

HIGHWAY WORK PROPOSAL

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

Proposal Number:

Ø 8

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Dane	1206-00-72		South Madison Beltline Seminole Highway Bridge B-13-0664	USH 12
Dane	1206-07-77		Mount Horeb-Madison Raymond Road to Seminole Highway, Phase I	USH 18
Dane	1206-07-81		Mount Horeb-Madison Verona Road, Phase I Sanitary Sewer and Water	
Dane	1206-07-83		Mount Horeb-Madison CTH PD Ped Bridge	

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, \$ 490,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: May 14, 2013 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code
Contract Completion Time July 25, 2014	SAMPLE NOT FOR BIDDING PURPOSES
Assigned Disadvantaged Business Enterprise Goal 0 %	This contract is exempt from federal oversight.

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

(Bidder Signature)

(Print or Type Bidder Name)

(Bidder Title)

For Department Use Only

Type of Work Earthwork, base course, HMA pavement, concrete curb and gutter, concrete barrier wall, MGS guardrail, storm sewer, pavement marking, erosion control, and structures (B-13-664, B-13-666, R-13-204, R-13-235, R-13-236, R-13-242, R-13-243, R-13-244, R-13-245, N-13-2, N-13-3, N-13-4, S-13-376, S-13-383, S-13-384, S-13-394, S-13-395, S-13-406, S-13-407, S-13-424, R-13-1000-TW1, R-13-1000-TW2, R-13-1000-TW3 and R-13-1000-TW4).	Notice of Award Dated	Date Guaranty Returned
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**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.

BID PREPARATION

Preparing the Proposal Schedule of Items

A General

- (1) Obtain bidding proposals as specified in **section 102** of the standard specifications prior to 11:45 AM of the last business day preceding the letting. Submit bidding proposals using one of the following methods:
 1. Electronic bid on the internet.
 2. Electronic bid on a printout with accompanying diskette or CD ROM.
 3. Paper bid under a waiver of the electronic submittal requirements.
- (2) Bids submitted on a printout with accompanying diskette or CD ROM or paper bids submitted under a waiver of the electronic submittal requirements govern over bids submitted on the internet.
- (3) The department will provide bidding information through the department's web site at <http://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm>. The contractor is responsible for reviewing this web site for general notices as well as information regarding proposals in each letting. The department will also post special notices of all addenda to each proposal through this web site no later than 4:00 P.M. local time on the Thursday before the letting. Check the department's web site after 5:00 P.M. local time on the Thursday before the letting to ensure all addenda have been accounted for before preparing the bid. When bidding using methods 1 and 2 above, check the Bid Express™ on-line bidding exchange at <http://www.bidx.com/> after 5:00 P.M. local time on the Thursday before the letting to ensure that the latest schedule of items Expedite file (*.ebs or *.00x) is used to submit the final bid.
- (4) Interested parties can subscribe to the Bid Express™ on-line bidding exchange by following the instructions provided at the www.bidx.com web site or by contacting:

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

- (5) The department will address equipment and process failures, if the bidder can demonstrate that those failures were beyond their control.
- (6) Contractors are responsible for checking on the issuance of addenda and for obtaining the addenda. Notice of issuance of addenda is posted on the department's web site at <http://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm> or by calling the department at (608) 266-1631. Addenda can ONLY be obtained from the departments web site listed above or by picking up the addenda at the Bureau of Highway Construction, Room 601, 4802 Sheboygan Avenue, Madison, WI, during regular business hours.

B Submitting Electronic Bids

B.1 On the Internet

- (1) Do the following before submitting the bid:
 1. Have a properly executed annual bid bond on file with the department.
 2. Have a digital ID on file with and enabled by Info Tech Inc. Using this digital ID will constitute the bidder's signature for proper execution of the bidding proposal.
- (2) In lieu of preparing, delivering, and submitting the proposal as specified in **102.6** and **102.9** of the standard specifications, submit the proposal on the internet as follows:

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

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

- (1) Download the latest schedule of items from the Wisconsin pages of the Bid Express™ web site reflecting the latest addenda posted on the department's web site at <http://www.dot.wisconsin.gov/business/engrserv/bid-letting-information.htm>. Use Expedite™ software to prepare and print the schedule of items. Provide a valid amount for all price fields. Follow instructions and review the help screens provided on the Bid Express™ web site to assure that the schedule of items is prepared properly.
- (2) Staple an 8 1/2 by 11 inch printout of the Expedite™ generated schedule of items to the other proposal documents submitted to the department as a part of the bidder's sealed bid. As a separate submittal not in the sealed bid envelop but due at the same time and place as the sealed bid, also provide the Expedite™ generated schedule of items on a 3 1/2 inch computer diskette or CD ROM. Label each diskette or CD ROM with the bidder's name, the 4 character department-assigned bidder identification code from the top of the bidding proposal, and a list of the proposal numbers included on that diskette or CD ROM as indicated in the following example:

Bidder Name

BN00

Proposals: 1, 12, 14, & 22

- (3) If bidding on more than one proposal in the letting, the bidder may include all proposals for that letting on one diskette or CD ROM. Include only submitted proposals with no incomplete or other files on the diskette or CD ROM.
- (4) The bidder-submitted printout of the Expedite™ generated schedule of items is the governing contract document and must conform to the requirements of section 102 of the standard specifications. If a printout needs to be altered, cross out the printed information with ink or typewriter and enter the new information and initial it in ink. If there is a discrepancy between the printout and the diskette or CD ROM, the department will analyze the bid using the printout information.
- (5) In addition to the reasons specified in section 102 of the standard specifications, proposals are irregular and the department may reject them for one or more of the following:
 1. The check code printed on the bottom of the printout of the Expedite™ generated schedule of items is not the same on each page.
 2. The check code printed on the printout of the Expedite™ generated schedule of items is not the same as the check code for that proposal provided on the diskette or CD ROM.

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

C Waiver of Electronic Submittal

- (1) The bidder may request a waiver of the electronic submittal requirements. Submit a written request for a waiver in lieu of bids submitted on the internet or on a printout with accompanying diskette or CD ROM. Use the waiver that was included with the paper bid document sent to the bidder or type up a waiver on the bidder's letterhead. The department will waive the electronic submittal requirements for a bidding entity (individual, partnership, joint venture, corporation, or limited liability company) for up to 4 individual proposals in a calendar year. The department may allow additional waivers for equipment malfunctions.
- (2) Submit a schedule of items on paper conforming to [section 102](#) of the standard specifications. The department charges the bidder a \$75 administrative fee per proposal, payable at the time and place the department designates for receiving bids, to cover the costs of data entry. The department will accept a check or money order payable to: "Wisconsin, Dept. of Transportation."
- (3) In addition to the reasons specified in [section 102](#) of the standard specifications, proposals are irregular and the department may reject them for one or more of the following:
 1. The bidder fails to provide the written request for waiver of the electronic submittal requirements.
 2. The bidder fails to pay the \$75 administrative fee before the time the department designates for the opening of bids unless the bidder requests on the waiver that they be billed for the \$75.
 3. The bidder exceeds 4 waivers of electronic submittal requirements within a calendar year.
- (4) In addition to the reasons specified in [section 102](#) of the standard specifications, the department may refuse to issue bidding proposals for future contracts to a bidding entity that owes the department administrative fees for a waiver of electronic submittal requirements.

PROPOSAL BID BOND

DT1303 1/2006

Wisconsin Department of Transportation

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

(Signature of Attorney-in-Fact)

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

DT1305 8/2003

Wisconsin Department of Transportation

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

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

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

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

(Signature of Authorized Contractor Representative)

(Date)

FEBRUARY 1999

LIST OF SUBCONTRACTORS

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

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

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

DECEMBER 2000

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

Instructions for Certification

1. By signing and submitting this proposal, the prospective contractor is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective contractor shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective contractor to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department determined to enter into this transaction. If it is later determined that the contractor knowingly rendered an erroneous certification in addition to other remedies available to the Federal Government the department may terminate this transaction for cause or default.
4. The prospective contractor shall provide immediate written notice to the department to whom this proposal is submitted if at any time the prospective contractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective contractor agrees by submitting this proposal that, should this contract be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department entering into this transaction.
7. The prospective contractor further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," which is included as an addendum to PR-1273 - "Required Contract Provisions Federal Aid Construction Contracts," without

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

8. The contractor may rely upon a certification of a prospective subcontractor/materials supplier that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A contractor may decide the method and frequency by which it determines the eligibility of its principals. Each contractor may, but is not required to, check the Disapproval List (telephone # 608/266/1631).
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a contractor in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department may terminate this transaction for cause or default.

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

- (1) The prospective contractor certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offense enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective contractor is unable to certify to any of the statements in this certification, such prospective contractor shall attach an explanation to this proposal.

Special Provisions

Table of Contents

Article	Description	Page #
1.	General.....	7
2.	Scope of Work.	7
3.	Mandatory Pre-Bid Meeting.	7
4.	Prosecution and Progress.	8
5.	Traffic.	20
6.	General Requirements for Incident Management.	36
7.	Hauling Restrictions.....	36
8.	Municipality Acceptance of Sanitary Sewer and Water Main Construction.....	37
9.	General Provisions for City of Madison Municipal Utilities (Sanitary Sewer and Water Main).....	37
10.	General Provisions for Storm Sewer.....	37
11.	General Provisions for Madison Sanitary Sewer.	38
12.	General Provisions for city of Madison Water Main.....	41
13.	Project Communication Enhancement Effort.	43
14.	Holiday and Special Event Work Restrictions.....	43
15.	Utilities.....	45
16.	Notice to Contractor, Notification of Demolition and/or Renovation No Asbestos Found.	71
17.	Coordination with Businesses.....	72
18.	Environmental Protection, Dewatering.....	72
19.	Erosion Control.....	73
20.	Clearing and Grubbing.....	73
21.	Removing Building and Site Clearance.....	74
22.	Notice to Contractor.....	74
23.	Debris Containment Structure B-13-0264, Item 203.0225.S.01.....	76
24.	Removing Overhead Sign Support, Item 204.9060.S.01.....	77
25.	Removing Storm Sewer Junction Chamber, Item 204.9060.S.02.	78
26.	Removing Crash Cushion, Item 204.9060.S.03.....	78
27.	Removing Inlet Covers, Item 204.9060.S.04.....	79
28.	Removing Apron Endwalls, Item 204.9060.S.05.	79
29.	Removing Modular Block Retaining Wall, Station 64+50 WP to Station 65+50 WP, Item 204.9090.S.01.	80
30.	Removing Modular Block Retaining Wall, Station 1166+85 to Station 1174+20, Item 204.9090.S.02.	80
31.	Temporary Shoring, Item 206.6000.S.....	81
32.	Backfill Coarse Aggregate Size No. 1, Item 209.0300.S.01.....	82
33.	Base Aggregate Dense 1 1/4-Inch.....	82
34.	QMP Base Aggregate.	83
35.	Concrete Pavement.	91
36.	Protection of Concrete.	92

37.	HMA Pavement.	92
38.	QMP Ride; Incentive IRI Ride, Item 440.4410.S.	93
39.	QMP HMA Pavement Nuclear Density.	100
40.	Asphaltic Surface Patching.	107
41.	Expansion Device, B-13-666.	108
42.	Precast Concrete Box Culvert, 3 FT x 6 FT, Item 504.2000.S.01.	109
43.	Concrete Staining B-13-664, Item 517.1010.S.01; B-13-666, Item 517.1010.S.02; R-13-204, Item 517.1010.S.03; R-13-235, Item 517.1010.S.04; R-13-236, Item 517.1010.S.05; R-13-242, Item 517.1010.S.06; R-13-243, Item 517.1010.S.07; S- 13-383, Item 517.1010.S.08; S-13-406, Item 517.1010.S.09; S-13-407, Item 517.1010.S.10; S-13-376, Item 517.1010.S.12; S-13-384, Item 517.1010.S.13; S- 13-394, Item 517.1010.S.14; S-13-395, Item 517.1010.S.15.	110
44.	Architectural Surface Treatment B-13-664, Item 517.1050.S.01; B-13-666, Item 517.1050.S.02; R-13-204, Item 517.1050.S.03; R-13-242, Item 517.1050.S.04; R- 13-243, Item 517.1050.S.05.	113
45.	Noise Barriers Double-Sided Sound Absorptive N-13-2, Item 531.0300.S.01; N- 13-3, Item 531.0300.S.02; N-13-4, Item 531.0300.S.03.	114
46.	High Early Strength Concrete Curb and Gutter, Concrete Sidewalk, Concrete Median Blunt Nose, and Concrete Median Sloped Nose.	126
47.	Adjusting Manhole Covers.	127
48.	Pipe Grates, Item 611.9800.S.	127
49.	Fence Safety, Item 616.0700.S.	128
50.	Mulching.	130
51.	Seeding.	130
52.	Signs Reflective Type II.	130
53.	Blue Specific Service Signs.	130
54.	Removing Signs (type); Removing Small Sign Supports.	131
55.	Field Facilities.	131
56.	Nighttime Work Lighting-Stationary.	132
57.	Traffic Control Flexible Tubular Marker Posts.	134
58.	Traffic Control Flexible Tubular Marker Bases.	135
59.	Pavement Marking Grooved Wet Reflective Tape, 4-Inch, Item 646.0881.S; 8- Inch, Item 646.0883.S.	135
60.	Install Conduit Into Existing Item, Item 652.0700.S.	137
61.	General Provisions for Intelligent Transportation Systems (ITS)-Control of Materials.	138
62.	General Provisions for Intelligent Transportation Systems.	140
63.	General Provisions for Electrical Conduit.	145
64.	General Provisions for Traffic Signal Conduit Installation.	146
65.	General Provision for Traffic Signals.	146
66.	Loop Detector Lead-In Cable.	147
67.	Traffic Signal Face (no., size, orientation) and Pedestrian Signal Face 12-Inch.	147
68.	Backplates Signal Face (Size).	148
69.	Field System Integrator.	149
70.	Install Ethernet Switch, Item 675.0400.S.	149
71.	Install Video Encoder, Item 677.0300.S.	149

72.	Fiber Optic Splice Enclosure.	150
73.	Pond Liner Clay, Item SPV.0035.01.	150
74.	Excavation Special, Item SPV.0035.02.	153
75.	Abandon Sanitary Sewer -Slurry, Item SPV.0035.03.....	159
76.	Rock Excavation Special, Item SPV.0035.04.....	160
77.	Portable Changeable Message Sign (PCMS) Cellular Communications, SPV.0045.01.	161
78.	Utility Line Opening (ULO), Item SPV.0060.01.	162
79.	Remove Existing City-Owned Light Pole Assembly, Item SPV.0060.02.....	163
80.	Remove Existing WisDOT-Owned Light Pole Assembly, Item SPV.0060.03.....	164
81.	Relocating Existing Light Pole Assembly, Item SPV.0060.04.	165
82.	Relocating Existing Traffic Signal Pole, Item SPV.0060.05.....	166
83.	Posts Galvanized Steel For Barrier Wall, Item SPV.0060.06.....	167
84.	Construction Staking Curb Ramp, Item SPV.0060.07.	168
85.	Construction Staking Sign Structure, Item SPV.0060.08.	169
86.	Storm Sewer Tap, Item SPV.0060.10.....	169
87.	Manhole ML205, Item SPV.0060.11; ML215, Item SPV.0060.12; VR346.1, Item SPV.0060.13.	170
88.	Manholes 9-FT Diameter, Item SPV.0060.14.	171
89.	Slotted Vane Drain Type A 6-FT, Item SPV.0060.15.....	172
90.	Weir Wall ML204.1, Item SPV.0060.16; VR344.1, Item SPV.0060.17.....	173
91.	Apron Endwalls For Storm Sewer Pipe Reinforced Concrete Box 3x6-FT, Item SPV.0060.18.	173
92.	Clay Anti-Seepage Collar, Item SPV.0060.19.....	174
93.	Covering Storm Sewer, Item SPV.0060.20.	177
94.	Locating Storm Sewer, Item SPV.0060.21.....	178
95.	Sanitary Sewer Access Structure (4-Foot Diameter), Item SPV.0060.22.	178
96.	Manhole Covers Type MAD, Item SPV.0060.23.	179
97.	Sanitary Sewer Internal Chimney Seal, Item SPV.0060.24.....	180
98.	Sanitary Sewer Tap, Item SPV.0060.25.	181
99.	Sanitary Lateral Electronic Marker, Item SPV.0060.26.	182
100.	Sanitary Lateral Reconnect, Item SPV.0060.27.	182
101.	Remove Sanitary Sewer Structure, Item SPV.0060.28.....	183
102.	Abandon Sanitary Sewer - Pipe Plug, Item SPV.0060.29.....	184
103.	Abandon Water Main, Item SPV.0060.30.....	185
104.	Posts Round Tubular Steel 2-Inch 10-FT, Item SPV.0060.31; 12-FT, Item SPV.0060.32; 14-FT, Item SPV.0060.33; 16-FT, Item SPV.0060.34.....	185
105.	Precast Sign Post Base, Item SPV.0060.35.	186
106.	Concrete Base Type G, Item SPV.0060.36; Type LB-3, Item SPV.0060.37; Type LB-8, Item SPV.0060.38; Type P, Item SPV.0060.39.	188
107.	Loop Detector Splice, Item SPV.0060.40.....	189
108.	Pull Box Type I, Item SPV.0060.41; Type III, Item SPV.0060.42; Type V, Item SPV.0060.43.	190
109.	Pull Box Marker, Item SPV.0060.44.....	191
110.	Traffic Signal Control Cabinet, Item SPV.0060.45.....	192
111.	Install Mounted Cabinet, Item SPV.0060.46.....	198

112.	Install Cellular Modem, Item SPV.0060.47.....	200
113.	Install Solar-Powered Bluetooth Sensor, Item SPV.0060.48.	201
114.	Furnish Traffic Signal Trombone Arms 25-Foot, Item SPV.0060.49.	201
115.	Install IP Wireless 5.8 GHz Radio/Antenna, Item SPV.0060.50.....	203
116.	Install Overhead Freeway DMS Full Matrix and Controller, Item SPV.0060.51.	204
117.	Install Spread Spectrum Radio, Item SPV.0060.52.....	205
118.	Luminaires 250-Watt HPS, Item SPV.0060.53.	206
119.	Install Yagi Antenna, Item SPV.0060.54.....	208
120.	Traffic Signal Dome Camera, Item SPV.0060.55.	209
121.	Traffic Signal Ethernet Switch, Item SPV.0060.56.....	210
122.	Traffic Signal Master Ethernet Switch, Item SPV.0060.57.....	211
123.	Transformer Base Steel, 16-Inch, Item SPV.0060.58; 20-Inch Steel, Item SPV.0060.59.	212
124.	Install Ground Mount Dynamic Message Sign and Controller, Item SPV.0060.60.....	213
125.	8-Count Fiber Optic Connector 1300-Feet, Item SPV.0060.61.....	214
126.	Wood Pole, 50-FT with Service, Item SPV.0060.62.....	215
127.	Install Portable Changeable Message Sign, Item SPV.0060.63.	217
128.	Install Solar Power Assembly, Item SPV.0060.64.	218
129.	Lighting Control Cabinet, Item SPV.0060.65.	219
130.	Decorative Pedestrian Bollard Luminaire, Item SPV.0060.66.....	220
131.	Concrete Weir Wall 6 1/2-Inch, Item SPV.0060.68; Concrete Weir Wall 18-Inch, Item SPV.0060.69.....	221
132.	Cut-In Connection, Item SPV.0060.70.....	222
133.	Hydrants, Item SPV.0060.71.	223
134.	Water Valve, 8-Inch, Item SPV.0060.72; 16-Inch, Item SPV.0060.73.....	223
135.	Adjust Water Valve Box, Item SPV.0060.74.	224
136.	Modify Existing Sign Structure, S-13-188, Item SPV.0060.75.....	225
137.	Traffic Signal Trombone Arms 15-Foot, Item SPV.0060.76; 20-Foot Item SPV.0060.77; 25-Foot Item SPV.0060.78.....	225
138.	Pole 20-Foot, 7 Gauge, Item SPV.0060.79; Pole 30-Foot, 11 Gauge, Item SPV.0060.80; Pole 30-Foot, 7 Gauge, Item SPV.0060.81; Luminaire Arm 10- Foot, Item SPV.0060.82.....	227
139.	Reestablish Section Corner Monuments, Item SPV.0060.83.	231
140.	Concrete Cutoff Wall, Item SPV.0060.84.	232
141.	Pull Boxes, Concrete Polymer, 24x36-Inch, SPV.0060.85.	233
142.	Cover Plates, Item SPV.0060.86.....	233
143.	Decorative Medallion, Item SPV.0060.87.....	234
144.	Medallion Concrete Staining Multi-Color, Item SPV.0060.88.	235
145.	Concrete Barrier Transition P32-S42 Special, Item SPV.0060.89; S56-56Vertical, Item SPV.0060.90; S56-56Vertical Special, Item SPV.0060.91; NJ32DF-S36 Special, Item SPV.0060.92; S36-S42 Special, Item SPV.0060.93; S42-S56 Special, Item SPV.0060.94.	237
146.	Helical Tieback Anchors, Item SPV.0060.95.....	238
147.	Outdoor Service Pedestal, Item SPV.0060.96.	248
148.	Furnish Traffic Signal Face 3-12 Inch Vertical, Item SPV.0060.97; Furnish Traffic Signal Face 3-12 Inch Horizontal, Item SPV.0060.98; Furnish Backplates	

	Signal Face 3-Section 12-Inch, Item SPV.0060.99; Furnish LED Modules 12-Inch Red Ball, Item SPV.0060.100; Furnish LED Modules 12-Inch Yellow Ball, Item SPV.0060.101; Furnish LED Modules 12-Inch Green Ball, Item SPV.0060.102.....	249
149.	Street Sweeping, Item SPV.0075.01.....	251
150.	Seeding Mixture Wet Detention Basin, SPV.0085.01.....	251
151.	Removing Existing Timber Piling, Item SPV.0090.01.....	252
152.	Earth Drilling 30-Inch Diameter, Item SPV.0090.02.....	253
153.	Concrete Barrier Precast 12.5-FT, Item SPV.0090.03.....	254
154.	Relocating Concrete Barrier Precast 12.5-FT, Item SPV.0090.04.....	255
155.	Glare Screens Temporary, Item SPV.0090.05.....	255
156.	Trenchless Storm Sewer Construction, 48-Inch, Item SPV.0090.06.....	256
157.	Concrete Curb and Gutter 4-Inch Sloped 24-Inch Type D, Item SPV.0090.07; 32-Inch Special, Item SPV.0090.08.....	258
158.	Sanitary Sewer Pipe, 8-Inch, Item SPV.0090.09; 10-Inch, Item SPV.0090.10.....	258
159.	Sanitary Sewer Lateral, Item SPV.0090.11.....	260
160.	Select Fill for Sanitary Sewer, Item SPV.0090.12.....	261
161.	Electrical Wire Lighting - Aluminum 2 AWG, Item SPV.0090.13.....	262
162.	Water Main Insulation, Item SPV.0090.14.....	262
163.	Water Main, 6-Inch, Item SPV.0090.15; 8-Inch, Item SPV.0090.16; 16-Inch, Item SPV.0090.17.....	263
164.	Select Fill for Water Main, Item SPV.0090.18.....	264
165.	Sand and Trash Collector, Item SPV.0105.01.....	264
166.	Construction Staking Structure, R-13-204, Item SPV.0105.02; R-13-235, Item SPV.0105.03; R-13-236, Item SPV.0105.04; R-13-242, Item SPV.0105.05; R-13-243, Item SPV.0105.06; R-13-244, Item SPV.0105.07; R-13-245, Item SPV.0105.08; R-13-1000-TW1, Item SPV.0105.09; R-13-1000-TW2, Item SPV.0105.10; R-13-1000-TW3, Item SPV.0105.11; R-13-1000-TW4, Item SPV.0105.12; N-13-2, Item SPV.0105.013; N-13-3, Item SPV.0105.14; N-13-4, Item SPV.0105.15.....	267
167.	Railing Steel Type C1 Galvanized Pedestrian, R-13-204, Item SPV.0105.16; Railing Steel Type C3 Galvanized Pedestrian, B-13-666, Item SPV.0105.17; R-13-242, Item SPV.0105.18; R-13-243, Item SPV.0105.19; Railing Steel Special Galvanized Pedestrian, B-13-666, Item SPV.0105.20.....	268
168.	Salvage Cantilever Sign Truss S-13-174, Item SPV.0105.21; S-13-175, Item SPV.0105.22.....	271
169.	Research and Locate Existing Property Monuments, Item SPV.0105.23.....	272
170.	Verify and Replace Existing Property Monuments, Item SPV.0105.24.....	273
171.	B-13-666 Lighting, Item SPV.0105.25.....	275
172.	Temporary Lighting (Freeport Connector), Item SPV.0105.26.....	278
173.	Painting Epoxy System Pedestrian Bridge B-13-666, Item SPV.0105.27.....	281
174.	Prefabricated Steel Truss Pedestrian Bridge, B-13-666 LRFD, Item SPV.0105.28.....	282
175.	Dewatering for Sanitary Sewer Construction, Item SPV.0105.29.....	286
176.	Heavy Wastewater Control, Item SPV.0105.30.....	288
177.	Construction Staking Sanitary Sewer, Item SPV.0105.31.....	289
178.	Construction Staking Water Main, Item SPV.0105.32.....	289
179.	Concrete Stain, Item SPV.0105.33.....	290

180.	Pedestrian Bridge Decorative Arch, Item SPV.0105.34.....	291
181.	Wastewater Control, Item SPV.0105.35.....	292
182.	Pile Driving Vibration Monitoring B-13-666, Item SPV.0105.36.	292
183.	Railing Tubular Screening Galvanized B-13-664, Item SPV.0105.37.....	295
184.	Water for Seeded Areas, Item SPV.0120.01.....	298
185.	Temporary Shoring Soil Nail Wall R-13-1000-TW2, Item SPV.0165.01.	299
186.	Wall Concrete Panel Mechanically Stabilized Earth LRFD R-13-204, Item SPV.0165.02; R-13-242, Item SPV.0165.03; R-13-243, Item SPV.0165.04; R-13- 244, Item SPV.0165.05; R-13-245, Item SPV.0165.06.....	300
187.	Precast Panels for Post and Panel Walls, Item SPV.0165.07.	308
188.	Shoring Left In Place, Item SPV.0165.08.....	309
189.	Stamped Colored Concrete Sidewalk 4-Inch, Item SPV.0165.09.	310
190.	Piling Steel Sheet Temporary Left In Place, Item SPV.0165.10.	312
191.	Temporary Pedestrian/Bicycle Access, Item SPV.0180.01.....	313
192.	Concrete Approach Slab, 6-Inch, Item SPV.0180.02.	313
193.	Excavation, Hauling, and Disposal of Contaminated Soil and Management of Contaminated Groundwater, Item SPV.0195.01.	314

SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1206-00-72, South Madison Beltline, Seminole Highway Bridge B-13-0664; Project 1206-07-77, Mount Horeb-Madison, Raymond Road to Seminole Highway, Phase I; Project 1206-07-81, Mount Horeb-Madison, Verona Road, Phase I Sanitary Sewer and Water; Project 1206-07-83, Mount Horeb-Madison, CTH PD Ped Bridge, 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, 2013 Edition, as published by the department, and these special provisions.

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

100-005 (20120615)

2. Scope of Work.

The work under this contract shall consist of earthwork, base course, HMA pavement, concrete curb and gutter, concrete barrier wall, MGS guardrail, storm sewer, pavement marking, erosion control, and structures (B-13-664, B-13-666, R-13-204, R-13-235, R-13-236, R-13-242, R-13-243, R-13-244, R-13-245, N-13-2, N-13-3, N-13-4, S-13-376, S-13-383, S-13-384, S-13-394, S-13-395, S-13-406, S-13-407, S-13-424, R-13-1000-TW1, R-13-1000-TW2, R-13-1000-TW3 and R-13-1000-TW4) and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. Mandatory Pre-Bid Meeting.

Supplement standard spec 102.3.1 with the following:

Prospective bidders are required to attend a mandatory pre-bid meeting at 1:00 PM April 23, 2013 at 2101 Wright Street, Madison, WI 53704.

No meeting minutes will be prepared. Issues discovered at the meeting will be handled by addendum.

102-010 (20041504)

4. Prosecution and Progress.

A General

Begin work within 10 calendar days after the engineer issues a written notice to proceed.

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 10 calendar days before the approved start date.

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

The contract time for completion is based on an expedited work schedule and may require extraordinary forces and equipment. 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 the schedule of operations for the construction staging as shown in the plans and as noted in the table below. Do not move operations ahead within the proposed construction staging unless modifications to the staging and schedule are approved in writing by the engineer.

The schedule of operations and the construction staging provided in the plans have been established based on the following:

<i>Work Areas (see title sheet)*</i>	<i>Work Year</i>	<i>Interim Completion Date</i>	<i>Final Completion Date</i>
USH 12/14 third lane, L ramp and S-13-384,394,395	2014		July 25, 2014
USH 12/14 storm sewer crossing, detention pond B	2013	9 Calendar Days, August 18, 2013 and October 4, 2013	
Verona Rd Overlay/Widening, Freeport Rd, detention pond A	2013	October 4, 2013 November 15, 2013	
Seminole Hwy Bridge and appurtenances, 'S' and 'SF' alignments	2013	30 Calendar Days, August 9, 2013 and November 15, 2013	
Warwick Way and N-13-2	2013/2014	August 9, 2013 and October 4, 2013, (Warwick Way)	July 25, 2014, (N-13-2)
N-13-3	2013/2014		July 25, 2014

<i>Work Areas (see title sheet)*</i>	<i>Work Year</i>	<i>Interim Completion Date</i>	<i>Final Completion Date</i>
N-13-4	2013/2014		July 25, 2014
Military Ridge Path Bridge and appurtenances	2013/2014	May 23,2014	
CTH PB/CTH M Intersection	2014		July 25, 2014
CTH M/CTH D Intersection	2014		July 25, 2014
CTH D/Whalen Rd Intersection	2014		July 25, 2014
Seminole Hwy/Lacy Road Intersection	2013	November 15, 2013	
Seminole Hwy/CTH PD Intersection	2013	November 15, 2013	
Seminole Hwy/Sentinel Pass Intersection	2013	November 15, 2013	
Seminole Hwy/Yuma/ Nakoma Intersection	2013	November 15, 2013	
Whitney Way/Gilbert Intersection	2014		July 25, 2014
ITS Installations including underground and sign structures	2014**		July 25, 2014
Sand and Trash Collector and appurtenances	2014		July 25, 2014

*Work areas are brief descriptions of the general areas of the project. Complete all work within the work areas as required by these special provisions and the project plans.

**For the ITS Installations the contractor may work on items in 2013 that do not cause lane or shoulder closures on the Beltline. Provide a schedule to the engineer for approval of the ITS work areas for 2013.

The established construction schedule for the contract will involve coordination of construction activities with Project 1206-01-84 Fish Hatchery Interchange, Project 1206-04-61 Yahara River Bridge Reconstruction, and Project 5992-09-07 Cannonball Beltline Overpass Construction projects.

B Construction Schedule of Operations

Prior to beginning operations under this contract, and at least 14 calendar days prior to the preconstruction conference, submit in writing, a Critical Path Method (CPM) Progress Schedule as specified in the bid item CPM Progress Schedule to establish the controlling items of work for the contractor's material production and work efforts to complete all work required by the contract. The contractor's schedule of operations shall

indicate working with adequate forces and equipment to assure that the work will be completed within the established contract time. The contractor is advised that there may be multiple mobilizations for such items as erosion control, traffic control, signing items, temporary pavement markings and other incidental items related to the staging. The department will make no additional payment for said mobilizations. Complete the CPM Progress Schedule in accordance to section 108.4 of the standard specifications and herein provided:

Replace standard spec 108.4.4.3 (7) with the following:

Provide Three-Week Look-Ahead bar charts by early start.

Add the following to standard spec 108.4.4.4:

Three-Week Look-Ahead Schedules

Between each monthly CPM Progress Schedule update, submit Three-Week Look-Ahead Schedules on a weekly basis after the notice to proceed. The Three-Week Look-Ahead schedules shall be generated by computer. With each Three-Week Look-Ahead include the following:

- Activities underway and activities completed for the past week.
- Planned work for the upcoming three-week period.
- The activities of the Three-Week Look-Ahead schedule shall include the activities underway and identify 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.
- On a weekly basis, the department and the contractor shall agree on the dates various activities are completed and depict these in the Three-Week Look-Ahead schedule and document any disagreements. Use the various activities completed dates from the Three-Week Look-Ahead schedules when updating the Monthly CPM schedule.

Replace standard spec 108.4.4.7(1) with the following:

The department will measure one CPM Progress Schedule for the contract. The schedule shall be broken out by the various project ID's. The measurement shall include creation of the initial work plan, initial schedule, each monthly schedule update, and all Three-Week Look Ahead schedule updates, acceptably completed for each project ID for the contract.

Replace the first sentence of standard spec 108.4.4.8(2) with the following:

Payment is full compensation for furnishing all work required under this bid item. The department will pay the bid item price which shall include the initial work plan, initial schedule, each monthly schedule update, and all Three-Week Look-Ahead schedule updates for each project ID submitted to the department. The

schedule of operations shall conform to the construction staging as shown in the plans, unless the engineer approves modifications to the plans and schedule in writing. The schedule of operations shall conform to the interim and final completion dates as described in Section E of this specification. The department will pay the contract amount in 3 payments as follows:

The CPM schedule shall address all major activities, components, and milestones of the Intelligent Transportation System (ITS) installation, and shall at minimum include the following:

- Major construction events.
- Contractor submissions.
- Equipment deliveries.
- System element installation by unit location.
- Installation of conduit and installation of poles.
- Installation of PCMS.
- Installation of processors and cabinets.
- Installation of camera assemblies.
- Detector assemblies.
- Communication equipment.
- Other equipment as required by this contract.
- Testing and acceptance schedule

C Contractor Coordination

The prime contractor shall have a superintendent or designated representative 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 schedule and subcontractors' 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.
- Shop drawing submittals.

- Equipment status of orders and deliveries.
- Plans and specifications for upcoming work to prevent potential conflicts between contractors.

During the weekly progress meetings submit written requests for traffic control closures to the engineer for approval as follows:

- Shoulder Closure: 5 working days prior to closure.
- Local Street Closure: 14 working days prior to closure.
- Lane Closure: 14 working days prior to closure.
- Ramp Closure: 14 working days prior closure.
- Road Closure: 14 working days prior closure.
- Rolling Closure: 14 working days prior closure.
- Traffic Switch: 14 working days prior to anticipated switch.
- Detours: 14 working days prior closure.

Place portable changeable message signs for all closures noted above a minimum of 5 working days in advance of the closure. Place portable changeable message signs a minimum of 10 working days prior to starting work on the Beltline or Verona Road and a minimum of 5 working days prior to starting work elsewhere. These timeframes may be adjusted by the engineer.

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

Based on the weekly progress meeting, if the engineer requests a new revised schedule, submit it within seven calendar days. Failure to submit a new schedule within seven days shall result in the engineer holding pay requests until a satisfactory and accurate schedule is received.

In addition to weekly progress meetings, conduct monthly project ITS coordination meetings at an agreed upon location. The monthly project ITS coordination meetings shall include the contractor and subcontractors; field system integrator; department project personnel, engineer, and other contractors requiring coordination. Facilitate discussion at the monthly project ITS coordination meetings with assistance from the Field System Integrator as noted in these special provisions under the item Field System Integrator. To change a meeting date, request in writing to the engineer, a change in a meeting date no less than seven calendar days prior to the scheduled meeting. The engineer will indicate the acceptance or rejection of the requested change. Prepare and distribute agendas and meeting notifications to attendees a minimum of three days prior to the meetings. Agenda items at the meeting shall include, but not be limited to, the following:

- The work completed since the last meeting.
- Anticipated work until the next meeting.
- Schedule adherence, schedule revisions and potential conflicts with other subcontractors.
- RFI status.
- Shop drawing submittal status.
- Material submittals.
- Materials testing and acceptance.
- Subcontractor status and coordination efforts.
- Equipment order and delivery status.
- Utility coordination.

