength to be used in steel reinforcement and connector design shall consider the corrosion losses and based upon conditions at the end of the design life.

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 steel reinforcement is not allowed.

The minimum embedment of the MSE wall shall be 1 foot 6 inches, or as given on the contract plan. Step the wall to follow the general slope of the ground line. Frost depth shall not be considered. Additional embedment may be detailed by the contractor, but will not be measured for payment.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All certifications related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 General

Provide steel reinforcement that meets the following requirements:

1. Welded Wire Fabric Soil Reinforcement
   Provide shop fabricated welded wire reinforcement from cold drawn steel wire that has a yield stress of 65,000 psi and conforming to the minimum requirements of ASTM A-1064 and be welded into the finished configuration according to ASTM A-1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

2. Steel Reinforcing Strips and Tie Strips
   As an alternate to welded wire reinforcing mesh, provide steel reinforcing strips or ladder reinforcing strips or equal, hot-rolled from bars, to the required shape and dimensions meeting the requirements of ASTM A-572 Grade 65 minimum. Tie

strips shall be shop fabricated of hot-rolled steel meeting the requirements of ASTM A-1011 Grade 50.

3. Welded Wire Fabric Facing Panels
   Provide welded wire fabric that is used to fabricate the facings of the wire-faced wall that has a yield stress of 65,000 psi. All steel shall be shop fabricated of cold drawn steel wire conforming to the minimum requirements of ASTM A-1064 and be welded into the finished configuration according to ASTM A-1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

4. Fasteners
   High strength bolts meeting the requirements of AASHTO M164 or equivalent.

5. Connector Pins and Mat Bars
   Connector pins and mat bars fabricated from cold drawn steel wire meeting the requirements of ASTM A-82.

6. Metallic Screen
   Provide a steel metallic screen. The metallic screen should have an approximate opening of ¼" and be made of 0.025" (minimum) gauge wire.

7. Geotextile Fabric
   Geotextile fabric shall be used behind the metallic screen. Use geotextile as recommended by the wall manufacturer. If none is recommended, use Type DF (schedule B) as shown in standard spec 645 or as specified on the contract plans. Deliver in a protective wrap and keep protected from ultraviolet light until incorporate into the work.

B.3.2 Backfill

Furnish and place backfill for Temporary Wire Faced MSE Walls as shown on the plans and as herein provided.

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 that conforms to the following gradation requirements as per AASHTO T27.

Sieve Size	**% by Weight Passing**
1 inch	100
No. 40	0-60
No. 200	0-15

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material shall meet the following requirements.

Test	Method	Value
pH	AASHTO T-289	5 – 10.0
Sulfate content	AASHTO T-290	200 ppm max.
Chloride content	AASHTO T-291	100 ppm max.
Electrical Resistivity	AASHTO T-288	3000 ohm-cm min.
Organic Content	AASHTO T-267	1.0% max.
Angle of Internal Friction	AASHTO T-236*	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.1)

*If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.
If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM 5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1" material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests (except Angle of Internal Friction test), are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. All certified report of these test results shall be less than 6 months old and performed by a certified independent laboratory.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall and facing leveling pad or footing 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 bottom of the wall unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it is should rain. Do not stockpile or store any 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.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facings, 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 wall facing. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing.

C.2 Compaction

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf), or as modified as follows. If the gradation of the granular backfill is such that the P-200 material is less than 7% and the P-40 is less than 30%, a one-point Proctor test can be conducted in place of the 5-point Proctor. To complete this one-point test, compact the sample at a moisture content of 6%, then compute the actual (as-tested) sample moisture after completion of the test. Use Method B or D, and perform this test without removing oversize particles and without correction for coarse particles, as per AASHTO T224. The one-point as-tested moisture content represents the optimum moisture, and the measured one-point density represents the maximum wet density of the material. From these values, the maximum dry density can be computed.

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the wall facing.

A minimum of 3 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 welded wire facing and other associated elements according to the wall manufacturer's construction guide. 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. Place remaining courses in vertical or battered positions as shown on the contract plans.

The MSE reinforcement shall lay horizontally on 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 obstruction 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.

When using a temporary wall for four (4) months or more or when the installation of a permanent wall facing will not occur for four (4) months or more after placement of any geotextile material, cover the exposed geotextile material in the wall as quickly as practical, to prevent damage caused by exposure to ultraviolet light.

C.3.2 Tolerances

The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 3 inches per 10 feet for permanent installations.

For battered wire facing, the final deviation from the design batter shall be within ±1 inch for each 10 feet of battered wall height.

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:

- An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
- The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
- A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
- Descriptions of stockpiling and hauling methods.
- An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
- Location of the QC laboratory, retained sample storage, and other documentation.
- A summary of the locations and calculated quantities to be tested under this provision.
- 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 (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/materials. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D 6938 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

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

C.4.4 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 data into the applicable materials reporting system (MRS) software within five business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within ten 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 1 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 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.1) 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 two 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.3.2 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 ten 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 E 178 to evaluate potential statistically outlying data.

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

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

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils engineer two working days to review the foundation.

D Measurement

The department will measure Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP by the square foot acceptably completed, measured as the vertical area within 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.0165.005	Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system, constructing the retaining system

including drainage system; providing backfill, backfilling, compacting, developing/ completing/ documenting the quality management program, performing compaction testing; and for covering geotextile fabric.

Parapets, railings, vehicle barriers and its support, abutment bodies and other items above the wall will be paid for separately. Concrete facings, facing leveling pads or footings, deadmen system, and copings will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively. (20150824)

177. Colored and Stamped Concrete 5-Inch, Item SPV.0165.006.

A Description

Construct colored concrete sidewalk according to standard spec 602, as shown in the plans, and as hereinafter provided.

B Materials

B.1 Concrete

Provide concrete according to standard spec 602 and as shown on the plans or as approved by the engineer.

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979. Follow color pigment manufacturers recommendations for minimum and maximum percentage of loading by weight of the cementitious materials in the mix.

Provide color Dark Gold RC5010, trademarked RheoColor, by BASF.

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 throughout the project. Use constant cement content, supplementary cementitious material content and water/cementitious materials ratio in the concrete mix to maintain consistent color.

B.2 Concrete Curing

Supply a clear, non-yellowing liquid membrane-forming clear curing compound conforming to ASTM C 1315, Type 1 A.

B.3 Admixtures

Furnish admixtures designed for use and compatible with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides.

B.4 Mix Approval

B.4.1 General

Perform preliminary laboratory and/or field trial batching to establish the mix proportions necessary to conform to the contract-required color.

Submit to the engineer the final mix design including specific sources and/or trade names as applicable for all materials. Include the slump, air, and water-cement ratio according to standard spec 602.

B.3.2 Test Panels

Provide the engineer ten calendar day notice for production of a test panel. At an engineer-approved location on the project, place and finish an 8-foot by 8-foot by 5-inch colored concrete test panel using processes and techniques intended for use on permanent work, including curing procedures stamping, coloring, antiquing, joint tooling and sealing. Produce test panels using the same workers who will perform the contract work. Retain samples of cements, sands, aggregates and color additives used in test panels for comparison with materials used in the contract work. For an accurate representation of the desired color or color intensity, produce the colored concrete for the test panel in a minimum batch size of 2 cubic yards or in full cubic yard increments for batch sizes greater than 2 cubic yards. Remove excess material from the project site.

The engineer will determine acceptance of the test panel color based on review and approval by engineer, the City of Fitchburg and department representatives. Test panel color will be evaluated for approval within five calendar days after the test panel is poured, cured and sealed according to all manufacturer's specifications (including all required cure time prior to sealing). Once approved, provide engineer with the documentation of all materials and material ratios within the approved test panel.

Store and protect the test panel on the project site for use during the entire project as a comparison of the completed work. Work that does not match the test panel, as determined by the engineer, may be ordered for removal and replacement by the engineer at no cost to the department.

Replace test panels that are damaged or removed from the project site at no cost to the department.

B.5. Stamp

Furnish 'Fractured Slate Embossing Skin' pattern (No. 910M), trademarked Lithotex Pavecrafters, by Scofield, with a tool size of approximately 42 inches by 42 inches. Provide a sample stamp pattern to engineer for approval by the engineer, City of Fitchburg and department representatives a minimum of ten calendar days prior to production of a test panel

B.6. Antiquing Release Agent

Use an antiquing release agent that is compatible with the stamp and coloring materials.

Use color Walnut 810 antique release, by Brickform.

Provide manufacturer's color chart and specifications for antiquing release agent to engineer ten calendar days prior to production of a test panel.

B.7. Concrete Sealant
Use concrete sealant that is compatible with the stamp, release agent and manufacturer's recommended installation methods. Provide sealant specifications to the engineer ten calendar days prior to production of a test panel.

Prime Sealant: Glossy.
Secondary Sealant: Matte.

C Construction
Construct Colored and Stamped Concrete 5-Inch according to standard spec 602.

Coordinate locations of permanent signage requiring PVC pipe box outs according to standard spec 634.3.2 and as approved by the engineer.

C.1 Placement
Produce consistent colored concrete mixes. Once colored concrete placement has started, variations in the amounts, types, or source of materials are not permitted, with the exception of minor adjustments of water and air-entraining agent as necessary according to the standard spec. Other changes require the contractor to repeat the mix approval process.

Schedule colored concrete placement to minimize exposure to rapid drying conditions, wind and full sun, before curing materials are applied. Do not place colored concrete if rain, snow, or freezing temperature is forecasted within 24-hours.

Cover and protect adjacent construction work from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored work as the engineer directs.

Perform finishing operations consistently to avoid color variation in the finished colored concrete. Do not begin finishing until bleed water has left the surface. If water is added to the surface of the colored concrete to aid in finishing, the engineer will order removal of the colored concrete. During final finishing and stamping apply all strokes in the same direction.

Cure colored concrete according to standard spec 415.3.12, using the impervious coating or impervious sheeting method. Protect colored concrete from premature drying and excessive cold or hot temperatures by prompt application of curing materials. Do not allow plastic sheeting to come in contact with colored concrete.

C.2 Stamp Preparation
Clean the stamp prior to each use and ensure that it is free of any build-up. Visually inspect each stamp for blemishes or tears, and repair if necessary according to the manufacturer's recommendations.

C.3 Stamp
Coordinate with the engineer to verify stamping pattern orientation prior to starting the stamping work.

Prepare stamp tools with a full, smooth coat of antiquing release agent according to the manufacturer's recommendations.

While concrete is still in the plastic state, apply imprinting tools to the surface and press into the concrete to create the desired impression. Finish all surfaces uniformly. Ensure that the stamped surface is free of laitance; sandblasting is not permitted. Grind or fill any blemishes.

Hand apply antiquing release agent to each individual joint line by spraying or rolling according to the manufacturer's recommendations.

Shake or spray antiquing release agent over concrete surface according to the manufacturer's recommendations to achieve desired look and to match approved test panel.

C.4 Finishing
Provide tooled joints in a 4-ft x 4-ft grid, perpendicular to the back of the primary curb, or as directed by the engineer.

Allow concrete to cure for 24 hours and according to the manufacturer's recommendations after application of the color hardeners, antiquing release agents and stamp pattern.

Pressure wash concrete surface to remove approximately 80% of the antiquing release agent.

Ensure that concrete is clean and dry according to the manufacturer's recommendations before proceeding with concrete sealant.

Apply sealant according to the manufacturer's recommendations. Spray or roll on a single layer of gloss sealant. Follow by spraying on a single coat of matte finish sealer. Do not roll matte finish sealer onto concrete surfaces.

Protect the colored concrete from damage. Do not permit construction traffic or material storage on colored concrete. Exclude other foot traffic from colored concrete for at least 24 hours after placement.

D Measurement
The department will measure Colored and Stamped Concrete 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 items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.006	Colored and Stamped Concrete 5-Inch	SF

Payment is full compensation for preparing the foundation; for developing mix designs and providing and storing test panels; for furnishing materials (including concrete masonry, colored pigments, sealers, joint and bond breakers, and retarders), hauling, preparing, placing, curing, and protecting the concrete; for stamping, for antiquing and finishing; for sawing required for construction of colored concrete; for jointing and joint materials; for measuring opening strength including fabricating and testing cylinders, and evaluating maturity; for furnishing all removal of test panels and surplus colored concrete; and for protecting adjacent work.

178. Asphaltic Median Sloped Nose, Item SPV.0165.007.

A Description
This special provision describes constructing an asphaltic median sloped nose in one course on a prepared foundation according to the applicable provisions of standard specs 465 and 620 and as detailed in the plans.

B Materials
Provide asphaltic median sloped nose materials according to the applicable sections of standard spec 465.

C Construction
Construct asphaltic median sloped nose according to the applicable sections of standard spec 620 and as detailed in the plans.

D Measurement
The department will measure Asphaltic Median Sloped Nose 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.0165.007	Asphaltic Median Sloped Nose	SF

Payment is full compensation for preparing the foundation; for providing all materials, including asphalt; for hauling, placing, consolidating, shaping, finishing, curing, and protecting the asphalt; and for disposing of surplus material and restoring the work site.

179. Colored Concrete Full Depth, Item SPV.0165.008.

A Description

Construct colored concrete according to standard specs 501 and 502, as shown in the plans, and as hereinafter provided.

B Materials

B.1 Concrete

Provide concrete according to standard spec 502 and as shown on the plans or as approved by the engineer.

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979. Follow color pigment manufacturer's recommendations for minimum and maximum percentage of loading by weight of the cementitious materials in the mix.

Provide color Dark Gold RC5010, trademarked RheoColor, by BASF.

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 throughout the project. Use constant cement content, supplementary cementitious material content and water/cementitious materials ratio in the concrete mix to maintain consistent color.

B.2 Concrete Curing

Supply a clear, non-yellowing curing compound according to standard spec section 502.2.6.

B.3 Admixtures

Furnish admixtures designed for use and compatible with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides.

B.4 Mix Approval

B.4.1 General

Perform preliminary laboratory and/or field trial batching to establish the mix proportions necessary to conform to the contract-required color.

Submit to the engineer the final mix design including specific sources and/or trade names as applicable for all materials. Include the slump, air, and water-cement ratio according to standard spec 502 and 715.

B.3.2 Test Panels

Provide the engineer ten calendar day notice for production of a test panel. At an engineer-approved location on the project, place and finish a 5-foot by 5-foot by 5-inch colored concrete test panel using processes and techniques intended for use on permanent work, including curing procedures, coloring, and sealing. Produce test panels using the same workers who will perform the contract work. Retain samples of cements,

sands, aggregates and color additives used in test panels for comparison with materials used in the contract work. For an accurate representation of the desired color or color intensity, produce the colored concrete for the test panel in a minimum batch size of 2 cubic yards or in full cubic yard increments for batch sizes greater than 2 cubic yards. Remove excess material from the project site.

The engineer will determine acceptance of the test panel color based on review and approval by engineer, the City of Fitchburg and department representatives. Test panel color will be evaluated for approval within five calendar days after the test panel is poured, cured and sealed according to all manufacturer's specifications (including all required cure time prior to sealing). Once approved, provide engineer with the documentation of all materials and material ratios within the approved test panel.

Store and protect the test panel on the project site for use during the entire project as a comparison of the completed work. Work that does not match the test panel, as determined by the engineer, may be ordered for removal and replacement by the engineer at no cost to the department.

Replace test panels that are damaged or removed from the project site at no cost to the department.

C Construction

Construct Colored Concrete Full Depth according to standard specs 501 and 502.

C.1 Placement

Produce consistent colored concrete mixes. Once colored concrete placement has started, variations in the amounts, types, or source of materials are not permitted, with the exception of minor adjustments of water and air-entraining agent as necessary according to the standard spec. Other changes require the contractor to repeat the mix approval process.

Schedule colored concrete placement to minimize exposure to rapid drying conditions, wind and full sun, before curing materials are applied. Do not place colored concrete if rain, snow, or freezing temperature is forecasted within 24-hours.

Cover and protect adjacent construction work from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored work as the engineer directs.

Perform finishing operations consistently to avoid color variation in the finished colored concrete. Do not begin finishing until bleed water has left the surface. If water is added to the surface of the colored concrete to aid in finishing, the engineer will order removal of the colored concrete. During final finishing apply all strokes in the same direction.

Cure colored concrete according to standard spec section 502.3.8, using the impervious coating or impervious sheeting method. Protect colored concrete from premature drying

and excessive cold or hot temperatures by prompt application of curing materials. Do not allow plastic sheeting to come in contact with colored concrete.

C.4 Finishing
Finish concrete according to standard spec section 502.3.7.

Allow concrete to cure for 24 hours and according to the manufacturer's recommendations after application of the color hardeners.

Protect the colored concrete from damage. Do not permit construction traffic or material storage on colored concrete. Exclude other foot traffic from colored concrete for at least 24 hours after placement.

D Measurement
The department will measure Colored Concrete Full Depth by the square foot, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.008	Colored Concrete Full Depth	SF

Payment is full compensation for developing mix designs and providing and storing test panels; for furnishing materials (including concrete masonry, colored pigments, joint and bond breakers, and retarders), hauling, preparing, placing, curing, and protecting the concrete; for finishing; for measuring opening strength including fabricating and testing cylinders, and evaluating maturity; for furnishing all removal of test panels and surplus colored concrete; and for protecting adjacent work.

180. Asphaltic Surface Safety Islands, Item SPV.0180.001.

A Description
This special provision describes providing asphaltic surface safety islands according to standard spec 465.

B (Vacant)

C (Vacant)

D Measurement
The department will measure Asphaltic Surface Safety Islands by the square yard, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.001	Asphaltic Surface Safety Islands	SY

Payment is full compensation for submitting an asphaltic mixture design; for preparing the foundation; for providing the asphaltic mixture, including asphaltic material and reclaimed asphaltic pavement materials; and for compacting the mixture.

181. R-13-272 MSE Wall Facing Protection, Item SPV.0195.001.

A Description

This special provision describes backfilling in front of retaining walls and structures with pea gravel backfill over protective geotextile fabric and placing rigid foam protection over top of concrete wall facing panels.

B Materials

Provide Geotextile Fabric Type C, Type R or Type SAS in accordance with standard spec section 645. Provide extruded polystyrene rigid foam insulation in accordance with ASTM C578.

Furnish pea gravel backfill consisting of rounded or sub-rounded gravel meeting the following gradation:

Seive Size	Percent Passing
1/2 inch	100
3/8 inch	85 to 100
No. 4	0 to 30
No. 8	0 to 10
No. 16	0 to 5

C Construction

Place geotextile fabric against structures prior to placing pea gravel backfill. Use care to protect the structures when placing fabric and backfill.

Place extruded polystyrene (XPS) foam over top of concrete wall facing panels prior to placing backfill or roadway base aggregate over the top of the wall. Use care to protect the concrete panels when placing foam and aggregate above the panels.

D Measurement

The department will measure R-13-272 MSE Wall Facing Protection in tons of backfill, 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.0195.001	R-13-272 MSE Wall Facing Protection	TON

Payment is full compensation for providing, transporting, and placing aggregate material; for furnishing and installing geotextile fabric; and for furnishing and installing the rigid foam insulation.

182. Excavation, Hauling, and Disposal of Contaminated Soil and Management of Contaminated Groundwater, Item SPV.0195.100.

A Description

A.1 General

This special provision describes excavating, loading, hauling, and disposing of contaminated soil at a DNR approved bioremediation facility. The closest DNR approved bioremediation facility is:

Waste Management Madison Prairie Landfill
6002 Nelson Road
Sun Prairie, WI
(608) 837-9031

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

Contaminated groundwater is not anticipated to be encountered but this special provision does describe pumping and disposing of contaminated groundwater (if dewatering is necessary).

Perform this work according to standard spec 205 and with pertinent parts of Chapters NR 100-299 of the Wisconsin Administrative Code, as supplemented herein. Perform all work necessary to control, handle, and dispose of groundwater and surface water, and all other water that may be encountered within contaminated areas, as required for performance of the work.

A.2 Notice to the Contractor – Contaminated Soil and Groundwater Locations

The department completed testing for soil and groundwater contamination for locations within this project where excavation is required.

Petroleum-contaminated soil is potentially present at the following locations:

1. (Site 95) Station 31+50 C to 32+75 C from the reference line to the right 35 feet and from the reference line left 25 feet.

2. Station 970+00 VR to 972+00 VR from 50 feet left of the reference line to the construction limits (North corner of the Raymond Road & Verona Road Intersection).
3. Station 96+50 RW to 99+00 RW from 25 feet left of the reference to the construction limits (North corner of the Raymond Road & Verona Road Intersection).

Contaminated soils and/or groundwater and/or underground storage tanks (USTs) may be encountered at other locations within the construction limits. If contaminated soils and/or groundwater and/or USTs are encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer and the environmental consultant. Contaminated soil and/or groundwater at other locations shall be managed by the contractor under this contract. USTs will be removed by others.

For further information regarding previous investigation and remediation activities at these sites contact:

Name:	Daniel Haak
Address:	TRC Environmental Corporation 708 Heartland Trail, Suite 3000, Madison, WI 53717
Phone:	(608) 826-3628
Fax:	(608) 826-3941
e-mail:	dhaak@trcsolutions.com

A.3 Coordination

Coordinate work under this Contract with the environmental consultant retained by the department:

Consultant:	TRC Environmental Corporation
Contact:	Mr. Dan Haak
Address:	708 Heartland Trail, Suite 3000, Madison, WI 53717
Phone:	(608) 826-3628
Fax:	(608) 826-3941
e-mail:	dhaak@trcsolutions.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
4. Identifying contaminated soils to be hauled to the bioremediation facility;
5. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
6. Obtaining the necessary approvals for disposal of contaminated soil from the bioremediation facility.
7. Coordinating abandonment of groundwater monitoring wells along the project corridor.
8. Identifying contaminated groundwater to be pumped for treatment and disposal (if dewatering is necessary). Coordinating groundwater characterization and approval for disposal of contaminated water.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Also notify the environmental consultant at least three calendar days prior to commencement of excavation activities in each of the contaminated areas.

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

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated areas. Perform excavation work in each of the contaminated areas on a continuous basis until excavation work is completed. Do not transport contaminated soil or pump contaminated groundwater offsite without prior approval from the environmental consultant.

A.4 Protection of Groundwater Monitoring Wells

Groundwater monitoring wells, including lost or improperly abandoned wells, may be present within the construction limits. Notify the environmental consultant if groundwater monitoring wells are encountered. Protect all groundwater monitoring wells to maintain their integrity. If required by the environmental consultant, adjust wells that do not conflict with utilities, structures, curb and gutter, etc. to be flush with the final grade. For wells that conflict with the previously mentioned items, notify the environmental consultant, and coordinate with the environmental consultant, or for wells that require abandonment, the abandonment or adjustment of the wells by others.

Coordinate with the environmental consultant to ensure that the environmental consultant is present to abandon and/or document the location of the groundwater monitoring well during excavation activities.

A.5 Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of contaminated material. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR's concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding the investigations, including waste characterization within the project limits, contact Jennifer Grimes with the department, at (608) 246-3823.

A.6 Health and Safety Requirements

Standard spec 107.1 is supplemented with the following:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer prior to the start of work.

Disposal of petroleum-contaminated soil at the bioremediation facility is subject to the facility's safety policies, which include as a minimum:

1. No smoking is allowed on-site.
2. Maximum speed limit of 15 mph on access roads and 5 mph while in active area.
3. All persons entering the active area must wear the following personal protective equipment: hard hats, high visibility clothing, steel toed work boots, safety glasses, and seat belts.
4. Minimum requirement for spacing is as follows:

    a. A minimum 15-foot Safety Zone is required between landfill equipment and all personnel at all times.

    b. Do not back up directly behind the compactor or dozer.

    c. Trucks must yield the right-of-way to landfill equipment.

    d. 15 feet required between trucks.

5. Only the driver can exit the truck and must stay within 4 feet of the truck. Use of Spotter is prohibited. Helper (if any), must remain in vehicle while unloading.
6. Tailgates of all vehicles may only be opened while in the active area and must be closed prior to exiting the active area.
7. Cleaning out vehicles must be done in designated area, not in the active area. Vehicles must be properly locked out / tagged out according to OSHA during the clean out process.
8. No scavenging is allowed.
9. Horseplay is prohibited.

Violation of the landfill's safety policy will result a verbal or written warning explaining this policy and may result in the loss of dumping privileges.

Immediately report all accidents and injuries at the bioremediation facility to landfill management.