Prepare and distribute a meeting summary for attendees within one week following each meeting.

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 closure may be rescinded.

At no time, 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 traffic lanes prior to or after the specified time periods in the Traffic article.

Keep USH 12/14/18/151, Verona Road, County PD and Midvale Blvd open to traffic at all times. 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 5 working days in advance of anticipated use. Do not use the ingress or egress locations until approved by the engineer.

E Interim and Final Completion of Work

USH 12/14/18/151 (Beltline Construction)

Seminole Highway Eastbound Entrance Ramp and Frontage Road

Complete all removals, grading, storm sewer, weir wall 18-inch, base course, pavement, curb and gutter, concrete barrier, guardrail, pavement marking, lighting, signing, drainage establishment and restoration necessary for opening to traffic the Seminole Highway eastbound entrance ramp and frontage road within 30 consecutive calendar days and prior to 12:01 AM August 9, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, storm sewer, weir wall 18-inch, base course, pavement, curb and gutter, concrete barrier, guardrail, pavement marking, lighting, signing, drainage establishment and restoration necessary for opening to traffic within 30 consecutive calendar days and prior to 12:01 AM August 9, 2013, the department will assess the contractor \$10,000 in interim liquidated damages for each calendar day that the roadway remains closed or the work remains incomplete after 30 consecutive calendar days and after 12:01 AM August 9, 2013. An entire calendar day will be charged for any period of time within a calendar day that the roadway remains closed or work remains incomplete beyond 30 consecutive calendar days and 12:01 AM August 9, 2013.

These interim liquidated damages are independent and cumulative.

Seminole Highway Structure and Retaining Walls

Traffic Operations on Seminole Highway or crossing the Seminole Highway Structure shall not be disrupted until the completion and opening of traffic for the Seminole Highway eastbound entrance ramp and frontage road.

Complete all removals, grading, base course, structure items for B-13-664, R-13-235, and R-13-236; pavement, curb and gutter, storm sewer, pavement marking, signing, lighting, traffic signals, drainage establishment and restoration necessary for opening to pedestrian and vehicular traffic prior to 12:01 AM November 15, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, base course, structure items for B-13-664, R-13-235, and R-13-236; pavement, curb and gutter, storm sewer, pavement marking, signing, lighting, traffic signals, drainage establishment and restoration necessary for opening Seminole Highway and the Seminole Highway Structure to pedestrian and vehicular traffic prior to 12:01 AM November 15, 2013, the department will assess the contractor \$10,000 in interim liquidated damages for each calendar day that the roadway or structure remains closed after 12:01 AM, November 15, 2013. 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.

Warwick Way, and Warwick Way Storm Sewer to Seminole Highway

Complete all removals, grading, base course, storm sewer, pavement, curb and gutter, sidewalks, guardrail, pavement marking, signing, drainage establishment and restoration necessary for opening Warwick Way to pedestrian and vehicular traffic prior to 12:01 AM August 9, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, base course, storm sewer, pavement, curb and gutter, sidewalks, guardrail, pavement marking, signing, drainage establishment and restoration necessary for opening Warwick Way to prior to 12:01 AM August 9, 2013, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day that the roadway remains closed after 12:01 AM August 9, 2013. 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.

Complete all removals, grading, storm sewer, drainage establishment and restoration necessary for the storm sewer installation between Warwick Way and Seminole Highway prior to 12:01 AM October 4, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete removals, grading, storm sewer, drainage establishment, Beltline signing re-establishment and restoration necessary for the storm sewer installation between Warwick Way and Seminole Highway prior to 12:01 AM October 4, 2013, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day that the roadway remains closed after 12:01 AM, October 4, 2013. 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.

Beltline Storm Sewer Crossing and Detention Basin B

Complete all sawing, removals, excavation, base course, storm sewer installation, backfilling, asphaltic pavement, guardrail, fencing, concrete barrier wall, crash cushions, pavement marking, drainage establishment and restoration necessary to complete each storm sewer crossing of the Beltline between Stations 1125+00 and 1127+00 within the specified lane closure times, within 9 consecutive calendar days or prior to 12:01 AM, August 18, 2013. Day one of the individual consecutive night closures shall begin with a Friday night lane closure.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all sawing, removals, excavation, base course, storm sewer installation, backfilling, asphaltic pavement, guardrail, fencing, concrete barrier wall, crash cushions, pavement marking, drainage establishment and restoration necessary to complete each storm sewer crossing of the Beltline between Stations 1125+00 and 1127+00 within the specified lane closure times, within 9 consecutive calendar days and prior to 12:01 AM, August 18, 2013 the department will assess the contractor \$30,000 in interim liquidated damages for each calendar day that the work remains incomplete after 9 consecutive calendar days and 12:01 AM August 18, 2013. An entire calendar day will be charged for any period of time within a calendar day that the work remains incomplete beyond 9 consecutive calendar days and 12:01 AM August 18, 2013.

These interim liquidated damages are independent and cumulative.

Complete all removals, grading, excavation, storm sewer, detention pond grading, junction chambers, fencing, concrete barrier wall, crash cushions and restoration necessary to establish all permanent drainage north of and outletting from storm sewer structures ML 214.2 and ML 205 prior to 12:01 AM, October 4, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, excavation, storm sewer, detention pond grading, junction chambers, fencing, concrete barrier wall, crash cushions and restoration necessary to establish all permanent drainage north of and outletting from storm sewer structures ML 214.2 and ML 205 prior to 12:01 AM, October 4, 2013, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day that the permanent drainage is not established after 12:01 AM, October 4, 2013. 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.

USH 18/151 (Verona Road Construction)

Freeport Connection

Complete all removals, grading, pedestrian and bicycle accommodations, soil nail retaining wall, sheet pile retaining walls, temporary barrier, asphalt paving, curb and gutter, and pavement markings, signing, watermain, storm sewer, drainage and restoration necessary for opening the roadway to traffic prior to 12:01 AM October 4, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, pedestrian and bicycle accommodations, soil nail retaining wall, sheet pile retaining walls, temporary barrier, asphalt paving, curb and gutter, and pavement markings, signing, watermain, storm sewer, drainage and restoration necessary for opening the roadway to traffic prior to 12:01 AM October 4, 2013, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day that the roadway remains closed after 12:01 AM, October 4, 2013. 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.

Storm Sewer Trunk Line and Detention Basin A

Complete all removals, grading, excavation, trenchless storm sewer installation, detention pond grading, retaining walls, water main, storm sewer trunk line, and restoration prior to 12:01 AM November 15, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, excavation, trenchless storm sewer installation, detention basin grading, retaining walls, water main, storm sewer trunk line, and restoration prior to 12:01 AM November 15, 2013, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day that the work remains incomplete after 12:01 AM, November 15, 2013. 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.

Base Patching, Overlay, and Widening

Complete all removals, base course, base patching, overlay paving, shoring, paving, temporary barrier, signing, pavement marking, and restoration necessary to complete this portion of work for eastbound and westbound Verona Road prior to 12:01 AM October 4, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, base course, base patching, overlay paving, shoring, concrete barrier precast 12.5-ft, signing, pavement marking, and restoration necessary to complete this portion of work for eastbound and westbound Verona Road prior to 12:01 AM October 4, 2013, the department will assess the contractor \$15,000 in interim liquidated damages for each calendar day that the roadway remains closed after 12:01 AM, October 4, 2013. 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.

County PD (McKee Road)

Military Ridge Path Overpass

Complete all removals, grading, excavation, Structures R-13-242, R-13-243 and B-13-666; paving, storm sewer, drainage, signing, pavement marking, lighting, concrete staining and restoration required to open the Military Ridge Path to bicycle and pedestrian traffic prior to 12:01 AM May 23, 2014.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, excavation, Structures R-13-242, R-13-243 and B-13-666; paving, storm sewer, drainage, signing, pavement marking, lighting, concrete staining and restoration required to open the Military Ridge Path to bicycle and pedestrian traffic prior to 12:01 AM May 23, 2014, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day that the Military Ridge Path remains closed after 12:01 AM, May 23, 2014. 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.

Intersection Improvements

Seminole Highway and CTH PD Intersection

Complete all removals, grading, curb and gutter, base course, paving, milling, pavement marking, signing, lighting and restoration necessary to open the eastbound left turn lane to traffic within 14 calendar days.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all removals, grading, curb and gutter, base course, paving, milling, pavement marking, signing, lighting and restoration necessary to open the eastbound left turn lane to traffic within 14 calendar days, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day that the turn lane remains closed or the work remains incomplete after 14 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the turn lane remains closed or work remains incomplete beyond 14 calendar days.

Seminole Highway Intersections

Complete all removals, grading, curb and gutter, culverts, storm sewer, base course, paving, milling, pavement marking, signing, signals, lighting and restoration necessary to open the following intersections to traffic prior to 12:01 AM November 15, 2013.

- Seminole Highway, Yuma, and Nakoma Road
- Seminole highway and Sentinel Pass
- CTH PD and Seminole Highway
- Seminole Highway and Lacy Road

Supplement standard spec 108.11 as follows:

If the contractor fails to complete removals, grading, curb and gutter, culverts, storm sewer, base course, paving, milling, pavement marking, signing and restoration necessary to open the above noted intersections to traffic prior to 12:01 AM November 15, 2013, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day and for each intersection that remains closed after 12:01 AM November 15, 2013. 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.

Micellaneous

Complete all building removals and site clearances by September 20, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete the building removals and site clearances prior to 12:01 AM September 20, 2013, the department will assess the contractor \$500 in interim liquidated damages for each calendar day that the work remains incomplete after 12:01 AM September 20, 2013. 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.

Winter Shut Down - Verona Road, Beltline and Intersection Improvements

Complete all interim punch list work, removal of all unnecessary traffic control devices, equipment, and materials from all areas of the project site prior to 12:01 AM November 20, 2013.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all interim punch list work, removal of all unnecessary traffic control devices, equipment, and materials from all areas of the project site prior to 12:01 AM November 20, 2013, the department will assess the contractor \$30,000 in interim liquidated damages for each calendar day that the work remains incomplete after 12:01 AM November 20, 2013. 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.

Work can continue after the winter shut down date, in accordance to the standard specifications, and the traffic section of these special provisions on the following items:

- B-13-666 (do not impede CTH PD traffic with traffic control devices except for setting the truss spans)
- R-13-242
- R-13-243
- N-13-2
- N-13-3

Project Completion Date

Complete all work specified in the contract and not specified above prior to 12:01 AM July 26, 2014.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete all work specified in the contract prior to 12:01 AM July 26, 2014, the department will assess the contractor \$30,000 in liquidated damages for each calendar day that the work remains incomplete after 12:01 AM, July 26, 2014. 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.

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

- Severe weather as specified in 108.10.2.2.
- Labor disputes that are not industry wide.
- Delays in material deliveries.

5. Traffic.

A General

The work under this item shall conform to the requirements of standard spec 643, the Manual on Uniform Traffic Control Devices (MUTCD) and as hereinafter provided.

Submit to engineer for approval a detailed traffic control plan for any changes to the proposed traffic control as shown on the plans. Submit the plan 14 days prior to the preconstruction conference, or if after the preconstruction conference, 14 days prior to the intended use of the revised traffic control.

Provide 24 hours-a-day availability of equipment and forces to expeditiously restore lights, signs, or other traffic control devices that are damaged or disturbed. The cost to maintain and restore the traffic control devices shall be considered incidental to the item as bid and no additional payment will be made therefore.

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.

Supply three contact names and numbers as noted above before starting any work.

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 in accordance to standard detail drawing "Traffic Control, Sidewalk Closure."

Do not disturb, remove or obliterate any traffic control signs, advisory signs, shoulder delineators or beam guard 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.

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:

1. Do not park or store any vehicle, piece of equipment, or construction materials within the clear zone without approval of the engineer.
2. All construction vehicles and equipment entering or leaving live traffic lanes shall yield to through traffic.
3. Equip all vehicles and equipment entering or leaving the live traffic lanes with a hazard identification beam (flashing yellow signal) capable of being visible on a sunny day when viewed without the sun directly on or behind the device from a distance of 1000 feet. Activate the beam when merging into or exiting a live traffic lane.
4. Maintain vehicle and pedestrian access at all times to buildings within the limits of construction. Provide temporary sidewalk, crosswalk and bicycle access as described in the special provisions under bid item Temporary Pedestrian/Bicycle Access and as detailed in the plans. Provide temporary sidewalk, crosswalk and bicycle access in accordance to the ADAAG, which are free from mud, sand, and other construction debris.
5. Additional intermediate construction staging or staging gaps, not shown on the plans, may be necessary to maintain continuous 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.
6. Do not deliver and store materials and equipment within open travel lanes or open side roads 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 during peak travel periods.

Upon switching traffic to any temporary roadways, or placing traffic on roadways patched as part of the project, designate a representative to monitor the condition of the temporary roadways and patches for a period of not less than eight hours after traffic utilizes the temporary or patched roadway and prior to beginning any work that may take place upon the existing roadway after traffic is utilizing the temporary or patched roadway(s). Should the temporary or patched roadways show any signs of failure, immediately notify the engineer.

Do not use flag persons to direct, control, or stop USH 12/14/18/151, Verona Road, or County PD traffic, unless provided written approval from the engineer.

Provide flag persons and associated advanced signing in accordance to the plans for temporary halting of traffic on the side roads.

Mount all traffic control signs at a minimum height of 5 feet above the edge of pavement.

The established construction schedule for the contract may involve construction activities 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. Also 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. This work shall be included in the cost of Traffic Control Surveillance and Maintenance.

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.

Traffic operations specific to USH 12/14/18/151 (Beltline) during all stages:

Maintain three lanes of traffic in each direction at all times on USH 12/14/18/151 during the construction of the Seminole Highway eastbound entrance ramp and frontage road, Noise Wall (N-13-0002), storm sewer construction near the Seminole Highway Bridge, Retaining Walls (R-13-235/236), Seminole Highway Bridge (B-13-664), Todd Drive storm sewer and storm water sand and trash collector, except as authorized in Section B. of this article.

Maintain two lanes of traffic in each direction at all times on USH 12/14 during the storm sewer Crossing of the Beltline between Station 1125+00 and 1127+00, Noise Wall (N-13-0004), the Whitney Way westbound entrance ramp and bike path, and the Beltline lane addition and shoulder widening, except as authorized in Section B. of this article.

Maintain a minimum lane width of 11-feet along USH 12/14/18/151 and all entrance and exit ramps.

Maintain traffic along the eastbound and westbound USH 12/14/18/151 entrance and exit ramps at all times during the construction, except as authorized in Section B. of this article.

Maintain 15 feet minimum clear width for traffic during all dual lane closures.

During deck removal and form/false-work removal operations, maintain minimum 6 feet offset from removal operations to live lanes of traffic.

Nighttime lane closures and rolling closures will be allowed for the removal of B-13-264, placement of girders for B-13-664, and placement of the ITS overhead sign structures for S-13-188, S-13-383, S-13-406 and S-13-407. Nighttime lane closures and rolling closures shall be in accordance to Sections B and C of this article.

Shoulder closures on USH 12/14/18/151 are allowed to complete construction of ITS components and sign structure installations. Shoulder closures shall be performed in accordance to Section B. of this article.

The Seminole Highway eastbound entrance ramp may be closed and the Frontage Road maintained using one-way eastbound operations as indicted in the plans and the Prosecution and Progress and Traffic sections of these special provisions.

Traffic operations specific to USH 18/151 (Verona Road) during all stages:

Maintain Verona Road open to two through lanes of vehicular traffic in each direction throughout the project duration, except as authorized in Section B. of this article.

Maintain a minimum lane width of 11-feet on USH 18/151 at all times during the construction.

Shoulder closures on USH 18/151 are allowed to complete construction for various stages of the project and ITS installations. Shoulder closures shall be in accordance to Section B. of this article.

Maintain existing turning movements as identified in the plans. The intersecting side roads of Atticus Way and Summit Avenue along with the East and West Verona Road Frontage Roads will utilize nighttime lane closures and daytime flagging operations as indicated in Section B. of this article.

Nighttime lane closures and rolling closures will be allowed for the removal and reinstallation of the trusses and attached signs for existing cantilever sign Structures S-13-174 and S-13-175. Nighttime lane closures and rolling closures shall be in accordance to Sections B and C of this article.

Complete construction on side roads while maintaining 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).

Traffic operations specific to CTH PD (McKee Road) during all stages:

Maintain CTH PD open to two through lanes of vehicular traffic in each direction throughout the project duration, except as authorized in Section B. of this article.

The existing Cannonball Trail crossing of CTH PD located approximately 650 feet east of the CTH PD and the US 18/151 intersection will be closed for the duration of construction operations. Maintain operation of the trail by utilizing the existing Military Ridge Path and intersection crossing of CTH PD at the CTH PD and USH 18/151 intersection as a detour route at all times. Do not restrict bicycle or pedestrian access on the Cannonball Trail until the required detour route is properly signed and approved by the engineer. Notify the City of Fitchburg, City Engineer, Paul Woodard, (608) 270-4261, 10 working days prior to work on the Cannonball Trail.

Maintain bicycle access on the existing westbound bike lane on CTH PD except that the bike lane may be closed during stage 2 for storm sewer construction and curb and gutter replacement. The existing eastbound bike lane on CTH PD may be closed to bicycle

traffic for the duration of construction operations. The existing eastbound sidewalk will be maintained at all times utilizing the temporary pedestrian/bicycle access bid item.

Nighttime lane closures and rolling closures will be allowed for the installation of the truss section of the bridge for Structure B-13-666. Nighttime lane closures and rolling closures shall be in accordance to Sections B and C of this article.

Traffic operations specific to Mitigation Intersection Improvements during all Stages:

Shoulder closures and flagging operations on CTH D, CTH M, CTH PB, Seminole Highway, Whalen Road, Lacy Road, Sentinel Pass, Nakoma, Yuma, Whitney Way and Gilbert Road are allowed to complete earthwork, base course, HMA paving, milling, and overlay operations for the various intersection locations of the project. Construction operations shall be in accordance to the plans and Section B. of this article.

Traffic operations specific to ITS Infrastructure improvements during all Stages:

Lane Closures, Shoulder Closures, and Rolling Closures on USH 12/14(Beltline), USH 12/14/18/151(Beltline), USH 18/151 (Verona Road), CTH D, CTH M, CTH PB, are allowed to complete construction of guardrail, concrete bases, and ITS sign structures for the various ITS locations of the project. Construction operations shall be in accordance to Section B. of this article.

B Specified Lane Closure Times and Lane Closure Assessments

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

Beltline East of Verona Road Interchange (six lane section)						
Description			Direction	Lanes	Start	End
Monday Night	to	Friday Morning	Eastbound/ Westbound	Single	8:00 PM	5:00 AM
			Eastbound/ Westbound	Dual	10:00 PM	5:00 AM
Friday Night	to	Saturday Morning	Eastbound/ Westbound	Single	9:00 PM	8:00 AM
			Eastbound/ Westbound	Dual	11:00 PM	6:00 AM
Saturday Night	to	Sunday Morning	Eastbound/ Westbound	Single	8:00 PM	10:00 AM
			Eastbound/ Westbound	Dual	11:00 PM	9:00 AM
Sunday Night	to	Monday Morning	Eastbound/ Westbound	Single	7:00 PM	5:00 AM
			Eastbound/ Westbound	Dual	10:00 PM	5:00 AM
Monday	to	Thursday	Eastbound/ Westbound	Shldr	9:00 AM	3:00 PM
Friday			Eastbound/ Westbound	Shldr	9:00 AM	12:00 PM
Monday	to	Sunday	Eastbound/ Westbound	Shldr	Continuous for median shoulder for ITS Butterfly and Seminole Pier	

Beltline West of Verona Road Interchange (four lane section)						
Description			Direction	Lanes	Start	End
Monday Night	to	Friday Morning	Eastbound/ Westbound	Single	8:00 PM	5:00 AM
Friday Night	to	Saturday Morning	Eastbound/ Westbound	Single	9:00 PM	8:00 AM
Saturday Night	to	Sunday Morning	Eastbound/ Westbound	Single	8:00 PM	10:00 AM
Sunday Night	to	Monday Morning	Eastbound/ Westbound	Single	7:00 PM	5:00 AM
Monday	to	Thursday	Eastbound/ Westbound	Shldr	9:00 AM	3:00 PM
Friday			Eastbound/ Westbound	Shldr	9:00 AM	12:00 PM
Monday	to	Sunday	Eastbound/ Westbound	Shldr	Continuous for median shoulder for ITS Butterfly and Seminole Pier	

Verona Road						
Description			Direction	Lanes	Start	End
Monday Night	to	Friday Morning	Northbound/ Southbound	Single and Dual	10:00 PM	5:00 AM
Friday Night	to	Saturday Morning	Northbound/ Southbound	Single and Dual	10:00 PM	7:00 AM
Saturday Night	to	Sunday Morning	Northbound/ Southbound	Single and Dual	10:00 PM	8:00 AM
Sunday Night	to	Monday Morning	Northbound/ Southbound	Single and Dual	10:00 PM	5:00 AM

CTH PD (McKee Road)					
Description		Direction	Lanes	Start	End
Monday to Thursday (Daytime Off-Peak)		Eastbound/ Westbound	Single	9:00 AM	3:00 PM
Friday (Daytime Off-Peak)		Eastbound/ Westbound	Single	9:00 AM	12:00 PM
Monday to Thursday (Nighttime)		Eastbound/ Westbound	Single	8:00 PM	5:00 AM
* No Lane Closures allowed on weekends					

Summary of Rolling Closures by Location/Direction:

Beltline Rolling Closures (15 Minutes Maximum)						
Description			Direction	Lanes	Start	End
Monday Night	to	Friday Morning	Eastbound/ Westbound	Dual	11:00 PM	5:00 AM
Friday Night	to	Saturday Morning	Eastbound/ Westbound	Dual	11:00 PM	6:00 AM
Saturday Night	to	Sunday Morning	Eastbound/ Westbound	Dual	11:00 PM	9:00 AM
Sunday Night	to	Monday Morning	Eastbound/ Westbound	Dual	11:00 PM	5:00 AM

Summary of Service Ramp Closures by Location/Direction:

Service Ramp Closures				
Description	Direction	Lanes	Start	End
Westbound On and Off Ramp from Verona Road	Westbound	Ramp	10:00 PM	5:00 AM
Westbound On Ramp from Whitney Way	Westbound	Ramp	10:00 PM	5:00 AM
Westbound Off Ramp to Whitney Way (Mon-Th)	Westbound	Ramp	9:00 AM	3:00 PM
Westbound Off Ramp to Whitney Way (Fri)	Westbound	Ramp	9:00 AM	12:00 PM

Summary of Lane Closures for Mitigation Intersections:

Mitigation Intersections						
Description			Direction	Lanes	Start	End
Saturday	to	Thursday	Northbound/ Southbound	Single	9:00 AM	3:00 PM
Friday			Northbound/ Southbound	Single	9:00 AM	12:00PM
SDD " Traffic Control for Lane Closure (suitable for Moving Operations)" shall apply						
* No Lane Closures allowed on weekends or nights						

No lanes shall be closed prior to or after the specified times provided in this article or the article. If the contractor closes lanes of traffic prior to or fails to open lanes of traffic by the specified times, reductions shall begin immediately upon exceeding the specified closure and will be based upon 15 minute increments for assessments to the contractor. The total reductions assessed to the contractor will be cumulative based on an escalating scale of 15 minute increments and will be the summation of separate reductions for each traffic lane and each direction of traffic in violation.

USH 18/151 (Verona Road) and CTH PD

Time Period in excess of specified time	Reduction per lane of traffic and per direction of traffic	Cumulative reduction per lane of traffic and per direction of traffic
0 to 15 minutes	\$750	\$750
15 to 30 minutes	\$1,500	\$2,250
30 to 45 minutes	\$2,250	\$4,500
45 to 60 minutes	\$3,000	\$7,500

If the contractor fails to open lanes of traffic after 60 minutes from the specified times, a constant reduction of \$3,000 for each additional 15 minute increment, for each lane and each direction of traffic, will be assessed until lanes are open to traffic.

USH 12/14/18/151 (Beltline)

Time Period in excess of specified time	Reduction per lane of traffic and per direction of traffic	Cumulative reduction per lane of traffic and per direction of traffic
0 to 15 minutes	\$1,500	\$1,500
15 to 30 minutes	\$3,000	\$4,500
30 to 45 minutes	\$4,500	\$9,000
45 to 60 minutes	\$6,000	\$15,000

If the contractor fails to open lanes of traffic after 60 minutes from the specified times, a constant reduction of \$6,000 for each additional 15 minute increment, for each lane and each direction of traffic, will be assessed until lanes are open to traffic.

The total reduction from monies due to the contractor shall be the summation of the separate reductions 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.

C Rolling Closures

Rolling closures may be utilized for operations as noted in section A and in accordance to section B of this article. Rolling closures will 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.

Contractor operations shall not require law enforcement vehicles to stop USH 12/14/18/151 traffic for more than 15 minutes for the rolling closures. The procedure at the Seminole Highway bridge shall be allowed for no more than four nights. One night to remove girders eastbound, one night to remove girders westbound, one night to place girders westbound, and one night to place girders eastbound. 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.

Arrangements for implementing the rolling closures shall be in accordance to the notification required in the prosecution and progress of these special provisions and through the engineer and Jeff Gustafson with the Southwest Region Office (608) 516-6400. Final confirmation of the scheduled rolling closure shall be provided to the engineer 72 hours in advance of the closure.

D Advance Notification

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, Engineer, School District, Madison Metro and the Post Office two weeks in advance of all traffic switches, lane closures, ramp closures, road closures, detours, and rolling closures. Notifications should be confirmed with all parties one week prior to implementation. Parties shall also be notified if a closure is cancelled.

E Pedestrian/Bicycle Access

Maintain pedestrian access, in accordance to the Americans with Disabilities Act (ADA) Accessibility Guidelines (ADAAG), along Verona Road and all other side roads by means of existing sidewalk, Temporary Pedestrian/Bicycle Access bid item, or new sidewalk at a minimum width of 5 feet, for all abutting businesses and properties. Keep a minimum width of 5 feet of existing sidewalk as long as practicable to maintain pedestrian access.

When required close sidewalks in accordance to the standard detail drawing "Traffic Control, Sidewalk Closure." Provide temporary pedestrian and bicycle access as detailed in the plans or as directed by the engineer. Pedestrian and bicycle access shall be maintained at all times utilizing a hard surface approved by the engineer, of either asphalt or concrete, and shall be constructed to match the width of the existing facility being maintained. The bid item Temporary Pedestrian/Bicycle access has been provided to complete this work.

F Property Access

Maintain access to properties along the project for local residents, businesses, and emergency vehicles. Access to all driveways and parking lots where alternative access is not available shall remain open at all times. 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 days prior to use. If the contractor coordinates the closure of any access to a business or private property with the owner(s), the contractor shall provide written documentation of coordination with the owner(s) to the engineer.

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 USH 12/14/18/151 traveled way. Equipment may be parked and materials stored closer than 30 feet on USH 12/14/18/151 if it is protected by a concrete barrier. Maintain a minimum of 4 feet clearance behind the 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 Traffic Control Operations

USH 12/14/18/151 (Beltline)

Seminole Highway Eastbound Entrance Ramp and Frontage Road (2013)

Stage 1 Phase 1

- Eastbound Beltline lane 1 will be closed at night in accordance to Section B.
- Eastbound traffic will utilize Lane 2 and 3 during nighttime closure periods in accordance to Section B.
- Mill the existing median rumble strips and repave the shoulder.

Stage 1 Phase 2

- Eastbound Beltline traffic will be shifted toward the median through the work zone.
- Seminole Highway eastbound entrance ramp will be closed to begin construction.
- The frontage road will continue its normal operation (eastbound/westbound).
- Seminole Highway eastbound ramp traffic will access the Beltline utilizing the Todd Drive entrance ramp.

Stage 2 Phase 1

- Eastbound Beltline traffic will remain shifted toward the median through the work zone. The Seminole Highway eastbound entrance ramp will remain closed. The frontage road will continue its normal operation (eastbound/westbound).
- Construct the Seminole Highway entrance ramp.
- Construct the multiuse path along the south side of the frontage road.
- Upon completion of the multiuse path, the frontage road can begin one-way eastbound operation.

Stage 2 Phase 2

- Eastbound Beltline traffic will remain shifted toward the median through the work zone. The Seminole Highway eastbound entrance ramp will remain closed. Frontage road traffic will continue to be restricted to one-way eastbound.
- Construction shall continue along the Seminole Highway eastbound entrance ramp.
- Construct the north half of the frontage road.

Stage 2 Phase 3

- Eastbound Beltline traffic will remain shifted toward the median through the work zone. The Seminole Highway entrance ramp will remain closed. Frontage road traffic will continue to be restricted to one-way eastbound.
- Frontage road traffic will be shifted to the newly constructed north portion of the frontage road.
- Construct the south portion of the frontage road.
- Complete the Seminole Highway entrance ramp and frontage road construction.

Warwick Way, N-13-0002 and Storm Sewer (2013)

Stage 1 Phase 1 (Warwick Way)

- Warwick Way will be closed.
- Construct Warwick Way at the intersection of Whenona Drive.
- Construct the noise wall and storm sewer trunk line off-alignment parallel to Warwick Way extending from Whenona Drive to Seminole Highway.

Stage 1 Phase 1 (N-13-0002 and Storm Sewer)

- Westbound Beltline outside lane will be closed in accordance to Section B.
- Mill the existing outside shoulder rumble strips and repave the shoulder.
- Install temporary barrier and crash cushion along the westbound outside shoulder.

Seminole Highway Structure and Retaining Walls (2013)

Stage 3 Phase 1

- All eastbound and westbound Beltline traffic will remain shifted to the outside shoulders through the work zone.
- Remove the median concrete barrier wall adjacent to the existing Seminole Highway Structure and place temporary barrier in the median for pier construction.
- Pedestrian and bicycle traffic will utilize the existing pedestrian/bicycle overpass structure located 1200 feet west of Seminole Highway.
- Construct the post and panel walls R-13-235/236 along the eastbound and westbound Beltline.
- Construct the new Seminole Highway Bridge B-13-664. See the utility section of these special provisions for required coordination and outage dates with ATC. Maintain Madison Metro bus stop along the frontage road throughout all stages and phases construction.

Stage 3 Phase 2

- Remove the temporary pavement marking and replace with permanent pavement marking.
- Place traffic back in its original position for the winter shut down.
- Place concrete barrier and crash cushions in their final positions for future use on project 1206-07-78.

Beltline Storm Sewer Crossing and Detention Basin B (2013)

Stage 1 Phase 1

- Westbound Beltline traffic will utilize lane 1 during the nighttime closure period.
- Westbound Beltline lane 2 and the westbound entrance ramp from Verona Road will be closed at night to construct the two storm sewer crossings of the Beltline between Station 1125+00 and 1127+00.
- The westbound entrance ramp may be closed for one night only.
- Install a crash cushion and temporary barrier along the westbound lanes for the construction of the remaining storm sewer, detention basin, and junction chamber adjacent to the Beltline.

Stage 1 Phase 2

- Traffic will utilize lane 2. The westbound entrance ramp will be open.
- Westbound Beltline lane 1 will be closed to continue the two storm sewer crossings of the Beltline between Station 1125+00 and 1127+00.

Stage 1 Phase 3

- Eastbound Beltline traffic will utilize lane 2 and the eastbound exit ramp.
- Eastbound lane 1 will be closed to continue the two storm sewer crossings of the Beltline between Station 1125+00 and 1127+00.

Stage 1 Phase 4

- Eastbound Beltline traffic will utilize lane 1.
- Lane 2 and the eastbound off ramp will be closed to continue the two storm sewer crossings of the Beltline between Station 1125+00 and 1127+00.
- The eastbound exit ramp may be closed for one night only.
- Install a crash cushion and temporary barrier along the eastbound lanes for the construction of the remaining storm sewer and junction chamber adjacent to the beltline.

Stage 1 Phase 5

- Place concrete barrier and crash cushions in their final positions for future use on project 1206-07-78.

Noise Wall N-13-0004 (2013/2014)**Stage 1 Phase 1**

- Close the far right lane of the westbound exit ramp at Whitney Way during specified hours for the construction of the Noise Wall N-13-0003.

West Beltline Whitney Way to Gammon Road, Whitney Way Westbound Entrance Ramp and Bike Path (2014)

- Material deliveries for this work shall take place at night utilizing the specified lane closure hours. Daytime construction is permitted utilizing nightly delivered materials. No ingress or egress of the area will be permitted outside of the specified lane closure hours.

Stage 1 Phase 1

- Shift the eastbound and westbound Beltline traffic to the outside shoulders and reduce the lanes to two 11 foot lanes.
- Construct the eastbound and westbound median widening by utilizing nightly eastbound and westbound lane closures of lane 1.
- Complete the eastbound median shoulder widening.

- Prior to opening to traffic each morning, the median shoulder must be restored to a slope no steeper than 3:1 and all equipment must be stored behind temporary concrete barrier when not in use.
- Construct the extension of the existing bike path paralleling the westbound beltline to Whitney Way.

Stage 1 Phase 2

- Restore eastbound traffic to its normal lane configuration.
- Shift westbound traffic to the newly constructed median addition and lane 2 (originally lane 1).
- Construct the widening along the outside shoulder of the westbound lanes and overlay and westbound lanes utilizing nighttime lane closures.
- Prior to opening to traffic each morning, the outside shoulder must be restored to a slope no steeper than 3:1 and all equipment must be stored outside the clear zone when not in use.
- The Whitney Way westbound entrance ramp may be closed for one night to accommodate the ramp and Beltline overlay construction.
- Construct the additional parallel ramp length and curb and gutter along the westbound entrance ramp at Whitney Way.

Storm Water Sand and Trash Collector (2014)

Stage 1 Phase 1

- Westbound Beltline lane 1 will be closed at night in accordance to Section B.
- Westbound Beltline traffic will utilize lane 2 and 3 during nighttime construction operations.
- Mill the existing median rumble strip and repave the shoulder.

Stage 1 Phase 2

- Westbound Beltline traffic will be shifted toward the median through the work site.
- Install temporary concrete barrier utilizing nighttime lane closures in accordance to Section B.
- Construct the storm water sand and trash collector and R-13-244/245.

Todd Drive Storm Water Improvements (2014)

Stage 1 Phase 1

- Shift Todd Drive exit ramp traffic to the left shoulder and install temporary concrete barrier and crash cushion.
- Remove existing permanent concrete barrier wall and construct the necessary manhole, 6.5-inch weir wall, endwalls, rip rap and replace concrete barrier wall.
- Maintain Madison Metro bus stop along the adjacent frontage road throughout construction.

USH 18/151 (Verona Road)

Base Patching, Overlay, and Widening (2013)

Stage 1 Phase 1 (base patching and overlay)

- Construct the westbound Verona Road base patching and overlay utilizing single and dual lane closures of westbound Verona Road between Station 973+00 'VR' and 1009+00 'VR' during specified hours.
- Construct the eastbound Verona Road base patching utilizing single and dual lane closures of Verona Road between Station 979+00 'VR' and 999+00 'VR' during specified hours.
- Left turn movements from the westbound beltline off ramp to westbound Verona Road may be reduced to one and two lanes during specified hours. Maintain left and right turn movements from Verona Road at the Summit Road and Atticus Way intersection at all times as shown on the plans.