B (Vacant)

C Construction
Supplement standard spec 205.3 with the following:

The environmental consultant will periodically examine excavated soil during excavations in the areas of known petroleum or soil contamination within the construction limits.

Control operations in the contaminated areas to minimize the quantity of contaminated soil excavated and to ensure that excavations do not extend beyond the minimum required to construct utilities and highway improvements unless expressly directed to do so by the engineer.

The environmental consultant will periodically evaluate soil excavated from the contaminated areas to determine if the soil will require offsite bioremediation or can be beneficially re-used on-site. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

On the basis of the results of such field-screening, the material will be designated for disposal as follows:

- Excavation Common consisting of clean soil and/or clean construction and demolition fill (such as clean soil, boulders, concrete, reinforced concrete, bituminous pavement, bricks, building stone, and unpainted or untreated wood), which under NR 500.08 are exempt materials, or

- Low-level contaminated material for reuse as fill within the construction limits, or

- Contaminated soil for off-site treatment and disposal at the WDNR-licensed bioremediation facility, or

- Potentially contaminated for temporary stockpiling and additional characterization prior to disposal.

Some material may require additional characterization prior to disposal. Provide for the temporary stockpiling of up to 200 cubic yards of contaminated soil on-site that require additional characterization. Construct and maintain a temporary stockpile of the material according to NR 718.05(3), including, but not limited to, placement of the contaminated

soil/fill material on an impervious surface and covering the stockpile with impervious material to prevent infiltration of precipitation. The department's environmental consultant will collect representative samples of the stockpiled material, laboratory-analyze the samples, and advise the contractor, within ten business days of the construction of the stockpile, of disposal requirements. The stockpiled material shall be disposed either at the WDNR-licensed disposal facility by the contractor or, if characterized as hazardous waste, by the department. As an alternative to temporarily stockpiling contaminated soil/fill material that requires additional characterization, the contractor has the option of suspending excavation in those areas where such soil is encountered until such time as characterization is completed.

Directly load and haul soils designated by the environmental consultant for off-site bioremediation to the DNR approved bioremediation facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of petroleum-contaminated soils or residues. Prior to transport, sufficiently dewater soils designated for off-site bioremediation so as not to contain free liquids. Verify that the vehicles used to transport contaminated material are licensed for such activity according to applicable state and federal regulations.

When material is encountered outside the above-identified limits of known contamination that appears to have been impacted with petroleum or chemical products, or when other obvious potentially contaminated materials are encountered or material exhibits characteristics of industrial-type wastes, such as fly ash, foundry sand, and cinders, or when underground storage tanks are encountered, suspend excavation in that area and notify the engineer and the Environmental Consultant.

Groundwater is not anticipated to be present within the construction limits. However, if groundwater is encountered and dewatering operations are necessary, the generated water, is expected to be permitted to discharge to the surface except in the contaminated areas. If dewatering of perched groundwater or stormwater is required, allow stormwater to settle for 24 hours after a rain event, after which the water shall be managed as uncontaminated dewatering, unless the environmental consultant has evidence that the water will require treatment and/or off-site disposal.

Contaminated groundwater generated from dewatering activities within the contaminated areas may exceed the surface water discharge limits for petroleum compounds specified in the DNR's "General Permit to Discharge under the Wisconsin Pollutant Discharge Elimination System" for "Contaminated Groundwater from Remedial Action Operations" (WPDES Permit No. WI-0046566-5), Table 3.1.

Pump contaminated water that exceeds surface water discharge limits, as determined by environmental consultant, into temporary holding tanks provided by others or an alternative discharge point as determined by the environmental consultant, as necessary to complete construction. Allow contaminated water encountered, but not requiring removal as a standard course of construction, to remain in-place and do not manage according to this special provision.

The environmental consultant will coordinate approval of contaminated water hauling and disposal. Only pump contaminated groundwater if the environmental consultant is on-site.

Discharging contaminated groundwater to any location other than that approved and provided by the environmental consultant, is at the contractor's cost. If the contractor chooses alternate discharge, at the contractor's cost, obtain DNR concurrence on any dewatering plans, and provide and operate any and all treatment and discharge equipment required.

Employ construction methods and techniques in a manner that will minimize the need for dewatering, and if dewatering is required, minimize the volume of water generated. Take measures to limit groundwater, surface water, and precipitation from entering and exiting excavations in the areas of contamination. Such measures, which may include berming, ditching, or other means, shall be maintained until construction of utilities in the areas of contamination are complete.

Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statues, judiciary decisions, and regulations of the State of Wisconsin.

D Measurement

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.100	Excavation, Hauling, and Disposal of Contaminated Soil and Management of Contaminated Groundwater	Ton

Payment is full compensation for excavating, segregating, loading, hauling, and treatment via bioremediation of contaminated soil; tipping fees including applicable taxes and surcharges; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; and dewatering of soils prior to transport, if necessary.

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 15 *(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 __6__ *(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: WI170005 04/14/2017 WI5

Superseded General Decision Number: WI20160005

State: Wisconsin

Construction Type: Building

County: Dane County in Wisconsin.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

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	02/10/2017
2	02/17/2017
3	04/14/2017

ASBE0205-001 06/01/2001

	Rates	Fringes
Asbestos Removal worker/hazardous material handler Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not	$ 17.90	4.45

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* BOIL0107-001 01/01/2017

	Rates	Fringes
BOILERMAKER		
Boilermaker	$ 35.65	29.89
Small Boiler Repair (under 25,000 lbs/hr)	$ 26.91	16.00

BRWI0013-001 06/01/2016

	Rates	Fringes
BRICKLAYER		
Bricklayer	$ 33.49	20.99
Terrazzo Finisher	$ 26.57	16.20
Terrazzo Worker	$ 34.76	19.91
Tile Finisher	$ 25.01	19.90
Tile Layer	$ 31.26	19.90

CARP0252-007 06/01/2016

	Rates	Fringes
CARPENTER (Including Acoustical work and Drywall hanging; Excluding Batt Insulation)		
CARPENTER & SOFT FLOOR		

LAYER.....$ 33.56 18.00
MILLWRIGHT.....$ 35.08 18.35
PILEDRIVERMAN.....$ 34.12 18.00

ELEC0014-005 05/30/2016

	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).

ELEC0159-002 05/30/2016

	Rates	Fringes
ELECTRICIAN	$ 36.50	20.39

ELEV0132-001 01/01/2017

	Rates	Fringes
ELEVATOR MECHANIC	$ 48.94	31.58

FOOTNOTE:
PAID VACATION: Employer contributes 8% of basic hourly rate as vacation pay for employees with more than 5 years or more of service, and 6% for less than 5 years of service.
PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0139-002 06/01/2016

	Rates	Fringes
OPERATOR: Power Equipment		
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 130,000 lbs & 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 & 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 Maaerial 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"; Compressors, under 400 CFM; Heaters, Mechanical; Combination small equipment operator; Winches, small electric; Oiler; Greaser; Rotary Drill Tender; Conveyor; Elevator Operator

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IRON0383-002 06/01/2015

	Rates	Fringes
IRONWORKER	$ 32.85	21.84

LABO0464-001 06/01/2016

	Rates	Fringes
Laborer, General	$ 26.06	16.55
Laborer: Asbestos/hazardous material remover (Preparation, removal, and encapsulation of hazardous materials from non-mechanical systems)	$ 24.47	15.55

PAIN0802-001 06/01/2016

	Rates	Fringes
PAINTER		
Brush, Roller	$ 27.50	17.72

PREMIUM RATES [Add to Basic Hourly Rate]

Swing Work	$0.25
Drywall Taper	$0.30
Paperhanger	$0.40
Steel, Spray	$1.00

PAIN0941-001 06/01/2016

	Rates	Fringes
GLAZIER	$ 38.27	16.07

PLAS0599-001 06/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 33.15	16.78
PLASTERER	$ 33.15	16.78

PLUM0075-007 06/01/2015

	Rates	Fringes
PLUMBER (Including HVAC work)	$ 38.82	20.12

PLUM0601-007 06/01/2016

	Rates	Fringes
PIPEFITTER (Including HVAC work)	$ 46.43	19.54

SFWI0669-002 04/01/2016

	Rates	Fringes
SPRINKLER FITTER	$ 39.48	19.36

SHEE0018-009 06/01/2015

	Rates	Fringes
Sheet Metal Worker (Including HVAC Duct work and Technicians)	$ 35.55	24.61

TEAM0662-003 06/05/2016

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 28.26	16.77
3 or more Axles	$ 28.26	16.77

SUWI2002-011 01/23/2002

	Rates	Fringes
Asbestos Worker/Heat and Frost Insulator	$ 25.36	8.37
Laborers:		
Concrete Worker	$ 16.34	3.59
Landscape	$ 8.73	4.90
ROOFER	$ 18.01	3.28
Tile & Marble Finisher	$ 13.89	7.58

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 04/28/2017 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

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

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* 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