Stage 1 Phase 2 (widening)

- Construct Verona Road widening between Stations 975+00 'VR' and 987+00 'VR'.
- Reduce Verona Road to two through lanes between Station 973+00 'VR' and 998+00 'VR' during specified hours.
- Maintain three left turn lanes from the westbound off ramp to westbound Verona Road. Maintain left and right turn movements from Verona Road at the Summit Road and Atticus Way intersection at all times as shown in the plans.

Detention Basin A and Storm Sewer Trunk Line to Summit Avenue (2013)

Stage 2

- Construct the detention basin storm sewer trunk line utilizing a closure of the West Frontage Road between Freeport Road and Summit Avenue.
- Construct the storm sewer and water main including the crossing of the Southwest Commuter Bike Path near Station 972+00 'VR' RT.

Freeport Connection (2013)

Stage 3

- Construct the Freeport Connection off existing alignment.
- The Verona Road West Frontage Road and Allied Drive shall remain open at all times during while constructing the Freeport Connection.
- The Southwest Commuter Bike Path shall remain open at all times while constructing the Freeport Connection. A temporary path shall be a paved surface of asphaltic pavement.

Storm Sewer Crossing Summit Avenue and Remaining Storm Sewer Trunk Line (2013)

Stage 4 Phase 1

- Construct the south half of the Summit Road storm sewer crossing during specified hours.
- Restrict the Verona Road West Frontage Road outbound traffic from using the Summit Avenue and Verona Road intersection and detour the Verona Road West Frontage Road traffic to the completed Freeport Connection.
- Close the eastbound right turn lane and the westbound left turn lane on the Verona Road West Frontage Road.
- Close the sidewalk on the south side of Summit Avenue from the Verona Road West Frontage Road to Verona Road and detour pedestrian traffic to the sidewalk on the other side of Summit Avenue. Pedestrian traffic shall be allowed access to all existing crosswalks.

Stage 4 Phase 2

- Construct the north half of the Summit Road storm sewer during specified hours.
- The Verona Road eastbound left turn lane and westbound right turn lane will be closed at the Summit Road intersection.
- Westbound Verona Road will be allowed to turn right from a shared through-right turn lane onto Summit Road.
- Eastbound Verona Road will be allowed to access the Verona Road West Frontage Road utilizing a detour route. The detour will require eastbound traffic to turn right onto Atticus Way and to turn right onto the Verona Road East Frontage Road continuing to the new Freeport connection and then onto the Verona Road West Frontage Road.
- Restrict the Verona Road West Frontage Road outbound traffic from using the Summit Avenue and Verona Road intersection and detour the Verona Road West Frontage Road traffic to the Freeport Connection.
- Close the sidewalk on the north side of Summit Road from the Verona Road West Frontage Road to Verona Road and detour pedestrian traffic to the sidewalk on the other side of Summit Road. Pedestrian traffic shall be allowed access to all existing crosswalks.
- The Freeport Connection shall be closed upon completion of Stage 4, Phase 2 as provided in the plans.

Stage 4 Phase 3

- Construct the remaining storm sewer trunk line along the West and East Frontage Roads in accordance to the plans.
- The West and East Frontage Road traffic will remain in its existing condition except for when installing the storm sewer trunk line that crosses the East Frontage Road near 995+30 'VR' RT.

- Close the eastbound Verona Road East Frontage Road to through traffic at Britta Parkway and temporarily detour traffic on Britta Parkway to Niemann Place to the West Beltline Frontage Road. Close the westbound West Beltline Frontage Road at Niemann Place and temporarily detour traffic on Niemann Place to Britta Parkway to the Verona Road East Frontage Road.
- Close the sidewalk on the east side of the Verona Road West Frontage Road at the storm sewer crossing location. Maintain access for pedestrian traffic while installing the storm sewer crossing.

Noise Wall N-13-0003 (2013/2014)

- Perform traffic control in accordance to the plans and standard detail drawings.

Military Ridge Overpass (2013/2014)

Stage 1

- Restrict CTH PD (McKee Road) eastbound and westbound traffic to one through travel lane during specified hours east of Verona Road utilizing median lane closures. Maintain two left-turn lanes and one right-turn lane for CTH PD (McKee Road) eastbound traffic. Maintain all eastbound and westbound turning movements for median opening at Station 129+25.
- During peak travel times, maintain existing through travel lanes and turn lanes open to traffic along CTH PD (McKee Road). Maintain all eastbound and westbound turning movements for median opening at Station 129+25.

Stage 2

- Restrict CTH PD (McKee Road) eastbound and west bound traffic to one through travel lane during specified times east of Verona Road utilizing outside lane closures. Maintain two left-turn lanes and one right-turn lane for CTH PD (McKee Road) eastbound traffic. Maintain all eastbound and westbound turning movements for median opening at Station 129+25.
- During peak travel times, maintain existing through travel lanes and turn lanes open to traffic along CTH PD (McKee Road). Maintain all eastbound and westbound turning movements for median opening at Station 129+25.
- See the utility section of these special provisions for required coordination and outage dates with ATC.

Mitigation Intersection Improvements (Various Locations - 2013/2014)

- All intersections will remain open during construction.
- The shoulders of the intersections will be closed during construction in accordance to Standard Detail Drawing (SDD) *Traffic Control, Work on Shoulder or Parking Lane, Undivided Roadway*.
- During daytime specified lane closure hours, traffic may be restricted to a single lane with the use of flaggers in accordance to SDD *Traffic Control for Lane Closure (Suitable for Moving Operations)*. Restriction to a single lane shall not be permitted on the weekends.
- Nighttime work will not be allowed at these intersections due to the close proximity of residences.

2013 Construction	
Seminole Highway, Yuma, and Nakoma	Seminole Highway and Sentinel Pass
CTH PD and Seminole Highway	Seminole Highway and Lacy Road
2014 Construction	
CTH M and CTH D (Fish Hatchery Road)	CTH D and Whalen Road
Whitney Way and Gilbert	CTH M and CTH PB

6. 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 two hours from the time notified.

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) 270-4351
City of Fitchburg Fire/EMS Department, Chief Randall Pickering	(608) 278-2980
City of Fitchburg Public Works Director, Paul Woodard	(608) 270-4260
City of Madison Police Department, Chief Noble Wray	(608) 266-4664
City of Madison Fire/EMS Department, Steven Davis	(608) 266-4420
City of Madison Engineering, Rob Phillips	(608) 266-4751
Dane County Department of Public Works, Pamela Dunphy	(608) 266-4036
State Patrol, Captin Charles R. Teasdale	(608) 846-8500
Wisconsin Department of Transportation, Jeff Gustafson	(608) 516-6400

7. Hauling Restrictions.

Conduct operations in such a manner that will cause a minimum of inconvenience to the free flow of vehicles on roadways carrying side road traffic. Do not haul on local roads without prior approval from the appropriate jurisdiction.

Provide the necessary flagging and signing to control construction equipment movements when hauling across public roads. Do not impede traffic flow on the public roads during flagging operations.

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

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

Both the department and city of Madison personnel will inspect construction of sanitary sewer and water main under this contract. However, construction staking, testing, and final acceptance of the sanitary sewer and water main construction will be by the city of Madison.

105-001 (20061009)

9. General Provisions for City of Madison Municipal Utilities (Sanitary Sewer and Water Main).

Perform work in accordance to these special provisions, the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction 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.

10. General Provisions for Storm Sewer.

Construct all storm sewer in accordance 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 shall include all information obtained from the bid item Utility Line Opening (ULO).

Seal the joints for reinforced concrete pipe with either mastic or internal rubber gaskets as described in subsection 607.2 of the standard specifications. 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 in accordance to subsection 305.2.1 of the standard specifications or when water is encountered, size No. 1 coarse concrete aggregate in accordance to standard spec 501.2.5.4. Bedding for pipe shall be included with the installation costs of the round or elliptical pipe.

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 1/4-Inch in accordance to standard spec 305.2.1 or when water is encountered, size No. 1 coarse concrete aggregate in accordance to standard spec 501.2.5.4. Bedding for structures shall be 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.

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 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 Madison personnel. Contact Jim Martinson, city of Madison Department of Public Works at (608) 267-1973 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 Madison does not pickup.

11. General Provisions for Madison Sanitary Sewer.

Utility Standard Specifications

Perform work in accordance to these provisions and City of Madison Standard Specifications for Public Works Construction-Latest Edition.

Work Sequence

Contact the identified person below 10 working days prior to starting work on the sanitary sewer and provide a schedule of operations.

Construct sanitary sewer main and laterals in stages in accordance to the traffic control plan and in proper coordination with construction for activities adjacent to the sanitary sewer main.

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

Shop Drawings and Samples

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

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

Contractor's responsibilities include:

- Review shop drawings and samples prior to submittal;
- Determine and verify field measurements, field construction criteria, catalog numbers and similar data, and conformance with specifications;
- Coordinate each submittal with requirements of work and of Special Provisions;
- Notify City Engineer or City Engineer's Representative, in writing, at time of submittal of deviations in submittals from requirements of Special Provisions.

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

Provide shop drawings containing the following:

- A. Date of submittal and dates of previous submittals.
- B. Project title and number.
- C. Contract identification.
- D. Names of contractor, supplier, and manufacturer.
- E. Identification of product, with identification numbers, and drawing and specification section numbers.
- F. Field dimensions clearly identified.
- G. Identification of details required on drawings and in specifications.
- H. Manufacturer and model number (give dimensions and provide clearances).
- I. Relation to adjacent or critical features or work or materials.

- J. Applicable standards, such as ASTM, and identification of deviations from contract documents.
- K. Source of samples and material properties.
- L. Identification of revisions on resubmittals.
- M. Eight-inch and three-inch blank space for contractor and City Engineer stamps.
- N. Contractor's stamp, signed, certifying to review of submittal, verification of products, field measurement, field construction criteria, and coordination of information with submittal with requirements of work and Special Provisions.

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

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

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

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

Provide complete copies of required submittals as follows:

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

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

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

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

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

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

All City of Madison manhole castings from removed and abandoned structures shall be delivered to City Engineering's Service Building, 1600 Emil Street, Madison, WI 53713.

In accordance to the City of Madison Standard Specifications for Public Works Construction – Latest Addition, “Pipe to be removed that is in the same trench as a new pipe shall not be compensated as remove pipe and shall be considered to be incidental to the new pipe installation.”

12. General Provisions for city of Madison Water Main.

Utility Standard Specifications

Perform work in accordance to these provisions and City of Madison Standard Specifications for Public Works Construction-Latest Edition.

Work Sequence

Contact the identified person below 10 working days prior to starting work on the water main and provide a schedule of operations.

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

As construction staging and sequence allows, disinfect the new water mains. The City of Madison Water Utility will flush and test all newly installed water mains. Coordinate as necessary with the City of Madison Water Utility 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.

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 or bulkheaded with concrete, 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.

Existing Water Service Laterals

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

Location of Existing Facilities

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

Testing and Acceptance

Submit testing results as required by the City of Madison Standard Specifications for Public Works Construction-Latest Edition or as required by the City Engineer or City Engineer's Representative. Final acceptance of water main, backfill materials, bedding, and concrete for plugs will come from the City Engineer or City Engineer's Representative.

Allow the city of Madison to sample/test materials as requested.

Provide complete copies of required submittals as follows:

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

Deliver required copies of submittals and testing results to Adam Wiederhoeft, City of Madison Water Utility, 119 East Olin Avenue, Madison, WI 53713.

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

In accordance to the City of Madison Standard Specifications for Public Works Construction – Latest Addition, “Pipe to be removed that is in the same trench as a new pipe shall not be compensated as remove pipe and shall be considered to be incidental to the new pipe installation.”

13. Project Communication Enhancement Effort.

Use the Project Communication Enhancement Effort (PCEE) tools 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 PCEE Manual available at the department’s Highway Construction Contract Information (HCCI) web site at:

<http://roadwaystandards.dot.wi.gov/standards/admin/pcee-user-manual.doc>

105-005 (20090901)

14. Holiday and Special Event Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying USH 12/14/18/151 and associated ramps, USH 18/151, CTH PD, Seminole Highway, West Beltline Frontage Road, and all local roads included in the contract, and entirely clear the traveled way and shoulders of such portions of the roadways of equipment, barricades, signs, lights and any other material that might impede the free flow of traffic during the following holiday and special event periods:

- Midwest Horse Fair, April 19-21, 2013: From 3:00 PM the Friday (the first day) of the event to 9:00 PM on the Sunday (the last day) of the event;
- Memorial Day Holiday: From noon Friday, May 24, 2013 to 5:00 AM Tuesday, May 28, 2013 (this duration includes the Bratfest event);
- Dane County E-Waste Recycle Day: Date pending. Previously has been held on a Saturday in the middle of June.
- Elver Park Fireworks: Date pending
- Rhythm and Booms: Date pending.
- Independence Day Holiday: From noon Wednesday, July 3, 2013 to 5:00 AM Monday, July 8, 2013.
- Dane County Fair, July 17-21, 2013: From 9 AM on the Wednesday (the first day) of the event to 9 PM on the Sunday (the last day) of the event.
- Labor Day Holiday: From noon Friday, August 30, 2013 to 5:00 AM Tuesday, September 3, 2013.
- Ironman Competition, September 8, 2013: From 4:00 AM the day of the event to 11:59 PM the day of the event.
- World Dairy Expo, October 1-5, 2013: From 5:00 AM the Tuesday (the first day) of the event to 10:00 PM on the Saturday (the last day) of the event.

- Thanksgiving Day Holiday: From noon Wednesday, November 27, 2013 to 5:00 AM Monday, December 2, 2013.
- Christmas Day Holiday: From noon Friday, December 20, 2013 to 5:00 AM Monday, December 30, 2013.
- Midwest Horse Fair, April 11-13, 2014: From 3:00 PM the Friday (the first day) of the event to 9:00 PM on the Sunday (the last day) of the event.
- Easter Holiday: From noon Friday, April 18, 2014 to 5:00 AM Monday, April 21, 2014.
- Memorial Day Holiday: From noon Friday May 23, 2014 to 5:00 AM Tuesday, May 27, 2014.
- Dane County E-Waste Recycle Day: Date pending. Previously has been held on a Saturday in the middle of June.
- Rhythm and Booms: Date pending.
- Elver Park Fireworks: Date pending.
- Independence Day Holiday: From noon Thursday, July 3, 2014 to 5:00 AM Monday, July 7, 2014.
- Dane County Fair: Date pending.

Wisconsin Badgers Football Home Games: From five hours before the scheduled kickoff time to five hours after the end of the game. Home games are scheduled on the following dates:

- Saturday, August 31, 2013
- Saturday, September 7, 2013
- Saturday, September 21, 2013
- Saturday, October 12, 2013
- Saturday, November 9, 2013
- Saturday, November 16, 2013
- Saturday, November 30, 2013

Work is permitted on bridges B-13-664 over the Beltline and B-13-666 over CTH PD during Wisconsin Badgers Football Home Games and non-holiday special events so long as traffic is not impeded on any portion of the highway carrying USH 12/14/18/151 and associated ramps, USH 18/151 and CTH PD.

For events identified that have dates listed as pending, confirm dates for these events with the engineer as soon as practicable. The department will determine the dates and times for work restrictions associated with these events. The restrictions are not anticipated to exceed three working days and may overlap with other identified events above. The department will not grant time extensions to the interim or final completion dates specified elsewhere in these special provisions for these work restrictions.

15. Utilities.

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

There are known utility facilities located near or within the project area. There are known utility adjustments required for the construction of this project. The contractor shall coordinate its construction activities by calling Digger's Hotline and/or a direct call to the utilities known to have facilities in the area as required by state statutes. The contractor shall use caution to ensure the integrity of underground facilities and maintain OSHA code clearances from overhead facilities at all times.

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

Some of the utility work described below is dependent on prior work being preformed by the contractor at a specific site. In such situations the contractor shall provide the 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 contractor expects to complete their work and when the site will be available to the utility. The contractor shall follow up with a confirmation notice to the engineer and affected utility a minimum of 5 working days before the site will be ready for the utility to being work. When utility adjustments become necessary during construction, the utility owner will make the required adjustments in coordination with the contractor's construction operation. The contractor shall notify the affected utilities 5 working days prior to the start of construction to coordinate the adjustments with the contractor.

Bidders should note that some existing and new utility facilities will remain within the excavation areas throughout the project. Close coordination will be needed between the contractor and the utility companies to prevent project delays and utility facility damage. Contractor potholing will be required to determine utility facility depths.

Alliant Energy (electric) has overhead and underground facilities within the project area. Alliant anticipates their electrical facility relocation work will take place beginning May 15, 2013 and is estimated to take 15 working days to complete. A portion of the relocation work for these facilities will be dependent on prior work being performed by the contractor at a specific site. Existing facility locations and anticipated proposed relocations are as follows:

Military Ridge Path Overpass (B-13-666) and Retaining Walls (R-13-242 and R-13-243)

Existing overhead facilities occur south of CTH PD (McKee Road) from approximately Station 125+29 PD to the west with an overhead crossing of CTH PD (McKee Road) at approximately Station 125+65 PD. The existing facilities are anticipated to be energized during construction and remain in place.

CTH PB and CTH M Intersection

Existing underground facilities occur east and west of CTH PB from approximately Station 100+50 PB to the south with two underground crossings of CTH M at approximately Station 99+40 MPB and Station 101+50 MPB. Existing underground facilities occur north of CTH M from approximately Station 92+00 MPB LT to Station 101+50 MPB LT. Underground crossings of CTH PB occur at approximately Station 97+80 PB and Station 100+50 PB. Existing light poles occur at approximately Station 99+50 PB and Station 100+50 PB. The existing lighting will remain until removal is needed to avoid construction conflicts. Contact Alliant Energy a minimum of 15 working days prior to the date that removal of the existing lighting is necessary.

CTH M and CTH D (Fish Hatchery Road) Intersection

Existing overhead facilities occur south of CTH M at approximately Station 95+25 MFH to the east through the project area with an overhead crossing of Fish Hatchery Road at approximately Station 99+50 FHM and two overhead crossings of CTH M at approximately Station 95+50 MFH and Station 105+75 MFH. Existing overhead facilities occur west of Fish Hatchery Road from approximately Station 102+00 FHM LT to the south through the project area with two overhead crossings at approximately Station 102+00 FHM and Station 96+00 FHM. Existing overhead facilities occur east of Fish Hatchery Road from approximately Station 100+75 RT to the north through the project area with a diagonal overhead crossing of Fish Hatchery Road from approximately Station 100+75 FHW RT to Station 99+50 FHW LT. The existing power poles located at approximately Station 99+47 FHM LT, Station 100+76 FHM RT, Station 102+12 FHM RT, Station 103+65 FHM RT, Station 104+42 FHM LT, Station 105+32 FHM LT, 100+76 FHM RT, and Station 98+85 MFH will be replaced and relocated to approximately Station 99+35 FHM LT, Station 102+19 FHM RT, Station 104+42 FHM LT, Station 105+87 FHM RT, Station 98+85 MFH LT. The existing guy at approximately Station 97+95 FHM LT will be removed. New underground electric facilities will run near the right-of-way from approximately Station 98+50 MFH RT to Station 99+35 FHM LT and cross Fish Hatchery Road at approximately Station 99+35 FHM. From Station 99+35 FHM RT the underground facilities continue north near the right-of-way to approximately Station 101+50 MFH RT with a crossing of CTH M at approximately Station 101+50 MFH where the facility continues north along the right-of-way to approximately Station 102+19 FHM RT. Contact Alliant Energy a minimum of 15 working days after grading is completed at the intersection. Other facilities are anticipated to remain in place.

Coordinate operations with Alliant Energy. Contact Jeffery Nelson (608) 845-1148.

American Transmission Company (ATC) (electric) has overhead and underground facilities within the project area. Existing facility locations and anticipated proposed relocations are as follows:

USH 12/14 - Whitney Way to Gammon Road, Westbound On Ramp (L Line), and Whitney Way Bike Path (WP Line)

An existing underground 69 kV line occurs north of USH 12/14 from approximately Station 1059+00 to the west through the project area. An existing overhead 345 kV facility occurs along USH 12/14 through the project area. The existing facilities are anticipated to remain in place.

Storm Sewer Crossing of USH 12/14 and Detention Basin B

An existing 345 kV overhead line occurs along the north side of USH 12/14 from approximately Station 1096+05 LT to Station 1121+30 LT where it crosses USH 12/14 to approximately Station 1124+35 RT. The overhead line continues along the south side of USH 12/14 east of the crossing. The 345 kV overhead line is anticipated remain in place.

An existing underground 69 kV oil cooled electric line occurs crossing USH 12/14 at approximately Station 1125+65. The underground 69 kV line is anticipated to remain in place.

Contact ATC a minimum of 2 weeks prior to beginning work to facilitate locating the underground electric line and 1 week prior to exposing the underground electric line. Use extreme caution when exposing the underground electric line. Backfill the excavation around the proposed storm sewer within 2 feet of the underground electric line with a material approved by ATC.

Verona Road Overlay/Widening (VR Line), Trunk Line Storm Sewer, Detention Basin A, and Retaining Wall R-13-204

An existing underground 69 kV oil cooled electric line is located running parallel and east of the Southwest Commuter Bike Path. The underground 69 kV line is anticipated to remain in place.

Contact ATC a minimum of 2 weeks prior to beginning work to facilitate locating the underground electric line. ATC underground electric facilities shall be adequately protected using mats or steel road plating during all work activities positioned over the underground electric facilities. When construction equipment of substantial size and weight is positioned over the underground electric line the entire area under the equipment shall be reinforced using appropriate construction matting to equalize the weight. Take any and all precautions to avoid soil compaction, undermining, and any other circumstances that would cause damage to the ATC underground electric line. ATC has manholes west of Detention Basin

A that shall not be covered with potentially stockpiled material from the Detention Basin A excavation.

Freeport Road

An existing underground 69 kV oil cooled electric line is located running parallel and east of the Southwest Commuter Bike Path. This underground electric line is anticipated to remain in place. See above for requirements for working near the underground electric line.

Seminole Highway Eastbound On-Ramp (S Line), Frontage Road (SF Line), and USH 12/14/18/151 Auxiliary Lane

ATC has a 345 kV overhead line south of USH 12/14/18/151 through the project area. The 345 kV overhead line is anticipated to remain in place.

Seminole Highway Bridge and Approaches (Structure B-13-664) and Retaining Walls (R-13-235 and R-13-236)

An existing 345 kV overhead line occurs south of USH 12/14/18/151 through the project area. The line is over the south abutment work area for Structure B-13-664. The 345 kV overhead line is anticipated to remain in place.

ATC will provide an outage of its overhead facilities from September 21, 2013 at 6 AM to September 22, 2013 at 6 PM to allow the contractor to drive piling and drive the anchor wall for the south abutment at B-13-664. ATC will provide an additional outage of its overhead facilities from October 4, 2013 at 8 PM to October 6, 2013 at 6 PM to allow the contractor to set the bridge girders. ATC's overhead facilities will be energized during the remainder of the work at this site. Coordinate with ATC for all operations anticipated to be within 50 feet of the energized facility.

Noise Wall N-13-0003

An existing 345 kV overhead line occurs approximately 60 feet north of proposed noise wall N-13-0003. The overhead 345 kV line is anticipated to remain in place and energized during construction of N-13-0003. Coordinate with ATC for all operations anticipated to be within 50 feet of the energized facility.

Military Ridge Path Overpass (B-13-666) and Retaining Walls (R-13-242 and R-13-243)

Existing 138 kV and 69 kV overhead lines occur together on the same structures south of CTH PD (McKee Road) through the project area. The existing structure located at approximately Station 125+29 PD RT will be relocated to approximately Station 125+39 PD RT. The existing structure at approximately Station 125+29 PD RT will be topped and remain in use by Alliant Energy. The existing structure located at approximately Station 127+74 PD RT will be removed and relocated to approximately Station 127+84 PD RT. Other facilities are anticipated to remain in place.

ATC will provide a 5 day outage of its overhead facilities from November 18, 2013 to November 22, 2013 to perform its relocations. ATC will require 2 days to perform its relocations. Coordinate with ATC to place the prefabricated steel trusses for structure B-13-666 during the remaining 3 days of this outage. ATC's overhead facilities will be energized during the remainder of the work at this work site.

CTH PB and CTH M Intersection

Existing 138 kV and 69 kV overhead lines occur together on the same structures north of CTH M through the project area. The 138 kV and 69 kV overhead lines are anticipated to be energized during construction and to remain in place.

CTH M and CTH D (Fish Hatchery Road) Intersection

An existing overhead 69 kV line occurs crossing CTH M at approximately Station 95+00 MFH. The overhead 69 kV crossing is anticipated to be energized during construction and to remain in place.

CTH D (Fish Hatchery Road) and Whalen Road Intersection

An existing 138 kV overhead line occurs east of Fish Hatchery Road from approximately Station 99+19 FHW RT to the south through the project area. From Station 99+19 FHW the line crosses the intersection diagonally to the north side of Whalen Road at approximately Station 98+90 WFH LT where the line continues west to approximately Station 95+85 WFH LT. From this point the overhead line continues to the north. The 138 kV overhead line is anticipated to be energized during construction and to remain in place.

Contact ATC 2 weeks prior to working near ATC facilities. Coordinate operations with ATC. Contact Matt Dopp (608) 225-5983.

AT&T (communication) has underground and overhead communication facilities within the project area. AT&T anticipates their communication facility relocation work will take place beginning May 1, 2013 and is estimated to be completed prior to construction. Existing facility locations and anticipated proposed relocations are as follows:

Verona Road Overlay/Widening (VR Line), Trunk Line Storm Sewer, Detention Basin A, and Retaining Wall R-13-204

Multiple existing underground facilities occur north of USH 18/151 (Verona Road) from approximately Station 973+50 VR LT to Station 1000+00 VR LT with a crossing of USH 18/151 (Verona Road) at approximately Station 992+50 VR. Existing underground facilities occur from approximately Station 992+00 VR LT to the west. The existing crossing of USH 18/151 (Verona Road) and the facilities from approximately Station 992+00 VR LT to the west are anticipated to remain in place.

AT&T will abandon existing underground facilities from Station 973+50 VR LT to Station 986+44 VR LT. From Station 986+44 VR LT to Station 995+20 VR LT, AT&T will vacate existing MG&E poles and follow the route of the MG&E underground electric facilities as described elsewhere in this special provision.

AT&T will abandon their existing facilities in place along USH 18/151 (Verona Road) from Station 992+00 VR LT to the manhole at Station 997+67 VR LT. The manholes at Station 992+00 VR LT (5 total castings) and 997+67 VR LT will remain in place.

AT&T will adjust their facilities in potential conflict with the storm sewer trunk line at Station 992+85 VR RT during construction. Contact AT&T two weeks prior to working near the potential conflict. The potential conflict is anticipated to be resolved within one week.

Freeport Road

Multiple existing underground facilities occur east of Freeport Road from approximately Station 19+00 FP RT to Station 21+50 FP RT with a crossing of Freeport Road from approximately Station 17+00 FP LT to Station 19+00 FP RT. The existing facility then crosses Freeport Road from approximately Station 17+00 FP LT to Station 14+50 FP RT. From Station 14+50 FP RT the facility continues northeast to a power pole at approximately Station 11+70 FP LT where the facility is then overhead and crosses Freeport Road at approximately Station 11+43 FP. Existing underground facilities occur from approximately Station 14+50 FP RT to the south.

The existing underground facilities from approximately Station 14+50 FP RT to the south will be removed. The facilities crossing Freeport Road from Station 17+00 FP LT to Station 19+00 FP RT will be abandoned as described above using the VR stationing. The facilities under Freeport Road from Station 17+00 FP LT to Station 14+50 FP RT will remain in place.

AT&T will reconstruct the manhole structure at Station 14+50 FP RT and provide new facilities to the north under Freeport Road. Potential conflicts may occur with the existing and proposed water main. Contact AT&T two weeks prior to working in this area. Each potential conflict is anticipated to be resolved within one working day.

Seminole Highway Eastbound On-Ramp (S Line), Frontage Road (SF Line), and USH 12/14/18/151 Auxiliary Lane

Multiple existing underground facilities occur north of West Beltline Frontage Road through the project area.

AT&T will resolve potential conflicts with the proposed MGS Guardrail along the West Beltline Frontage Road prior to construction. The manhole located at Station 76+90 SF LT will remain.

AT&T will adjust the manhole at Station 76+94 SF LT during construction. Contact AT&T two weeks prior to working near the manhole. The potential conflict is anticipated to be resolved within one working day.

AT&T will adjust the two manholes at Station 86+00 SF LT during construction. Contact AT&T two weeks prior to working near the manholes. The potential conflicts are each anticipated to be resolved within one working day.

Seminole Highway Bridge and Approaches (Structure B-13-664) and Retaining Walls (R-13-235 and R-13-236)

Existing underground facilities occur crossing Seminole Highway at approximately Station 8+64 SH.

AT&T does not anticipate conflicts with the facility at this location.

Warwick Way and Noise Wall N-13-0002

Existing underground facilities occur east of Whenona Drive from approximately Station 52+00 WW LT to the north with two crossings of Warwick Way at approximately Station 51+00 WW and 52+00 WW. Existing underground facilities occur crossing USH 12/14/18/151 at approximately Station 1157+69.

The existing facilities are anticipated to be relocated during construction. Potential conflicts exist with the proposed storm sewer. Contact AT&T two weeks prior to working near this area. The potential conflict is anticipated to be resolved within four working days.

Noise Wall N-13-0003

Existing underground facilities occur west of Niemann Place and north of Britta Parkway through the project area.

Potential conflicts will be resolved prior to construction.

Seminole Highway and Lacy Road Intersection

Existing underground facilities occur east of Seminole Highway through the project area with a crossing of Lacy Road at approximately Station 100+67 LR and two crossings of Seminole Highway at approximately Station 99+03 SL and Station 100+98 SL. Existing underground facilities occur north of Lacy Road from approximately Station 100+69 LR LT to the east and from approximately Station 98+67 LR LT to west with two crossings of Lacy Road at approximately Station 97+71 LR and 98+67 LR. Existing underground facilities exist south of Lacy Road from approximately Station 98+67 LR to Station 99+60 LR. Existing facilities occur west of Seminole Highway from approximately Station 101+00 LR to the north.

The existing facilities west of Seminole Highway will be relocated west of the east right-of-way from approximately Station 100+85 SL RT to Station 108+00 SL RT, where the facility will cross Seminole Highway and connect to the existing facilities west of Seminole Highway. The pedestals at Station 99+06 SL RT and 100+94 SL RT will be adjusted during construction. Contact AT&T two weeks prior to working near the pedestals. The pedestals are each anticipated to be adjusted within two working days. Other existing facilities are anticipated to remain in place.

Seminole Highway and Sentinel Pass Intersection

Existing overhead facilities occur west of Seminole Highway through the project area attached to MG&E Electric poles with an overhead crossing of Sentinel Pass at approximately Station 99+75 S. The existing overhead facilities will be relocated to the new MG&E poles as described elsewhere in this special provision.

Seminole Highway/Yuma Drive and Nakoma Road Intersection

Existing underground facilities occur under the southbound travel lane of Nakoma Road through the project area. Existing underground facilities occur west of Seminole Highway through the project area with a crossing of Seminole Highway and Nakoma Road from approximately Station 98+50 SN LT to Station 100+50 N LT. Existing underground facilities occur north of Yuma Drive from approximately Station 100+25 SN to the west. The existing facilities at approximately Station 100+30 SN RT will be relocated during construction to avoid conflicts with traffic signal pole SB-7. Contact AT&T five days prior to construction. The relocation is anticipated to take two working days to complete. Other existing underground facilities are anticipated to remain in place.

Coordinate operations with AT&T. Contact Carol Anason (608) 252-2385.

CenturyLink (communication) has underground communication facilities within the project area as follows:

Verona Road Overlay/Widening (VR Line), Trunk Line Storm Sewer, Detention Basin A, and Retaining Wall R-13-204

Existing underground facilities occur south of the West Beltline Frontage Road from approximately Station 101+00 EE LT to the west with a crossing of Verona Road at approximately Station 997+75 VR. The existing facilities are anticipated to remain in place. Contact CenturyLink two weeks prior to work taking place in these areas.

Freeport Road

Existing underground facilities occur west of the Freeport Road from approximately Station 11+50 FP RT to Station 14+50 FP RT with a crossing of the Freeport Road at approximately Station 11+50 FP. The facilities are anticipated to be relocated prior to construction. Contact CenturyLink two weeks prior to work taking place in this area.

Seminole Highway Eastbound On-Ramp (S Line), Frontage Road (SF Line), and USH 12/14/18/151 Auxiliary Lane

Existing underground facilities occur along each of these roadways. The existing underground facilities are anticipated to remain in place. CenturyLink will adjust facilities as noted below.

CenturyLink has identified potential conflicts with its underground facilities and the proposed storm sewer construction at approximately Stations 80+71 SF, 83+50 SF, 86+50 SF and 89+32 SF. Potential conflicts will be re-aligned prior to construction. Contact CenturyLink two weeks prior to work taking place in these areas. If additional conflicts are found during construction each potential conflict is anticipated to be resolved within one working day.

CenturyLink has identified a potential conflict with its underground facilities and the proposed excavation at approximately Station 1180+50 S to 1182+00 S, and 1170+00 to 1179+00. Contact CenturyLink two weeks prior to work taking place in these areas. The potential conflicts will be resolved during construction and are anticipated to be resolved within five working days.

Noise Wall N-13-0003

Existing buried facilities occur west of Niemann Place with a crossing of Britta Parkway at approximately Station 18+05 BR. Existing underground facilities occur south of Britta Parkway from approximately Station 18+00 BP RT to the west. The existing facilities are anticipated to remain in place. If the underground facilities are found to be in conflict with the construction, the existing facilities will be adjusted during construction as necessary. Contact CenturyLink two weeks prior to construction of noise wall N-13-0003. The relocation is anticipated to take 1 working day to complete.

Coordinate operations with CenturyLink. Contact Kyle Tostenson (318) 417-2768.

Charter Communications (communication) has underground and overhead communication facilities within the project area. Charter anticipates their communication facility relocation work will take place beginning March 17, 2013 and is estimated to take 90 working days to complete. Existing facility locations and anticipated proposed relocations are as follows:

Freeport Road

Existing underground facilities occur along the west edge of Freeport Road from approximately Station 15+00 FP LT to Station 18+00 FP LT with a crossing of the Freeport Road at approximately Station 15+00 FP where the facility goes to overhead attached to MG&E Electric poles and continues as overhead to the northeast, southwest, and south. An existing overhead crossing of Freeport Road occurs at approximately Station 11+43 FP. The existing underground facilities are anticipated to remain in place. Additional new underground facilities will be

placed from approximately Station 14+52 FP RT to a new MG&E Electric pole at approximately Station 14+41 FP LT. The existing overhead facilities will be relocated to the new MG&E Electric poles as described elsewhere in this special provision.

Seminole Highway Eastbound On-Ramp (S Line), Frontage Road (SF Line), and USH 12/14/18/151 Auxiliary Lane

Existing underground facilities occur south of the West Beltline Highway Frontage Road through the project area. The existing underground facilities will be abandoned in place and be relocated jointly with MG&E Electric underground approximately 5 feet north of the south right-of-way. Existing overhead facilities occur from approximately Station 70+95 SF RT to Station 71+72 SF RT. The existing overhead facility is anticipated to remain in place.

Seminole Highway Bridge and Approaches (Structure B-13-664) and Retaining Walls (R-13-235 and R-13-236)

Existing overhead facilities occur attached to MG&E Electric poles along the east side of Seminole Highway through the project area. The existing overhead line is anticipated to remain in place.

Warwick Way and Noise Wall N-13-0002

An existing overhead crossing occurs along MG&E Electric poles at approximately Station 50+75 WW. Charter will follow the MG&E Electric relocation plans for the existing overhead crossing of Warwick Way. A new joint underground crossing of USH 12/14/18/151 will occur at approximately Station 1162+80 with MG&E Electric.