ELEC0242-005 05/29/2016

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 34.92	25.05

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 06/01/2014

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 29.64	20.54

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

TEAM0039-001 06/01/2016

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 26.63	19.85
3 or more Axles; Euclids Dumptor & Articulated, Truck Mechanic	$ 26.78	19.85
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: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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	201.0105 Clearing	4.000 STA	_____.____	_____.____
0020	201.0120 Clearing	28.000 ID	_____.____	_____.____
0030	201.0205 Grubbing	4.000 STA	_____.____	_____.____
0040	201.0220 Grubbing	28.000 ID	_____.____	_____.____
0050	203.0100 Removing Small Pipe Culverts	6.000 EACH	_____.____	_____.____
0060	203.0200 Removing Old Structure (station) 001. 944+29 VR	LS	LUMP SUM	_____.____
0070	203.0200 Removing Old Structure (station) 002. 973+00 VR	LS	LUMP SUM	_____.____
0080	203.0200 Removing Old Structure (station) 003. Station 874+00 VR	LS	LUMP SUM	_____.____
0090	204.0100 Removing Pavement	60,485.000 SY	_____.____	_____.____
0100	204.0115 Removing Asphaltic Surface Butt Joints	620.000 SY	_____.____	_____.____
0110	204.0120 Removing Asphaltic Surface Milling	1,014.000 SY	_____.____	_____.____
0120	204.0150 Removing Curb & Gutter	5,923.000 LF	_____.____	_____.____
0130	204.0155 Removing Concrete Sidewalk	1,485.000 SY	_____.____	_____.____
0140	204.0165 Removing Guardrail	5,144.000 LF	_____.____	_____.____
0150	204.0170 Removing Fence	20.000 LF	_____.____	_____.____
0160	204.0180 Removing Delineators and Markers	144.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
0170	204.0195 Removing Concrete Bases	49.000 EACH	_____.____	_____.____
0180	204.0210 Removing Manholes	10.000 EACH	_____.____	_____.____
0190	204.0220 Removing Inlets	54.000 EACH	_____.____	_____.____
0200	204.0235 Removing Buildings (parcel) 001. TPP 1206-07-30, PARCEL 2	LS	LUMP SUM	_____.____
0210	204.0240 Site Clearance (parcel) 001. TPP 1206-07-30, PARCEL 2	LS	LUMP SUM	_____.____
0220	204.0245 Removing Storm Sewer (size) 001. 6-Inch	35.000 LF	_____.____	_____.____
0230	204.0245 Removing Storm Sewer (size) 002. 8-Inch	9.000 LF	_____.____	_____.____
0240	204.0245 Removing Storm Sewer (size) 003. 12-Inch	970.000 LF	_____.____	_____.____
0250	204.0245 Removing Storm Sewer (size) 004. 15-Inch	650.000 LF	_____.____	_____.____
0260	204.0245 Removing Storm Sewer (size) 005. 18-Inch	1,159.000 LF	_____.____	_____.____
0270	204.0245 Removing Storm Sewer (size) 006. 24-Inch	2,835.000 LF	_____.____	_____.____
0280	204.0245 Removing Storm Sewer (size) 007. 30-Inch	250.000 LF	_____.____	_____.____
0290	204.0245 Removing Storm Sewer (size) 008. 36-Inch	170.000 LF	_____.____	_____.____
0300	204.0245 Removing Storm Sewer (size) 009. 19X30-Inch HERCP	60.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
0310	204.0245 Removing Storm Sewer (size) 010. 29X45-Inch HERCP	30.000 LF	_____.____	_____.____
0320	204.0245 Removing Storm Sewer (size) 011. 53X83-Inch HERCP	15.000 LF	_____.____	_____.____
0330	204.0245 Removing Storm Sewer (size) 012. 20X28-Inch Pipe Arch	35.000 LF	_____.____	_____.____
0340	204.0280 Sealing Pipes	7.000 EACH	_____.____	_____.____
0350	204.0291.S Abandoning Sewer	16.000 CY	_____.____	_____.____
0360	204.9060.S Removing (item description) 001. Inlet Covers	10.000 EACH	_____.____	_____.____
0370	204.9060.S Removing (item description) 002. Endwalls	34.000 EACH	_____.____	_____.____
0380	204.9060.S Removing (item description) 003. Business Sign and Base	1.000 EACH	_____.____	_____.____
0390	204.9090.S Removing (item description) 001. Modular Block Retaining Wall	47.000 LF	_____.____	_____.____
0400	205.0100 Excavation Common	281,343.000 CY	_____.____	_____.____
0410	205.0200 Excavation Rock	900.000 CY	_____.____	_____.____
0420	206.1000 Excavation for Structures Bridges (structure) 001. B-13-833	LS	LUMP SUM	_____.____
0430	206.1000 Excavation for Structures Bridges (structure) 002. B-13-455	LS	LUMP SUM	_____.____
0440	206.2000 Excavation for Structures Culverts (structure) 001. C-13-115	LS	LUMP SUM	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
0450	209.2100 Backfill Granular Grade 2	6,157.000 CY	_____.____	_____.____
0460	210.1100 Backfill Structure Type A	12.000 CY	_____.____	_____.____
0470	210.1500 Backfill Structure Type A	900.000 TON	_____.____	_____.____
0480	211.0400 Prepare Foundation for Asphaltic Shoulders	14.000 STA	_____.____	_____.____
0490	213.0100 Finishing Roadway (project) 001. 1206-07-75	1.000 EACH	_____.____	_____.____
0500	213.0100 Finishing Roadway (project) 002. 1206-08-79	1.000 EACH	_____.____	_____.____
0510	305.0110 Base Aggregate Dense 3/4-Inch	1,553.000 TON	_____.____	_____.____
0520	305.0120 Base Aggregate Dense 1 1/4-Inch	65,292.000 TON	_____.____	_____.____
0530	305.0125 Base Aggregate Dense 1 1/4-Inch	35.000 CY	_____.____	_____.____
0540	305.0130 Base Aggregate Dense 3-Inch	11,790.000 TON	_____.____	_____.____
0550	312.0110 Select Crushed Material	128,307.000 TON	_____.____	_____.____
0560	340.0100 Cracking and Seating	12,050.000 SY	_____.____	_____.____
0570	415.0100 Concrete Pavement 10-Inch	90,595.000 SY	_____.____	_____.____
0580	415.0410 Concrete Pavement Approach Slab	390.000 SY	_____.____	_____.____
0590	416.0190 Concrete Driveway 9-Inch	140.000 SY	_____.____	_____.____
0600	416.0610 Drilled Tie Bars	272.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
0610	416.0620 Drilled Dowel Bars	204.000 EACH	_____.____	_____.____
0620	440.4410 Incentive IRI Ride	11,903.000 DOL	1.00000	11,903.00
0630	450.4000 HMA Cold Weather Paving	506.000 TON	_____.____	_____.____
0640	455.0605 Tack Coat	1,352.000 GAL	_____.____	_____.____
0650	460.2000 Incentive Density HMA Pavement	5,010.000 DOL	1.00000	5,010.00
0660	460.6223 HMA Pavement 3 MT 58-28 S	4,884.000 TON	_____.____	_____.____
0670	460.6424 HMA Pavement 4 MT 58-28 H	2,811.000 TON	_____.____	_____.____
0680	465.0105 Asphaltic Surface	72.000 TON	_____.____	_____.____
0690	465.0120 Asphaltic Surface Driveways and Field Entrances	228.000 TON	_____.____	_____.____
0700	465.0125 Asphaltic Surface Temporary	7,079.000 TON	_____.____	_____.____
0710	465.0310 Asphaltic Curb	635.000 LF	_____.____	_____.____
0720	495.1000.S Cold patch	10.000 TON	_____.____	_____.____
0730	502.0100 Concrete Masonry Bridges **P**	993.000 CY	_____.____	_____.____
0740	502.3200 Protective Surface Treatment **P**	3,448.000 SY	_____.____	_____.____
0750	502.3210 Pigmented Surface Sealer **P**	2,093.000 SY	_____.____	_____.____
0760	502.4205 Adhesive Anchors No. 5 Bar	54.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
0770	503.0146 Prestressed Girder Type I 45W-Inch **P**	2,250.000 LF	_____.____	_____.____
0780	504.0100 Concrete Masonry Culverts	5.000 CY	_____.____	_____.____
0790	504.0500 Concrete Masonry Retaining Walls **P**	1,833.000 CY	_____.____	_____.____
0800	505.0400 Bar Steel Reinforcement HS Structures **P**	16,000.000 LB	_____.____	_____.____
0810	505.0600 Bar Steel Reinforcement HS Coated Structures **P**	393,170.000 LB	_____.____	_____.____
0820	506.2605 Bearing Pads Elastomeric Non-Laminated	44.000 EACH	_____.____	_____.____
0830	506.4000 Steel Diaphragms (structure) 001. B-13-833	40.000 EACH	_____.____	_____.____
0840	509.0301 Preparation Decks Type 1	37.000 SY	_____.____	_____.____
0850	509.0302 Preparation Decks Type 2	16.000 SY	_____.____	_____.____
0860	509.0500 Cleaning Decks	1,015.000 SY	_____.____	_____.____
0870	509.1500 Concrete Surface Repair	3.000 SF	_____.____	_____.____
0880	509.2000 Full-Depth Deck Repair	5.000 SY	_____.____	_____.____
0890	509.2500 Concrete Masonry Overlay Decks	59.000 CY	_____.____	_____.____
0900	509.5100.S Polymer Overlay	990.000 SY	_____.____	_____.____
0910	511.1300 Temporary Shoring (location) 001. R-13-270 STA. 5+80 TO STA. 8+50	5,810.000 SF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
0920	511.1300 Temporary Shoring (location) 002. R-13-270 STA. 9+20 TO STA. 10+35	1,000.000 SF	_____.____	_____.____
0930	511.1300 Temporary Shoring (location) 003. R-13-270 STA. 10+50 TO STA. 12+00	1,215.000 SF	_____.____	_____.____
0940	511.1300 Temporary Shoring (location) 004. STA. 35+75 C	1,645.000 SF	_____.____	_____.____
0950	513.4091 Railing Tubular Screening (structure) 001. B-13-833	442.000 LF	_____.____	_____.____
0960	513.8016 Railing Steel Pedestrian Type C3 (structure) 001. R-13-272	85.000 LF	_____.____	_____.____
0970	513.8016 Railing Steel Pedestrian Type C3 (structure) 002. R-13-273	85.000 LF	_____.____	_____.____
0980	516.0500 Rubberized Membrane Waterproofing	192.000 SY	_____.____	_____.____
0990	517.1010.S Concrete Staining (structure) 001. R-13-268 **P**	25,525.000 SF	_____.____	_____.____
1000	517.1010.S Concrete Staining (structure) 002. R-13-270 **P**	17,240.000 SF	_____.____	_____.____
1010	517.1010.S Concrete Staining (structure) 003. S-13-446 **P**	480.000 SF	_____.____	_____.____
1020	517.1010.S Concrete Staining (structure) 004. S-13-448 **P**	310.000 SF	_____.____	_____.____
1030	517.1010.S Concrete Staining (structure) 005. S-13-449 **P**	88.000 SF	_____.____	_____.____
1040	517.1010.S Concrete Staining (structure) 006. S-13-450 **P**	88.000 SF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
1050	517.1010.S Concrete Staining (structure) 007. S-13-451 **P**	88.000 SF	_____.____	_____.____
1060	517.1010.S Concrete Staining (structure) 008. Barrier Wall **P**	597.000 SF	_____.____	_____.____
1070	517.1010.S Concrete Staining (structure) 009. B-13-833 **P**	8,640.000 SF	_____.____	_____.____
1080	517.1010.S Concrete Staining (structure) 010. R-13-272 **P**	25,600.000 SF	_____.____	_____.____
1090	517.1010.S Concrete Staining (structure) 011. R-13-273 **P**	11,650.000 SF	_____.____	_____.____
1100	517.1050.S Architectural Surface Treatment (structure) 001. R-13-268 **P**	17,155.000 SF	_____.____	_____.____
1110	517.1050.S Architectural Surface Treatment (structure) 002. R-13-270 **P**	14,190.000 SF	_____.____	_____.____
1120	517.1050.S Architectural Surface Treatment (structure) 003. R-13-272 **P**	17,280.000 SF	_____.____	_____.____
1130	517.1050.S Architectural Surface Treatment (structure) 004. S-13-446 **P**	480.000 SF	_____.____	_____.____
1140	517.1050.S Architectural Surface Treatment (structure) 005. S-13-448 **P**	235.000 SF	_____.____	_____.____
1150	517.1050.S Architectural Surface Treatment (structure) 006. S-13-449 **P**	64.000 SF	_____.____	_____.____
1160	517.1050.S Architectural Surface Treatment (structure) 007. S-13-450 **P**	64.000 SF	_____.____	_____.____
1170	517.1050.S Architectural Surface Treatment (structure) 008. S-13-451 **P**	64.000 SF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
1180	517.1050.S Architectural Surface Treatment (structure) 009. B-13-833 **P**	1,640.000 SF	_____.____	_____.____
1190	517.1050.S Architectural Surface Treatment (structure) 010. R-13-273 **P**	6,255.000 SF	_____.____	_____.____
1200	520.1012 Apron Endwalls for Culvert Pipe 12-Inch	1.000 EACH	_____.____	_____.____
1210	520.1018 Apron Endwalls for Culvert Pipe 18-Inch	2.000 EACH	_____.____	_____.____
1220	520.1024 Apron Endwalls for Culvert Pipe 24-Inch	4.000 EACH	_____.____	_____.____
1230	520.2012 Culvert Pipe Temporary 12-Inch	169.000 LF	_____.____	_____.____
1240	520.2024 Culvert Pipe Temporary 24-Inch	220.000 LF	_____.____	_____.____
1250	520.4112 Culvert Pipe Class IV 12-Inch	190.000 LF	_____.____	_____.____
1260	520.4115 Culvert Pipe Class IV 15-Inch	128.000 LF	_____.____	_____.____
1270	520.4118 Culvert Pipe Class IV 18-Inch	325.000 LF	_____.____	_____.____
1280	520.4124 Culvert Pipe Class IV 24-Inch	425.000 LF	_____.____	_____.____
1290	520.8000 Concrete Collars for Pipe	55.000 EACH	_____.____	_____.____
1300	521.0728 Pipe Arch Corrugated Steel 28x20-Inch	6.000 LF	_____.____	_____.____
1310	521.2005.S Surface Drain Pipe Corrugated Metal Slotted (inch) 001. 24-Inch	781.000 LF	_____.____	_____.____
1320	522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	1.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
1330	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	2.000 EACH	_____.____	_____.____
1340	522.1036 Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	1.000 EACH	_____.____	_____.____
1350	524.0624 Apron Endwalls for Culvert Pipe Salvaged 24-Inch	1.000 EACH	_____.____	_____.____
1360	531.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 001. N-13-5	40,200.000 SF	_____.____	_____.____
1370	531.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 002. N-13-6	25,750.000 SF	_____.____	_____.____
1380	550.0010 Pre-Boring Unconsolidated Materials	227.000 LF	_____.____	_____.____
1390	550.0020 Pre-Boring Rock or Consolidated Materials	224.000 LF	_____.____	_____.____
1400	550.1120 Piling Steel HP 12-Inch X 53 Lb	910.000 LF	_____.____	_____.____
1410	601.0405 Concrete Curb & Gutter 18-Inch Type A	274.000 LF	_____.____	_____.____
1420	601.0407 Concrete Curb & Gutter 18-Inch Type D	470.000 LF	_____.____	_____.____
1430	601.0409 Concrete Curb & Gutter 30-Inch Type A	2,356.000 LF	_____.____	_____.____
1440	601.0411 Concrete Curb & Gutter 30-Inch Type D	1,537.000 LF	_____.____	_____.____
1450	601.0551 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type A	10,110.000 LF	_____.____	_____.____