Noise Wall N-13-0003

Existing overhead facilities occur attached to MG&E poles west of Niemann Place and north of Britta Parkway. The existing overhead facilities will be relocated and attached to new MG&E Electric poles as described elsewhere in this special provision.

CTH PB and CTH M Intersection

Existing underground facilities occur north of CTH M through the project area with a crossing of CTH PB at approximately Station 100+75 PB. The existing underground facilities are anticipated to remain in place.

CTH M and CTH D (Fish Hatchery Road) Intersection

Existing underground facilities occur east of Fish Hatchery Road through the project area with a crossing of CTH M at approximately Station 100+37 MFH. The existing underground facilities from Station 96+13 FHM RT to Station 98+58 FHM RT and from Station 100+70 FHM RT to Station 105+70 FHM RT will be relocated to approximately 1 foot west of the east right-of-way. The existing pedestal at approximately Station 98+60 FHM RT will be removed and relocated to approximately Station 98+43 FHM RT. The existing underground facilities

from approximately Station 98+58 FHM RT to Station 100+70+00 FHM RT are anticipated to remain in place. The existing underground crossing of CTH M at approximately Station 100+37 MFH will be abandoned in place and relocated to cross CTH M at approximately Station 101+50 MFH. The existing overhead facilities are anticipated to remain in place. Existing underground facilities occur north of CTH M from approximately Station 100+75 MFH LT to Station 105+50 MFH LT. The existing underground facilities north of CTH M are anticipated to remain in place. Existing underground facilities occur west of Fish Hatchery Road from approximately Station 96+00 FHM LT to the north with a crossing of CTH M at approximately Station 99+50 MFH. Existing overhead facilities occur west of Fish Hatchery Road from approximately Station 96+07 FHM to the north. The existing underground facilities west of Fish Hatchery Road from approximately Station 96+07 FHM to the north out of the project area will be abandoned in place and relocated to the new conduit east of Fish Hatchery Road.

CTH D (Fish Hatchery Road) and Whalen Road Intersection

Existing overhead fiber optic occurs from Station 97+55 FHW RT to the south. The existing overhead fiber optic will be relocated underground in new conduit along the right-of-way east of Fish Hatchery Road. Existing underground facilities occur east of Fish Hatchery Road through the project area with a crossing of Whalen Road at approximately Station 100+40 WFH. The existing underground coaxial facility from Station 97+55 FHW RT to Station 100+30 FHW RT will be abandoned in place and relocated to the existing underground fiber optic conduit east of Fish Hatchery Road. The existing underground conduits from Station 99+50 FHW RT to Station 99+70 FHW RT will be lowered approximately 8 feet. The existing facilities east of Fish Hatchery Road from approximately Station 100+30 FHW to the north are anticipated to remain in place. Existing underground facilities occur south of Whalen Road from approximately Station 96+00 WFH RT to Station 100+40 WFH RT with a crossing of Fish Hatchery Road at approximately Station 99+50 FHW and a crossing of Whalen Road at approximately Station 98+40 WFH. The existing underground fiber optic facilities south of Whalen Road are anticipated to remain in place.

Seminole Highway and Lacy Road Intersection

Existing overhead facilities occur south of Lacy Road attached to MG&E Electric poles through the project area with a crossing of Seminole Highway at approximately Station 99+60 SL. Existing overhead facilities continue attached to MG&E Electric poles from approximately Station 99+60 SL to the north with a crossing of Lacy Road at approximately Station 99+70 LR. The existing overhead facilities will be relocated and attached to the proposed MG&E Electric poles as described elsewhere in this special provision.

Seminole Highway and Sentinel Pass Intersection

Existing overhead facilities occur west of Seminole Highway from approximately Station 102+65 SS LT to the north. Existing underground facilities occur from power pole at approximately 102+65 SS LT to the west. The existing overhead and underground facilities are anticipated to remain in place.

Coordinate operations with Charter Communications. Contact Glen Jakusz (608) 274-3822 ext. 6657.

City of Fitchburg (lighting) has light poles and associated underground electric within the project area. Relocation of the light poles and associated underground electric will be accomplished by the contractor as part of contract 1206-07-77 and 1206-07-83. Existing facility locations and anticipated proposed relocations are as follows:

Military Ridge Path Overpass (B-13-666) and Retaining Walls (R-13-242 and R-13-243)

Existing light poles and underground electric occur in the median of CTH PD (McKee Road) at the Military Ridge Path crossing. The existing light poles and underground electric will be relocated by the contractor as part of contract 1206-07-83.

Seminole Highway and CTH PD (McKee Road) Intersection

Existing light poles and underground electric occur in the median of CTH PD from approximately Station 91+00 PD to Station 95+00 PD and from approximately Station 97+30 PD to Station 99+25 PD. The existing underground electric will be relocated by the contractor as part of contract 1206-07-77.

Coordinate operations with city of Fitchburg. Contact Holly Powell (608) 270-4263.

City of Fitchburg (sanitary sewer) has underground facilities within the project area at the following locations:

Military Ridge Path Overpass (B-13-666) and Retaining Walls (R-13-242 and R-13-243)

Existing underground facilities occur west of the Military Ridge Path from approximately Station 100+23 MR to the north with a crossing of the Military Ridge Path at approximately Station 100+18 MR. The existing underground facilities are anticipated to remain in place.

Seminole Highway and Sentinel Pass Intersection

Existing underground facilities occur under the center of Sentinel Pass from approximately Station 99+75 S to the west. Existing underground facilities also occur from approximately Station 100+10 SS to the south. The existing underground facilities are anticipated to remain in place.

Coordinate operations with city of Fitchburg. Contact Holly Powell (608) 270-4263.

City of Fitchburg (water) has underground facilities within the project limits at the following locations:

Military Ridge Path Overpass (B-13-666) and Retaining Walls (R-13-242 and R-13-243)

Existing underground facilities occur under the westbound travel lane of CTH PD (McKee Road) with a crossing of the Military Ridge Path at approximately Station 100+25 MR. The existing underground facilities are anticipated to remain in place.

Seminole Highway and Sentinel Pass Intersection

Existing underground facilities occur under the westbound travel lane of Sentinel Pass from approximately Station 99+75 S LT to the west. Existing underground facilities occur west of Seminole Highway from approximately Station 100+15 SS LT to the south. The existing underground facilities are anticipated to remain in place.

Coordinate operations with city of Fitchburg. Contact Holly Powell (608) 270-4263.

City of Madison (sanitary sewer) has underground facilities within the project area. Relocation of the sanitary sewer will be accomplished by the contractor as part of contract 1206-07-81. Existing facility locations and anticipated proposed relocations are as follows:

Whitney Way Westbound On-Ramp (L Line)

An existing underground crossing of the ramp occurs at approximately Station 74+50 L. The existing underground facility is anticipated to remain in place.

Whitney Way Bike Path (WP Line)

Existing underground facilities occur north of the Whitney Way Bike Path from approximately Station 64+50 WP LT to Station 71+75 WP LT with a crossing of the Whitney Way Bike Path at approximately Station 71+75 WP. The existing underground facilities are anticipated to remain in place. See plans for sanitary sewer manhole adjustment, replacement and reconstruction locations.

Verona Road Overlay/Widening (VR Line), Trunk Line Storm Sewer, Detention Basin A, and Retaining Wall R-13-204

Existing underground facilities occur west of USH 18/151 (Verona Road) from approximately Station 986+25 VR LT to Station 987+27 VR LT and from approximately Station 988+92 VR LT to Station 996+00 VR LT with a crossing of USH 18/151 (Verona Road) at approximately Station 986+25 VR. Abandoned in place existing facilities occur west of USH 18/151 (Verona Road) from approximately Station 982+86 VR LT to Station 986+25 VR LT. Existing underground facilities occur east of USH 18/151 (Verona Road) from approximately Station 980+63 VR RT to Station 991+30 VR RT. An existing

underground crossing of USH 18/151 (Verona Road) occurs at approximately Station 976+87 VR. Existing underground facilities occur along the west side of Detention Basin A. The existing underground facilities are anticipated to remain in place. See plans for sanitary sewer manhole adjustment, replacement and reconstruction locations.

Freeport Road

Existing underground facilities occur along the west side of Freeport Road from approximately Station 10+50 FP RT to Station 14+50 FP RT with a crossing of Freeport Road at approximately Station 14+50 FP where the facility continues to the south. Existing underground facilities cross Freeport Road at approximately Station 19+94 FP. The existing underground facilities are anticipated to remain in place. See plans for sanitary sewer manhole adjustment, replacement and reconstruction locations.

Warwick Way and Noise Wall N-13-0002

Existing underground facilities occur west of Warwick Way from approximately Station 51+10 WW RT to the north. Existing underground facilities occur north of Warwick Way from approximately Station 52+40 WW LT to the east. Existing underground facilities are anticipated to remain in place. See plans for sanitary sewer manhole adjustment, replacement and reconstruction locations.

Noise Wall N-13-0003

Existing underground facilities cross noise wall N-13-0003 at approximately Station 121+78 EE. An existing abandoned in place underground facility crosses noise wall N-13-0003 at approximately Station 122+27 EE. The existing underground facility crossing noise wall N-13-0003 at approximately Station 121+78 EE will be reconstructed by the contractor as part of contract 1206-07-83 and the crossing will remain at the same location. See plans for sanitary sewer manhole adjustment, replacement and reconstruction locations.

Seminole Highway and Sentinel Pass Intersection

Existing underground facilities occur west of Seminole Highway through the project area with a crossing of Sentinel Pass at approximately Station 99+75 SP. The existing underground facilities are anticipated to remain in place. See plans for sanitary sewer manhole adjustment, replacement and reconstruction locations.

Seminole Highway/Yuma Drive and Nakoma Road Intersection

Existing underground facilities occur east of Nakoma Road from approximately Station 98+00 N RT to Station 100+50 N RT with a crossing of Seminole Highway at approximately Station 99+70 SN. From Station 100+50 N RT the facility crosses Nakoma Road to approximately Station 100+85 N LT and continues north. Existing underground facilities occur east of Seminole Highway from approximately Station 99+75 SN to the south. The existing underground crossing of Seminole Highway will be abandoned in place and relocated to cross Seminole Highway at approximately Station 99+32 SN by the contractor as part

of contract 1206-07-83. The bid item Utility Line Opening (ULO) has been included in the contract for this work. The remaining existing underground facilities are anticipated to remain in place. See plans for sanitary sewer manhole adjustment, replacement and reconstruction locations.

Whitney Way and Gilbert Road Intersection

Existing underground facilities occur southeast of Whitney Way from approximately Station 99+20 W RT to the south. Existing underground facilities occur crossing Whitney Way from approximately Station 99+20 W RT to Station 101+46 W LT where the underground facility continues to the north. Existing underground facilities occur west of Whitney Way from approximately Station 98+75 W LT to Station 101+46 W LT. The existing underground facilities are anticipated to remain in place.

Coordinate operations with the City of Madison Engineering Division. Contact Mark Moder (608) 261-9250.

Frontier (communication) has underground communication facilities within the project area. Frontier anticipates their communication facility relocation work will take place beginning March 1, 2013 and is estimated to take 45 working days. Existing facility locations and anticipated proposed relocations are as follows:

CTH M and CTH D (Fish Hatchery Road) Intersection

Existing underground facilities occur west of Fish Hatchery Road through the project area with a crossing of CTH M at approximately Station 99+68 MFH. The existing underground facilities west of Fish Hatchery Road from approximately Station 94+19 FHM to Station 106+55 FHM will be replaced with two new cables approximately one foot off the existing right-of-way west of Fish Hatchery Road with an underground crossing of CTH M at approximately Station 99+68 MFH. The existing underground facilities will be abandoned in place. Existing underground facilities occur south of CTH M from approximately Station 99+65 MFH RT to the west. The existing underground facilities will be replaced approximately one foot off the right-of-way south of CTH M from approximately Station 95+23 MFH to Station 99+65 MFH. The existing underground facilities will be abandoned in place. Existing underground facilities occur north of CTH M from approximately Station 105+50 MFH LT to the east. The existing underground facilities will be replaced with two new cables approximately one foot off the right-of-way north of CTH M from approximately Station 100+50 MFH to Station 106+80 MFH. The existing underground facilities will be abandoned in place.

CTH D (Fish Hatchery Road) and Whalen Road Intersection

Existing underground facilities occur west of Fish Hatchery Road through the project area with a crossing of Whalen Road at approximately Station 99+00 WFH. The existing underground facilities will be replaced with two new cables approximately one foot off the right-of-way west of Fish Hatchery Road from

approximately Station 96+54 FHW to Station 108+25 FHW with an underground crossing of Whalen Road at approximately Station 99+53 WFH. The two new cables will be approximately eight feet off the right-of-way west of Fish Hatchery Road at approximately Station 99+48 FHM. The existing underground facilities will be abandoned in place. Existing underground facilities occur north of Whalen Road through the project area with a crossing of Fish Hatchery Road at approximately Station 100+50 FHW. The existing underground facilities will be replaced with two new cables approximately one foot off the right-of-way north of Whalen Road through the project limits with a crossing of Fish Hatchery Road at approximately Station 100+37 FHW. New underground cable will be placed approximately one foot off the right-of-way south of Whalen Road from approximately Station 98+65 WFH to Station 99+50 WFH with a crossing of Whalen Road at approximately Station 98+65 WFH.

Coordinate operations with Frontier. Contact Brian Van Ooyen (608) 837-1151.

Madison Gas and Electric (MG&E) (electric) has overhead and underground facilities within the project area. MG&E Electric anticipates their electric facility relocation work will take place beginning March 1, 2013 and is estimated to take 120 working days to complete. Existing facility locations and anticipated proposed relocations are as follows:

USH 12/14 - Whitney Way to Gammon Road, Westbound On Ramp (L Line), and Whitney Way Bike Path (WP Line)

Existing overhead facilities occur north of USH 12/14 from approximately Station 1023+20 to Station 1033+70 with overhead crossings of USH 12/14 at approximately Station 1020+22 and Station 1033+70. The existing overhead facilities are anticipated to remain in place.

Storm Sewer Crossing of USH 12/14 and Detention Basin B

Existing overhead facilities cross USH 12/14 at approximately Station 1125+50. North of USH 12/14 the overhead facility lie approximately between the two bike paths. The existing power poles and overhead facilities are anticipated to remain in place. Coordinate with MG&E Electric on holding the existing pole at approximately Station 1124+51 LT and Station 1125+23 LT during storm sewer removal near the pole.

Verona Road Overlay/Widening (VR Line), Trunk Line Storm Sewer, Detention Basin A, and Retaining Wall R-13-204

Existing overhead facilities occur west of USH 18/151 (Verona Road) from approximately Station 974+00 VR LT to Station 999+00 VR LT. The existing overhead facilities from Station 974+00 VR LT to Station 999+00 VR LT will be removed. Existing overhead facilities occur along the west side of the Southwest Commuter Path. The existing overhead facilities along the west edge of the Southwest Commuter Path are anticipated to remain in place. New underground electric will be located west of Verona Road near the existing right-of-way from approximately Station 986+41 VR LT to Station 989+99 VR LT with an

underground crossing of the Verona Road West Frontage Road at approximately Station 88+37 WN. The existing underground facilities west of Verona Road from approximately Station 985+80 VR to Station 986+41 VR will be abandoned in place.

Freeport Road

Existing overhead facilities occur west of Freeport Road through the project area. The existing overhead facilities west of Freeport Road are anticipated to remain in place. Existing overhead facilities occur north of Freeport Road from approximately Station 11+75 FP RT to Station 14+60 FP RT with crossings of the Freeport Road at approximately Station 11+60 FP, Station 14+46 FP and 14+60 FP. The existing power poles at approximately Station 11+70 FP RT and Station 14+52 FP RT will be removed. New power poles will be located at approximately Station 11+06 FP RT, Station 11+37 FP LT, Station 12+28 FP LT, Station 13+86 FP LT and Station 14+44 FP LT. Existing overhead facilities occur north of Freeport Road from approximately Station 17+43 LT to Station 21+50 FP LT. The existing overhead power poles north of Freeport Road at approximately Station 18+89 FP LT and Station 20+32 FP LT will be removed.

Seminole Highway Eastbound On-Ramp (S Line), Frontage Road (SF Line), and USH 12/14/18/151 Auxiliary Lane

Existing underground facilities occur south of the West Beltline Frontage Road from approximately Station 71+72 SF RT to the east through the project area and will be relocated approximately 5 feet north of the south right-of-way from approximately Station 71+72 SF RT to Station 1190+40 LT with a 5' by 7' pull box placed at approximately Station 81+00 SF. The existing underground facility will be abandoned in place. Existing overhead facilities occur from Station 70+94 SF RT to Station 71+72 SF RT and are anticipated to remain in place. Contact MG&E Electric one day prior to beginning work in the area to verify the abandoned cable is de-energized.

Seminole Highway Bridge and Approaches (Structure B-13-664) and Retaining Walls (R-13-235 and R-13-236)

Existing overhead facilities occur along the east side of the bridge through the project area. The existing power poles at approximately Station 9+07 SH RT and Station 11+32 SH RT are anticipated to remain in place. Contact MG&E Electric 2 weeks prior to beginning construction to have the overhead span wires east of the structure removed.

Warwick Way and Noise Wall N-13-0002

An existing overhead crossing of Warwick Way occurs at approximately Station 50+75 WW. The overhead line is anticipated to be relocated. Existing overhead facilities cross USH 12/14/18/151 at approximately Station 1162+73 (57+06 WW). The existing power poles at approximately Station 1162+59 LT and Station 1162+79 RT will be removed and relocated to approximately Station 1162+58 LT and Station 1162+83 RT. The existing overhead facility will be removed and

relocated to the new poles. A new underground crossing of USH 12/14/18/151 will occur at approximately Station 1162+80.

Noise Wall N-13-0003

Existing overhead facilities occur north of Britta Parkway through the project area. Existing overhead facilities occur west of Niemann Place through the project area with an overhead crossing of Niemann Place at approximately Station 10+78 NP RT. The existing power poles at approximately Station 10+78 NP 68' RT, 10+95 NP 101' RT, and 10+75 NP 7' LT will be removed. A new power pole will be located at approximately Station 10+63 NP 31' RT. The existing overhead facilities north of Britta Parkway are anticipated to remain in place.

Military Ridge Path Overpass (B-13-666) and Retaining Walls (R-13-242 and R-13-243)

Existing overhead facilities occur north of CTH PD (McKee Road) from approximately Station 127+29 PD to the east. Existing overhead facilities occur east of the Military Ridge Path structure from approximately Station 100+75 MR to the south through the project area. The existing guy wires for the power pole at approximately Station 127+29 PD LT will be relocated to outside of the proposed sidewalk/bike path. Other existing facilities are anticipated to remain in place.

CTH D (Fish Hatchery Road) and Whalen Road Intersection

Existing overhead facilities occur east of Fish Hatchery Road from approximately Station 100+41 FHW to the north and from approximately Station 98+29 to the south. Existing underground facilities occur east of Fish Hatchery Road from approximately Station 98+29 FHW RT to Station 100+41 FHW RT with a crossing of Whalen Road at approximately Station 100+31 WFH. Existing underground facilities occur south of Whalen Road from approximately Station 100+31 WFH to the west. The existing underground and overhead facilities are anticipated to remain in place.

Seminole Highway and Lacy Road Intersection

Existing overhead facilities occur south of Lacy Road through the project area with a crossing of Seminole Highway at approximately Station 99+65 SL. Existing overhead facilities occur west of Seminole Highway through the project limits with a crossing of Lacy Road at approximately Station 99+75 L. The existing power poles located at Station 92+74 SL LT, Station 95+07 SL LT, Station 97+38 SL LT, Station 99+59 SL LT, Station 101+12 SL LT, Station 103+13 SL LT, and Station 105+28 SL LT will be replaced with new poles at approximately Station 90+48 SL LT, Station 92+13 SL LT, Station 93+70 SL LT, Station 95+28 SL LT, Station 96+85 SL LT, Station 97+72 SL RT, Station 98+43 SL LT, Station 98+47 SL RT, Station 99+51 SL LT, Station 99+69 SL RT, Station 101+25 SL RT, Station 102+81 SL RT and Station 105+93 SL RT.

Seminole Highway and Sentinel Pass Intersection

Existing overhead facilities occur west of Seminole Highway through the project area with a crossing of Sentinel Pass at approximately Station 99+75 S and a crossing of Seminole Highway at approximately Station 99+75 SS. The existing power pole at approximately Station 99+44 SS LT will be removed and replaced with a new pole at approximately Station 99+49 SS LT. The existing power pole at approximately Station 101+22 SS LT will be relocated to approximately Station 101+10 SS LT. A new power pole will be located at approximately Station 102+68 SS RT. Contact MG&E Electric to remove the existing light pole at approximately Station 100+01 SS. The light pole shall remain until it conflicts with construction or until the proposed lighting is constructed by the contractor.

Seminole Highway/Yuma Drive and Nakoma Road Intersection

Existing overhead facilities occur north of Yuma Drive from approximately Station 99+75 SN to the west through the project area with a crossing of Nakoma Road at approximately Station 100+36 N. Existing overhead facilities occur east of Nakoma Road from approximately Station 100+36 N RT to the north out of the project area with two crossings of Nakoma Road at approximately Station 101+02 N and Station 101+85 N. Existing overhead facilities occur west of Nakoma Road from approximately Station 99+18 N LT to Station 101+80 N LT with an overhead crossing of Yuma Drive at approximately Station 100+27 SN. Existing overhead facilities occur west of Seminole Highway from approximately Station 98+52 SN LT to the south through the project area with a crossing from approximately Station 98+50 SN LT to 99+82 SN RT. The existing power pole at Station 100+37 N LT will be relocated to approximately Station 100+53 SN RT. The existing power pole at Station 100+36 RT will be relocated to approximately Station 100+47 N RT. A new guy pole will be located at approximately Station 100+47 SN 30' LT.

Whitney Way and Gilbert Road Intersection

Existing overhead facilities occur east of Whitney Way from approximately Station 99+50 W RT to the north through the project area with a crossing of Whitney Way at approximately Station 98+50 W. The existing overhead facilities are anticipated to remain in place.

Coordinate operations with MG&E Electric. Contact Marty Jacobi (608) 252-4785.

Madison Gas and Electric (gas) has underground gas facilities within the project area. MG&E Gas anticipates their facility relocation work will take place beginning March 1, 2013 and is estimated to take 160 working days to complete. Existing facility relocations and anticipated proposed relocations are as follows:

Storm Sewer Crossing of USH 12/14 and Detention Basin B

Existing underground gas facilities cross USH 12/14 at approximately Station 1125+90. North of USH 12/14 the underground gas facility is parallel to and under the eastern bike path. The underground gas facility is anticipated to remain in place.

Verona Road Overlay/Widening (VR Line), Trunk Line Storm Sewer, Detention Basin A, and Retaining Wall R-13-204

Existing underground facilities occur west of USH 18/151 (Verona Road) from approximately Station 977+50 VR LT to Station 982+91 VR LT with a crossing of USH 18/151 (Verona Road) at approximately Station 982+91 VR. These existing underground facilities will be abandoned in place. Existing underground facilities occur west of USH 18/151 (Verona Road) from approximately Station 986+45 VR LT to Station 996+56 VR LT. These existing underground facilities will be abandoned in place. Existing underground facilities occur from approximately Station 977+50 VR LT to the north through Detention Basin A. The existing underground facilities from approximately Station 977+50 VR LT through Detention Basin A will be abandoned in place. The existing underground facilities from approximately Station 992+04 VR LT to Station 996+56 VR LT will be abandoned in place and relocated along the roadway right-of-way.

Freeport Road

Existing underground 400 psi gas facilities occur west of Freeport Road from approximately Station 17+50 FP LT to the north. The existing gas facility crosses Freeport Road from approximately Station 14+50 FP RT to Station 15+50 LT and crosses Freeport Road at 14+50 FP and continues south. The existing underground facility is anticipated to remain in place. New underground facilities will be constructed from approximately Station 13+20 FP RT to Station 14+63 FP RT with a crossing of Freeport Road at approximately Station 12+94 FP. Two new regulator pits and temporary vent pipes were constructed at approximately Station 12+75 FP LT in December 2012.

Warwick Way and Noise Wall N-13-0002

Existing underground gas facilities occur along the east side of Whenona Drive and the north side of Warwick Way. New underground gas main will be constructed from approximately Station 52+46 WW LT to Station 53+27 WW LT. The existing underground facility from approximately Station 50+00 WW LT to Station 52+63 WW LT will be abandoned in place.

Noise Wall N-13-0003

Existing underground gas facilities occur along the west side of Niemann Place with an underground crossing of Britta Parkway at approximately Station 18+60 NP. The existing underground gas main will be abandoned in place from approximately Station 10+37 NP to the north. Existing underground gas facilities occur along the south side of Britta Parkway from approximately Station 19+00 NP to the east. The remaining underground facilities are anticipated to remain in

place. MG&E Gas will lower its existing gas main at approximately Station 19+38 NP RT during construction. The relocation work is anticipated to take 10 working days to complete. Contact MG&E Gas 2 weeks prior to starting construction work at this location.

Military Ridge Path Overpass (B-13-666) and Retaining Walls (R-13-242 and R-13-243)

Existing underground gas facilities occur along the eastbound travel lane near the median and along the Military Ridge Path east right-of-way south of CTH PD (McKee Road). Existing underground facilities occur north of CTH PD (McKee Road) through the project limits. The existing facilities are anticipated to remain in place.

CTH PB and CTH M Intersection

Existing underground facilities occur along the south side of CTH M from approximately Station 98+90 MPB RT to the west and approximately Station 102+10 MPB RT to the east. There are two crossings of CTH M at approximately Station 98+90 MPB and Station 102+10 MPB. There is a crossing of CTH PB at approximately Station 100+85 PB. Existing underground facilities occur along the east side of CTH PB from approximately Station 100+85 PB RT to the north and along the west side of CTH PB from approximately Station 100+85 PB LT to the south. The existing underground facilities are anticipated to remain in place.

CTH M and CTH D (Fish Hatchery Road) Intersection

Existing underground facilities occur along the north side of CTH M through the project area with a crossing of Fish Hatchery Road at approximately Station 100+25 FHM. Existing underground facilities occur along the east side of Fish Hatchery Road through the project area with a crossing of CTH M at approximately Station 100+40 MFH. The existing underground facilities from approximately Station 94+50 FHM RT to Station 98+60 FHM RT will be lowered during construction. The existing gas main at approximately Station 104+00 MFH will be lowered during construction. The relocation work is anticipated to take 20 working days to complete. Other underground facilities are anticipated to remain in place. Contact MG&E Gas 2 weeks prior to starting construction work at this location.

CTH D (Fish Hatchery Road) and Whalen Road Intersection

Existing underground facilities occur north of Whalen Road from approximately Station 100+25 WFH LT to the west with a crossing of Fish Hatchery Road at approximately Station 100+25 FHW. Existing underground facilities occur along the east side of Fish Hatchery Road from approximately Station 100+25 FHW RT to the north. Existing underground facilities occur along the west side of Fish Hatchery Road from approximately Station 100+25 FHW LT to the south with a crossing of Whalen Road at approximately Station 99+75 WFH. The existing underground facilities from approximately Station 90+75 FHW LT to Station

100+25 FHW LT will be abandoned in place and relocated west of the existing gas line during construction. The relocation work is estimated to take 30 working days to complete. Other underground facilities are anticipated to remain in place. Contact MG&E Gas 2 weeks prior to starting construction work at this location.

Seminole Highway and Lacy Road Intersection

Existing underground facilities occur south of Lacy Road through the project area with a crossing of Seminole Highway at approximately Station 99+75 SL. Existing underground facilities occur east of Seminole Highway from Lacy Road to the south. The existing underground facility from Station 97+25 SL RT to Station 99+75 SL RT will be abandoned in place and replaced in the same location during construction. The relocation work is estimated to take 5 working days to complete. Other underground facilities are anticipated to remain in place. Contact MG&E Gas 2 weeks prior to starting construction work at this location.

Seminole Highway and Sentinel Pass Intersection

Existing underground facilities occur west of Seminole Highway through the project area with a crossing of Sentinel Pass at approximately Station 99+75 SP. The existing underground facility west of Seminole Highway will be replaced prior to construction from approximately Station 97+75 SS LT to Station 104+50 SS LT and the existing facility will be abandoned in place. Existing underground facilities occur north of Sentinel Pass from approximately Station 98+75 SP LT to the west through the project area. The existing gas services located at approximately Station 97+82 SP and Station 98+52 SP will be lowered. The relocation work is anticipated to begin on April 15, 2013 and is estimated to take 28 working days to complete. Existing underground facilities occur west of Crescent Road with a crossing of Sentinel Pass at approximately Station 96+65 S. The remaining underground facilities are anticipated to remain in place.

Seminole Highway/Yuma Drive and Nakoma Road Intersection

Existing underground facilities occur northwest of Nakoma Road through the project area with a crossing of Yuma Drive at approximately Station 100+25 SN. Existing underground facilities occur north of Yuma Drive from approximately Station 100+25 SN LT to the west. The existing facility crosses Nakoma Road at approximately Station 101+00 N where it continues along the east side of Seminole Highway and the south side of Tumalo Terrace. The existing underground facilities are anticipated to remain in place. Contact MG&E Gas 2 weeks prior to starting construction work at this location.

Whitney Way and Gilbert Road Intersection

Existing underground facilities occur under the southbound travel lane of Whitney Way. The existing facility continues south through the curve of Whitney Way and runs along the west side of Gilbert Road. The underground facility is anticipated to remain in place.

Coordinate operations with MG&E Gas. Contact Larry Capps (608) 252-7224.

Madison Metropolitan Sewerage District (MMSD) (sewer) has existing underground facilities west of the Military Ridge Path through the project area. The existing underground facilities are anticipated to remain in place.

Coordinate operations with Madison Metropolitan Sewerage District. Contact Ray Schneider (608) 222-1201.

Madison Water Utility (water) has underground water main facilities within the project area. Madison Water Utility anticipates their facility relocation work will take place beginning January 2013 and is estimated to be completed prior to construction. Existing facility locations and anticipated proposed relocations are as follows:

Storm Sewer Crossing of USH 12/14 and Detention Basin B

Existing underground facilities occur along the north side of the West Beltline Frontage Road from approximately Station 66+00 WN to the east. The underground facilities are anticipated to remain in place.

Verona Road Overlay/Widening (VR Line), Trunk Line Storm Sewer, Detention Basin A, and Retaining Wall R-13-204

Existing underground water main occurs west of USH 18/151 (Verona Road) from approximately Station 973+00 VR LT to Station 1002+00 VR LT with an underground crossing of Verona Road at approximately Station 996+81 VR. Existing underground water main occurs east of Verona Road from approximately Station 975+87 VR RT to Station 996+81 VR RT. Relocation may be necessary based on utility line openings performed by Madison Water Utility. Contact Madison Water Utility for relocation plan for this area.

Freeport Road

Existing underground water main occurs along the west side of Freeport Road from approximately Station 17+56 FP to the south through the project area. An existing hydrant located at approximately Station 17+18 FP LT will either be adjusted or relocated outside of the project limits prior to construction. Existing underground water main occurs under Freeport Road from approximately Station 11+97 FP LT to the south. Existing underground water main occurs south of Freeport Road from approximately Station 11+97 FP LT to the northeast. The existing underground water main will be abandoned in place from approximately Station 11+97 FP LT to Station 10+85 FP LT. New water main will be connected to the existing water main from approximately Station 14+62 FP LT to Station 10+84 FP LT and will be constructed by the contractor as part of project 1206-07-81. The bid item Utility Line Opening (ULO) has been included in the contract for this work. Relocation plans are pending utility line openings performed by Madison Water Utility. Contact Madison Water Utility for relocation plans for this area.

Seminole Highway Eastbound On-Ramp (S Line), Frontage Road (SF Line), and USH 12/14/18/151 Auxiliary Lane

Existing underground water main occurs along the north side of the Frontage Road from approximately Station 70+01 SF LT to Station 73+66 SF LT with a crossing of the Frontage Road at approximately Station 73+66 SF. Existing underground water main occurs south of the Frontage Road from approximately Station 73+66 SF RT to the east out of the project area. Relocation plans are pending utility line openings performed by Madison Water Utility. The contractor shall contact Madison Water Utility for relocation plans in this area.

Seminole Highway Bridge and Approaches (Structure B-13-664) and Retaining Walls (R-13-235 and R-13-236)

Existing underground water main occurs north of the Frontage Road from approximately Station 8+82 SH LT to the west through the project limits with a crossing of Seminole Highway at approximately Station 8+82 SH. Existing underground water main crosses the Beltline Highway at approximately Station 1170+20. The existing underground facilities north of the Frontage Road are anticipated to remain in place. Relocation plans are pending utility line openings performed by Madison Water Utility. The contractor shall contact Madison Water Utility for relocation plans in this area.

Warwick Way and Noise Wall N-13-0002

Existing underground water main occurs west of Whenona Drive from approximately Station 51+81 WW RT to the north out of the project area. Existing underground water main occurs north of Warwick Way from approximately Station 51+81 WW RT to the east with a crossing of Warwick Way at approximately Station 52+15 WW. Existing underground water main occurs crossing USH 12/14/18/151 at approximately Station 1157+16. Relocation plans are pending utility line openings performed by Madison Water Utility. The contractor shall contact Madison Water Utility for relocation plans in this area.

Noise Wall N-13-0003

Existing underground water main occurs north of Britta Parkway from approximately Station 17+43 BP LT to the east with a crossing of Niemann Place at approximately Station 10+13 NP. The existing buried facilities are anticipated to remain in place. Existing underground water services cross noise wall N-13-0003 at approximately Station 121+81 EE RT. The water services will be abandoned in place.

Seminole Highway/Yuma Drive and Nakoma Road Intersection

Existing underground water main occurs west of Nakoma Road from approximately Station 100+00 N LT to the south. Existing underground water main occurs east of Nakoma Road from approximately Station 100+00 N to the north. Existing underground water main occurs along the western side of Seminole Highway from approximately Station 99+77 SN to the south. Existing underground water main occurs under the southbound travel lane of Yuma Drive

from approximately Station 99+77 SN to the west out of the project area with a crossing of Nakoma Road at approximately Station 100+00 N. The existing underground water main is anticipated to remain in place.

Whitney Way and Gilbert Road Intersection

Existing underground water main occurs along the median of Whitney Way from approximately Station 101+35 W RT to the north through the project area. The existing underground water main continues south from Station 101+35 W, crossing northbound Whitney Way and continuing south along the east edge of Gilbert Road with a crossing of Whitney Way at approximately Station 99+57 W. The existing underground water main is anticipated to remain in place.

Madison Water Utility hydrants and water valves shall remain accessible at all times. Coordinate operations with Madison Water Utility. Contact Adam Wiederhoeft (608) 266-9121.

TDS Telecom (communication) has underground and overhead communication facilities within the project area. TDS Telecom anticipates their facility relocation work will begin March 1, 2013 is estimated to take 120 working days to complete. Existing facility locations and anticipated proposed relocations are as follows:

Freeport Road

Existing overhead facilities occur west of the Freeport Road attached to MG&E Electric poles from approximately Station 16+50 FP LT to the north. The existing overhead facilities are anticipated to remain in place.

Seminole Highway Eastbound On-Ramp (S Line), Frontage Road (SF Line), and USH 12/14/18/151 Auxiliary Lane

Existing underground facilities occur south of the West Beltline Frontage Road through the project area. The existing underground facilities are anticipated to remain in place.

Seminole Highway Bridge and Approaches (Structure B-13-664) and Retaining Walls (R-13-235 and R-13-236)

Existing overhead facilities occur east of Seminole Highway attached to MG&E Electric poles from approximately Station 8+00 SH RT to the south. The existing overhead facilities are anticipated to remain in place.