1460	601.0600 Concrete Curb Pedestrian	115.000 LF	_____.____	_____.____
1470	602.0405 Concrete Sidewalk 4-Inch	5,065.000 SF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
1480	602.0410 Concrete Sidewalk 5-Inch	23,795.000 SF	_____.____	_____.____
1490	602.0415 Concrete Sidewalk 6-Inch	1,125.000 SF	_____.____	_____.____
1500	602.0505 Curb Ramp Detectable Warning Field Yellow	244.000 SF	_____.____	_____.____
1510	602.0515 Curb Ramp Detectable Warning Field Natural Patina	82.000 SF	_____.____	_____.____
1520	603.1142 Concrete Barrier Type S42	8,051.000 LF	_____.____	_____.____
1530	603.1232 Concrete Barrier Type S32A	15.000 LF	_____.____	_____.____
1540	603.1342 Concrete Barrier Type S42B	21.000 LF	_____.____	_____.____
1550	603.1442 Concrete Barrier Type S42C	1,306.000 LF	_____.____	_____.____
1560	603.3113 Concrete Barrier Transition Type NJ32SF to S36	1.000 EACH	_____.____	_____.____
1570	603.3513 Concrete Barrier Transition Type S32 to S36	3.000 EACH	_____.____	_____.____
1580	603.3535 Concrete Barrier Transition Type S36 to S42	4.000 EACH	_____.____	_____.____
1590	603.8000 Concrete Barrier Temporary Precast Delivered	28,325.000 LF	_____.____	_____.____
1600	603.8125 Concrete Barrier Temporary Precast Installed	41,335.000 LF	_____.____	_____.____
1610	604.0400 Slope Paving Concrete	58.000 SY	_____.____	_____.____
1620	604.0500 Slope Paving Crushed Aggregate **P**	3,370.000 SY	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
1630	606.0200 Riprap Medium	81.000 CY	_____.____	_____.____
1640	608.0005 Storm Sewer Rock Excavation	45.500 CY	_____.____	_____.____
1650	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	5,422.000 LF	_____.____	_____.____
1660	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	1,542.000 LF	_____.____	_____.____
1670	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	3,923.000 LF	_____.____	_____.____
1680	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	3,036.000 LF	_____.____	_____.____
1690	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	434.000 LF	_____.____	_____.____
1700	608.0436 Storm Sewer Pipe Reinforced Concrete Class IV 36-Inch	560.000 LF	_____.____	_____.____
1710	608.0442 Storm Sewer Pipe Reinforced Concrete Class IV 42-Inch	2,163.000 LF	_____.____	_____.____
1720	608.0454 Storm Sewer Pipe Reinforced Concrete Class IV 54-Inch	233.000 LF	_____.____	_____.____
1730	610.0419 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	54.000 LF	_____.____	_____.____
1740	610.0424 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 24x38-Inch	195.000 LF	_____.____	_____.____
1750	610.0429 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 29x45-Inch	16.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
1760	611.0420 Reconstructing Manholes	5.000 EACH	_____.____	_____.____
1770	611.0430 Reconstructing Inlets	2.000 EACH	_____.____	_____.____
1780	611.0530 Manhole Covers Type J	7.000 EACH	_____.____	_____.____
1790	611.0535 Manhole Covers Type J-Special	11.000 EACH	_____.____	_____.____
1800	611.0540 Manhole Covers Type K	1.000 EACH	_____.____	_____.____
1810	611.0545 Manhole Covers Type L	2.000 EACH	_____.____	_____.____
1820	611.0610 Inlet Covers Type BW	38.000 EACH	_____.____	_____.____
1830	611.0612 Inlet Covers Type C	2.000 EACH	_____.____	_____.____
1840	611.0624 Inlet Covers Type H	16.000 EACH	_____.____	_____.____
1850	611.0627 Inlet Covers Type HM	53.000 EACH	_____.____	_____.____
1860	611.0636 Inlet Covers Type HM-S	20.000 EACH	_____.____	_____.____
1870	611.0639 Inlet Covers Type H-S	19.000 EACH	_____.____	_____.____
1880	611.0642 Inlet Covers Type MS	38.000 EACH	_____.____	_____.____
1890	611.0651 Inlet Covers Type S	18.000 EACH	_____.____	_____.____
1900	611.0654 Inlet Covers Type V	49.000 EACH	_____.____	_____.____
1910	611.2003 Manholes 3-FT Diameter	4.000 EACH	_____.____	_____.____
1920	611.2004 Manholes 4-FT Diameter	74.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
1930	611.2005 Manholes 5-FT Diameter	29.000 EACH	_____.____	_____.____
1940	611.2006 Manholes 6-FT Diameter	13.000 EACH	_____.____	_____.____
1950	611.2007 Manholes 7-FT Diameter	10.000 EACH	_____.____	_____.____
1960	611.2008 Manholes 8-FT Diameter	1.000 EACH	_____.____	_____.____
1970	611.3220 Inlets 2x2-FT	48.000 EACH	_____.____	_____.____
1980	611.3225 Inlets 2x2.5-FT	14.000 EACH	_____.____	_____.____
1990	611.3230 Inlets 2x3-FT	43.000 EACH	_____.____	_____.____
2000	611.3901 Inlets Median 1 Grate	18.000 EACH	_____.____	_____.____
2010	611.3902 Inlets Median 2 Grate	8.000 EACH	_____.____	_____.____
2020	611.8110 Adjusting Manhole Covers	6.000 EACH	_____.____	_____.____
2030	611.8115 Adjusting Inlet Covers	25.000 EACH	_____.____	_____.____
2040	611.8120.S Cover Plates Temporary	13.000 EACH	_____.____	_____.____
2050	611.9800.S Pipe Grates	1.000 EACH	_____.____	_____.____
2060	611.9900.S Drain Slotted Vane	59.000 EACH	_____.____	_____.____
2070	612.0206 Pipe Underdrain Unperforated 6-Inch	240.000 LF	_____.____	_____.____
2080	612.0406 Pipe Underdrain Wrapped 6-Inch	5,030.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
2090	612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	1.000 EACH	_____.____	_____.____
2100	614.0150 Anchor Assemblies for Steel Plate Beam Guard	1.000 EACH	_____.____	_____.____
2110	614.0200 Steel Thrie Beam Structure Approach	13.000 LF	_____.____	_____.____
2120	614.0220 Steel Thrie Beam Bullnose Terminal	1.000 EACH	_____.____	_____.____
2130	614.0230 Steel Thrie Beam	66.000 LF	_____.____	_____.____
2140	614.0396 Guardrail Mow Strip Asphalt	63.000 SY	_____.____	_____.____
2150	614.0805 Crash Cushions Permanent Low Maintenance	3.000 EACH	_____.____	_____.____
2160	614.0905 Crash Cushions Temporary	4.000 EACH	_____.____	_____.____
2170	614.1000 MGS Guardrail Temporary	1,146.000 LF	_____.____	_____.____
2180	614.2300 MGS Guardrail 3	8,831.000 LF	_____.____	_____.____
2190	614.2500 MGS Thrie Beam Transition	427.000 LF	_____.____	_____.____
2200	614.2610 MGS Guardrail Terminal EAT	7.000 EACH	_____.____	_____.____
2210	614.2620 MGS Guardrail Terminal Type 2	6.000 EACH	_____.____	_____.____
2220	616.0100 Fence Woven Wire (height) 001. 5-FT	575.000 LF	_____.____	_____.____
2230	616.0206 Fence Chain Link 6-FT	3,980.000 LF	_____.____	_____.____
2240	616.0700.S Fence Safety	3,625.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
2250	618.0100 Maintenance And Repair of Haul Roads (project) 001. 1206-07-75	1.000 EACH	_____.____	_____.____
2260	619.1000 Mobilization	1.000 EACH	_____.____	_____.____
2270	620.0300 Concrete Median Sloped Nose	901.000 SF	_____.____	_____.____
2280	623.0200 Dust Control Surface Treatment	105,510.000 SY	_____.____	_____.____
2290	624.0100 Water	1,472.900 MGAL	_____.____	_____.____
2300	625.0100 Topsoil	693.000 SY	_____.____	_____.____
2310	625.0500 Salvaged Topsoil	94,319.000 SY	_____.____	_____.____
2320	627.0200 Mulching	104,438.000 SY	_____.____	_____.____
2330	628.1104 Erosion Bales	406.000 EACH	_____.____	_____.____
2340	628.1504 Silt Fence	5,675.000 LF	_____.____	_____.____
2350	628.1520 Silt Fence Maintenance	5,101.000 LF	_____.____	_____.____
2360	628.1905 Mobilizations Erosion Control	29.000 EACH	_____.____	_____.____
2370	628.1910 Mobilizations Emergency Erosion Control	15.000 EACH	_____.____	_____.____
2380	628.2004 Erosion Mat Class I Type B	95,626.000 SY	_____.____	_____.____
2390	628.2006 Erosion Mat Urban Class I Type A	20,114.000 SY	_____.____	_____.____
2400	628.6505 Soil Stabilizer Type A	4.000 ACRE	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
2410	628.6510 Soil Stabilizer Type B	4.000 ACRE	_____.____	_____.____
2420	628.7005 Inlet Protection Type A	320.000 EACH	_____.____	_____.____
2430	628.7010 Inlet Protection Type B	130.000 EACH	_____.____	_____.____
2440	628.7015 Inlet Protection Type C	113.000 EACH	_____.____	_____.____
2450	628.7020 Inlet Protection Type D	65.000 EACH	_____.____	_____.____
2460	628.7504 Temporary Ditch Checks	894.000 LF	_____.____	_____.____
2470	628.7555 Culvert Pipe Checks	29.000 EACH	_____.____	_____.____
2480	628.7560 Tracking Pads	9.000 EACH	_____.____	_____.____
2490	628.7570 Rock Bags	59.000 EACH	_____.____	_____.____
2500	629.0210 Fertilizer Type B	149.300 CWT	_____.____	_____.____
2510	630.0120 Seeding Mixture No. 20	5,376.000 LB	_____.____	_____.____
2520	630.0130 Seeding Mixture No. 30	313.000 LB	_____.____	_____.____
2530	630.0140 Seeding Mixture No. 40	1,109.000 LB	_____.____	_____.____
2540	630.0200 Seeding Temporary	6,308.000 LB	_____.____	_____.____
2550	631.0300 Sod Water	20.000 MGAL	_____.____	_____.____
2560	631.1000 Sod Lawn	815.000 SY	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
2570	632.0101 Trees (species) (size) (root) 001. Maple, Miyabei 'State Street', B&B, 2.5" Cal.	7.000 EACH	_____.____	_____.____
2580	632.0101 Trees (species) (size) (root) 002. Oak, Bur, B&B, 2.5" Cal.	1.000 EACH	_____.____	_____.____
2590	632.0101 Trees (species) (size) (root) 003. Oak, Red, B&B, 2.5" Cal.	2.000 EACH	_____.____	_____.____
2600	632.0101 Trees (species) (size) (root) 004. Serviceberry, 'Autumn Brilliance' (Shrub Form Tree), B&B, 6' Ht.	2.000 EACH	_____.____	_____.____
2610	632.0101 Trees (species) (size) (root) 005. Pine, Austrian, B&B, 8' Ht.	8.000 EACH	_____.____	_____.____
2620	632.0101 Trees (species) (size) (root) 006. Spruce, Black Hills, B&B, 8' Ht.	30.000 EACH	_____.____	_____.____
2630	632.9101 Landscape Planting Surveillance and Care Cycles	23.000 EACH	_____.____	_____.____
2640	633.0100 Delineator Posts Steel	8.000 EACH	_____.____	_____.____
2650	633.0500 Delineator Reflectors	8.000 EACH	_____.____	_____.____
2660	633.1000 Delineator Brackets	69.000 EACH	_____.____	_____.____
2670	633.5200 Markers Culvert End	8.000 EACH	_____.____	_____.____
2680	634.0412 Posts Wood 4x4-Inch X 12-FT	3.000 EACH	_____.____	_____.____
2690	634.0414 Posts Wood 4x4-Inch X 14-FT	3.000 EACH	_____.____	_____.____
2700	634.0416 Posts Wood 4x4-Inch X 16-FT	3.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
2710	634.0612 Posts Wood 4x6-Inch X 12-FT	5.000 EACH	_____.____	_____.____
2720	634.0614 Posts Wood 4x6-Inch X 14-FT	17.000 EACH	_____.____	_____.____
2730	634.0616 Posts Wood 4x6-Inch X 16-FT	24.000 EACH	_____.____	_____.____
2740	634.0618 Posts Wood 4x6-Inch X 18-FT	21.000 EACH	_____.____	_____.____
2750	634.0620 Posts Wood 4x6-Inch X 20-FT	8.000 EACH	_____.____	_____.____
2760	634.0624 Posts Wood 4x6-Inch X 24-FT	1.000 EACH	_____.____	_____.____
2770	635.0200 Sign Supports Structural Steel HS	1,190.000 LB	_____.____	_____.____
2780	636.0100 Sign Supports Concrete Masonry **P**	135.400 CY	_____.____	_____.____
2790	636.0500 Sign Supports Steel Reinforcement	136.000 LB	_____.____	_____.____
2800	636.1000 Sign Supports Steel Reinforcement HS **P**	8,040.000 LB	_____.____	_____.____
2810	636.1500 Sign Supports Steel Coated Reinforcement HS **P**	15,960.000 LB	_____.____	_____.____
2820	637.1220 Signs Type I Reflective SH	1,791.000 SF	_____.____	_____.____
2830	637.2210 Signs Type II Reflective H	766.800 SF	_____.____	_____.____
2840	637.2215 Signs Type II Reflective H Folding	55.740 SF	_____.____	_____.____
2850	637.2220 Signs Type II Reflective SH	6.750 SF	_____.____	_____.____
2860	637.2230 Signs Type II Reflective F	199.250 SF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
2870	638.2101 Moving Signs Type I	4.000 EACH	_____.____	_____.____
2880	638.2102 Moving Signs Type II	24.000 EACH	_____.____	_____.____
2890	638.2601 Removing Signs Type I	1.000 EACH	_____.____	_____.____
2900	638.2602 Removing Signs Type II	139.000 EACH	_____.____	_____.____
2910	638.3000 Removing Small Sign Supports	95.000 EACH	_____.____	_____.____
2920	638.3100 Removing Structural Steel Sign Supports	4.000 EACH	_____.____	_____.____
2930	641.1200 Sign Bridge Cantilevered (structure) 001. S-13-446	LS	LUMP SUM	_____.____
2940	641.1200 Sign Bridge Cantilevered (structure) 002. S-13-449	LS	LUMP SUM	_____.____
2950	641.1200 Sign Bridge Cantilevered (structure) 003. S-13-450	LS	LUMP SUM	_____.____
2960	641.1200 Sign Bridge Cantilevered (structure) 004. S-13-451	LS	LUMP SUM	_____.____
2970	641.1200 Sign Bridge Cantilevered (structure) 005. S-13-454	LS	LUMP SUM	_____.____
2980	641.6600 Sign Bridge (structure) 001. S-13-442	LS	LUMP SUM	_____.____
2990	641.6600 Sign Bridge (structure) 002. S-13-448	LS	LUMP SUM	_____.____
3000	641.8100 Overhead Sign Support (structure) 001. S-13-445	LS	LUMP SUM	_____.____
3010	641.8100 Overhead Sign Support (structure) 002. S-13-456	LS	LUMP SUM	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
3020	641.8100 Overhead Sign Support (structure) 003. S-13-457	LS	LUMP SUM	_____.____
3030	642.5401 Field Office Type D	1.000 EACH	_____.____	_____.____
3040	643.0100 Traffic Control (project) 001. 1206-08-79	1.000 EACH	_____.____	_____.____
3050	643.0200.S Traffic Control Surveillance and Maintenance (project) 001. 1206-07-75	415.000 DAY	_____.____	_____.____
3060	643.0300 Traffic Control Drums	121,624.000 DAY	_____.____	_____.____
3070	643.0420 Traffic Control Barricades Type III	11,940.000 DAY	_____.____	_____.____
3080	643.0453 Traffic Control Barricades Permanent Type III	9.000 EACH	_____.____	_____.____
3090	643.0500 Traffic Control Flexible Tubular Marker Posts	123.000 EACH	_____.____	_____.____
3100	643.0600 Traffic Control Flexible Tubular Marker Bases	123.000 EACH	_____.____	_____.____