Warwick Way and Noise Wall N-13-0002

Existing overhead facilities attached to MG&E Electric power poles occur crossing USH 12/14/18/151 (Beltline Highway) at approximately Station 1162+73 (57+06 WW). The existing overhead facilities will be removed and relocated underground jointly with MG&E Electric at approximately Station 1162+80.

CTH PB and CTH M Intersection

Existing underground facilities occur east of CTH PB through the project area with a crossing of CTH M at approximately Station 102+00 MPB. Existing underground facilities occur south of CTH M from approximately Station 102+00 MPB RT to the east. Existing underground facilities occur west of CTH M from approximately Station 95+09 PB LT to Station 101+75 PB LT with a crossing of CTH M at approximately Station 98+25 MPB and a crossing of CTH PB at approximately Station 101+75 PB. The existing underground facilities are anticipated to remain in place.

Seminole Highway and Sentinel Pass Intersection

Existing underground facilities occur west of Seminole Highway from approximately Station 96+25 SS LT to the south. Existing overhead facilities occur attached to MG&E Electric poles from approximately Station 96+25 SS LT to the north with a crossing of Sentinel Pass at approximately Station 99+75 S. The existing overhead facilities will be relocated and attached to new MG&E poles. The relocation work may take place prior to or during construction. The existing underground facilities are anticipated to remain in place.

Coordinate operations with TDS Telecom facilities. Contact Erik Borgen (608) 664-4438.

US Signal has existing overhead facilities attached to MG&E Electric poles crossing USH 12/14/18/151 (Beltline Highway) at approximately Station 1162+73 (57+06 WW). The existing overhead facilities will be removed and relocated underground jointly MG&E Electric at approximately Station 1162+80. US Signal anticipates their facility relocation work will begin March 1, 2013 and is estimated to take 60 working days to complete.

Coordinate operations with US Signal. Contact Rick Andricks (614) 483-6350.

Windstream has existing overhead facilities attached to MG&E poles at the storm sewer crossing of USH 12/14 at approximately Station 1125+50. North of USH 12/14 the overhead facility is located approximately between the two bike paths. The existing overhead facility will be relocated onto the new MG&E poles as described elsewhere in these special provisions. The relocation will begin after MG&E has relocated its poles and is estimated to take 1 working day to complete. The relocation work may take place prior to or during construction.

Coordinate operations with Windstream. Contact Jim Kostuch (262) 792-7938.

Wisconsin Wisconsin Independent Network (communication) has underground communication facilities within the project area. Wisconsin Independent Network anticipates their facility relocation work will begin on April 22, 2013 and is estimated to take 6 working days to complete. Existing facility locations and anticipated proposed relocations are as follows:

Seminole Highway and Lacy Road Intersection

Existing underground facilities occur south of Lacy Road from approximately Station 97+02 L RT to the east with a crossing of Lacy Road at approximately Station 97+02 L and a crossing of Seminole Highway at approximately Station 99+84 L. The existing underground facilities from approximately Station 97+05 LR RT to Station 103+94 LR RT will be abandoned in place and relocated to approximately 4 feet north of the south right of way with a crossing of Seminole Highway at approximately Station 99+05 LR. Other underground facilities are anticipated to remain in place.

Seminole Highway and Sentinel Pass Intersection

Existing underground facilities occur west of Seminole Highway through the project area with a crossing of Sentinel Pass at approximately Station 99+75 S. The existing underground facilities from approximately Station 96+22 SS LT to Station 103+86 SS LT will be abandoned in place and relocated west of the proposed roadway improvements with a crossing of Sentinel Pass at approximately Station 99+65 SP. Other underground facilities are anticipated to remain in place.

Coordinate operations with Wisconsin Independent Network. Contact Loren Lamphear (608) 217-8588.

16. Notice to Contractor, Notification of Demolition and/or Renovation No Asbestos Found.

James Gondek, License Number All-108099, inspected Structure B-13-0264 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)-246-7548.

In accordance to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form to Wayne Chase, P.E., (608) 246-3859 and DOT BTS-ESS Attn: Hazardous Materials Specialist PO Box 7965, Madison, WI. 53707-7965. In addition, comply with all local or municipal asbestos requirements.

Use the following information to complete WisDNR form 4500-113 :

- Site Name: Structure B-13-0264, Seminole Highway over USH 12/14/18/151
- Site Address: 1.3M N JCT CTH PP
- Ownership Information: WisDOT Transportation Southwest Region, 2101 Wright Street, Madison, WI 53704-2583
- Contact: Wayne Chase, P.E.
- Phone: (608) 246-3859
- Age: 42 years old. This structure was constructed in 1971.
- Area: 9,972 SF of deck.

Insert the following paragraph in Section 6.g.:

- If asbestos not previously identified is found or previously non-friable asbestos becomes crumbled, pulverized, or reduced to a powder, stop work immediately, notify the engineer, and the engineer will notify the department's Bureau of Technical Services at (608) 266-1476 for an emergency response in accordance to standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

107-125 (20120615)

17. Coordination with Businesses.

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

108-060 (20030820)

18. Environmental Protection, Dewatering.

Supplement standard spec 107.18 as follows:

If dewatering is required, treat the water to remove suspended solids before allowing it to enter any waterway or wetland. Provide a sedimentation basin with sufficient capacity and size to provide an efficient means to filter the water from the dewatering operation before it is discharged back into the waterway or wetland as provided in the standard specifications and these special provisions. As part of the Erosion Control Implementation Plan (ECIP) submittal, supply all pertinent information and calculations used to determine the best management practice for dewatering at each location.

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

The cost of all work and materials associated with water treatment and/or dewatering is incidental to other bid items. Dewatering will be paid separately for the sanitary sewer work under item Dewatering for Sanitary Sewer Construction.

19. Erosion Control.

Supplement standard spec 107.20 with the following:

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

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

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

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

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

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

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

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

20. Clearing and Grubbing.

Replace standard spec 201.3 (10) as follows:

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

Replace standard spec 201.4.2 (1) with the following:

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

21. Removing Building and Site Clearance.

Conform to the requirements of standard spec 204 and as hereinafter specified. Do not remove adjacent parking lots for the sites.

The department has investigated the buildings to be removed for the presence of asbestos. Any friable asbestos found will be removed by others prior to the start of construction. If any additional friable asbestos is found during the building removal, cease building removal and contact the engineer to arrange for friable asbestos removal by others.

Contact the SW Region Madison Environmental Coordinator (currently Jennifer Grimes) at (608) 246-3823 to obtain a copy of the asbestos report prior to building removal.

22. Notice to Contractor.

Removing Buildings

Habitat for Humanity Restore has expressed interest in salvaging building materials that the contractor is not interested in salvaging. They have indicated that they are insured and that their salvage activities would typically take about two days for each building. The contact person for Habitat for Humanity Restore is Frank Byrne at (608) 712-0737 and byrnerestoredane.org. Liability insurance must be provided by Habitat for Humanity Restore two days prior to any work being done by Habitat for Humanity Restore affiliated individuals.

Coordination with other Projects

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

- The USH 12/14/18/151 (Beltline) - CTH D (Fish Hatchery Road) interchange will be under construction as part of I.D. 1206-01-84.
- The Beltline bridge structures over the Yahara River (B-13-315 and B-13-316) will be under construction as part of I.D. 1206-04-61.
- A pedestrian overpass structure will be constructed over the Beltline between Fish Hatchery Road and Todd Drive as part of I.D. 5992-09-07.

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

Madison Metro Coordination

Notify Tim Sobota, Transit Planner for Metro Transit at (608) 261-4289 a minimum of one week prior to impacting Metro Transit signing or stops.

The City of Madison Traffic Engineering Division will remove, move, and/or install signs for bus routes and stops at the locations shown in the plans. Contact City of Madison Traffic Engineering Division Field Operations at (608) 266-4767 a minimum of one week prior to installing or removing sign support bases and sign posts at a Metro Transit stop to arrange for moving, removing, or installation of bus signing.

Shoulder Widening Coordination

Coordinate with Dane County Highway Department before placing the HMA Pavement overlay on Fish Hatchery Road. The Dane County Highway department will be widening the existing aggregate shoulders and preparing the aggregate base for the overlay. Contact Pam Dunphy, Deputy Commissioner for the Dane County Highway Department at (608) 266-4063.

Construction Activities at the CTH PD - Seminole Highway Intersection

Notify Ahnaray Bizjak from the city of Fitchburg at (608) 270-4262 a minimum of two weeks before construction activities begin at the CTH PD - Seminole Highway intersection. The City of Fitchburg would like to relocate the median trees at this intersection.

Construction Activities at the Seminole Highway - Sentinel Pass Intersection

Contact Ahnaray Bizjak from the City of Fitchburg at (608) 270-4262 a minimum of one week prior to the placement of traffic signs at the Seminole Highway - Sentinel Pass intersection. The City of Fitchburg will provide two state-owned signs at this intersection.

Construction Activities at the Fish Hatchery Road and Whalen Road Intersection

Contact Ahnaray Bizjak from the City of Fitchburg at (608) 270-4262 a minimum of two weeks prior to beginning work at the intersection of Fish Hatchery Road and Whalen Road. The City of Fitchburg may be relocating its driveway to their maintenance facility on Fish Hatchery Road north of Whalen Road at a different location than shown in the plans.

Commercial and Residential Parking Lots

Contact the owner of the parcel 10 working 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 12/14/18/151 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 2 feet clearance behind the concrete barrier wall to any equipment or materials that extend above the concrete barrier wall (not including glare screen if applicable).

Right-of-Way Access

Prior to entry onto any parcel shown in Transportation Project Plat (TPP) 1206-07-26 or TPP 1206-07-29, contact Mary Heiser, WisDOT Real Estate at (608) 242-8037 to verify that the parcel is available for entry.

Project Aesthetics

Several retaining walls, noise walls and bridges utilize the same concrete formliner and concrete staining color scheme as shown in the plans. Coordinate the concrete formliners and concrete stain colors for these structures to ensure a similar and consistent appearance. Inconsistent appearance of concrete formliners and concrete staining colors shall be removed.

N-13-3

Coordinate the placement of the vertical supports for the noise wall in conjunction with the utility relocations that are taking place within the noise wall limits (for projects 1206-07-77 and 1206-07-78). Discuss utility relocations with the utility companies prior to preparing the noise wall shop drawings. Indicate, as applicable, the locations of the relocated utilities on the noise wall shop drawings and provide anticipated distances from the relocated utilities to the vertical supports for the noise wall.

23. Debris Containment Structure B-13-0264, Item 203.0225.S.01.

A Description

This special provision describes providing a containment system to prevent debris from structure removal, reconstruction, or other construction operations from falling onto facilities located under the structure. Using this containment system does not relieve the contractor of requirements under standard spec 107.17 and standard spec 107.19 or requirements under a US Army Corps of Engineers Section 404 Permit.

B (Vacant)

C Construction

Prior to starting work, submit a debris containment plan to the engineer for review. Incorporate engineer-requested modifications. Do not start work over USH 12/14/18/151 until the engineer approves the debris containment plan.

Maintain adequate protection throughout construction for people and property within the potential fall zone. Ensure that a containment system capable of protecting underlying facilities from falling construction debris is in place before beginning deck repair, parapet removal, or other operations that may generate debris.

At least 15 working days before conducting potential debris generating operations, contact the following owners or lessees:

Wayne Chase, (608) 246-3859

D Measurement

The department will measure Debris Containment Structure B-13-0264 as a single lump sum unit of work for each structure, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
203.0225.S.01	Debris Containment Structure B-13-0264	LS

Payment is full compensation for furnishing, installing, maintaining, and removing a debris containment system.
203-010 (20080902)

24. Removing Overhead Sign Support, Item 204.9060.S.01.

A Description

This special provision describes Removing Overhead Sign Support in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C Construction

Remove all structural steel supports and remove concrete footings or bases. The structural steel becomes the contractor's property, unless otherwise specified. Dispose of the structural steel off of the right-of-way. Remove concrete footings or bases as specified for restoration of site in 638.3.9 of the standard specifications.

D Measurement

The department will measure Removing Overhead Sign Support as each individual removed sign structure, acceptably completed.

E Payment

Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.01	Removing Overhead Sign Support	Each
204-025 (20041005)		

25. Removing Storm Sewer Junction Chamber, Item 204.9060.S.02.**A Description**

This special provision describes the removal of storm sewer junction chambers in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)**C Construction**

Remove the storm sewer junction chamber in its entirety. Dispose of excess materials off the right-of-way.

D Measurement

The department will measure Removing Storm Sewer Junction Chamber as each individual removed storm sewer junction chamber, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.02	Removing Storm Sewer Junction Chamber	Each
204-025 (20041005)		

26. Removing Crash Cushion, Item 204.9060.S.03.**A Description**

This special provision describes the removal of crash cushions in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

B Materials

Provide a non-shrink commercial grout or epoxy material identified on the current WisDOT approved products list for filling remaining holes in the concrete or bridge deck.

C Construction

Upon removal of the crash cushion unit, remove all anchor bolts to at least 2-inches below the surface and completely fill in the remaining holes with non-shrinking grout or epoxy.

D Measurement

The department will measure Removing Crash Cushion as each individual removed crash cushion, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.03	Removing Crash Cushion	Each

Payment shall be in accordance to standard spec 204.5.

27. Removing Inlet Covers, Item 204.9060.S.04.**A Description**

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

B (Vacant)**C (Vacant)****D Measurement**

The department will measure Removing Inlet Covers as each individual removed inlet cover, acceptably completed.

E Payment

Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.04	Removing Inlet Covers	Each
204-025 (20041005)		

28. Removing Apron Endwalls, Item 204.9060.S.05.**A Description**

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

B (Vacant)**C (Vacant)****D Measurement**

The department will measure Removing Apron Endwalls as each individual removed apron endwall, acceptably completed.

E Payment

Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.05	Removing Apron Endwalls	Each
204-025 (20041005)		

29. Removing Modular Block Retaining Wall, Station 64+50 WP to Station 65+50 WP, Item 204.9090.S.01.

A Description

This special provision describes Removing Modular Block Retaining Wall, Station 64+50 WP to Station 65+20 WP in accordance to the pertinent provisions of standard spec 204, as shown in the details, and as hereinafter provided.

B (Vacant)**C Construction**

Remove all plastic sheeting, fabric, pipe under drain, reinforcing grid, or tie-backs that abut or underlie the portion of the existing modular block retaining wall to be removed in a manner that will not impede the structural stability or functionality of the portion of the wall to remain. If the contractor damages the blocks of any portion of the wall to remain through its own operations then the contractor shall replace them at no expense to the department.

D Measurement

The department will measure Removing Modular Block Retaining Wall, Station 64+50 WP to Station 65+50 WP as each linear foot of removed modular block retaining wall, acceptably completed.

E Payment

Supplement 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.01	Removing Modular Block Retaining Wall, Station 64+50 WP to Station 65+50 WP	LF

30. Removing Modular Block Retaining Wall, Station 1166+85 to Station 1174+20, Item 204.9090.S.02.

A Description

This special provision describes Removing Modular Block Retaining Wall, Station 1166+85 to Station 1174+20 in accordance to the pertinent provisions of standard spec 204, as shown in the details, and as hereinafter provided.

B (Vacant)

C Construction

Remove the top cap block and first block course only. Do not to disturb the modular block wall reinforcing straps.

D Measurement

The department will measure Removing Modular Block Retaining Wall, Station 1166+85 to Station 1174+20 for each linear foot of removed modular block wall, acceptably completed.

E Payment

Supplement 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.02	Removing Modular Block Retaining Wall, Station 1166+85 to Station 1174+20	LF

31. Temporary Shoring, Item 206.6000.S.

A Description

This special provision describes designing and providing temporary shoring at locations the plans show.

B Materials

B.1 Shoring Design

Provide a shoring design for each location where the plan requires temporary shoring. 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 shoring design, signed and sealed by the same professional engineer verifying the design, to the engineer for incorporation into the permanent project record.

C Construction

Provide temporary shoring at each required location conforming to the design developed for that location.

Remove the shoring when it is no longer needed unless the engineer allows it to remain in place. Backfill the space that is excavated but not occupied by the new permanent construction conforming to standard spec 206.3.13.

D Measurement

The department will measure Temporary Shoring by the square foot acceptably completed at locations the plans show, measured as the area of exposed face in the plane of the shoring from the ground line in front of the shoring to a maximum of one foot above the retained grade. Shoring used for staged construction in multiple configurations without removal and reinstallation will be measured once based on the configuration with the largest area of exposed face.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
206.6000.S	Temporary Shoring	SF

Payment is full compensation for designing and providing shoring; for providing a signed and sealed copy of the design; and for backfilling and removing the shoring.

The department will not pay for temporary shoring, installed for contractor convenience, that is not required in the plans.

206-005 (20110615)

32. Backfill Coarse Aggregate Size No. 1, Item 209.0300.S.01.**A Description**

This special provision describes furnishing and placing coarse aggregate backfill as shown on the plans and as hereinafter provided.

B Materials

Provide clean concrete aggregate graded in accordance to the requirements as specified under standard spec 501.2.5.4.4. The soundness and wear requirements are deleted from this material.

C Construction

Construct the coarse aggregates in accordance to standard spec 209.3.

D Measurement

The department will measure Backfill Coarse Aggregate Size No. 1 in volume by the cubic yard in the vehicle, 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
209.0300.S.01	Backfill Coarse Aggregate Size No. 1	CY

Payment is full compensation for furnishing and installing the aggregate.

209-030 (20030820)

33. Base Aggregate Dense 1 1/4-Inch.

Revise standard spec 305.2.2.1 as follows:

Use 1 1/4-Inch base aggregate that conforms to the following gradation requirements:

Percentage by weight passing:

Sieve Size	Percentage of Mass Passing
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	2 - 12 ^{[1],[2]}

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

^[2] 3 - 10 percent passing when base is $\geq 50\%$ crushed gravel.

34. QMP Base Aggregate.

A Description

A.1 General

- (1) This special provision describes contractor quality control (QC) sampling and testing for base aggregates, documenting those test results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.
- (2) Conform to standard spec 301, standard spec 305, and standard spec 310 as modified here in this special provision. Apply this special provision to material placed under all of the Base Aggregate Dense and Base Aggregate Open Graded bid items, except do not apply this special provision to material classified as reclaimed asphaltic pavement placed under the Base Aggregate Dense bid items.
- (3) Do not apply this special provision to material placed under the Aggregate Detours, Salvaged Asphaltic Pavement Base, Breaker Run, Select Crushed, Pit Run, Subbase, or Riprap bid items.
- (4) Provide and maintain a quality control program, defined as all activities related to and documentation of the following:
 1. Production and placement control and inspection.
 2. Material sampling and testing.
- (5) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

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

A.2 Contractor Testing for Small Quantities

- (1) The department defines a small quantity, for each individual Base Aggregate bid item, as a plan quantity of 9000 tons or less of material as shown in the schedule of items under that bid item.
- (2) The requirements under this special provision apply equally to a small quantity for an individual bid item except as follows:
 1. The contractor need not submit a full quality control plan but shall provide an organizational chart to the engineer including names, telephone numbers, and current certifications of all persons involved in the quality control program for material under affected bid items.
 2. Divide the aggregate into uniformly sized sublots for testing as follows:

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

- ^[1] If using production tests for acceptance, submit test results to the engineer for review prior to incorporating the material into the work. Production test results are valid for a period of 3 years.
 - ^[2] For 3-inch material, obtain samples at load-out.
 - ^[3] If the actual quantity overruns 9000 tons, create overrun sublots to test at a rate of one additional placement test for each 3000 tons, or fraction of 3000 tons, of overrun.
 3. No control charts are required. Submit aggregate load-out and placement test results to the engineer within one business day of obtaining the sample. Assure that all properties are within the limits specified for each test.
 4. Department verification testing is optional for quantities of 6000 tons or less.
- (3) Material represented by a subplot with any property outside the specification limits is nonconforming. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B Materials

B.1 Quality Control Plan

- (1) Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not place base before the engineer reviews and comments on the plan. Construct the project as that plan provides.
- (2) Do not change the quality control plan without the engineer's review. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in each of the contractor's laboratories as changes are adopted. Ensure that the plan provides the following elements:

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

B.2 Personnel

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

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

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

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

B.3 Laboratory

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

Materials Management Section
3502 Kinsman Blvd.
Madison, WI 53704
Telephone: (608) 246-5388

<http://www.dot.state.wi.us/business/engrserv/lab-qualification.htm>

B.4 Quality Control Documentation

B.4.1 General

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

B.4.2 Records

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

B.4.3 Control Charts

- (1) Plot gradation and fracture on the appropriate control chart as soon as test results are available. Format control charts according to CMM 8.30. Include the project number on base placement control charts. Maintain separate control charts for each base aggregate size, source or classification, and type.
- (2) Provide control charts to the engineer within 6 hours after obtaining a sample. For 3-inch base, extend this 6-hour limit to 24 hours. Post or distribute charts using a method mutually agreeable to the engineer and contractor. Update control charts daily to include the following:
 1. Contractor individual QC tests.
 2. Department QV tests.
 3. Department IA tests.
 4. Four-point running average of the QC tests.
- (3) Except as specified under B.8.2.1 for nonconforming QV tests, include only QC tests in the running average. The contractor may plot process control or informational tests on control charts, but do not include these tests, conforming QV tests, or IA tests in the running average.

B.5 Contractor Testing

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

- (3) Split each contractor QC sample and identify it according to CMM 8.30. Retain the split for 7 calendar days in a dry, protected location. If requested for department comparison testing, deliver the split to the engineer within one business day.
- (4) The engineer may require additional sampling and testing to evaluate suspect material or the technician's sampling and testing procedures.
- (5) Test fracture for each gradation test until the fracture running average is above the lower warning limit. Subsequently, the contractor may reduce the frequency to one test per 10 gradation tests if the fracture running average remains above the warning limit.
- (6) Test the liquid limit and plasticity index for the first gradation test. Subsequently, test the liquid limit and plasticity index a minimum of once per 10 gradation tests.

B.6 Test Methods

B.6.1 Gradation

- (1) Test gradation using a washed analysis conforming to the following as modified in CMM 8.60:
 Gradation..... AASHTO T 27
 Material finer than the No. 200 sieve..... AASHTO T 11
- (2) For 3-inch base, if 3 consecutive running average points for the percent passing the No. 200 sieve are 8.5 percent or less, the contractor may use an unwashed analysis. Wash at least one sample out of 10. If a single running average for the percent passing the No. 200 sieve exceeds 8.5 percent, resume washed analyses until 3 consecutive running average points are again 8.5 percent passing or less.
- (3) Maintain a separate control chart for each sieve size specified in standard spec 305 or standard spec 310 for each base aggregate size, source or classification, and type. Set control and warning limits based on the standard specification gradation limits as follows:
 1. Control limits are at the upper and lower specification limits.
 2. There are no upper warning limits for sieves allowing 100 percent passing and no lower control limits for sieves allowing 0 percent passing.
 3. Dense graded warning limits, except for the No. 200 sieve, are 2 percent within the upper and lower control limits. Warning limits for the No. 200 sieve are set 0.5 percent within the upper and lower control limits.
 4. Open graded warning limits for the 1-inch, 3/8-inch, and No. 4 sieves are 2 percent within the upper and lower control limits. Upper warning limits for the No. 10, No. 40, and No. 200 sieves are 1 percent inside the upper control limit.

B.6.2 Fracture

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

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

B.6.3 Liquid Limit and Plasticity

- (1) Test the liquid limit and plasticity according to AASHTO T 89 and T 90.
- (2) Ensure the material conforms to the limits specified in standard spec table 301-2.

B.7 Corrective Action

B.7.1 General

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

B.7.2 Placement Corrective Action

- (1) Do not blend additional material on the roadbed to correct gradation problems.
- (2) Notify the engineer whenever the running average exceeds a warning limit. When 2 consecutive running averages exceed a warning limit, the engineer and contractor will discuss appropriate corrective action. Perform the engineer's recommended corrective action and increase the testing frequency as follows:
 1. For gradation, increase the QC testing frequency to at least one randomly sampled test per 1000 tons placed.
 2. For fracture, increase the QC testing frequency to at least one test per gradation test.
- (3) If corrective action improves the property in question such that the running average after 4 additional tests is within the warning limits, the contractor may return to the testing frequency specified in B.5.3. If corrective action does not improve the property in question such that the running average after 4 additional individual tests is still in the warning band, repeat the steps outlined above starting with engineer notification.
- (4) If the running average exceeds a control limit, material starting from the first running average exceeding the control limit and ending at the first subsequent running average inside the control limit is nonconforming and subject to pay reduction.
- (5) For individual test results significantly outside the control limits, notify the engineer, stop placing base, and suspend other activities that may affect the area in question. The engineer and contractor will jointly review data, data reduction, and data analysis; evaluate sampling and testing procedures; and perform additional testing as required to determine the extent of potentially unacceptable material. The engineer

may direct the contractor to remove and replace that material. Individual test results are significantly outside the control limits if meeting one or more of the following criteria:

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

B.8 Department Testing

B.8.1 General

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

B.8.2 Verification Testing

B.8.2.1 General

- (1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in B.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.
- (2) The department will conduct QV tests of each base aggregate size, source or classification, and type during placement conforming to the following:
 1. One non-random test on the first day of placement.
 2. At least one random test per 30,000 tons, or fraction of 30,000 tons, placed.
- (3) The department will sample randomly, at locations independent of the contractor's QC work, collecting one sample at each QV location. The department will collect QV samples after the material has been bladed, mixed, and shaped but before compacting; except, for 3-inch aggregates, the department will collect samples from the stockpile at load-out. The department will split each sample, test half for QV, and retain half.
- (4) The department will conduct QV tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.
- (5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to the specification, the department will take no further action. If QV test results are nonconforming, add the QV to the QC test results as if it were an additional QC test.

B.8.3 Independent Assurance

- (1) Independence assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:
 1. Split sample testing.
 2. Proficiency sample testing.
 3. Witnessing sampling and testing.
 4. Test equipment calibration checks.
 5. Reviewing required worksheets and control charts.
 6. Requesting that testing personnel perform additional sampling and testing.
- (2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in B.9.

B.9 Dispute Resolution

- (1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.
- (2) Production test results, and results from other process control testing, may be considered when resolving a dispute.
- (3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C (Vacant)

D (Vacant)

E Payment

- (1) Costs for all sampling, testing, and documentation required under this special provision are incidental to this work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the non-performance of QMP administrative item.
- (2) For material represented by a running average exceeding a control limit, the department will reduce pay by 10 percent of the contract price for the affected Base Aggregate bid items listed in subsection A. The department will administer pay reduction under the Nonconforming QMP Base Aggregate Gradation or Nonconforming QMP Base Aggregate Fracture Administrative items. The department will determine the quantity of nonconforming material as specified in B.7.2.

301-010 (20100709)

35. 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 not exceed 40, the weighted soundness must not exceed 9 percent, and the weighted freeze-thaw average loss must not exceed 12 percent.

36. Protection of Concrete.

Supplement standard spec 415.3.14 with the following:

Provide for a minimum of one concrete finisher to remain on the project site 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.

The cost for providing the finisher(s), the necessary equipment, and materials is construed to be included in the contract unit price for each concrete item.

37. HMA Pavement.

Replace Table 460-2 Mixture Requirements of the standard specifications with the following:

TABLE 460-2 MIXTURE REQUIREMENTS

Mixture type	E - 0.3	E - 1	E - 3	E - 10	E - 30	E - 30x	SMA
ESALs x 10 ⁶ (20 yr design life)	< 0.3	0.3 - < 1	1 - < 3	3 - < 10	10 - < 30	>= 30	
LA Wear (AASHTO T96)							
100 revolutions(max % loss)	13	13	13	13	13	13	13
500 revolutions(max % loss)	40	40	40	40	40	40	40
Soundness (AASHTO T104) (sodium sulfate, max % loss)	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Freeze/Thaw (AASHTO T103) (specified counties, max % loss)	12	12	12	12	12	12	12
Fractured Faces (ASTM 5821) (one face/2 face, % by count)	60 /	65 /	75 / 60	85 / 80	98 / 90	100/100	100/90
Flat and Elongated (ASTM D4791) (max %, by weight)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	5 (5:1 ratio)	20 (3:1ratio)
Fine Aggregate Angularity (AASHTO T304, method A, min)	40	40	43	45	45	45	45
Sand Equivalency (AASHTO T176, min)	40	40	40	45	45	50	50

Mixture type	E - 0.3	E - 1	E - 3	E - 10	E - 30	E - 30x	SMA
Gyratory Compaction							
Gyrations for N _{ini}	6	7	7	8	8	9	8
Gyrations for N _{des}	40	60	75	100	100	125	65
Gyrations for N _{max}	60	75	115	160	160	205	160
Air Voids, %V _a (%G _{mm} N _{des})	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)	4.0 (96.0)
% G _{mm} N _{ini}	<= 91.5 ^[1]	<= 90.5 ^[1]	<= 89.0 ^[1]	<= 89.0	<= 89.0	<= 89.0	---
% G _{mm} N _{max}	<= 98.0	<= 98.0	<= 98.0	<= 98.0	<= 98.0	<= 98.0	---
Dust to Binder Ratio ^[2] (% passing 0.075/P _{be})	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	0.6 - 1.2	1.2 - 2.0
Voids filled with Binder (VFB or VFA, %)	70-80 ^{[4] [5]}	65-78 ^[4]	65-75 ^[4]	65-75 ^{[3] [4]}	65-75 ^{[3] [4]}	65-75 ^{[3] [4]}	70-80
Tensile Strength Ratio (TSR) (ASTM 4867)	0.70	0.70	0.70	0.70	0.70	0.70	0.70
no antistripping additive	0.75	0.75	0.75	0.75	0.75	0.75	0.75
with antistripping additive							
Draindown at Production Temperature (%)	---	---	---	---	---	---	0.30

^[1] The percent maximum density at initial compaction is only a guideline.

^[2] For a gradation that passes below the boundaries of the caution zone(ref. AASHTO MP3), the dust to binder ratio limits are 0.6 - 1.6.

^[3] For 9.5mm nominal maximum size mixtures, the specified VFB range is 73 - 76%.

^[4] For 37.5mm nominal maximum size mixes, the specified VFB lower limit is 67%.

^[5] For 25.0mm nominal maximum size mixes, the specified VFB lower limit is 67%.

38. QMP Ride; Incentive IRI Ride, Item 440.4410.S.

A Description

- (1) This special provision describes profiling pavements with a non-contact profiler, locating areas of localized roughness, and determining the International Roughness Index (IRI) for each wheel path segment.
- (2) Profile the final riding surface of all mainline pavements, bridges, approaches, and railroad crossings. Roundabouts, and pavements within 150 feet of the points of curvature of roundabout intersections, are excluded from the testing requirements of this provision.
- (3) Pavements that are excluded from localized roughness according to C.5.2(1), bridges, and roundabout intersections are subject to engineer-directed straightedging according to the standard specifications. All other surfaces being tested under this provision are exempt from straightedging requirements.

B (Vacant)

C Construction

C.1 Quality Control Plan

- (1) Submit a written quality control plan to the engineer at or before the pre-construction conference. Ensure that the plan provides the following elements:
 1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of all quality control personnel.
 2. The process by which quality control information and corrective action efforts will be disseminated to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.
 3. The methods and timing used for monitoring and/or testing ride quality throughout the paving process.
 4. The evaluation process that will be used to make improvements to the construction operations if poor ride quality is found during the process control testing.
 5. The methods that will be used to ensure a smooth pavement transition when matching into existing surfaces such as bridges, bridge approaches, or railroad crossings.
 6. The segment locations of each profile run used for acceptance testing.
 7. The approximate timing of acceptance testing in relation to the paving operations.

C.2 Personnel

- (1) Have a profiler operator, certified under the department's highway technician certification program (HTCP), operate the equipment, collect the required data, and document the results using the methods taught in the HTCP profiling course.

C.3 Equipment

- (1) Furnish a profile-measuring device capable of measuring IRI from the list of department-approved devices published on the department's web site:
<http://roadwaystandards.dot.wi.gov/standards/qmp/index.htm>
- (2) Unless the engineer and contractor mutually agree otherwise, arrange to have a calibrated profiler available when paving the final riding surface. Calibrate the profiler according to the manufacturer's recommendations. Provide the engineer with a copy of the most recent calibration results, signed by the certified profiler operator.
- (3) Perform daily calibration verification of the profiler using test methods according to the manufacturer's recommendations. Notify the engineer prior to performing the calibration verification. If the engineer requests, arrange to have the engineer observe the calibration verification and operation. Maintain records of the calibration verification activities, and provide the records to the engineer upon request.

C.4 Testing

C.4.1 Run and Reduction Parameters

- (1) Enter the equipment-specific department-approved filter settings and parameters listed on the department's ride web site.

C.4.2 Contractor Testing

- (1) Operate profilers within the manufacturer's recommended speed tolerances. Perform all profile runs in the direction of travel. Measure the longitudinal profile of each wheel track of each lane. The wheel tracks are 6.0 feet apart and centered in the traveled way of the lane.
- (2) Coordinate with the engineer to schedule profile runs for acceptance. The department may require testing to accommodate staged construction or if corrective action may be required.
- (3) Measure the profiles of each standard or partial segment. Define primary segments starting at a project terminus and running contiguously along the mainline to the other project terminus. Field-locate the beginning and ending points for each profile run. When applicable, align segment limits with the subplot limits used for testing under the QMP Concrete Pavement specification. Define segments one wheel path wide and distinguished by length as follows:
 1. Standard segments are 500 feet long.
 2. Partial segments are less than 500 feet long.
- (4) Treat partial segments as independent segments.
- (5) The department will categorize each standard or partial segment as follows:

Segments with a Posted Speed Limit of 55 MPH or Greater	
Category	Description
HMA I	Asphalt pavement with multiple opportunities to achieve a smooth ride. The following operations performed under this contract are considered as opportunities: a layer of HMA, a leveling or wedging layer of HMA, and diamond grinding or milling of the underlying pavement surface.
HMA II	Asphalt pavement with a single opportunity to achieve a smooth ride.
HMA III	Asphalt pavement segments containing any portion of a bridge, bridge approach, railroad crossing, or intersection. An intersection is defined as the area within the points of curvature of the intersection radii.
PCC II	Concrete pavement including all gaps.
PCC III	Concrete pavement segments containing any portion of a bridge, bridge approach, railroad crossing, or intersection. An intersection is defined as the area within the points of curvature of the intersection radii.

Segments with Any Portion Having a Posted Speed Limit Less Than 55 MPH	
Category	Description
HMA IV	Asphalt pavement including intersections, bridges, approaches, and railroad crossings.
PCC IV	Concrete pavement including gaps, intersections, bridges, approaches, and railroad crossings.

C.4.3 Verification Testing

- (1) The department may conduct verification testing (QV) to validate the quality of the product. A certified HTCP profiler technician will perform the QV testing. The department will provide the contractor with a listing of the names and telephone numbers of all verification personnel for the project.
- (2) The department will notify the contractor before testing so the contractor can observe the QV testing. Verification testing will be performed independent of the contractor's QC work using separate equipment from the contractor's QC tests. The department will provide test results to the contractor within 1 business day after the department completes the testing.
- (3) The engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's testing procedures and equipment. Both parties will document all investigative work.
- (4) If the contractor does not respond to an engineer request to resolve a testing discrepancy, the engineer may suspend production until action is taken. Resolve disputes as specified in C.6.

C.4.4 Documenting Profile Runs

- (1) Compute the IRI for each segment and analyze areas of localized roughness using the ProVAL software. Within 5 business days after completing a final acceptance profile run, submit a copy of the ProVAL smoothness assurance report showing the IRI for each segment and the areas of localized roughness exceeding an IRI of 175 in/mile. The ProVAL software and department-specified inputs are available on the department's web site:

<http://roadwaystandards.dot.wi.gov/standards/qmp/index.htm>

- (2) As part of the profiler software outputs and ProVAL reports, document the areas of localized roughness and the locations of individual features including construction joints, structure limits, design features, utility fixtures, and other features that might affect the department's evaluation of ride quality. Field-locate the areas of localized roughness prior to the engineer's assessment for corrective actions.
- (3) Within 5 business days after completing profiling of the pavement covered under this special provision, unless the engineer and contractor mutually agree to a different timeline, submit the electronic ProVAL project file containing the .ERD files for each profiler acceptance run. Submit profile data using the department's Materials Reporting System (MRS) software available on the department's web site:

<http://www.atwoodsystems.com/mrs>

C.5 Corrective Actions

C.5.1 General

- (1) Correct the ride as the engineer directs. The department will independently assess whether a repair will help or hurt the long-term pavement performance and/or public perception of the ride before deciding on corrective action.

C.5.2 Corrective Actions for Localized Roughness

- (1) Apply localized roughness requirements to all pavements, including HMA III, PCC III, HMA IV, and PCC IV; except localized roughness requirements will not be applied to pavements within 25 feet of the following surfaces if they are not constructed under this contract: bridges, bridge approaches, or railroad crossings. The department may direct the contractor to make corrections to the pavement within the 25-foot exclusionary zones and will compensate the contractor for the extra work.
- (2) The engineer will review each individual wheel track for areas of localized roughness. The engineer will assess areas of localized roughness that exceed an IRI of 175 in/mile and do one of the following for each location:
 1. Direct the contractor to correct the area to minimize the effect on the ride.
 2. Leave the area of localized roughness in place with no pay reduction.
 3. Except for HMA IV and PCC IV segments, assess a pay reduction as follows for each location in each wheel path:

Localized Roughness IRI (in/mile)	Pay Reduction ^[1] (dollars)
> 175	(Length in Feet) x (IRI – 175)

^[1] A maximum \$250 pay reduction may be assessed for locations of localized roughness that are less than or equal to 25 feet long. Locations longer than 25 feet may be assessed a maximum pay reduction of \$10 per foot.

- (3) The engineer will not direct corrective action or assess a pay reduction for an area of localized roughness without independent identification of that area as determined by physically riding the pavement. For corrections, use only techniques the engineer approves.
- (4) Re-profile corrected areas to verify that the IRI is less than 140 in/mile after correction. Submit a revised ProVAL smoothness assurance report for the corrected areas to validate the results.

C.5.3 Corrective Actions for Excessive IRI

- (1) If an individual segment IRI exceeds 140 in/mile for HMA I, HMA II, and PCC II pavements after correction for localized roughness, the engineer may require the contractor to correct that segment. Correct the segment final surface as follows:

HMA I:	Correct to an IRI of 60 in/mile using whichever of the following methods the engineer directs: Mill and replace the full lane width of the riding surface excluding the paved shoulder. Correct the full lane width using techniques approved by the engineer.
HMA II:	Correct to an IRI of 85 in/mile using whichever of the following methods the engineer directs: Mill and replace the full lane width of the riding surface excluding the paved shoulder. Correct the full lane width using techniques approved by the engineer.
PCC II:	Correct to an IRI of 85 in/mile using whichever of the following methods the engineer directs: Continuous diamond grinding of the full lane width of the riding surface including adjustment of the paved shoulders Correct the full lane width using techniques approved by the engineer.

- (2) Re-profile corrected segments to verify that the final IRI meets the above correction limits and there are no areas of localized roughness. Submit a revised ProVAL smoothness assurance report for the corrected areas to validate the results. Segments failing these criteria after correction are subject to the engineer's right to adjust pay for non-conforming work under standard spec 105.3.

C.6 Dispute Resolution

- (1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate testing procedures, and perform additional testing.
- (2) If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming pavement, the department will use third party testing to resolve the dispute. The department's Quality Assurance Unit, or a mutually agreed on independent testing company, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent tester. The department may use third party tests to evaluate the quality of questionable pavement and determine the appropriate payment.

D Measurement

- (1) The department will measure Incentive IRI Ride by the dollar, adjusted as specified in E.2.

E Payment

E.1 Payment for Profiling

- (1) Costs for furnishing and operating the profiler, documenting profile results, and correcting the final pavement surface are incidental to the contract.

E.2 Pay Adjustment

- (1) The department will pay incentive for ride under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
440.4410.S	Incentive IRI Ride	DOL

- (2) Incentive payment is not limited, either up or down, to the amount the schedule of items shows.
- (3) The department will administer disincentives for ride under the Disincentive IRI Ride administrative item.
- (4) The department will not assess disincentive on HMA III or PCC III segments. Incentive pay for HMA III and PCC III segments will be according to the requirements for the category of the adjoining segments.
- (5) The department will adjust pay for each segment based on the initial IRI for that segment before any corrective action is taken. The department will base disincentives on the IRI after correction for pavement meeting the following conditions:
 - All Pavement: The corrective work is performed in a contiguous, full lane width section 500 feet long, or a length as agreed with the engineer.
 - HMA Pavements: The corrective work is a mill and inlay or full depth replacement and the inlay or replacement layer thickness conforms to standard spec 460.3.2.
 - Concrete Pavements: The corrective work is a full depth replacement and conforms to standard spec 415.
- (6) The department will adjust pay for 500-foot long standard segments nominally one wheel path wide using equation “QMP 1.03” as follows:

HMA I	
Initial IRI (inches/mile)	Pay Adjustment^[1] (dollars per standard segment)
< 30	250
≥ 30 to < 35	1750 – (50 x IRI)
≥ 35 to < 60	0
≥ 60 to < 75	1000 – (50/3 x IRI)
≥ 75	-250

HMA II and PCC II	
Initial IRI (inches/mile)	Pay Adjustment^{[1][2]} (dollars per standard segment)
< 50	250
≥ 50 to < 55	2750 – (50 x IRI)
≥ 55 to < 85	0
≥ 85 to < 100	(4250/3) – (50/3 x IRI)
≥ 100	-250

HMA IV and PCC IV	
Initial IRI (inches/mile)	Pay Adjustment^{[1][2]} (dollars per standard segment)
< 50	250
≥ 50 to < 75	750 – (10 x IRI)
≥ 75	0

^[1] If the engineer directs placing upper layer asphaltic mixtures between October 15 and May 1 for department convenience as specified in standard spec 450.3.2.1(5), the department will not adjust pay for ride on pavement the department orders the contractor to place when the temperature, as defined in standard spec 450.3.2.1(2), is less than 36 F.

^[2] If the engineer directs placing concrete pavement for department convenience, the department will not adjust pay for ride on pavement the department orders the contractor to place when the air temperature falls below 35 F.

(7) The department will prorate the pay adjustment for partial segments based on their length.

440-010 (20100709)

39. QMP HMA Pavement Nuclear Density.

A Description

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

- (1) This special provision describes density testing of in-place HMA pavement with the use of nuclear density gauges. Conform to standard spec 460 as modified in this special provision.
- (2) Provide and maintain a quality control program defined as all activities and documentation of the following:
 1. Selection of test sites.
 2. Testing.
 3. Necessary adjustments in the process.
 4. Process control inspection.

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

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

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

<http://www.atwoodsystems.com/mrs>

B Materials

B.1 Personnel

- (1) Perform HMA pavement density (QC, QV) testing using a HTCP certified nuclear technician I, or a nuclear assistant certified technician (ACT-NUC) working under a certified technician.
- (2) If an ACT is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

B.2 Testing

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

B.3 Equipment

B.3.1 General

- (1) Furnish nuclear gauges from the department's approved product list at <http://www.dot.wisconsin.gov/business/engrser/approvedprod.htm>.
- (2) Have the gauge calibrated by the manufacturer or an approved calibration service within 12 months of its use on the project. Retain a copy of the manufacturer's calibration certificate with the gauge.
- (3) Prior to each construction season, and following any calibration of the gauge, the contractor must perform calibration verification for each gauge using the reference blocks located in the department's central office materials laboratory. To obtain information or schedule a time to perform calibration verification, contact the department's Radiation Safety Officer at:

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

B.3.2 Correlation of Nuclear Gauges

B.3.2.1 Correlation of QC and QV Nuclear Gauges

- (1) Select a representative section of the compacted pavement prior to or on the first day of paving for the correlation process. The section does not have to be the same mix design.
- (2) Correlate the 2 or more gauges used for density measurement (QC, QV). The QC and QV gauge operators will perform the correlation on 5 test sites jointly located. Record each density measurement of each test site for the QC, QV and back up gauges.
- (3) Calculate the average of the difference in density of the 5 test sites between the QC and QV gauges. Locate an additional 5 test sites if the average difference exceeds 1.0 lb/ft^3 . Measure and record the density on the 5 additional test sites for each gauge.
- (4) Calculate the average of the difference in density of the 10 test sites between the QC and QV gauges. Replace one or both gauges if the average difference of the 10 tests exceeds 1.0 lb/ft^3 and repeat correlation process from B.3.2.1 (2).
- (5) Furnish one of the QC gauges passing the allowable correlation tolerances to perform density testing on the project.

B.3.2.2 Correlation Monitoring

- (1) After performing the gauge correlation specified in B.3.2.1, establish a project reference site approved by the department. Clearly mark a flat surface of concrete or asphalt or other material that will not be disturbed during the duration of the project. Perform correlation monitoring of the QC, QV, and all back-up gauges at the project reference site.
- (2) Conduct an initial 10 density tests with each gauge on the project reference site and calculate the average value for each gauge to establish the gauge's reference value. Use the gauge's reference value as a control to monitor the calibration of the gauge for the duration of the project.
- (3) Check each gauge on the project reference site a minimum of one test per day if paving on the project. Calculate the difference between the gauge's daily test result and its reference value. Investigate if a daily test result is not within 1.5 lb/ft^3 of its reference value. Conduct 5 additional tests at the reference site once the cause of deviation is corrected. Calculate and record the average of the 5 additional tests. Remove the gauge from the project if the 5-test average is not within 1.5 lb/ft^3 of its reference value established in B.3.2.2(2).
- (4) Maintain the reference site test data for each gauge at an agreed location.

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

- (1) A lot consists of the tonnage placed each day for each layer and target density specified in standard spec 460.3.3.1. A lot may include partial sublots.
- (2) Divide the roadway into sublots. A sublot is 1500 lane feet for each layer and target density.
- (3) A sublot may include HMA placed on more than one day of paving. Test sublots at the pre-determined random locations regardless of when the HMA is placed. No additional testing is required for partial sublots at the beginning or end of a day's paving.
- (4) If a resulting partial quantity at the end of the project is less than 750 lane feet, include that partial quantity with the last full sublot of the lane. If a resulting partial quantity at the end of the project is 750 lane feet or more, create a separate sublot for that partial quantity.
- (5) Randomly select test locations for each sublot as specified in CMM 8.15 prior to paving and provide a copy to the engineer. Locate and mark QC density test sites when performing the tests. Perform density tests prior to opening the roadway to traffic.
- (6) Use Table 1 to determine the number of tests required at each station, depending on the width of the lane being tested. When more than one test is required at a station, offset the tests 10 feet longitudinally from one another to form a diagonal testing row across the lane.

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

Table 1

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

- (1) A lot represents a combination of the total daily tonnage for each layer and target density.
- (2) Each side road, crossover, turn lane, ramp, and roundabout must contain at least one sublot for each layer.
- (3) If a side road, crossover, turn lane, or ramp is 1500 feet or longer, determine sublots and random test locations as specified in B.4.1.1.

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

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

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

- (1) Calculate the average subplot densities using the individual test results in each subplot.
- (2) If all subplot averages are no more than one percent below the target density, calculate the daily lot density by averaging the results of each random QC test taken on that day's material.
- (3) If any subplot average is more than one percent below the target density, do not include the individual test results from that subplot when computing the lot average density and remove that subplot's tonnage from the daily quantity for incentive. The tonnage from any such subplot is subject to disincentive pay according to standard spec 460.5.2.2.

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

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

B.4.2.2.2 Width of 5 Feet or Less

- (1) If all subplot test results are no more than 3.0 percent below the minimum target density, calculate the daily lot density by averaging all individual test results for the day.
- (2) If a subplot test result is more than 3.0 percent below the target density, the engineer may require the unacceptable material to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine the limits of the unacceptable material according to B.4.3.

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

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

B.4.2.4 Documentation

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

B.4.3 Corrective Action

- (1) Notify the engineer immediately when an individual test is more than 3.0 percent below the specified minimum in standard spec 460.3.3.1. Investigate and determine the cause of the unacceptable test result.
- (2) The engineer may require unacceptable material specified in B.4.3(1) to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine limits of the unacceptable area by measuring density of the layer at 50-foot increments both ahead and behind the point of unacceptable density and at the same offset as the original test site. Continue testing at 50-foot increments until a point of acceptable density is found as specified in standard spec 460.5.2.2(1). Removal and replacement of material may be required if extended testing is in a previously accepted subplot. Testing in a previously accepted subplot will not be used to recalculate a new lot density.
- (3) Compute unacceptable pavement area using the product of the longitudinal limits of the unacceptable density and the full subplot width within the traffic lanes or shoulders.
- (4) Retesting and acceptance of replaced pavement will be according to standard spec 105.3.
- (5) Tests indicating density more than 3.0 percent below the specified minimum, and further tests taken to determine the limits of unacceptable area, are excluded from the computations of the subplot and lot densities.
- (6) If 2 consecutive subplot averages within the same paving pass and same target density are more than one percent below the specified target density, notify the engineer and take necessary corrective action. Document the locations of such sublots and the corrective action that was taken.

B.5 Department Testing

B.5.1 Verification Testing

- (1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will test randomly at locations independent of the contractor's QC work. The department will perform verification testing at a minimum frequency of 10 percent of the sublots and a minimum of one subplot per mix design. The sublots selected will be within the active work zone. The contractor will supply the necessary traffic control for the department's testing activities.
- (2) The QV tester will test each selected subplot using the same testing requirements and frequencies as the QC tester.
- (3) If the verification subplot average is not more than one percent below the specified minimum target density, use the QC tests for acceptance.

- (4) If the verification subplot average is more than one percent below the specified target density, compare the QC and QV subplot averages. If the QV subplot average is within 1.0 lb/ft³ of the QC subplot average, use the QC tests for acceptance.
- (5) If the first QV/QC subplot average comparison shows a difference of more than 1.0 lb/ft³ each tester will perform an additional set of tests within that subplot. Combine the additional tests with the original set of tests to compute a new subplot average for each tester. If the new QV and QC subplot averages compare to within 1.0 lb/ft³, use the original QC tests for acceptance.
- (6) If the QV and QC subplot averages differ by more than 1.0 lb/ft³ after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

- (1) The testers may perform investigation in the work zone by analyzing the testing, calculation, and documentation procedures. The testers may perform gauge correlation according to B.3.2.1.
- (2) The testers may use correlation monitoring according to B.3.2.2 to determine if one of the gauges is out of tolerance. If a gauge is found to be out of tolerance with its reference value, remove the gauge from the project and use the other gauge's test results for acceptance.
- (3) If the testing discrepancy cannot be identified, the contractor may elect to accept the QV subplot density test results or retesting of the subplot in dispute within 48 hours of paving. Traffic control costs will be split between the department and the contractor.
- (4) If investigation finds that both gauges are in error, the contractor and engineer will reach a decision on resolution through mutual agreement.

B.7 Acceptance

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

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

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

E.2 Disincentive for HMA Pavement Density

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

E.3 Incentive for HMA Pavement Density

- (1) Delete standard spec 460.5.2.3.
- (2) If the lot density is greater than the minimum specified in standard spec table 460-3 and all individual air voids test results for that mixture are within +1.0 percent or -0.5 percent of the design target in standard spec table 460-2, the department will adjust pay for that lot as follows:

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

- (3) The department will adjust pay under the Incentive Density HMA Pavement bid item. Adjustment under this item is not limited, either up or down, to the bid amount shown on the schedule of items.
- (4) If a traffic lane meets the requirements for disincentive, the department will not pay incentive on the integrally paved shoulder.
- (5) Submit density results to the department electronically using the MRS software. The department will validate all contractor data before determining pay adjustments.
460-020 (20100709)

40. Asphaltic Surface Patching.

Supplement standard spec 465.2(1) with the following:

Under the Asphaltic Surface Patching item submit a mix design. Furnish asphaltic mixture meeting the requirements specified for type HMA Pavement Type E-10 and Asphaltic Material PG64-22; except the engineer will not require the contractor to conform to the quality management program as specified under standard spec 460.2.8.

Supplement standard spec 465.3.1(1) with the following:

Repair existing potholes, spalling and other deficiencies that have not been specified to receive full depth Asphaltic Surface Patching prior to the HMA overlay of southbound Verona Road. Remove all unsound and deteriorated material including pre-existing patch material and joint sealants as directed by the engineer. Blow out repair areas with 80-psi minimum compressed air until all dirt, dust or deleterious matter is removed from the repair area.

Supplement standard spec 465.5(2) with the following:

Payment for Asphaltic Surface Patching is full compensation for identifying deficient areas, removing and disposing of unsound materials, preparing the area for receiving asphaltic mixture; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

41. Expansion Device, B-13-666.

A Description

This special provision describes furnishing and installing an expansion device in accordance to standard spec 502, as shown on the plans, and as hereinafter provided.

B Materials

The minimum thickness of the polychloroprene strip seal shall be ¼-inch for non-reinforced elastomeric glands and 1/8-inch for reinforced glands. Furnish the strip seal gland in lengths suitable for a continuous one-piece installation at each individual expansion joint location. Provide preformed polychloroprene strip seals that conform to the requirements ASTM D3542, and have the following physical properties:

Property Requirements	Value	Test Method
Tensile Strength, min.	2000 psi	ASTM D412
Elongation @ Break, min	250%	ASTM D412
Hardness, Type A, Durometer	60 ± 5 pts.	ASTM D2240
Compression Set, 70 hours @212°F, max.	35%	D395 Method B Modified
Ozone Resistance, after 70 hrs. at 100°F under 20% Strain with 100 pphm ozone	No Cracks	ASTM D1149 Method A
Mass Change in Oil 3 after 70 hr. 212°F Mass Change, max.	45%	ASTM D471

Install the elastomeric strip seal gland with tools recommended by the manufacturer, and with a lubricant adhesive conforming to the requirements of ASTM D4070.

The manufacturer and model number shall be one of the following approved strip seal expansion device products:

Manufacturer	Model Number Strip Seal Gland Size*		
	4-Inch	5-Inch	6-Inch
D.S. Brown	SSA2-A2R-400	SSA2-A2R-XTRA	SSA2-A2R-XTRA
R.J. Watson	RJA-RJ400	RJA-RJ500	RJA-RJ600
Watson Bowman Acme	A-SE400	A-SE500	A-SE800
Commercial Fabricators	A-AS400	-----	-----

*Expansion device strip seal gland size requirement of 4", 5", and 6" shall be as shown on the plans.

Furnish manufacturer's certification for production of polychloroprene represented showing test results for the cured material supplied, and certifying that it meets all specified requirements.

The steel extrusion or retainer shall conform to ASTM designation A 709 grade 36 steel. After fabrication, steel shall be galvanized conforming to the requirements ASTM A123.

Manufacturer's certifications for adhesive and steel shall attest that the materials meet the specification requirements.
502-020 (20110615)

42. Precast Concrete Box Culvert, 3 FT x 6 FT, Item 504.2000.S.01.

A Description

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

B Materials

Provide materials and fabricate Precast Concrete Box Culvert in accordance to Precast Reinforced Concrete Box Sections for Culverts, Storm Drains and Sewers AASHTO Designation M259 or ASTM C1433, except that the concrete mixture shall contain not less than 565 pounds of Portland cement, blended cement or Portland cement plus pozzolanic admixture per cubic yard. Slab thickness, areas of reinforcement, and other details shall be as shown on the plans.

C (Vacant)

D Measurement

The department will measure Precast Concrete Box Culvert, 3 FT x 6 FT, completed in accordance to the contract and accepted, in length by the linear foot in place. The box culvert will be measured on the centerline of the box along the flow line.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
504.2000.S.01	Precast Concrete Box Culvert, 3 FT x 6 FT	LF

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

504-015 (20040415)

- 43. Concrete Staining B-13-664, Item 517.1010.S.01; B-13-666, Item 517.1010.S.02; R-13-204, Item 517.1010.S.03; R-13-235, Item 517.1010.S.04; R-13-236, Item 517.1010.S.05; R-13-242, Item 517.1010.S.06; R-13-243, Item 517.1010.S.07; S-13-383, Item 517.1010.S.08; S-13-406, Item 517.1010.S.09; S-13-407, Item 517.1010.S.10; S-13-376, Item 517.1010.S.12; S-13-384, Item 517.1010.S.13; S-13-394, Item 517.1010.S.14; S-13-395, Item 517.1010.S.15.**

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 in accordance 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 Surfer, Smooth by TK Products
Tri-Sheen Acrylic by TK Products
TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products
Safe-Cure and Seal EPX by Chem Masters
H + C Shield Plus by Sherwin-Williams

C Construction

C.1 General

Furnish, prepare, apply, cure, and store all materials in accordance 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 in accordance 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 in accordance 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.

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 structures, apply the stain to sample panels measuring a minimum of 60-inches x 60-inches and constructed to demonstrate workmanship in the use of the form liner specified on the structure if applicable. Coordinate and apply the stain to sample panels provided under bid item Wall Concrete Panel Mechanically Stabilized Earth LRFD (structure) as appropriate. 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 in accordance to the plan.

D Measurement

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
517.1010.S.01	Concrete Staining B-13-664	SF
517.1010.S.02	Concrete Staining B-13-666	SF
517.1010.S.03	Concrete Staining R-13-204	SF
517.1010.S.04	Concrete Staining R-13-235	SF
517.1010.S.05	Concrete Staining R-13-236	SF
517.1010.S.06	Concrete Staining R-13-242	SF
517.1010.S.07	Concrete Staining R-13-243	SF
517.1010.S.08	Concrete Staining S-13-383	SF
517.1010.S.09	Concrete Staining S-13-406	SF
517.1010.S.10	Concrete Staining S-13-407	SF
517.1010.S.11	Intentionally Omitted	---
517.1010.S.12	Concrete Staining S-13-376	SF
517.1010.S.13	Concrete Staining S-13-384	SF
517.1010.S.14	Concrete Staining S-13-394	SF
517.1010.S.15	Concrete Staining S-13-395	SF

Payment is full compensation for coordination with staining sample panels; for proving sample panels as necessary; for furnishing and applying the two coat system; for preparing the concrete surface; and for preparing the sample panels.

517-110 (20100709)

44. Architectural Surface Treatment B-13-664, Item 517.1050.S.01; B-13-666, Item 517.1050.S.02; R-13-204, Item 517.1050.S.03; R-13-242, Item 517.1050.S.04; R-13-243, Item 517.1050.S.05.

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 1/4-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 3/4-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 1/4-inch from each other, attach liner securely to forms in accordance to the manufacturer’s recommendations, and coordinate wall ties with form liner and form manufacturer, e.g., diameter, size, and frequency.

C.4 Surface Finishing

Ensure that the textured surface is free of laitance; sandblasting is not permitted.

Grind or fill pouring blemishes.

D Measurement

The department will measure Architectural Surface Treatment (Structure) in area by the square foot of architectural surface acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
517.1050.S.01	Architectural Surface Treatment B-13-664	SF
517.1050.S.02	Architectural Surface Treatment B-13-666	SF
517.1050.S.03	Architectural Surface Treatment R-13-204	SF
517.1050.S.04	Architectural Surface Treatment R-13-242	SF
517.1050.S.05	Architectural Surface Treatment R-13-243	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.

517-150 (20110615)

45. Noise Barriers Double-Sided Sound Absorptive N-13-2, Item 531.0300.S.01; N-13-3, Item 531.0300.S.02; N-13-4, Item 531.0300.S.03.

A Description

This special provision describes designing, fabricating, transporting, and erecting double-sided sound absorptive noise barriers in accordance to the plans, applicable portions of the standard specifications, the department-approved installation specifications, and as hereinafter provided.

B Materials

All materials used in the work shall conform to the pertinent requirements of the standard specifications and as hereinafter specified.

Provide grade A, A-2, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to standard spec 501 for concrete posts and the core component of composite concrete sound absorbing panels.

B.1 System Pre-Qualification

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 at: <http://www.dot.wisconsin.gov/business/engrserv/approvedprod.htm>. Systems eligible for use on this project shall be pre-qualified and added to that list prior to the award of this contract.

B.2 Design

The department specifies pre-qualified double-sided sound absorptive noise barrier products on the department's approved product lists available at:

<http://www.dot.wisconsin.gov/business/engrserv/approvedprod.htm>

Provide the name of the selected system 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. The suppliers of the noise barrier components shall attend this meeting.

B.2.1 Structural and Foundation Design

The structural and foundation design of the noise barrier system shall be in accordance to the current edition of “Guide Specifications for Structural Design of Sound Barriers published by the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, NW, Suite 225, Washington, DC 20001.

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.

The top 3-feet of supporting soil shall be ignored in the design of ground-mounted barrier foundations.

B.2.2 Fire Hose Access Openings

Design fire hose access openings, at locations shown on the plans, with additional reinforcement and protective coating 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 Color and Surface Texture

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.

The final color of the panels and posts shall be Federal Color No. 33448 and the top band of the panels shall be Federal Color No. 20122 in accordance with the plans.

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.

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.2.6 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.

B.2.7 Noise Reduction Coefficient (NRC)

Design the noise barrier so that at least 70 percent of the highway side of the noise barrier panels that are 2-feet above the ground shall have a minimum NRC of 0.80. The remaining noise barrier panels on the highway side that are 2-feet or more above the ground shall have a minimum NRC of 0.70. The minimum NRC for panels on the residential side, which are 2-feet above the ground shall be 0.70.

B.2.8 Structural Steel

Galvanize all structural steel after fabrication by the hot dip process in accordance to ASTM A123. Galvanize steel hardware and threaded fasteners, bolts, nuts, and washers in accordance 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 per SSPC-SP1 to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. The cleaned surface should then be Brush Blast Cleaned per SSPC-SP7 to create a slight angular surface profile (1.0 – 1.5 mils suggested) for adhesion. Blasting should not fracture the galvanized finish or remove any dry film thickness.

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.2.5. 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 Perimeter Drive, Suite 710 Schaumburg, IL 60173 (847) 330-1562	Tie	Recoatable Epoxy Primer B67-5 Series/B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carbolin 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	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

B.2.9 Design Coordination

B.2.9.1 Underground Utility and Drainage Crossings

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.

B.2.9.2 Proposed Structures

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.

For noise barriers mounted on proposed bridges and retaining walls, coordinate and design the noise barrier post spacing to coincide with noise barrier post and embedded noise barrier anchor assembly spacing shown on the bridge and retaining wall plans. Coordinate any required changes to the noise barrier post spacing and embedded noise barrier anchor assembly locations shown on the bridge and retaining wall plans, if required for the design of the noise barrier.

B.2.10 Project Submittal Requirements

Submit three copies of the following documents to the engineer for review:

1. All structural and foundation design calculations.
2. Detailed design/shop drawings.
3. Certifications for all materials, including trade name of the products along with the name and address of the manufacturers.
4. Specifications regarding installation requirements and sequence of construction, including a detailed bill of materials.
5. Detailed colored plan of the aesthetic treatment for the entire noise barrier.

Submit the following documents to the Bureau of Structures Design Section:

1. Three sets of design/shop drawings and one set of design calculations for review and acceptance. Any necessary revisions and/or corrections required for acceptance will be noted and returned to the contractor.

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

B.2.11 Review Process

All documents, including drawings, calculations and related material submitted for review will be given final acceptance by the engineer.

It is expressly understood that the engineer's review and acceptance of the drawings, calculations, and related material, submitted by the contractor, means only an acceptance of the character and sufficiency of the details, 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 shall 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 the submittal requirements shall be at the contractor's own risk.

B.3 Wall System Testing Requirements

All test reports required in section B.3 shall reference the specific facility which will be producing material for this contract. Test reports shall be representative of differing production lots on materials manufactured for this specific contract which is representative of the manufacturer's continuous production for wall systems. Panels tested or from which samples will be taken from shall 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. Test reports will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. Testing shall be conducted 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.

Products tested should be tested as a system under the requirements in B.3.1 and B.3.2; this includes stain intended for the supplied concrete and composite concrete components wall panels.

B.3.1 Noise Reduction Coefficient (NRC)

The noise barrier panel shall be tested in accordance to ASTM C423, and placed in accordance to ASTM E795, mounting type A, to determine the noise reduction coefficient (NRC) of the material. Submit to the engineer an independent testing laboratory test report that shows that the noise barrier panels achieve an NRC as specified for each side of the barrier.

B.3.2 Salt Scaling Resistance

All sound absorbing composite concrete and composite concrete components shall be tested for salt scaling resistance in accordance to ASTM C672 and the following modifications and/or requirements.

B.3.2.1 Test Specimens

For the purposes of the test, three specimens of a full cross section of the composite panel at least 12 inches x 12-inches shall be selected at random from the provided composite panel as defined in B.3. Sample specimens shall be from production panels as selected and marked by the engineer, representative of the manufacturer's continuous production operation.

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

B.3.2.2 Test Procedure

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

The specimens shall then be subjected to continuous freeze-thaw cycles as follows:

After each five cycles, the salt solution and particles of deteriorated concrete shall be removed from the slab and collected 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. This washing should continue until all loose particles are removed from the concrete. The solution shall then be strained through a filter and the residue dried out at 221 degrees Fahrenheit to a constant mass condition. The residue shall be cumulatively weighed after each five cycles. This residue shall be defined as the loss of mass and expressed in pounds per square foot of exposed slab area. This is to exclude the concrete core for composite concrete panels in the calculation of the area used to express the mass loss per square foot. The loss of mass shall be calculated to the nearest 0.01 pounds per square foot. The surfaces should be rated in accordance to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After the washing of each slab, a new solution of sodium chloride (concentration 3% by mass) shall be placed in the 5 sided water tight container to fully submerge the specimen to a depth of ¼-inch above the top surface of the fully submerged test specimen.

The test shall continue until 50 freeze-thaw cycles have been completed.

During the test each specimen shall be positioned and supported to allow free circulation of the test solution under, around, and over test pieces. The bottom of the specimens shall be supported on blocks in a manner to assure movement of moisture through and around the test specimen(s).

B.3.2.3 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 50 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 50 cycles of freezing and thawing. The measured surfaces are not to include the exposed surface of any core material of a composite concrete component.

- 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 50 cycles freeze-thaw test.
 - 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, 30, 40, and 50 freeze-thaw cycles.
 - 9. Visual rating in accordance to 10.1.5 ASTM C672 including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

B.4 Wall Systems Material Requirement

Contractor shall provide certification of compliance to all applicable requirements in B.4. All material certifications shall reference the specific facility manufacturing the material and this contract. Certifications will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. For projects that do not exceed 100,000 SF, a minimum of 2 lots of material will represent the project, each lot representing equivalent square footage.

B.4.1 Sound Transmission Loss (TL)

Submit to the engineer certification of compliance that the sound transmission loss of the panel material, when tested in accordance to ASTM Standard E90, achieves a transmission loss as specified in B.2.6.

B.4.2 Structural Steel

Submit to the engineer certification of compliance that structural steel galvanized after fabrication is in accordance to ASTM A123. Steel posts of post and panel walls shall be galvanized. Any galvanized surfaces exposed to view shall be coated with an approved paint system as referenced in B.2.8.

B.4.3 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 by ASTM Standard G155, G153, or G152 after 2400 hours of exposure on a cement based test specimen(s).

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

B.4.4 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 in accordance to ASTM B117 and comply with the following requirements:

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

B.4.5 Steel Panels

All steel panels shall be minimum nominal 20 gauge galvanized steel. The steel panels shall be free from laminations, blisters, slivers, open seams, pits from heavy rolled-in scale, ragged edges or other defects that may affect their appearance or use for the intended purpose. All shearing, cutting, and punching shall be done prior to preparation of the panels for application of coatings.

B.4.6 Aluminum Panels

All aluminum panels shall be minimum 0.063 inch nominal thickness or greater. The aluminum panels shall be free from laminations, blisters, slivers, open seams, pits from heavy rolled-in scale, ragged edges or other defects that may affect their appearance or use for the intended purpose. All aluminum panels shall conform to the thickness tolerances of the Aluminum Association, Inc. All shearing, cutting, and punching shall be done prior to preparation of the panels for application of coatings.

B.4.7 Timber Components

All lumber and timber furnished for the work shall be in accordance to the requirements of standard spec 507 and as hereinafter specified.

B.4.7.1 Species of Wood

All lumber and timber, with the exception of Glue Laminated Timber, shall be from one of the following species: Douglas Fir-Larch, Southern Pine, and Hem-Fir.

Glue laminated timber shall be Southern Pine.

B.4.7.2 Preservative Treatment

All timber components shall receive a chemical preservative treatment. The wood shall be dried to 19% or less prior to treatment. The wood shall be treated using a chromated-copper arsenate solution in accordance to standard spec 507.2.2.6. After treatment, all wood having nominal dimensions less than 3-inches by 3-inches shall be air or kiln dried to a maximum moisture content of 15%. Wood in greater dimensions shall be dried to maximum moisture content of 19%. The required Certificate of Preservative Treatment shall indicate compliance with the maximum moisture content requirement(s), in addition to requirements of the preservative treatment specifications herewith set forth. Wood shall be protected from increases in moisture content until incorporated into the work.

B.4.7.3 Glue Laminated Timber

Glue laminated timber shall contain the mark of a recognized inspection agency as being in conformance with ANSI/AITC A190.1. A wet-use adhesive suitable for use with treated wood as shown in ANSI/AITC A190.1 shall be used. Members shall be of Industrial appearance grade per AITC 110.

Lumber to be glue laminated shall be pressure preservative treated prior to gluing to a retention of 0.4 pounds per cubic foot.

B.4.7.4 Lumber

Non-laminated timber shall not exceed the proportion of six (nominal width) to one (nominal thickness) and shall be No. 1 grade or better. Sound knots shall extend through members no farther than 50 percent of the cross-section width. Unsound knots are not permitted. Knots are not permitted in the fastening area of any member.

B.4.7.5 Plywood

Plywood shall be exterior type conforming to the provisions of the US Product Standards PS-1 and shall bear the mark of a qualified and approved inspection and testing agency.

B.4.7.6 Sealant/Stain

All wood components of the barrier system shall be coated with a wood sealer/stain as hereinafter provided.

The manufacturer shall select a sealer/stain from one of the sources on the department's approved product list. Product data sheets shall be provided which indicate the mixing directions and recommended method(s) of application. The method and rate of application shall be as recommended by the producer.

B.4.7.7 Hardware and Fasteners

All hardware and fastening devices shall be either hot dipped galvanized steel or made of nonferrous or stainless steel. Fastening devices shall be screws; no nails or staples shall be allowed.

B.4.7.8 Mineral Fiber Material

Mineral fiber material used to increase sound absorption shall be manufactured in accordance to Federal Specification HH-1-558B and ASTM C612. Mineral fiber material shall have a minimum density of 6 pounds per cubic foot, shall absorb less than 1 percent of water when tested in accordance to ASTM C553, be non-corrosive, and nonhygroscopic. The mineral fiber material shall be fastened to the noise barrier system in a manner to prevent sagging when in a saturated condition.

C Construction

C.1 General

Construct the noise barriers at the locations shown on the plans, in accordance to the contract specifications and design drawings and/or as directed by the engineer. All sound absorbing composite concrete components shall be delivered 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 10 day notice to the engineer of the date that the fabrication of the noise barrier material will commence. Certifications and test reports will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. For projects that do not exceed 100,000 SF a minimum of 2 lots of material will represent the project, each lot representing equivalent square footage.