3110	643.0705 Traffic Control Warning Lights Type A	22,836.000 DAY	_____.____	_____.____
3120	643.0715 Traffic Control Warning Lights Type C	7,683.000 DAY	_____.____	_____.____
3130	643.0800 Traffic Control Arrow Boards	300.000 DAY	_____.____	_____.____
3140	643.0900 Traffic Control Signs	62,443.000 DAY	_____.____	_____.____
3150	643.0910 Traffic Control Covering Signs Type I	5.000 EACH	_____.____	_____.____
3160	643.0920 Traffic Control Covering Signs Type II	7.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
3170	643.1000 Traffic Control Signs Fixed Message	157.000 SF	_____.____	_____.____
3180	643.1050 Traffic Control Signs PCMS	364.000 DAY	_____.____	_____.____
3190	644.1410.S Temporary Pedestrian Surface Asphalt	3,520.000 SF	_____.____	_____.____
3200	644.1601.S Temporary Curb Ramp	5.000 EACH	_____.____	_____.____
3210	644.1616.S Temporary Pedestrian Safety Fence	1,535.000 LF	_____.____	_____.____
3220	645.0120 Geotextile Type HR	264.000 SY	_____.____	_____.____
3230	645.0220 Geogrid Type SR	10,500.000 SY	_____.____	_____.____
3240	646.0106 Pavement Marking Epoxy 4-Inch	66,805.000 LF	_____.____	_____.____
3250	646.0107.S Pavement Marking Grooved Epoxy 4-Inch	19,078.000 LF	_____.____	_____.____
3260	646.0126 Pavement Marking Epoxy 8-Inch	5,192.000 LF	_____.____	_____.____
3270	646.0600 Removing Pavement Markings	66,130.000 LF	_____.____	_____.____
3280	646.0841.S Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	3,814.000 LF	_____.____	_____.____
3290	646.0843.S Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	1,036.000 LF	_____.____	_____.____
3300	647.0166 Pavement Marking Arrows Epoxy Type 2	55.000 EACH	_____.____	_____.____
3310	647.0206 Pavement Marking Arrows Bike Lane Epoxy	8.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
3320	647.0306 Pavement Marking Symbols Bike Lane Epoxy	8.000 EACH	_____.____	_____.____
3330	647.0356 Pavement Marking Words Epoxy	22.000 EACH	_____.____	_____.____
3340	647.0456 Pavement Marking Curb Epoxy	70.000 LF	_____.____	_____.____
3350	647.0566 Pavement Marking Stop Line Epoxy 18-Inch	889.000 LF	_____.____	_____.____
3360	647.0606 Pavement Marking Island Nose Epoxy	6.000 EACH	_____.____	_____.____
3370	647.0726 Pavement Marking Diagonal Epoxy 12-Inch	416.000 LF	_____.____	_____.____
3380	647.0763 Pavement Marking Crosswalk Paint 6-Inch	362.000 LF	_____.____	_____.____
3390	647.0766 Pavement Marking Crosswalk Epoxy 6-Inch	2,449.000 LF	_____.____	_____.____
3400	647.0955 Removing Pavement Markings Arrows	11.000 EACH	_____.____	_____.____
3410	647.0960 Removing Pavement Markings Symbols	1.000 EACH	_____.____	_____.____
3420	647.0965 Removing Pavement Markings Words	10.000 EACH	_____.____	_____.____
3430	649.0400 Temporary Pavement Marking Removable Tape 4-Inch	42,816.000 LF	_____.____	_____.____
3440	649.0402 Temporary Pavement Marking Paint 4-Inch	50,641.000 LF	_____.____	_____.____
3450	649.0506 Temporary Pavement Marking Removable Mask-Out Tape 6-Inch	595.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
3460	649.0510 Temporary Pavement Marking Removable Mask-Out Tape 10-Inch	180.000 LF	_____.____	_____.____
3470	649.0600 Temporary Pavement Marking Removable Tape 6-Inch	1,460.000 LF	_____.____	_____.____
3480	649.0801 Temporary Pavement Marking Removable Tape 8-Inch	1,835.000 LF	_____.____	_____.____
3490	649.0802 Temporary Pavement Marking Paint 8-Inch	2,620.000 LF	_____.____	_____.____
3500	649.1100 Temporary Pavement Marking Stop Line 18-Inch	294.000 LF	_____.____	_____.____
3510	649.1200 Temporary Pavement Marking Stop Line Removable Tape 18-Inch	249.000 LF	_____.____	_____.____
3520	650.4000 Construction Staking Storm Sewer	299.000 EACH	_____.____	_____.____
3530	650.4500 Construction Staking Subgrade	33,837.000 LF	_____.____	_____.____
3540	650.5000 Construction Staking Base	5,650.000 LF	_____.____	_____.____
3550	650.5500 Construction Staking Curb Gutter and Curb & Gutter	2,007.000 LF	_____.____	_____.____
3560	650.6500 Construction Staking Structure Layout (structure) 001. B-13-833	LS	LUMP SUM	_____.____
3570	650.6500 Construction Staking Structure Layout (structure) 002. R-13-268	LS	LUMP SUM	_____.____
3580	650.6500 Construction Staking Structure Layout (structure) 003. R-13-270	LS	LUMP SUM	_____.____
3590	650.6500 Construction Staking Structure Layout (structure) 004. R-13-272	LS	LUMP SUM	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
3600	650.6500 Construction Staking Structure Layout (structure) 005. N-13-5	LS	LUMP SUM	_____.____
3610	650.6500 Construction Staking Structure Layout (structure) 006. N-13-6	LS	LUMP SUM	_____.____
3620	650.6500 Construction Staking Structure Layout (structure) 007. S-13-442	LS	LUMP SUM	_____.____
3630	650.6500 Construction Staking Structure Layout (structure) 008. S-13-445	LS	LUMP SUM	_____.____
3640	650.6500 Construction Staking Structure Layout (structure) 009. S-13-446	LS	LUMP SUM	_____.____
3650	650.6500 Construction Staking Structure Layout (structure) 010. S-13-448	LS	LUMP SUM	_____.____
3660	650.6500 Construction Staking Structure Layout (structure) 011. S-13-449	LS	LUMP SUM	_____.____
3670	650.6500 Construction Staking Structure Layout (structure) 012. S-13-450	LS	LUMP SUM	_____.____
3680	650.6500 Construction Staking Structure Layout (structure) 013. S-13-451	LS	LUMP SUM	_____.____
3690	650.6500 Construction Staking Structure Layout (structure) 014. S-13-454	LS	LUMP SUM	_____.____
3700	650.6500 Construction Staking Structure Layout (structure) 015. S-13-456	LS	LUMP SUM	_____.____
3710	650.6500 Construction Staking Structure Layout (structure) 016. S-13-457	LS	LUMP SUM	_____.____
3720	650.6500 Construction Staking Structure Layout (structure) 017. R-13-273	LS	LUMP SUM	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
3730	650.7000 Construction Staking Concrete Pavement	19,683.000 LF	_____._____	_____._____
3740	650.8000 Construction Staking Resurfacing Reference	1,390.000 LF	_____._____	_____._____
3750	650.8500 Construction Staking Electrical Installations (project) 001. 1206-07-75	LS	LUMP SUM	_____._____
3760	650.9910 Construction Staking Supplemental Control (project) 001. 1206-07-75	LS	LUMP SUM	_____._____
3770	650.9910 Construction Staking Supplemental Control (project) 002. 1206-08-79	LS	LUMP SUM	_____._____
3780	650.9920 Construction Staking Slope Stakes	21,920.000 LF	_____._____	_____._____
3790	652.0125 Conduit Rigid Metallic 2-Inch	50.000 LF	_____._____	_____._____
3800	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	8,903.000 LF	_____._____	_____._____
3810	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	3,259.000 LF	_____._____	_____._____
3820	652.0700.S Install Conduit into Existing Item	16.000 EACH	_____._____	_____._____
3830	652.0800 Conduit Loop Detector	4,109.000 LF	_____._____	_____._____
3840	653.0222 Junction Boxes 18x12x6-Inch	11.000 EACH	_____._____	_____._____
3850	653.0900 Adjusting Pull Boxes	6.000 EACH	_____._____	_____._____
3860	653.0905 Removing Pull Boxes	70.000 EACH	_____._____	_____._____
3870	654.0101 Concrete Bases Type 1	13.000 EACH	_____._____	_____._____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
3880	654.0102 Concrete Bases Type 2	8.000 EACH	_____.____	_____.____
3890	654.0105 Concrete Bases Type 5	2.000 EACH	_____.____	_____.____
3900	654.0106 Concrete Bases Type 6	26.000 EACH	_____.____	_____.____
3910	654.0110 Concrete Bases Type 10	1.000 EACH	_____.____	_____.____
3920	654.0113 Concrete Bases Type 13	3.000 EACH	_____.____	_____.____
3930	654.0217 Concrete Control Cabinet Bases Type 9 Special	3.000 EACH	_____.____	_____.____
3940	654.0220 Concrete Control Cabinet Bases Type 10	1.000 EACH	_____.____	_____.____
3950	655.0230 Cable Traffic Signal 5-14 AWG	2,149.000 LF	_____.____	_____.____
3960	655.0240 Cable Traffic Signal 7-14 AWG	1,627.000 LF	_____.____	_____.____
3970	655.0260 Cable Traffic Signal 12-14 AWG	215.000 LF	_____.____	_____.____
3980	655.0305 Cable Type UF 2-12 AWG Grounded	505.000 LF	_____.____	_____.____
3990	655.0515 Electrical Wire Traffic Signals 10 AWG	3,704.000 LF	_____.____	_____.____
4000	655.0610 Electrical Wire Lighting 12 AWG	5,427.000 LF	_____.____	_____.____
4010	655.0620 Electrical Wire Lighting 8 AWG	11,174.000 LF	_____.____	_____.____
4020	655.0625 Electrical Wire Lighting 6 AWG	20,931.000 LF	_____.____	_____.____
4030	655.0630 Electrical Wire Lighting 4 AWG	8,349.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
4040	655.0635 Electrical Wire Lighting 2 AWG	5,042.000 LF	_____.____	_____.____
4050	655.0700 Loop Detector Lead In Cable	9,975.000 LF	_____.____	_____.____
4060	655.0800 Loop Detector Wire	10,405.000 LF	_____.____	_____.____
4070	656.0200 Electrical Service Meter Breaker Pedestal (location) 001. 968+35 VR	LS	LUMP SUM	_____.____
4080	656.0500 Electrical Service Breaker Disconnect Box (location) 001. 968+35 VR	LS	LUMP SUM	_____.____
4090	657.0100 Pedestal Bases	15.000 EACH	_____.____	_____.____
4100	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	35.000 EACH	_____.____	_____.____
4110	657.0305 Poles Type 2	3.000 EACH	_____.____	_____.____
4120	657.0310 Poles Type 3	5.000 EACH	_____.____	_____.____
4130	657.0322 Poles Type 5-Aluminum	8.000 EACH	_____.____	_____.____
4140	657.0327 Poles Type 6-Aluminum	26.000 EACH	_____.____	_____.____
4150	657.0410 Traffic Signal Standards Aluminum 9-FT	2.000 EACH	_____.____	_____.____
4160	657.0420 Traffic Signal Standards Aluminum 13-FT	13.000 EACH	_____.____	_____.____
4170	657.0585 Trombone Arms 15-FT	2.000 EACH	_____.____	_____.____
4180	657.0590 Trombone Arms 20-FT	2.000 EACH	_____.____	_____.____
4190	657.0595 Trombone Arms 25-FT	1.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
4200	657.0615 Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT	33.000 EACH	_____.____	_____.____
4210	657.0709 Luminaire Arms Truss Type 4-Inch Clamp 12-FT	6.000 EACH	_____.____	_____.____
4220	657.0710 Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT	1.000 EACH	_____.____	_____.____
4230	657.1345 Install Poles Type 9	1.000 EACH	_____.____	_____.____
4240	657.1355 Install Poles Type 12	2.000 EACH	_____.____	_____.____
4250	657.1360 Install Poles Type 13	1.000 EACH	_____.____	_____.____
4260	657.1525 Install Monotube Arms 25-FT	1.000 EACH	_____.____	_____.____
4270	657.1550 Install Monotube Arms 50-FT	1.000 EACH	_____.____	_____.____
4280	657.1555 Install Monotube Arms 55-FT	2.000 EACH	_____.____	_____.____
4290	657.6005.S Anchor Assemblies Light Poles on Structures	7.000 EACH	_____.____	_____.____
4300	658.0110 Traffic Signal Face 3-12 Inch Vertical	21.000 EACH	_____.____	_____.____
4310	658.0215 Backplates Signal Face 3 Section 12-Inch	21.000 EACH	_____.____	_____.____
4320	658.0416 Pedestrian Signal Face 16-Inch	10.000 EACH	_____.____	_____.____
4330	658.0500 Pedestrian Push Buttons	7.000 EACH	_____.____	_____.____
4340	658.0600 Led Modules 12-Inch Red Ball	13.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
4350	658.0605 Led Modules 12-Inch Yellow Ball	11.000 EACH	_____.____	_____.____
4360	658.0610 Led Modules 12-Inch Green Ball	10.000 EACH	_____.____	_____.____
4370	658.0615 Led Modules 12-Inch Red Arrow	8.000 EACH	_____.____	_____.____
4380	658.0620 Led Modules 12-Inch Yellow Arrow	10.000 EACH	_____.____	_____.____
4390	658.0625 Led Modules 12-Inch Green Arrow	11.000 EACH	_____.____	_____.____
4400	658.0635 Led Modules Pedestrian Countdown Timer 16-Inch	10.000 EACH	_____.____	_____.____
4410	658.5069 Signal Mounting Hardware (location) 001. Verona Road and Raymond Road	LS	LUMP SUM	_____.____
4420	658.5069 Signal Mounting Hardware (location) 002. Verona Road and Williamsburg Way	LS	LUMP SUM	_____.____
4430	659.1125 Luminaires Utility LED C	41.000 EACH	_____.____	_____.____
4440	661.0200 Temporary Traffic Signals for Intersections (location) 001. USH 18/151 and Raymond Road	LS	LUMP SUM	_____.____
4450	671.0132 Conduit HDPE 3-Duct 2-Inch	6,087.000 LF	_____.____	_____.____
4460	672.0250 Base Camera Pole 50-FT	1.000 EACH	_____.____	_____.____
4470	673.0105 Communication Vault Type 1	12.000 EACH	_____.____	_____.____
4480	673.0225.S Install Pole Mounted Cabinet	1.000 EACH	_____.____	_____.____
4490	674.0300 Remove Cable	4,529.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
4500	675.0400.S Install Ethernet Switch	2.000 EACH	_____.____	_____.____
4510	677.0150 Install Camera Pole 50-FT	1.000 EACH	_____.____	_____.____
4520	677.0200 Install Camera Assembly	1.000 EACH	_____.____	_____.____
4530	678.0006 Install Fiber Optic Cable Outdoor Plant 6-CT	2,981.000 LF	_____.____	_____.____
4540	678.0072 Install Fiber Optic Cable Outdoor Plant 72-CT	3,920.000 LF	_____.____	_____.____
4550	678.0200 Fiber Optic Splice Enclosure	2.000 EACH	_____.____	_____.____
4560	678.0300 Fiber Optic Splice	24.000 EACH	_____.____	_____.____
4570	678.0400 Fiber Optic Termination	12.000 EACH	_____.____	_____.____
4580	690.0150 Sawing Asphalt	8,249.000 LF	_____.____	_____.____
4590	690.0250 Sawing Concrete	8,193.000 LF	_____.____	_____.____
4600	715.0415 Incentive Strength Concrete Pavement	27,179.000 DOL	1.00000	27,179.00
4610	715.0502 Incentive Strength Concrete Structures	16,938.000 DOL	1.00000	16,938.00
4620	715.0710 Optimized Aggregate Gradation Incentive	85,612.280 DOL	1.00000	85,612.28
4630	999.1000.S Seismograph	 LS	LUMP SUM	_____.____
4640	999.1500.S Crack and Damage Survey	 LS	LUMP SUM	_____.____
4650	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	3,200.000 HRS	5.00000	16,000.00