Panels from which samples will be taken from for testing required in B.3 shall be selected and appropriately marked by the engineer either at the manufactures' plant or from panels delivered to the project at the engineer's option. Test reports will be required for each lot of material not to exceed 100,000 SF of noise barrier produced. Testing shall be conducted 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.

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.

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 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 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.4 Structure Mounted Noise Barriers

Do not erect noise barriers mounted to bridge or retaining wall structures until after the concrete masonry 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 of 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.5 Tolerances The posts and panels comprising the noise barrier shall be installed plumb within 1/2-inch of vertical in 15-feet. The posts shall be located to the line and grades as shown in the plans to within +/- 3/4-inch. Horizontal joints of adjacent panels shall be lined up to a vertical tolerance of 1/4-inch. Where vertical adjustments are required for alignment, a mortar base or steel shims shall be used. Galvanize and prime coat steel shims in accordance to B.2.8.

D Measurement

The department will measure Noise Barriers Double-Sided Sound Absorptive (Structure), as set forth in the contract plans without measurement thereof. Any modifications to the contract quantity caused by corrections or revisions of the original contract plan, which

have been approved by the engineer, will be measured by the square foot. This area in square feet will be determined by measuring the length in linear feet along the faces of the noise barrier, and height in linear feet from bottom to top of the noise barrier, then multiplying the measured length by the measured height, and the contract quantity will be adjusted accordingly to determine the final pay quantity.

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.01	Noise Barriers Double-Sided Sound Absorptive N-13-2	SF
531.0300.S.02	Noise Barriers Double-Sided Sound Absorptive N-13-3	SF
531.0300.S.03	Noise Barriers Double-Sided Sound Absorptive N-13-4	SF

Payment is full compensation for preparing the design drawings and calculations; supplying and delivering samples and test barrier panels as required in B.2.5 and B.3; furnishing all labor, equipment, and materials required for the manufacture, testing, supply, and delivery of the noise barrier material including aesthetic patterns on panel and coloring; furnishing all labor, tools, equipment, and materials required to construct the noise barriers, including site preparation, all necessary excavation, disposing of materials, constructing foundations, and erecting posts and panels.
531-010 (20110615)

46. High Early Strength Concrete Curb and Gutter, Concrete Sidewalk, Concrete Median Blunt Nose, and Concrete Median Sloped Nose.

Replace standard spec 601.2(1), 602.2(1), and 620.2(1) with the following:

601.2 Materials

(1) Furnish materials conforming to the following:

Joint filler.....415.2.3
Concrete..... standard spec 501 - Type III portland cement

602.2 Materials

(1) Furnish materials conforming to the following:

Expansion joint filler.....415.2.3
Concrete.....standard spec 501 - Type III portland cement
Reinforcement.....standard spec 505
Electrical conduit..... standard spec 652

620.2 Materials

(1) Use materials conforming to the requirements for the class of material named and specified below:

Concrete.....standards spec 501 - Type III portland cement
Joint filler.....415.2
Reinforcement.....standard spec 505

47. 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.

611-005 (20030820)

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 in accordance to the requirements of AASHTO M36M.

D Measurement

The department will measure Pipe Grates in units of work, where one unit is one grate, 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
611.9800.S	Pipe Grates	Each

Payment is full compensation for furnishing and installing all materials; and for drilling and connecting grates to pipes.

611-010 (20030820)

49. 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
Service temperature:	-60° F to 200° F (ASTM D648)
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate tensile strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at break (%):	Greater than 100% (ASTM D638)
Chemical resistance:	Inert to most chemicals and acids

C Construction

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.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

Payment is full compensation for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; removing and disposing of fence and posts at project completion; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

(051007) 616-030

50. Mulching.

Supplement standard spec 627.2 with the following:

Mulching material consists of straw or hay in an air-dry condition, wood excelsior fiber, wood chips, or other certified material of a similar nature that the engineer approves, and shall be certified as noxious weed seed free forage and mulch, as designated by the North American Weed Free Forage Certification Program.

Utilize one of the suppliers as noted below or approved equal and provide documentation of certification of weed seed free forage and mulch:

Golden Express Farms LLC of Rock County
Jonathan Gibbs of Dodge County
Hayescrest Farm of Fond du Lac County

Replace standard spec 627.3.2 with the following:

Perform the work using Method B, Tackifier.

51. Seeding.

Supplement standard spec 630.2.1.4 with the following:

Store seed as specified until 24 hours before the seed is to be placed on the project.

52. Signs Reflective Type II.

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.

53. Blue Specific Service Signs.

Supplement standard spec 638.3.4 with the following:

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, Derse, Inc., is responsible for these signs. Contact Mark Rognsvoog of the Derse Company at (800) 345-5772 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. 638-010 (20120615)

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

Perform this work in accordance 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 Madison, become the property of the City of Madison.

Store 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. Store the disassembled materials as follows:

- Signs – Banded and neatly stacked on pallets.
- Posts - Banded and neatly stacked on pallets.
- Hardware – In 5-gallon pails or burlap sacks.

Upon completion of the removal and storage of the signing materials, contact the City of Madison Traffic Engineering Division Field Operations at (608) 266-4767 to schedule material pick up.

55. Field Facilities.

Supplement standard spec 642.2.2.1 (3) with the following:

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

- Uses toner, not ink.
- Has fax capability.
- Has auto-feed capability.
- Can copy and scan both 8 1/2" x 11" and 11" x 17" paper.

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

Add standard spec 642.2.2.1 (5) with the following:

Provide a field office having a hard surface parking facility with a minimum capacity of 8 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 750 square feet including a meeting room that is at least 20 feet by 20 feet; furnish indoor bathroom facilities that is housed within, or directly adjacent to, the field office; clean, maintain, and supply the field office and bathroom facilities weekly; and equipped as specified in standard spec 642.2.2.1; and equipped with the following:

- Five suitable office desks with drawers and locks.
- Five additional office chairs for a total of seven.
- One four-drawer file cabinet.
- One four-shelf bookcase.
- Two 2.5 x 5 foot (minimum) tables.
- Two 4 x 8 foot (minimum) tables for the meeting room.
- Ten, or more, folding chairs.

Add standard spec 642.3 (7) with the following:

(7) Locate the field office to be within ½ mile of the Verona Road-Beltline Interchange.

Add standard spec 642.5 (4) with the following:

(4) Payment of the field office is full compensation of providing a weekly cleaning service for the field office and bathroom, and for providing bathroom supplies as necessary.

56. Nighttime Work Lighting-Stationary.

A Description

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

B (Vacant)

C Construction

C.1 General

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

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

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

C.2 Portable Lighting

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

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

C.3 Light Level and Uniformity

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

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

C.4 Glare Control

Design, install, and operate all lighting supplied under these specifications to minimize or avoid glare that interferes with all traffic on the roadway or that causes annoyance or discomfort for properties adjoining the roadway. Locate, aim, and adjust the luminaires to

provide the adequate level of illumination and the specified uniformity in the work area without the creation of objectionable glare.

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

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

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

C.5 Continuous Operation

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

D (Vacant)

E Payment

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

57. Traffic Control Flexible Tubular Marker Posts.

Replace standard spec 643.3.4.1(1) with the following:

Under the Traffic Control Flexible Tubular Marker Posts bid item, furnish, install and maintain flexible tubular marker posts with reflective sheeting until contract completion. Posts do not require removal and are to remain in place at completion of the project.

Replace standard spec 643.4.3(4) with the following:

The department will measure Traffic Control Flexible Tubular Marker Posts and Traffic Control Flexible Tubular Marker Bases as each individual installation acceptably completed. The department will measure replacing damaged posts and bases by each post and base replaced.

58. Traffic Control Flexible Tubular Marker Bases.

Replace standard spec 643.3.4.2(1) with the following:

Under the Traffic Control Flexible Tubular Marker Bases bid item, furnish, install and maintain bases for flexible tubular marker posts. Bases do not require removal and are to remain in place at completion of the project.

Replace standard spec 643.4.3(4) with the following:

The department will measure Traffic Control Flexible Tubular Marker Posts and Traffic Control Flexible Tubular Marker Bases as each individual installation acceptably completed. The department will measure replacing damaged posts and bases by each post and base replaced.

59. Pavement Marking Grooved Wet Reflective Tape, 4-Inch, Item 646.0881.S; 8-Inch, Item 646.0883.S.

A Description

This special provision describes furnishing, grooving and installing preformed wet reflective pavement marking tape for grooved applications as shown on the plans, according to standard spec 646, and as hereinafter provided.

B Materials

Furnish grooved wet reflective pavement marking tape and adhesive material per manufacturer's recommendations, if required, from the department's approved products list.

Furnish a copy of the manufacturer's recommendations to the engineer before preparing the pavement marking grooves.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of pavement marking tape.

Plane the grooved lines according to details in the plan and per manufacturer's recommendations. Use grooving equipment with a free-floating, independent cutting head. Plane a minimum number of passes to create a grooved surface per manufacturer's recommendations.

C.2 Groove Depth

Cut the groove to a depth of 120 mils \pm 10 mils from the pavement surface or, if tined, from the high point of the tined surface. To measure the depth, the contractor may use a depth plate placed in the groove and a straightedge placed across the plate and groove, or the contractor may use a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Longitudinal Markings

Cut the groove one-inch wider than the width of the tape.

C.4 Groove Position

Position the groove edge according to plan details. Groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the tape segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with high-pressure water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the adhesive, and pavement marking tape. Use a high-pressure air blower with at least 185 ft³/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 ft³/min air flow and 120 psi air pressure to clean the groove.

C.5.3 Existing Asphalt

Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 ft³/min air flow and 120 psi air pressure to clean the groove.

C.6 Tape Application

Apply the wet reflective pavement marking tape when both the air and surface temperature are 40 degrees F and rising.

Apply tape in the groove as per manufacturer's recommendations. If manufacturer's recommendations require surface preparation adhesive.

- For the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee:
 - Apply SPA-60 during May 1 to September 30, both dates inclusive due to Volatile Organic Compound Limitations.
 - Apply P-50 during October 1 to April 30, both dates inclusive.
- For the remainder counties:
 - Apply either adhesive.

Refer to the manufacturer's instructions for determining when the surface preparation adhesive is set.

Tamp the wet reflective pavement marking tape with a tamper cart roller, with a minimum of a 200-lb load, cut to fit the groove. Tamp a minimum of three complete cycles (6 passes) with grooved modified tamper roller cart.

D Measurement

The department will measure Pavement Marking Grooved Wet Reflective Tape (Width) for grooved applications in length by the linear foot of tape placed according to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0881.S	Pavement Marking Grooved Wet Reflective Tape 4-inch	LF
646.0883.S	Pavement Marking Grooved Wet Reflective Tape 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for removing temporary pavement marking, if necessary.

646-018 (20120615)

60. 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

Furnish conduit and fittings 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.

61. General Provisions for Intelligent Transportation Systems (ITS)-Control of Materials.**Standard spec 106.2 – Supply Source and Quality**

Supplement standard spec 106.2 with the following:

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

Department-furnished Items
Overhead Dynamic Message Sign and Controller
Sidemount Dynamic Message Sign and Controller
Mounted Cabinet
IP 900 MHz Spread Spectrum Radio
IP 900 MHz Spread Spectrum Radio Antenna
IP 5.8 GHz Radio and Antenna
Ethernet Switch and Terminal Servers
Ethernet Video Codec
Microwave Detector Assembly
Dome Camera Assembly
50-Foot Camera Pole With Lowering Mechanism
Cellular Modem
Portable Changeable Message Sign
Wireless Bluetooth Detection Sensor
Master Traffic Signal Controller
Traffic Signal Controller
Fiber Optic Cable
Solar Power Cabinet and Panels
Fiber Optic Termination Panels

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

Large department-furnished equipment, such as camera poles will be delivered by the supplier to a contractor-controlled site within 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.

Subsection 106.3 – Approval of Materials

Supplement standard spec 106.3 with the following:

Design/Shop Drawings

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

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

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

- Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.
- Mounting LED warning signs to the sign structure.
- Mounting detail for dynamic message signs.
- Any contractor-designed structure or foundation.
- Mounting details for Dynamic Message Sign installation on sign bridge truss.

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.

62. General Provisions for Intelligent Transportation Systems.

A Description

A.1 General

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

Unusual aspects of this project include:

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

- The department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment prior to installing it.

A.2 Surge Protection

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

B Materials

B.1 General

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

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

B.2 Outdoor Equipment

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

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

B.3 Custom Equipment

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

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

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

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

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

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

B.3 Environmental Conditions

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

1. **Vibration and Shock:** Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. **Duty Cycle:** Continuous
3. **Electromagnetic Radiation:** The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. **Electrical Power:**
 - a. **Operating power:** The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.

- b. **High frequency interference:** The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.
- c. **Line voltage transients:** The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.

5. **Temperature and Humidity:**

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

B.4 Patch Cables and Wiring

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

B.5 Surge Protection

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

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

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

C Construction

C.1 Thread Protection

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

C.2 Cable Installation

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

C.3 Wiring

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

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

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

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

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

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

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

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

C.4 System Operations

If the contractor's operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

C.5 Surge Protection

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

C.6 Staking

Notify Graham Heitz at (608) 246-5362 a minimum of 3 days prior to any construction to field verify construction staking electrical locations.

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.

63. General Provisions for Electrical Conduit.

Modify standard spec 652.3.1.1 by adding the following:

Install a 12 AWG. XLP insulated, stranded copper, 600 volt AC, pull wire, green in color, in at least one conduit for each run of conduit, unless the contract provides for the installation of wire or cable. Provide a pull wire that is approximately four feet longer than the run of the conduit, which is doubled back at least two feet at each raceway access point. Anchor the pull wire at each access point in a manner acceptable to the engineer.

For all other conduits in the run, furnish and install woven pull tape. The woven pull tape shall have documentation as duct cutting resistant, tensile strength of greater than 1100 pounds, nominal width of 1/2 inch, and maximum allowable elongation under pulling tension of 10 percent. All spare conduits shall have woven pull tape installed in the duct. Tie the pull line or rope off at each raceway point in an acceptable manner. Labor and materials associated with this work shall be incidental to the Conduit bid items.

64. General Provisions for Traffic Signal Conduit Installation.

Supplement standard spec 652 as follows:

Use Schedule 80 conduit under all traffic areas, including driveways.

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

Where conduit runs parallel to curb and gutter, place the conduit within 12 inches of the back of the curb, except as directed by the engineer. The engineer will determine termination points not within pull boxes or concrete bases.

Where conduit passes under an existing roadway, driveway, sidewalk or other hard surface, directionally bore the conduit, as indicated on the plans. Correct any “bumps” caused by boring operations to the satisfaction of the engineer. Hand trench and/or directional bore around existing trees/plantings as required to minimize harm to the trees/plantings.

Unless the contract provides for installation of cable, cap the ends of each run of conduit with standard conduit caps or otherwise appropriately plug to preclude infiltration of water and soil. Install a pull wire in each conduit run in which cable will not be installed as part of the contract and in other conduits as indicated by the engineer or on the plans. Provide pull wire approximately 4 feet longer than the conduit run, and doubled back for at least 2 feet at each terminal. Provide #10 AWG copper, stranded, pull wire with THHN insulation and green color coding. Install the pull wire within seven days of completing a conduit installation from structure to structure.

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

65. General Provision for Traffic Signals.

Contact Mike Christoph at the City of Madison Traffic Engineering Shop, (608) 266-9031 a minimum of 7 working days in advance to coordinate installation of new signal and installation of new communications and camera equipment in existing traffic signal cabinets. Contact Mike Christoph a minimum 14 working days in advance to coordinate installation of any fiber splices into the Metropolitan Unified Fiber Network.

The City of Madison will install, terminate, and wire the contractor-supplied traffic control cabinet and its contents.

Perform all work on the lighting and conduit/pull box system in accordance to the Wisconsin Electrical Code, and applicable provisions of standard spec 651, and these special provisions and plans.

Provide stainless steel mounting hardware for all components.

Amend standard spec 651.2 with the following:

The approved products list is located at:

<http://www.dot.wisconsin.gov/business/engrserv/docs/ap0/electrical.pdf>

66. Loop Detector Lead-In Cable.

Perform work in accordance to standard spec 655 except as hereinafter modified:

Furnish 0.25 inch diameter, 4-conductor, #18 AWG, waterproof, shielded, polypropylene insulation cable, with HDPE outer jacket. Meeting IMSA specifications. Provide loop detector lead in cable that is smooth on the outside without any ripples or ribbing from cable wires.

Furnish and install one cable for every two loops from each loop handhole to the intersection control cabinet via the most direct route, without intermediate splicing. Most of the loops will be new and are shown on the plan. Install cable for some existing loops. Verify cable needs with the City of Madison Traffic Engineering staff before completing intersection wiring.

67. Traffic Signal Face (no., size, orientation) and Pedestrian Signal Face 12-Inch.

This work is in accordance to standard spec 658 except as hereinafter modified:

Furnish all LED lamps according to those listed in the table below:

12 inch Red Ball LED	Duralight JXC-300CAR
12 inch Yellow Ball LED	Duralight JXC-300CAY
12 inch Green Ball LED	Duralight JXC-300CAG
12 inch Red Arrow LED	Duralight JXJ-300VIRA
12 inch Yellow Arrow LED	Duralight JXJ-300VIYA
12 inch Green Arrow LED	Duralight JXJ-300VIGA
12 inch Pedestrian Countdown LED	Duralight JXM-200VIEP
12 inch Pedestrian Signal LED	Duralight JXM200VIHM

Provide tunnel visors for all pedestrian signals.

Provide cutaway visors for all vehicle signals.

All signals mounted on monotube arms or trombone arms shall have a snow-shedding shield on each signal indication. The shield shall be impact resistant polycarbonate, designed and installed specifically to reduce snow accumulation, while not allowing water to enter or reside in the signal unit. If there are not any far side signals on monotube arms or trombone arms, then install snow-shedding shields on each signal indication of the far right signal.

Pedestrian countdown timers shall have a control wire so that when 120V AC current is applied, the timer will immediately go dark. Connect this control wire back to the signal control cabinet.

All vehicle and pedestrian signal heads shall be CH-SIG, Siemens LFE/SG, McCain, or Peek/TCT, subject to review and approval by City of Madison Traffic Engineering. Provide drain channels so that rainwater does not pond on top of the units.

Provide black color for all vehicle and pedestrian signal heads.

All vehicle and pedestrian signal heads shall be made with polycarbonate material, UV stabilized, with color impregnated in the material. All features and performance shall meet the requirements outlined in the latest revision of the Institute of Transportation Engineers' publication, "Adjustable Face Vehicular Traffic Control Signal Heads." The front face and all visors (inside and outside) shall be flat or semi-gloss black. All other exterior parts shall be flat or semi-gloss black. All exterior hardware shall be stainless steel.

The LED Modules for the vehicles heads are paid for under bid items, LED Modules 12-inch (Color, Type).

Furnish and install pedestrian LED modules with Pedestrian Signal Face 12-Inch bid item.

For each Pedestrian Signal Face 12-Inch bid item, furnish and install an additional separate 12-inch pedestrian head to house the LED Modules Countdown Timer. The Countdown LED Modules are paid for under bid item, LED Modules Countdown Timer 12-Inch.

68. Backplates Signal Face (Size).

This work is in accordance to standard spec 658 except as hereinafter modified:

Backplates for 12-inch signal heads shall provide a 5-inch wide black band around the signal head. The backplates shall be an approved black rigid material, such as vacuum formed ABS plastic. The backplates shall match the signal heads being furnished under

this contract, equipped with all necessary holes and mounting devices. All mounting hardware shall be stainless steel.

69. Field System Integrator.

Perform work in accordance to standard spec 670 except as hereinafter modified:

The Field System Integrator shall plan and facilitate/conduct monthly coordination meetings. Planning of the meetings shall include developing and distributing meeting agendas and meeting notification to attendees. The Field System Integrator's lead engineer or designated representative shall be in attendance of all ITS project coordination meetings.

70. Install Ethernet Switch, Item 675.0400.S.

A Description

This special provision describes installing an Ethernet Switch, and providing all necessary associated wiring.

B Materials

The department will furnish the Ethernet Switch. Provide all necessary cables between the Ethernet switch and terminal server or other device.

C Construction

Install the Ethernet Switch in a new or existing field cabinet. Connect it to devices as shown on the plans, or as directed by the engineer.

D Measurement

The department will measure Install 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.

675-040 (20100630)

71. Install Video Encoder, Item 677.0300.S.

A Description

This special provision describes installing a state-furnished video encoder in a pole mounted cabinet or field cabinet as shown on the plans and as hereinafter provided.

B Materials

Provide Category 5 or better Ethernet cable to connect the Ethernet video encoder to the Ethernet switch. The department will furnish the video encoder or it will be an existing and salvaged encoder.

C Construction

Make the necessary electrical and communication network connections to the video encoder. Mount the video encoder in the pole mounted cabinet or field cabinet. Program the video encoder according to the manufacturer's instructions.

D Measurement

The department will measure Install Video Encoder by each individual assembly, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
677.0300.S	Install Video Encoder	Each

Payment is full compensation for installing the video encoder in a pole mounted cabinet or field cabinet; for making all connections; and for furnishing all programming.

677-030 (20100630)

72. Fiber Optic Splice Enclosure.

Perform work in accordance to standard spec 678 except as 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.

73. Pond Liner Clay, Item SPV.0035.01.**A Description**

This special provision describes furnishing and installing low permeable clay in the areas shown on the plans.

B Materials

For each source, prior to excavating and hauling the low permeable clay to the project, submit the results of the laboratory tests described in Table 1. The laboratory testing shall document that the clay from the source meets or exceeds the requirements.

The sample for the hydraulic conductivity test shall be remolded clay at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test AASHTO T-99 and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test AASHTO T-99. The laboratory source

testing shall be conducted at the frequency listed in Table 1. Submit the test results to the engineer for review, two weeks prior to construction.

C Construction

C.1 Low Permeable Clay Placement

C.1.1 Subgrade

Compact the subgrade to a minimum density as defined in standard spec 207.3.6.3 for Standard Compaction.

C.1.2 Erosion Protection

Do not place the low permeable clay until after all adjacent site grading has been completed and only after silt fence has been installed completely around the area of low permeable clay placement.

C.1.3 Low Permeable Clay Placement

After the fine grading is complete, place and compact low permeable clay in completed 6-inch lifts. Place each lift of low permeable clay in one continuous lift. See plans for low permeable clay construction limits. The thickness of the low permeable clay shown on the plans should be measured perpendicular to the surface.

Notify the engineer at least three days prior to starting construction of low permeable clay.

Compact the low permeable clay to a minimum of 95% Standard Proctor AASHTO T-99 Maximum Dry Density with a footed compaction equipment having feet at least as long as the loose lift height. As needed, clay shall be disked or otherwise mechanically processed prior to compaction to break up clods and allow moisture content adjustment. Clod size shall be no greater than 4-inches. All compaction equipment utilized shall have a minimum static weight of 30,000 pounds.

Provide all equipment necessary to adjust low permeable clay to the proper moisture content for compaction.

A sufficient number of passes of the compaction equipment shall be made over each lift of clay to ensure complete remolding of the clay.

Do not proceed with placement of additional lifts until all required low permeable clay testing and documentation has been completed for the previous lift.

Table 1					
Reference	Number	Test Title	Requirements	Testing Frequency	
				Screening	QA/QC ¹²
AASHTO ¹	T99-01	Moisture –Density Relationships of Soils Using a 2.5-kg (5.5 lb) Rammer a 305 mm (12-in.) Drop (Standard Proctor)	NA ¹¹	1/source	NA
AASHTO	T-88-00	Particle Size Analysis of Soils	$P_{200}^3 \geq 50\%$	2/source	1/lift
AASHTO	T-89-02	Determining the Liquid Limit of Soils	$LL^4 \geq 22\%$	2/source	1/lift
AASHTO	T-90-00	Determining the Plastic Limit and Plasticity Index of Soils	$PI^5 \geq 12\%$	2/source	1/lift
AASHTO	T310-03	In-Place Density and Moisture Content of Soils and Soil-Aggregates by nuclear Methods (Shallow Depth)	$DD^6 \geq 95\%$ of the MDD ⁷	NA	100'x100' Grid/lift
ASTM ²	D5084-03	Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter	$K^8 \leq 1 \times 10^{-7}$ cm/sec	1/source ⁹	1/site ¹⁰
<p>Notes:</p> <ol style="list-style-type: none"> 1. AASHTO = American Association of State Highway and Transportation Officials 2. ASTM = American Society of Testing and Materials 3. P200 = Percent by weight passing the #200 sieve (%) 4. LL = Liquid Limit (%) 5. PI = Plasticity Index (%) 6. DD = Dry Density (pcf) 7. MDD = Maximum Dry Density (pcf) as determined by the Standard Proctor Test 8. K = Hydraulic Conductivity (cm/sec) 9. The sample for the test shall be remolded at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test. 10. An undisturbed sample from a thinned walled sampler (Shelby tube) 11. NA = Not applicable. 12. QA/QC = Quality Assurance / Quality Control 					

During placement of the low permeable clay the minimum moisture content shall be as defined by the testing performed in the source evaluation and with the following limits:

- No drier than the optimum moisture content as determined by the Standard Proctor test.

If the in-place low permeable clay fails to meet the requirements of Table 1, then remove and replace or rework any portion of the low permeable clay not meeting the project requirements until project specifications are met. There shall be no compensation for removing, replacing and reworking low permeable clay not meeting the requirements in Table 1.

C.1.4 QA/QC Testing of the Low Permeable Clay

The department will perform the QA/QC testing at the frequency shown in Table 1. The department will record the thickness of low permeable clay on a 100-foot x 100-foot grid pattern.

Provide the following:

- Access for on-site testing, inspection, and documentation.
- Machinery required to grade/blade density test locations.
- Machinery required to collect undisturbed clay samples (i.e., with Shelby tubes).
- Replace and recompact clay material removed for testing purposes.

D Measurement

The department will measure Pond Liner Clay in volume by the cubic yards, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.01	Pond Liner Clay	CY

Payment is full compensation for dewatering areas of site where the low permeable clay is to be placed; testing and sampling; furnishing and placing the low permeable clay; and for performing all tests.

74. Excavation Special, Item SPV.0035.02.

A Description

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

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 fill material, the reuse location that is approved by the department, the Wisconsin Department of Natural Resources (WDNR), and City of Madison.

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 and groundwater (if dewatering is necessary) is potentially present at the following locations:

- (Site-1) Station 94+00 EE to 98+50 EE reference line to construction limits LT at the Former Fiore Coal and Oil Company (4716 and 4740 Verona Road).
- (Site-2) Station 986+50 VR to 989+00 VR 100 feet LT of reference line to construction limits at Summit Road Properties.
- (Site-3) Station 989+00 VR to 991+50 VR 100 feet LT of reference line to construction limits LT at the Marathon (4602 Verona Road).
- (Site-4) Station 991+50 VR to 993+00 VR 100 feet RT of reference line to construction limits RT at the Mobil Exxon Station (4601 Verona Road).
- (Site-5) Station 102+00 to 103+00 at H&D Partnership (2102 and 2106 Allied Drive).
- (Site-6) Station 115+00 EE to 118+00 EE at Verona Road BP Mart (Former Amoco #15518) (4501 Verona Road).
- (Site-7) Station 97+00 W to 99+50 W at Morrison's Auto Parts (Former Amoco #15883) (1002 South Whitney Way).
- (Site-8) Station 93+00 MR to 107+00 MR along the Military Ridge Path.

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 either stockpiled or hauled to the bioremediation facility (paid separately).
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.
4. Obtaining the necessary approvals for disposal of contaminated soil from the bioremediation facility.
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, including lost or improperly abandoned wells, may be present within the construction limits. Notify the environmental consultant when groundwater monitoring wells are encountered. Protect all groundwater monitoring wells to maintain their integrity. For wells that conflict with the previously mentioned items, notify the environmental consultant, and coordinate with the environmental consultant.

For wells that require abandonment or adjustment, notify the environmental consultant, and coordinate with the environmental consultant the abandonment or adjustment of the wells by others. The environmental consultant will provide maps indicating the locations of all known monitoring wells, if requested by the contractor.

Known lost or not properly abandoned groundwater monitoring wells are present at the following locations and as shown on the plans:

- (Site-1) Station 94+00 EE to 99+50 EE reference line to construction limits LT and 96+50 WN to 97+50 WN reference line to construction limits RT at the Former Fiore Coal and Oil Company (4716 and 4740 Verona Road).
- (Site-2) Station 988+00 VR to 989+50 VR 100 feet LT of reference line to construction limits at Summit Road Properties.
- (Site-7) Station 96+50 W to 100+00 W at Morrison's Auto Parts (Former Amoco #15883) (1002 South Whitney Way).

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

Supplement standard spec 107.1 with the following:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for 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 bioremediation (paid separately) or can be beneficially re-used on-site under highway pavements, behind retaining walls, or in back-slopes with 2-foot thick soil cover, including 4 inches of topsoil and grass 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 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 in accordance 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 10 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.

Where materials are stockpiled for future on-site reuse, these long-term temporary stockpiles may store material for approximately 1 to 2 years. The long-term temporary stockpiles shall be constructed in a manner to minimize depressions in the surface, and shall have a 1-foot thick vegetated soil cover. The soil cover shall be maintained until the material can be moved and reused. Reference plans for the locations of moved and reused soil.

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 in accordance 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 statutes, judiciary decisions, and regulations of the State of Wisconsin.

D Measurement

The department will measure Excavation by the cubic yards acceptably completed as 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.0035.02	Excavation Special	CY

Payment is full compensation for segregating, hauling and temporary stockpiling of material.

75. Abandon Sanitary Sewer -Slurry, Item SPV.0035.03.

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 B Slurry Mix as specified in Article 301.9 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

Perform materials testing as required in the 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 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 engineer, to verify the slurried pipe is free of air voids.

D Measurement

The department will measure Abandoning Sanitary Sewer-Slurry by the cubic yard of 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.0035.03	Abandon Sanitary Sewer-Slurry	CY

Payment is full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to complete this item of work. Replacement sanitary sewer pipe and laterals or appropriate bypass pumping are not included in this bid item.

76. Rock Excavation Special, Item SPV.0035.04.

A Description

This special provision describes Rock Excavation in accordance to Article 502.1 of the City of Madison Standard Specification for Public Works Construction- Latest Edition.

B (Vacant)

C Construction

Excavate rock in accordance to Article 502.1(b) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Excavate rock to a depth 6 inches below the outside of the sewer, and to a width limited to the outside diameter of the pipe plus 2 feet.

Excavate rock to a depth of 8 inches below the outside of the sewer access structures up to 10 feet deep and 12 inches below the outside of the sewer access structures over 10 feet deep.

The horizontal limit for rock excavation is considered the outside dimension of the sewer access structure plus 2 feet.

D Measurement

The department will measure Rock Excavation Special by the cubic yard of rock excavation, 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.0035.04	Rock Excavation Special	CY

Payment is full compensation for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete this item of work.

77. Portable Changeable Message Sign (PCMS) Cellular Communications, SPV.0045.01.

A Description

This special provision describes cellular communications requirements for use with PCMS. Cellular communication allows the department to control PCMS during incidents or other emergencies through Trans Suite software. The department will notify contractor of message changes.

B Materials

Provide a cellular modem and antenna that enables the department to communicate and control PCMS conforming to standard spec 643.2.7.

B.1 Cellular Modem and Antenna

Furnish an EV-DO Cellular modem registered to a 3G Cellular carrier. The cellular modem must include 1 or more external antennas, 1 or more 10/100 Ethernet ports, and 1 or more db9 Serial RS-232 interfaces. The device must be able to handle -30° C to +75° C and powered by a 12VDC power supply. The cellular modem must have a built-in secure router with NAT, port forwarding and IP pass-through capabilities.

Provide management IP and passwords for the cellular modem to the department.

Access includes IP address, serial port setting, and password(s). Antenna cable shall be continuous without splices. Mount the antenna at the highest practical location on the PCMS.

C Construction

Conform to standard spec 643.3.7. Install cellular modem in a lockable, weatherproof compartment in the PCMS trailer.

A minimum of 14 days prior to deployment, demonstrate to the department that the cellular modem is capable of communications with Trans Suite software.

If remote communications are interrupted or temporarily unavailable, contractor will be notified by the department to change the message.

D Measurement

The department will measure Portable Changeable Message Sign (PCMS) Cellular Communications by the day acceptably completed, measured as the number of calendar days each cellular modem for PCMS is available for exclusive use under the contract. The department will deduct one day for each calendar day the sign communications are required but out of service for more than 2 hours.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0045.01	Portable Changeable Message Sign (PCMS) Cellular Communications	DAY

Payment is full compensation for providing, operating and maintaining a cellular modem and antenna, and for making message changes if cellular communications are interrupted or temporarily unavailable.

78. Utility Line Opening (ULO), Item SPV.0060.01.

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.

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 10 days in advance of proposed utility construction to allow any conflicts to be resolved with minimal disruption. Where utilities are within 6 feet of each other at a potential conflict location, only one utility line opening will be called for. In these cases, a single utility line opening will be considered full payment to locate multiple utilities. 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 3 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.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Utility Line Opening (ULO) as each 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.0060.01	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.

79. Remove Existing City-Owned Light Pole Assembly, Item SPV.0060.02.

A Description

This special provision describes removing and salvaging or disposing of existing city-owned light poles, pedestal/transformer bases, arms, luminaires, and wiring as shown on the plans and as hereinafter provided.

B (Vacant)

C Construction

Contact Mike Christoph, (608) 266-9031, at least 7 days prior to removing any street lights on the City of Madison lighting systems. Arrange a meeting to document the existing condition of all light pole assemblies that will be affected by construction activities. The City of Madison will provide the following information:

- Identification of all items to be salvaged or disposed.
- Identification of existing feed-point locations and circuit breakers.

Remove existing light poles, pedestal/transformer bases, wiring in light poles and between light poles being removed, and fixtures in accordance to standard spec 204, and as shown on the plans. Disconnect underground conduit system from concrete pole base and cap conduit, unless otherwise approved by the engineer or the city of Madison.

When removing existing light pole assemblies, carefully stockpile all equipment at a location approved by the engineer. Place all equipment on blocks so as not to be in direct contact with the ground. Protect luminaires from moisture. Either reinstall lights as the plans show or make available for City of Madison to pick up and salvage. Properly dispose of any equipment that the city does not salvage.

Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged piece.

D Measurement

The department will measure Remove Existing City-Owned Light Pole Assembly as each individual removed 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.0060.02	Remove Existing City-Owned Light Pole Assembly	Each

Payment is full compensation for removing light poles, including fixtures, wiring and conduit; for furnishing all salvaging and disposing of surplus material; and for meeting with the city of Madison.

80. Remove Existing WisDOT-Owned Light Pole Assembly, Item SPV.0060.03.

A Description

This special provision describes removing and salvaging or disposing of existing WisDOT-owned light poles, pedestal/transformer bases, arms, luminaires, and wiring as shown on the plans and as hereinafter provided.

B (Vacant)

C Construction

Contact Dena Dramm, (608) 246-5360, at least 7 days prior to removing any light pole assemblies owned by the Wisconsin Department of Transportation (WisDOT). Arrange a meeting to document the existing condition of all light pole assemblies that will be affected by construction activities. WisDOT will provide the following information:

- Identify all items to be salvaged or disposed.
- Identify existing feed-point locations and circuit breaks.

Remove existing light poles, pedestal/transformer bases, wiring in light poles and between light poles being removed, and fixtures in accordance to standard spec 204, and as shown on the plans. Disconnect underground conduit system from concrete pole base and cap conduit, unless otherwise approved by either the engineer or WisDOT.

When removing existing light pole assemblies, carefully stockpile all equipment at a location approved by the engineer. Place all equipment on blocks so as not to be in direct contact with the ground. Protect luminaires from moisture. Either reinstall lights as the plans show or make available for WisDOT to pick up and salvage. Properly dispose of any equipment that WisDOT does not salvage.