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
4660	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	6,000.000 HRS	5.00000	30,000.00
4670	SPV.0035 Special 001. Roadway Embankment	193,648.000 CY	_____.____	_____.____
4680	SPV.0035 Special 002. Concrete Masonry Deck Patching	1.000 CY	_____.____	_____.____
4690	SPV.0035 Special 003. Expanded Polystyrene (EPS) Geofoam	230.000 CY	_____.____	_____.____
4700	SPV.0035 Special 004. Excavation Special	20.000 CY	_____.____	_____.____
4710	SPV.0035 Special 600. Abandon Existing Sanitary Sewer - Slurry	40.000 CY	_____.____	_____.____
4720	SPV.0060 Special 001. Utility Line Opening (ULO)	17.000 EACH	_____.____	_____.____
4730	SPV.0060 Special 002. Maintenance and Removal of Crash Cushions Temporary Left in Place By Other	4.000 EACH	_____.____	_____.____
4740	SPV.0060 Special 003. Relocate Crash Cushion Temporary Left In Place By Others	1.000 EACH	_____.____	_____.____
4750	SPV.0060 Special 004. Department Owned Crash Cushion Temporary	10.000 EACH	_____.____	_____.____
4760	SPV.0060 Special 005. Maintenance of Permanent Crash Cushions Placed By Others	1.000 EACH	_____.____	_____.____
4770	SPV.0060 Special 006. Pipe Bollard	75.000 EACH	_____.____	_____.____
4780	SPV.0060 Special 007. Posts Round Tubular Steel 2-Inch 12-FT	1.000 EACH	_____.____	_____.____
4790	SPV.0060 Special 008. Posts Round Tubular Steel 2-Inch Reflective 10-FT	6.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
4800	SPV.0060 Special 009. Posts Round Tubular Steel 2-Inch Reflective 12-FT	4.000 EACH	_____.____	_____.____
4810	SPV.0060 Special 010. Precast Sign Post Base	11.000 EACH	_____.____	_____.____
4820	SPV.0060 Special 011. Covering Signs	12.000 EACH	_____.____	_____.____
4830	SPV.0060 Special 013. Flexible Tubular Marker Post and Base	192.000 EACH	_____.____	_____.____
4840	SPV.0060 Special 014. Gates Chain Link 8-FT Polymer-Coated	1.000 EACH	_____.____	_____.____
4850	SPV.0060 Special 015. Decorative Medallion	2.000 EACH	_____.____	_____.____
4860	SPV.0060 Special 016. Medallion Concrete Staining Multi-Color	2.000 EACH	_____.____	_____.____
4870	SPV.0060 Special 048. Relocate Apron Endwalls for Underdrain	4.000 EACH	_____.____	_____.____
4880	SPV.0060 Special 049. Inlet Covers Type 2x3-FT	10.000 EACH	_____.____	_____.____
4890	SPV.0060 Special 050. Inlet Covers Type DW	1.000 EACH	_____.____	_____.____
4900	SPV.0060 Special 051. Cover Plates	12.000 EACH	_____.____	_____.____
4910	SPV.0060 Special 052. Concrete Cutoff Wall	1.000 EACH	_____.____	_____.____
4920	SPV.0060 Special 053. Covering and Locating Storm Sewer	7.000 EACH	_____.____	_____.____
4930	SPV.0060 Special 054. Storm Sewer Tap	25.000 EACH	_____.____	_____.____
4940	SPV.0060 Special 055. Manhole C4755	1.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
4950	SPV.0060 Special 056. Manhole C4757	1.000 EACH	_____.____	_____.____
4960	SPV.0060 Special 057. Inlet Covers, Flat Temporary	4.000 EACH	_____.____	_____.____
4970	SPV.0060 Special 058. MSE Wall Sleeve Type 1	1.000 EACH	_____.____	_____.____
4980	SPV.0060 Special 059. MSE Wall Sleeve Type 13	1.000 EACH	_____.____	_____.____
4990	SPV.0060 Special 060. MSE Wall Sleeve Temporary Signal Pole	2.000 EACH	_____.____	_____.____
5000	SPV.0060 Special 061. MSE Wall Sleeve Type 10	1.000 EACH	_____.____	_____.____
5010	SPV.0060 Special 100. Loop Detector Splice	2.000 EACH	_____.____	_____.____
5020	SPV.0060 Special 101. Pull Box Non-Conductive 24x36-Inch	16.000 EACH	_____.____	_____.____
5030	SPV.0060 Special 102. Pull Box Non-Conductive 24x42-Inch	32.000 EACH	_____.____	_____.____
5040	SPV.0060 Special 103. Fiber Tracer Marker Post	12.000 EACH	_____.____	_____.____
5050	SPV.0060 Special 104. Remove Wireless Antenna	12.000 EACH	_____.____	_____.____
5060	SPV.0060 Special 105. Relocate Wireless ITS Bluetooth Detector	2.000 EACH	_____.____	_____.____
5070	SPV.0060 Special 107. Remove Non-Intrusive Detection	17.000 EACH	_____.____	_____.____
5080	SPV.0060 Special 108. Install Wireless Antenna	8.000 EACH	_____.____	_____.____
5090	SPV.0060 Special 109. Install Non-Intrusive Detection	12.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
5100	SPV.0060 Special 150. Relocate Existing City-Owned Lighting Cabinet	1.000 EACH	_____.____	_____.____
5110	SPV.0060 Special 151. Remove Existing City-Owned Lighting Cabinet	1.000 EACH	_____.____	_____.____
5120	SPV.0060 Special 152. Remove Existing City-Owned Light Pole Assembly	5.000 EACH	_____.____	_____.____
5130	SPV.0060 Special 153. Relocate Existing Pull Box	1.000 EACH	_____.____	_____.____
5140	SPV.0060 Special 154. Interim Lighting Williamsburg Way	1.000 EACH	_____.____	_____.____
5150	SPV.0060 Special 155. Remove Existing Department-Owned ITS Pole Assembly	1.000 EACH	_____.____	_____.____
5160	SPV.0060 Special 600. Fire Hydrants	1.000 EACH	_____.____	_____.____
5170	SPV.0060 Special 601. Remove and Reuse Existing Hydrant	2.000 EACH	_____.____	_____.____
5180	SPV.0060 Special 602. Water Valve, 6-Inch	3.000 EACH	_____.____	_____.____
5190	SPV.0060 Special 603. Water Valve, 8-Inch	3.000 EACH	_____.____	_____.____
5200	SPV.0060 Special 604. Water Valve, 10-Inch	2.000 EACH	_____.____	_____.____
5210	SPV.0060 Special 605. Water Valve, 12-Inch	3.000 EACH	_____.____	_____.____
5220	SPV.0060 Special 606. Adjust Existing Valve Box	3.000 EACH	_____.____	_____.____
5230	SPV.0060 Special 607. Remove Existing Valve Box	5.000 EACH	_____.____	_____.____
5240	SPV.0060 Special 608. Connect to Existing Water Main	8.000 EACH	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
5250	SPV.0060 Special 609. Abandon Existing Water Main	5.000 EACH	_____.____	_____.____
5260	SPV.0060 Special 610. Temporary Water Main Connection	2.000 EACH	_____.____	_____.____
5270	SPV.0060 Special 611. Sanitary Sewer Structure, 4-Foot Diameter	9.000 EACH	_____.____	_____.____
5280	SPV.0060 Special 612. Remove Existing Sanitary Sewer Structure	6.000 EACH	_____.____	_____.____
5290	SPV.0060 Special 613. Sanitary Sewer Lateral Electronic Marker	8.000 EACH	_____.____	_____.____
5300	SPV.0060 Special 614. Reconstruct Bench and Flowlines	1.000 EACH	_____.____	_____.____
5310	SPV.0060 Special 615. Install Existing Sanitary Sewer Structure M-4, 4-Foot Diameter	1.000 EACH	_____.____	_____.____
5320	SPV.0060 Special 616. Reconstruct Existing Sanitary Sewer Structure M-5	1.000 EACH	_____.____	_____.____
5330	SPV.0060 Special 617. Connect to Existing Sanitary Sewer	1.000 EACH	_____.____	_____.____
5340	SPV.0060 Special 700. Baseline CPM Progress Schedule	1.000 EACH	_____.____	_____.____
5350	SPV.0060 Special 701. CPM Progress Schedule Updates and Accepted Revisions	11.000 EACH	_____.____	_____.____
5360	SPV.0075 Special 001. Street Sweeping	400.000 HRS	_____.____	_____.____
5370	SPV.0090 Special 001. Concrete Curb & Gutter 32-Inch Special	160.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
5380	SPV.0090 Special 002. Concrete Curb & Gutter 56-Inch Special	325.000 LF	_____.____	_____.____
5390	SPV.0090 Special 003. Concrete Curb & Gutter 4-Inch Sloped 5-Foot Type A	385.000 LF	_____.____	_____.____
5400	SPV.0090 Special 004. Concrete Curb & Gutter 24-Inch Type A	260.000 LF	_____.____	_____.____
5410	SPV.0090 Special 005. Fence Chain Link 4-FT Polymer-Coated	595.000 LF	_____.____	_____.____
5420	SPV.0090 Special 006. Fence Chain Link 6-FT Polymer-Coated	6,290.000 LF	_____.____	_____.____
5430	SPV.0090 Special 007. Salvage Concrete Barrier Precast	8,318.000 LF	_____.____	_____.____
5440	SPV.0090 Special 008. MGS Guardrail Relap	770.000 LF	_____.____	_____.____
5450	SPV.0090 Special 009. Sawing Pavement Deck Preparation Areas	140.000 LF	_____.____	_____.____
5460	SPV.0090 Special 010. Salvage Modular Block Retaining Wall	26.000 LF	_____.____	_____.____
5470	SPV.0090 Special 011. Concrete Barrier Special Type A	45.000 LF	_____.____	_____.____
5480	SPV.0090 Special 012. Concrete Barrier Special Type B	60.000 LF	_____.____	_____.____
5490	SPV.0090 Special 013. Concrete Barrier Special Type C	28.000 LF	_____.____	_____.____
5500	SPV.0090 Special 014. Concrete Barrier Special Type D	38.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
5510	SPV.0090 Special 015. Concrete Barrier Special Transition S42C-S56C	25.000 LF	_____.____	_____.____
5520	SPV.0090 Special 016. Concrete Barrier Temporary Precast Delivered-Department Owned	8,070.000 LF	_____.____	_____.____
5530	SPV.0090 Special 050. Pipe Underdrain 6-Inch with Geotextile Fabric and Aggregate	18,507.000 LF	_____.____	_____.____
5540	SPV.0090 Special 051. Storm Sewer Pipe Reinf. Concrete Horiz. Elliptical Class HE-IV 53x83-Inch	62.000 LF	_____.____	_____.____
5550	SPV.0090 Special 052. Storm Sewer Pipe PVC 6-Inch	16.000 LF	_____.____	_____.____
5560	SPV.0090 Special 053. Storm Sewer Pipe PVC 10-Inch	9.000 LF	_____.____	_____.____
5570	SPV.0090 Special 054. Storm Sewer Pipe PVC 18-Inch	230.000 LF	_____.____	_____.____
5580	SPV.0090 Special 600. Water Main, 6-Inch	33.000 LF	_____.____	_____.____
5590	SPV.0090 Special 601. Water Main, 8-Inch	77.000 LF	_____.____	_____.____
5600	SPV.0090 Special 602. Water Main, 10-Inch	380.000 LF	_____.____	_____.____
5610	SPV.0090 Special 603. Water Main, 12-Inch	554.000 LF	_____.____	_____.____
5620	SPV.0090 Special 604. Granular Backfill For Water Main	1,044.000 LF	_____.____	_____.____
5630	SPV.0090 Special 605. Insulation	220.000 LF	_____.____	_____.____
5640	SPV.0090 Special 606. Sanitary Sewer Pipe, 8-Inch	1,438.000 LF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
5650	SPV.0090 Special 607. Sanitary Sewer Pipe, 10-Inch	215.000 LF	_____.____	_____.____
5660	SPV.0090 Special 608. Granular Backfill for Sanitary Sewer	2,124.000 LF	_____.____	_____.____
5670	SPV.0090 Special 609. Trenchless Steel Casing Pipe, 24-Inch	145.000 LF	_____.____	_____.____
5680	SPV.0090 Special 610. Sanitary Sewer Lateral, 4-Inch	93.000 LF	_____.____	_____.____
5690	SPV.0090 Special 611. Sanitary Sewer Pipe, 15-Inch	136.000 LF	_____.____	_____.____
5700	SPV.0090 Special 612. Open Cut Steel Casing Pipe, 24-Inch	105.000 LF	_____.____	_____.____
5710	SPV.0090 Special 613. Open Cut Steel Casing Pipe, 30-Inch	230.000 LF	_____.____	_____.____
5720	SPV.0105 Special 001. Research and Locate Existing Property Monuments	LS	LUMP SUM	_____.____
5730	SPV.0105 Special 002. Verify and Replace Existing Property Monuments	LS	LUMP SUM	_____.____
5740	SPV.0105 Special 003. Construction Staking Supplemental Features	LS	LUMP SUM	_____.____
5750	SPV.0105 Special 100. Remove Traffic Signals Verona Road & Raymond Road	LS	LUMP SUM	_____.____
5760	SPV.0105 Special 101. Remove Traffic Signals Verona Road & Williamsburg Way	LS	LUMP SUM	_____.____
5770	SPV.0105 Special 102. Remove Traffic Signals Verona Road & CTH PD	LS	LUMP SUM	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
5780	SPV.0105 Special 103. EVP Detector Verona Road & Raymond Road	LS	LUMP SUM	_____.____
5790	SPV.0105 Special 104. Relocate ITS Camera Pole Assembly	LS	LUMP SUM	_____.____
5800	SPV.0105 Special 200. Interim Traffic Signals For Intersections USH 18/151 and Williamsburg Way	LS	LUMP SUM	_____.____
5810	SPV.0105 Special 201. Interim Traffic Signals for Intersections USH 18/151 and CTH PD	LS	LUMP SUM	_____.____
5820	SPV.0105 Special 500. Salt Storage Shed	LS	LUMP SUM	_____.____
5830	SPV.0105 Special 502. Swing Gate	LS	LUMP SUM	_____.____
5840	SPV.0105 Special 503. Bioretention Basin	LS	LUMP SUM	_____.____
5850	SPV.0105 Special 504. Removing Erosion Control Items Left In Place By Others	LS	LUMP SUM	_____.____
5860	SPV.0105 Special 600. Construction Staking Water Main	LS	LUMP SUM	_____.____
5870	SPV.0105 Special 601. Construction Staking Sanitary Sewer	LS	LUMP SUM	_____.____
5880	SPV.0120 Special 001. Water for Seeded Areas	1,546.300 MGAL	_____.____	_____.____
5890	SPV.0165 Special 001. Temporary Curb Ramp Detectable Warning Field	306.000 SF	_____.____	_____.____
5900	SPV.0165 Special 002. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-268 **P**	21,330.000 SF	_____.____	_____.____

Proposal ID: 20170711004 **Project(s):** 1206-07-75, 1206-08-75, 1206-08-79

Federal ID(s): WISC 2017338, 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
5910	SPV.0165 Special 003. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-270 **P**	18,460.000 SF	_____.____	_____.____
5920	SPV.0165 Special 004. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-272 **P**	22,300.000 SF	_____.____	_____.____
5930	SPV.0165 Special 005. Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP	1,510.000 SF	_____.____	_____.____
5940	SPV.0165 Special 006. Colored and Stamped Concrete 5-Inch	6,020.000 SF	_____.____	_____.____
5950	SPV.0165 Special 007. Asphaltic Median Sloped Nose	77.000 SF	_____.____	_____.____
5960	SPV.0165 Special 008. Colored Concrete Full Depth **P**	1,030.000 SF	_____.____	_____.____
5970	SPV.0165 Special 009. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP, R-13-273 **P**	9,570.000 SF	_____.____	_____.____
5980	SPV.0180 Special 001. Asphaltic Surface Safety Islands	2,430.000 SY	_____.____	_____.____
5990	SPV.0195 Special 001. R-13-272 MSE Wall Facing Protection	450.000 TON	_____.____	_____.____
6000	SPV.0195 Special 100. Excavation, Hauling, & Disposal Of Cntmntd Soil & Mngmnt Of Cntmntd Grndwt	75.000 TON	_____.____	_____.____

Section: 0001 **Total:** _____.____

Total Bid: _____.____

PLEASE ATTACH SCHEDULE OF ITEMS HERE