Replace any equipment damaged in the removal process with equipment that is of greater or equal quality than the damaged piece.

D Measurement

The department will measure Remove Existing WisDOT-Owned Light Pole Assembly as each individual removed existing WisDOT-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.0060.03	Remove Existing WisDOT-Owned Light Pole Assembly	Each

Payment is full compensation for removing light poles, including fixtures, wiring and conduit; for furnishing all salvaging and disposing of surplus material; and for meeting with WisDOT.

81. Relocating Existing Light Pole Assembly, Item SPV.0060.04.

A Description

This special provision describes removing existing light poles and attached fixtures from their concrete bases, storing them, and reinstalling the light poles and fixtures as shown on the plans and as hereinafter provided. The work also consists of disconnecting and disposing of existing lighting wire. New concrete bases, conduit, and wire for reinstalling salvaged light poles are not included in this item of work and will be paid separately.

B (Vacant)

C Construction

Perform all work in accordance to standard spec 651 and standard spec 659.

Notify the appropriate lighting utilities personnel at least three working days prior to the removal of the lights. For lighting maintained by WisDOT, notify Dena Dramm, Southwest Region Traffic Signal Operations Engineer, (608) 246-5360. For lighting maintained by the city of Madison, notify Mike Christoph, (608) 266-9031. For lighting maintained by the City of Fitchburg, notify Holly Powell, (608) 270-4263.

Coordinate the de-energizing of the lighting system with the owner. Perform a field review of existing lighting equipment for condition of equipment prior to removal. Notify the owner of any damaged or non-operating equipment.

Disconnect the wiring splices in the transformer base, remove light poles, pedestal/transformer bases, fixture, mounting arms, and all hardware. Dispose of existing wire in light pole and between poles that are being relocated back to the first light pole to remain as shown on the plans. Maintain full operation of remaining light poles.

If the equipment is not reinstalled the same day, store all materials removed in a safe and secure location as directed by the engineer. Protect from theft and damage.

Contact the owner to coordinate a post-storage inspection of all equipment to be reinstalled. All equipment that is determined to have been damaged during storage shall be replaced in kind at contractor's expense.

Reinstall salvaged light pole assemblies on a concrete base as shown on the plans. Reconnect the light pole assembly to the existing lighting branch circuit with wiring splices in accordance to standard spec 659.3.2.

D Measurement

The department will measure Relocating Existing Light Pole Assembly as each individual relocated existing light pole, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.04	Relocating Existing Light Pole Assembly	Each

Payment is full compensation for removing, storing, and reinstalling light poles, disposing of existing wire, furnishing and installing materials including conduit fittings and any additional required mounting hardware; for disposal of surplus materials, drilling holes, storing and protecting equipment, and for making all connections; and for corresponding with the owner.

82. Relocating Existing Traffic Signal Pole, Item SPV.0060.05.

A Description

This work consists of the removing, storing, and protecting existing traffic signal poles, and installing them on new concrete bases in accordance to the plans and as hereinafter provided.

B (Vacant)

C Construction

Perform all work in accordance to standard spec 651 and standard spec 658.

Notify Dena Dramm Southwest Region Traffic Signal Operations Engineer, (608) 246-5360 at least seven working days prior to the removal of the traffic signal poles.

Coordinate relocating of signal poles with Dena Dramm. Perform a field review of existing signal equipment with the Southwest Region electrician for condition of equipment prior to removal. Notify the department of any damaged or non-operating equipment.

Disconnect the wiring splices in the transformer base, remove traffic signal poles, pedestal/transformer bases, and all hardware and install them on proposed concrete bases. Pull existing traffic signal cable back to the nearest pull box to be reused when pole is re-installed on new concrete base. If the equipment is not reinstalled the same day, store all materials removed in a safe and secure location as directed by the engineer. Protect from theft and damage.

Contact Dena Dramm to coordinate a post-storage inspection of all equipment to be reinstalled. All equipment that is determined to have been damaged during storage shall be replaced in kind at contractor's expense.

Reinstall traffic signal pole assemblies on the new concrete bases. Reconnect the wire and splices in the transformer bases.

D Measurement

The department will measure Relocating Existing Traffic Signal Pole as each individual relocated existing signal pole, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.05	Relocating Existing Traffic Signal Pole	Each

Payment is full compensation for removing, storing, and reinstalling signal poles, furnishing and installing materials including; conduit and fittings and any additional required mounting hardware; for disposal of surplus materials, drilling holes, storing and protecting equipment, and for making all connections; and for corresponding with owner.

83. Posts Galvanized Steel For Barrier Wall, Item SPV.0060.06.

A Description

Perform work in accordance to the applicable provisions of standard spec 634, as shown in the plans, and as hereinafter provided.

B Materials

Provide hardware in accordance to the details in the plans.

C Construction

Install sign posts at the locations shown on the plans and approved by the engineer.

Install the sign posts in accordance to the details in the plans.

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 in accordance 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.

D Measurement

The department will measure Posts Galvanized Steel For Barrier Wall as each individual post galvanized steel for barrier 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.0060.06	Posts Galvanized Steel For Barrier Wall	Each

Payment is full compensation for providing, hauling, and placing the posts; treating cut post ends; providing and installing a water tight top end cap; and providing hardware and anchors.

84. Construction Staking Curb Ramp, Item SPV.0060.07.

A Description

Preform work in accordance 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 additional construction stakes as necessary to establish location and grade of the curb ramp including points of change in alignment and grade in accordance to the plans, standard details for curb ramps, and for conformance with ADAAG. 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 Curb Ramp as each individual construction staking curb 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
SPV.0060.07	Construction Staking Curb Ramp	Each

Payment is full compensation for locating and setting all construction stakes and for relocating and resetting damaged or missing construction stakes.

85. Construction Staking Sign Structure, Item SPV.0060.08.

A Description

Perform work in accordance 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 additional construction stakes as necessary to establish location and grade of the sign structure in accordance to the plans and details for sign structures. 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 Sign Structure as each individual construction staking sign 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.0060.08	Construction Staking Sign Structure	Each

Payment is full compensation for locating and setting all construction stakes and for relocating and resetting damaged or missing construction stakes.

86. Storm Sewer Tap, Item SPV.0060.10.

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 in accordance to the applicable provisions of standard spec 607 and standard spec 611.

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.

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.0060.10	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, cleaning out, and for furnishing all equipment and incidentals necessary to complete the contract work.

87. Manhole ML205, Item SPV.0060.11; ML215, Item SPV.0060.12; VR346.1, Item SPV.0060.13.

A Description

Perform work in accordance to the applicable provisions of standard spec 611 and as detailed in the plans.

B (Vacant)**C Construction**

Provide shop drawings for the details of the reinforcing to the engineer.

Do not place reinforcing until engineer has reviewed the reinforcing shop drawing.

Construct in accordance to standard spec 611 and plan details.

Maintain existing drainage patterns and provide necessary materials necessary for temporary connections to existing storm sewer.

All necessary temporary shoring will not be paid for separately but will be included in this item of work.

After completion of Manhole VR346.1, notify Mark Moder, City of Madison Department of Public Works at the City-County Building, Room 115, 210 Martin Luther King Jr. Boulevard, Madison, Wisconsin 53710. Provide a minimum of 5 working days before starting construction on R-13-1000-TW3 to allow the city of Madison the opportunity to televise local sanitary sewer facilities.

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.0060.11	Manhole ML205	Each
SPV.0060.12	Manhole ML215	Each
SPV.0060.13	Manhole VR346.1	Each

Payment is full compensation for providing all materials and performing the work, including all concrete, steel reinforcement, conduit and sewer connections, and other fittings; for furnishing all excavating, backfilling, disposing of surplus material; for furnishing all temporary shoring; for shop drawings; and for cleaning out and restoring to work site, and all incidentals necessary to complete the contract work except that the department will pay for covers, including frames, grates and lids separately.

88. Manholes 9-FT Diameter, Item SPV.0060.14.**A Description**

Perform work in accordance to the applicable provisions of standard spec 611 and as detailed in the plans.

B Materials

Furnish materials conforming to standard spec 611 and plan details.

C Construction

Provide shop drawings for the details of the reinforcing to the engineer.

Do not place reinforcing until engineer has reviewed the reinforcing shop drawing.

Construct in accordance to standard spec 611 and plan details.

Maintain existing drainage patterns and provide necessary materials necessary for temporary connections to existing storm sewer.

All necessary temporary shoring will not be paid for separately but will be included in this item of work.

D Measurement

The department will measure Manholes 9-FT Diameter as each individual manhole, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.14	Manholes 9-FT Diameter	Each

Payment is full compensation for providing all materials, including all masonry, conduit and sewer connections, steps and other fittings; for performing the work; for furnishing all excavating, backfilling, disposing of surplus material, and for cleaning out and restoring to work site, and all incidentals necessary to complete the contract work except that the department will pay for covers, including frames, grates and lids separately.

89. Slotted Vane Drain Type A 6-FT, Item SPV.0060.15.

A Description

This special provision describes furnishing and installing slotted vane drain as shown on the plans, in accordance to standard spec 501, 505, 607, and 611, and as hereinafter provided.

B Materials

Provide a pipe that the vane drain casting rests in that is 15-inch diameter SDR-35 poly vinyl chloride, (PVC) pipe.

C Construction

Prior to encasing the pipe in concrete, cover the upper end of the slotted drain with a cap as shown on the plans.

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.

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.

Place concrete pavement 7-Inch and base course with this item as shown on the plans.

D Measurement

The department will measure Slotted Vane Drain Type A 6-FT as each slotted vane drain type A 6-ft, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.15	Drain Slotted Vane Type A 6-FT	Each

Payment is full compensation for furnishing all materials, including PVC pipe and end cap, slotted vane drain castings, concrete masonry and reinforcement; for adjacent concrete pavement 7-Inch and base course; for adjusting bricks; drilling type V inlet cover to accommodate connection bolts to vane drain; hauling and placing the pipe; making connections to existing inlets; cleaning and restoring; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

90. Weir Wall ML204.1, Item SPV.0060.16; VR344.1, Item SPV.0060.17.

A Description

Perform work in accordance to the applicable provisions of standard spec 611 and as detailed in the plans.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Weir Wall (number) as each individual weir 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.0060.16	Weir Wall ML204.1	Each
SPV.0060.17	Weir Wall VR344.1	Each

Payment is full compensation for providing all materials, including all concrete, steel reinforcement, storm sewer connections, and other fittings; for furnishing all excavating, backfilling, disposing of surplus material, and for cleaning out and restoring to work site, and all incidentals necessary to complete the contract work.

91. Apron Endwalls For Storm Sewer Pipe Reinforced Concrete Box 3x6-FT, Item SPV.0060.18.

A Description

This special provision describes furnishing and installing endwalls in accordance to the applicable standard spec of 522 and as detailed in the plans.

B Materials

Furnish materials conforming to standard spec 522 and plan details.

C Construction

Construct in accordance to standard spec 522 and plan details.

D Measurement

The department will measure Apron Endwalls For Storm Sewer Pipe Reinforced Concrete Box 3x6-FT as each individual apron endwall for storm sewer pipe reinforced concrete box 3x6-FT, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.18	Apron Endwalls For Storm Sewer Pipe Reinforced Concrete Box 3x6-FT	Each

Payment is full compensation for providing, transporting, and installing the apron endwall; for furnishing all excavating, including forming the bed, and for backfilling.

92. Clay Anti-Seepage Collar, Item SPV.0060.19.**A Description**

This special provision describes furnishing and installing low permeable clay around reinforced concrete storm sewer pipe at the locations shown on the plans.

B Material

For each source, prior to excavating and hauling the low permeable clay to the project, submit the results of the laboratory tests described in Table 1. The laboratory testing shall document that the each clay type from the source meets or exceeds the requirements.

The sample for the hydraulic conductivity test shall be remolded clay at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test ASTM D698 and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test ASTM D698. Submit the test results to the engineer for review, two weeks prior to construction.

Table 1						
Reference	Number	Test Title	Requirements	Testing Frequency		
				Screening	QA/QC ³	
					Top Cover	Sideslopes
ASTM ¹	D698	Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort	NA ²	1/source	1/source	1/source
ASTM	D1140	Standard Test Methods for Amount of Material in Soils Finer Than the No. 200 (75-um) Sieve	Per NR 538 ⁴	2/source	1/2,220 cy per lift ⁵	1/3,330 cy per lift
ASTM	D422	Standard Test Method for Particle-Size Analysis of Soils	Per NR 538	2/source	1/2,220 cy per lift	1/3,330 cy per lift
ASTM	D4318	Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.	Per NR 538	2/source	1/2,220 cy per lift	1/3,330 cy per lift
ASTM	D2487	Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)	Per NR 538	2/source	1/2,220 cy per lift	1/3,330 cy per lift
ASTM	D2922	Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)	Per NR 538	NA	200' x 200' Grid/lift	240' x 240' Grid/lift
ASTM	D5084	Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter	Per NR 538	1/source ⁶	1/6,660 cy per lift ⁷	1/10,000 cy per lift ⁷

Notes:

1. ASTM = American Society of Testing and Materials.
2. NA = Not applicable.
3. QA/QC = Quality Assurance / Quality Control. One QA/QC test for the project quantity required.
4. NR 538 = Wisconsin Department of Natural Resources regulations Chapter NR 538 Beneficial Use of Industrial Byproducts.
5. A lift shall not exceed 8-inches.
6. The sample for the test shall be remolded at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test.
7. An undisturbed sample from a thinned walled sampler (Shelby tube).

C Construction

C.1.1 Subgrade

Compact the collar to a minimum density as defined in standard spec207.3.6.3 Standard Compaction or as otherwise specified in the contract requirements.

C.1.2 Placement

Place and compact low permeable clay in 6-inch lifts. Place each lift of low permeable clay in one continuous lift. The thickness of the low permeable clay shown on the plans should be measured perpendicular to the surface.

Extend the clay collar a minimum of four feet along the length of pipe, centered on the joint, and construct the clay collar in accordance to the construction detail.

Compact the low permeable clay to a minimum of 95% Standard Proctor ASTM D698 Maximum Dry Density. Break up clods greater than 4-inches in diameter prior to compaction. Provide all equipment necessary to adjust low permeable clay to the proper moisture content for compaction. Do not proceed with placement of additional lifts until all required low permeable clay testing and documentation has been completed for the previous lift. During placement of the low permeable clay the minimum moisture content shall be as defined by the testing performed in the source evaluation and with the following limits:

- No drier than the optimum moisture content as determined by the Standard Proctor test ASTM D698.

Low permeable clay not meeting the above requirements will be removed as directed by the engineer and removing, replacing, and/or reworking low permeable clay not meeting the above requirements will be completed at no cost to the department.

D Measurement

The department will measure Clay Anti-Seepage Collar by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.19	Clay Anti-Seepage Collar	Each

Payment is full compensation for testing/sampling furnishing, hauling and placing of all materials; excavation, backfilling and disposing of excess material.

93. Covering Storm Sewer, Item SPV.0060.20.

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. The locations of covering storm sewer are shown on the plans.

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 Break, 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.

D Measurement

The department will measure Covering Storm Sewer by each individual covering storm sewer, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.20	Covering Storm Sewer	Each

Payment is full compensation for furnishing and installing all specified materials; for delivering, assembling.

94. Locating Storm Sewer, Item SPV.0060.21.

A Description

Perform work in accordance to the applicable provisions of standard spec 650.

B (Vacant)

C Construction

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 Locating Storm Sewer as each individual locating storm sewer, 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.0060.21	Locating Storm Sewer	Each

Payment is full compensation for locating, preparing, and delivering the horizontal and vertical location of the top of the storm sewer.

95. Sanitary Sewer Access Structure (4-Foot Diameter), Item SPV.0060.22.

A Description

Work under this item includes installing 4-Foot Diameter Sewer Access Structures at the depths and locations shown on the plan.

B Materials

Provide precast concrete Sanitary Sewer Access Structure (4-Foot Diameter) meeting the requirements of Standard Detail Drawing 5.7.2, 5.7.15, and Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Furnishing and installing Sewer Access Structure Frames and Covers, in accordance to Standard Detail Drawing 5.7.16 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition, will be paid for separately under the Manhole Covers Type MAD bid item.

C Construction

Install Sanitary Sewer Access Structure (4-Foot Diameter) in accordance to Article 507.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Maintain the normal flow of wastewater at all times during installation of the new sanitary sewer access structure and when connecting pipes to the new structure. All bypass pumping, temporary piping, and/or temporary connections, which are required to maintain the normal flow of wastewater throughout construction, is incidental to this bid item.

Place concrete benches and flow lines as directed by the city of Madison or the engineer.

Complete testing of new sanitary sewer access structure in accordance to Article 501 of the City Standard Specifications for Public Works Construction - Latest Edition.

D Measurement

The department will measure Sanitary Sewer Access Structure (4-Foot Diameter) as each individual sanitary sewer access structure, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.22	Sanitary Sewer Access Struture (4-Foot Diameter)	Each

Payment is full compensation for constructing benches and flow lines; for furnishing and installing all bypass or temporary piping and connections.

96. Manhole Covers Type MAD, Item SPV.0060.23.

A Description

Furnish and install metal frames, grates and lids in accordance to standard spec 611, as shown on the plans, and as hereinafter provided.

B Materials

Furnish castings in accordance to standard spec 611 and Article 507 of the City of Madison Standard Specifications for Public Works Construction-Latest Edition, and the details shown on the plans.

C Construction

Install castings in accordance to standard spec 611.

D Measurement

The department will measure Manhole Covers Type MAD as each manhole cover type MAD, 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.0060.23	Manhole Covers Type MAD	Each

Payment is full compensation for providing new covers, including frames, lids, and all other required materials; for installing and adjusting each cover; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work. Old covers removed remain the property of the municipality.

97. Sanitary Sewer Internal Chimney Seal, Item SPV.0060.24.**A Description**

Furnish and install an internal chimney seal on all sanitary sewer access structures located within 100 feet of a street low point, in greenways, and where indicated on the plan.

B Material

Provide an internal chimney seal consisting of either rubber with metal bands or a low density polyethylene insert conforming to the City of Madison Standard Detail Drawing 5.7.17 – SAS Internal Chimney Seal or other equivalent chimney seal products as approved by the engineer.

C Construction

Install internal chimney seals in accordance to the manufacturer's instructions.

D Measurement

The department will measure Sanitary Sewer Internal Chimney Seal as each individual sanitary sewer internal chimney seal, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.24	Sanitary Sewer Internal Chimney Seal	Each

Payment is full compensation for furnishing all labor, tools, materials, and all other work incidental to the installation of the sanitary internal chimney seal.

98. Sanitary Sewer Tap, Item SPV.0060.25.

A Description

Work under this item includes the connection of a new lateral or main to an existing structure and the connection of an existing lateral or main to a new structure.

B Materials

Provide Kor-n-Seal flexible connector, or approved equal, in the tapped hole, in accordance to Standard Detail Drawing 5.7.31 of the City of Madison Standard Specifications for Public Works Construction- Latest Edition.

C Construction

C.1 New Pipe to Existing Structure

Use a portable coring drill to produce a pipe opening that is round, clean and free of any pitting of the concrete.

Make a watertight connection of the pipe to the sewer access structure with a Kor-n-Seal flexible connector, or approved equal, in accordance to Standard Detail Drawing 5.7.31 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

C2. Existing Pipe to New Structure

Provide a flexible connector to connect the existing pipe to any new pipe which is required to make the connection to the structure.

Provide PVC (SDR-26) that matches the existing pipe's diameter, or the next larger diameter, to reconnect the existing sewer main or lateral. The PVC (SDR-26) sanitary sewer pipe is considered incidental to this bid item.

The pouring and construction of concrete benches and flowlines in new sewer access structures for the inlet or outlet pipes is not included in this bid item and is considered incidental to the bid item Sanitary Sewer Access Structure (4-Foot Diameter).

The downstream pipe connection to a Sewer Access Structure (4-Foot Diameter) is considered incidental to the Sewer Access Structure (4-Foot Diameter).

D Measurement

The department will measure Sanitary Sewer Tap as each individual sanitary sewer tap, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.25	Sanitary Sewer Tap	Each

Payment is full compensation for providing all connectors; for coring; and for furnishing all work, materials, labor and incidentals required to complete the work.

99. Sanitary Lateral Electronic Marker, Item SPV.0060.26.

A Description

Work under this item includes installing Sanitary Lateral Electronic Marker in accordance to Article 503.2 of the City of Madison Standard Specification for Public Works Construction- Latest Addition.

B Materials

All materials are described in Article 503.2(f) of the City of Madison Standard Specification for Public Works Construction- Latest Addition.

C Construction

Install Sanitary Lateral Electronic Marker in accordance to Article 503.2(f) of the Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure Sanitary Lateral Electronic Marker as each individual sanitary 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.0060.26	Sanitary Lateral Electronic Marker	Each

Payment for Sanitary Lateral Electronic Marker is full compensation for furnishing all work, materials, labor and incidentals required to complete the work.

100. Sanitary Lateral Reconnect, Item SPV.0060.27.

A Description

This special provision describes sanitary sewer lateral connections encountered during the course of this project that connect to the sanitary sewer main.

B Material

Furnish sanitary sewer pipe and fittings that are solid-wall Poly Vinyl Chloride (PVC) and that conform to the requirements of the Specification for PVC Sewer Pipe and Fittings, ASTM D 3034.

Provide sanitary sewer pipe and fittings having a standard dimension ratio of 26.

Furnish elastomeric or solvent cement joints made as recommended by the manufacturer.

C Construction

The pipe for the connection of laterals is not to exceed a length of 5 feet.

Install risers, where necessary, in accordance to Standard Detail Drawing 5.3.1 of the City of Madison Standard Specifications for Public Works Construction- Latest Edition. Risers five feet in length are included in the bid item Sanitary Lateral Reconnect.

Backfill and compact in accordance to section 202.3(b) of the City of Madison Standard Specifications for Public Works Construction-Latest Edition utilizing select fill.

D Measurement

The department will measure Sanitary Sewer Reconnect as each individual sanitary sewer reconnect, acceptably completed.

Sanitary sewer lateral pipe exceeding five feet in length will be paid under bid item Sanitary Sewer Lateral.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.27	Sanitary Lateral Reconnect	Each

Payment is full compensation for furnishing all materials, including fill material; plugging the ends of all sewer mains and sewer laterals; excavation; trimming and chipping; cutting, protecting or removing reinforcing steel; disposal of surplus materials from the structure or excavation; excavation and compaction of the backfill material; restoring the site; and for furnishing all labor tools, equipment, and incidentals necessary to complete the contract work.

101. Remove Sanitary Sewer Structure, Item SPV.0060.28.

A Description

This special provision describes removing sanitary sewer access structures as shown on the plans. The work includes salvaging and disposing of the resulting materials and backfilling the trenches with select fill.

B Materials

Provide select fill meeting the requirements of Article 202.2 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition; furnishing and placing select fill in void created by the structure removal is included with this bid item.

C Construction

Remove sanitary sewer access structures in accordance to Article 203.2(a) of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

D Measurement

The department will measure Remove Sanitary Sewer Structure as each individual remove 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.0060.28	Remove Sanitary Sewer Structure	Each

Payment is full compensation for furnishing all materials, including fill material; for disposal of surplus materials; excavation and compaction of select fill material; restoring the site; and for furnishing all labor, tools equipment, and incidentals necessary to complete the contract work.

102. Abandon Sanitary Sewer - Pipe Plug, Item SPV.0060.29.**A Description**

This work consists of plugging pipes as shown in the plans and hereinafter provided.

B Material

Provide concrete conforming to Article 301 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition

C Construction

Abandon sanitary sewer pipe with a plug in accordance to Article 203 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

Provide replacement sanitary sewers and laterals or appropriate bypass pumping prior to abandoning sanitary sewer pipe.

Saw cut end of existing pipe and clean interior of pipe to create a good bonding surface. Form and pour a minimum 1-FT deep concrete plug completely filling the opening of the pipe.

Where structures are called out for removal and/or abandonment, plug pipes at the structure.

D Measurement

The department will measure Abandon Sanitary Sewer - Pipe Plug as each individual abandon sanitary sewer - pipe plug, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.29	Abandon Sanitary Sewer – Pipe Plug	Each

Payment is full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to complete this item of work.

103. Abandon Water Main, Item SPV.0060.30.

A Description

This special provision describes abandoning existing water mains at the locations shown in accordance to Article 704.14 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

B Materials

Furnish materials in accordance to Article 702 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

C Construction

After a safe sample of the new water main section has been obtained and all water service laterals have been reconnected, abandon the existing water main where indicated in accordance to Article 703.15 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure Abandon Water Main by each individual abandon 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.0060.30	Abandon Water Main	Each

Payment is full compensation for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the contract work.

104. Posts Round Tubular Steel 2-Inch 10-FT, Item SPV.0060.31; 12-FT, Item SPV.0060.32; 14-FT, Item SPV.0060.33; 16-FT, Item SPV.0060.34.

A Description

Perform work in accordance 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, as detailed in the plans, on the bottom end and a water tight end cap on the top end.

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 in accordance 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.

D Measurement

The department will measure Posts Round Tubular Steel 2-Inch (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.0060.31	Posts Round Tubular Steel 2-Inch 10-FT	Each
SPV.0060.32	Posts Round Tubular Steel 2-Inch 12-FT	Each
SPV.0060.33	Posts Round Tubular Steel 2-Inch 14-FT	Each
SPV.0060.34	Posts Round Tubular Steel 2-Inch 16-FT	Each

Payment is full compensation for providing, hauling, and placing the posts; threading; treating cut post ends; providing and installing a water tight top end cap; and providing hardware and anchors. The department will not pay for replacing damaged posts or upper tube cut-offs.

105. Precast Sign Post Base, Item SPV.0060.35.**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
Steel Reinforcement

Standard spec 501
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 Mark Winter, City of Madison Traffic Engineering, at (608) 266-6543 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 in accordance 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. Provide a 1-year warranty that the sign post base installation shall remain plumb.

Remove and dispose of all excess excavation, surplus material and debris resulting from operations and satisfactorily repair and restore other work damaged by operations.

D Measurement

The department will measure Precast Sign Post Base as each individual 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.0060.35	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.

106. Concrete Base Type G, Item SPV.0060.36; Type LB-3, Item SPV.0060.37; Type LB-8, Item SPV.0060.38; Type P, Item SPV.0060.39.

A Description

Perform work in accordance to the applicable provisions of standard spec 654 and as detailed in the plans.

B Materials

Provide concrete masonry Grade A, A-WR, A-FA, or A-IP conforming to the requirements of standard spec 501.

Provide, conduit cast within the bases, Schedule 40 polyvinyl chloride (PVC) electrical conduit and conforming to the requirements of standard spec 652.

Provide anchor bolts for Type G bases made from high-strength steel 50 KSI minimum yield strength, ASTM A36, and fitted with a hard washer and heavy hex nut. Provide approximately 3 inches or more of thread at the top end of each bolt. Provide galvanized bolts, washers, and nuts. Provide bolts that are 1.25 inch by 24 inch.

Provide anchor bolts for Type LB-3 and Type LB-8 bases made from high strength steel (50 KSI minimum yield strength), ASTM A36, and fitted with two hard washers and two heavy hex nuts. Provide approximately 6 inches or more of thread at the top end of each bolt. Provide galvanized bolts, washers, and nuts. Provide bolts for the LB-8 base that are 1.25 inch by 48 inch, including 4 inch L-bend at the bottom. Provide bolts for the LB-3 base that are 1 inch by 40 inch including 4 inch L-bend at the bottom.

Include a concrete maintenance platform for the Type P bases. Construct the Type P bases in accordance to the Concrete Control Cabinet Base detail in the plans. Confirm the location of the conduits in the base with the city of Madison. Anchor bolts, nuts, and washers for Concrete Controller Base Type P, will be provided and installed by the city of Madison when installing signal control cabinets. Provide bar steel reinforcement conforming to the requirements of standard spec 505.

C Construction

Place the bases with one side parallel to the centerline of the street.

Construct forms of sufficient depth to provide a minimum of 12 inches of formed base below the finished grade on the low side of the base. Level the top surface of the base with a ¾ inch bevel on the edges and shall be given a rubbed finish.

Cast anchor bolts into the base as shown on the plans. Verify bolt circle diameters before constructing the bases.

Furnish manufactured elbows and install in all bases, except as noted on the details. Install elbows to permit conduit to be installed in as nearly straight-line runs as possible, without unnecessary bends. Bases not installed to this standard will not be accepted. Extend existing conduit into the bases.

Provide elbows conforming to the requirements of the type of conduit entering the base. Install an extra elbow in each base, at the end of a run, as directed by the engineer.

Install extra elbows in any base as directed by the engineer.

Do not erect poles on the concrete bases until the bases have cured for at least seven days.

Complete a rubbed finish on all concrete bases to 2-inches below finished grade.

D Measurement

The department will measure Concrete Base (Type) as each individual concrete base, 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.0060.36	Concrete Base Type G	Each
SPV.0060.37	Concrete Base Type LB-3	Each
SPV.0060.38	Concrete Base Type LB-8	Each
SPV.0060.39	Concrete Base Type P	Each

Payment is full compensation for furnishing and installing all materials including conduit, bushings, caps and/or plugs, ground rod, anchor bolts, cadwelding, copper grounding wire; bar steel reinforcement, nuts and washers, extra elbows, rubbed finish, and concrete masonry; for providing openings through existing pavement where required; for excavation, including hand-digging as required, backfill, and proper disposal of surplus materials.

107. Loop Detector Splice, Item SPV.0060.40.

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

Install Loop Detector Splice in accordance to the applicable provisions of standard spec 655 and as noted on the plans.

C Construction

Make splices immediately after wires, as specified in Loop Detector Wire, are installed, but after all required testing of the item Loop Detector Wire. Follow the manufacturer's recommended installation procedures.

D Measurement

The department will measure Loop Detector Splice by 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.0060.40	Loop Detector Splice	Each

Payment is full compensation for furnishing and installing; for mechanical connections and splice kit.

108. Pull Box Type I, Item SPV.0060.41; Type III, Item SPV.0060.42; Type V, Item SPV.0060.43.

A Description

Perform work in accordance to the applicable provisions of standard spec 653 and as detailed in the plans.

B Materials

Provide Pull Box Type I that are gray colored polymer concrete construction. Provide box dimensions for Type I of 19 inches wide, 32 inches long, and 24 inches deep, and with a cover rated to withstand 15,000 pounds over a 10-inch square with a minimum test load of 22,568 pounds.

Provide Pull Box Type III that are high-density polyethylene box and concrete polymer lid or concrete polymer construction for box and lid. Provide box dimensions for Type III of 12 inches wide, 12 inches long and 12 inches deep. The Type III box and polymer cover must be rated to withstand 20,000 pounds.

Provide Pull Box Type V that are gray colored polymer concrete construction. Provide box dimensions of 24 inches wide, 36 inches long, and 24 inches deep. The box and cover must be rated at 15,000 pounds over a 10-inch square.

Provide each cover with the logo “TRAFFIC SIGNAL” imprinted on it from the manufacturer.

C (Vacant)

D Measurement

The department will measure Pull Box (Type) as each individual pull box, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.41	Pull Box Type I	Each
SPV.0060.42	Pull Box Type III	Each
SPV.0060.43	Pull Box Type V	Each

Payment is full compensation for providing and installing all materials including coarse aggregate; for excavating, backfilling, and properly disposing of surplus materials.

109. Pull Box Marker, Item SPV.0060.44.

A Description

This special provision describes furnishing and installing flexible marker posts at pull box locations, as shown on the plans and as hereinafter provided.

B Materials

Furnish posts in accordance to standard spec 633.2.2. Use post colored white except the top 6-inches to 9-inches shall be silver. The silver marking may be accomplished by application of non-reflective sign tape to the front and back of the post.

Furnish hardware in accordance to standard spec 633.2.3.

C Construction

Install pull box markers at pull box locations identified in the plans. Position the curved side of the curved post to face in the direction of travel on the highway.

Use only one marker per pull box.

Install the soil anchor and marker post in front of the object being marked (as referenced from the direction of travel by the approaching highway traffic).

D Measurement

The department will measure Pull Box Marker as each individual pull box 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.0060.44	Pull Box Marker	Each

Payment is full compensation for furnishing and installing the marker including non-reflective tape and soil anchor.

110. Traffic Signal Control Cabinet, Item SPV.0060.45.

A Description

This special provision describes providing a door-in-door style, base mounted cabinet, with exterior dimensions of 55" height, 38" width, and 26" depth and conflict monitor (Traffic Signal Controller will be furnished by the department), as specified in standard spec 651 and 655, as shown on the plans, and as provided hereinafter.

B Materials

Provide a cabinet that is of weatherproof construction, fabricated from sheet aluminum at least 0.125-Inches thick and adequately reinforced. Provide a heavy duty stainless steel handle (5/8 inch minimum diameter) and latch. Provide stainless steel door hinges that are continuous for the full height of the door.

Provide a cabinet with a zinc chromate prime coat interior with a rust-resistant high gloss white enamel finished coat. Provide a cabinet with a natural mill finish exterior. Provide the manufacturer's highest quality paint system, using prime and finish paint. Provide a paint system that is durable, weather-resistant, well adhered to the cabinet, and suitable for streets with heavy salting and resulting salt spray from passing vehicles traveling at speeds averaging 40 mph. Identify the manufacturer's warranty on the paint finish. No warranty less than five years will be accepted. Obtain approval of the paint system from the city of Madison before proceeding with the cabinet.

Provide two adjustable-height shelves of 12-13 inches deep for the cabinet.

B.1 Locks

Provide a main cabinet door with a tumbler lock keyed for a Corbin No. 2 key. Equip the auxiliary (Police Panel) door with a lock for a standard police key. Furnish a key for each lock. When the door is closed and latched, with the key removed, the door shall lock. Provide a locking bar that is made from solid, non-rusting, metal with a square cross-section equipped with a double roller on each end.

B.2 Door Stop

Equip the cabinet with a door stop assembly to hold the door open at approximately 90° and 150°.

B.3 Weather Protection and Incandescent Light

Equip the cabinet with an electric fan assembly with a minimum capacity of 100 cubic feet per minute. Mount the fan in the top of the cabinet in a manner to prevent rain from entering the cabinet. Provide a fan that can be thermostatically controlled to turn on between 80° F and 150° F and is also manually adjustable. Provide a cabinet fan circuit that has fuse protection at 125% of the capacity of the fan motor.

Furnish a removable filter at the air intake louvered vents near the bottom of the cabinet, including a gasketed aluminum filter replacement for use in the winter to prevent entrance of snow.

Mount an incandescent light socket in the upper front part of the cabinet.

B.4 Grounding

Provide a copper equipment grounding bus in each cabinet to accept up to #4 stranded wire. Ground the ground bus to the cabinet, and provide at least 14 terminals of the tubular clamp type. Connect all ground bus together with a minimum #8 green copper wire.

B.5 Controller and Conflict Monitor Equipment

- Controller will be furnished by the department (Econolite ASC/3-2100 with HTR, data key and Ethernet)
- Furnish Econolite TIO board with harness
- Furnish D connector interface harness and board
- Furnish NEMA-Plus 12-channel signal conflict monitor, with LCD display, and an Ejector Tab card release on the side of the card.

B.6 Solid State Flasher

Furnish the cabinet with two 6 pin, 20 amp, double circuit solid state flashers, fully connected and operating.

B.7 Flash Transfer Relays

Provide electromechanical relays for opening and closing traffic signal field circuits. Furnish the cabinet supplied under this specification with four 2-pole transfer relays wired to transfer the vehicle phases. Cover relays used for this purpose, insulate, or locate so that electrically alive parts are not readily exposed. All relays shall be next to each other and mounted on the back panel.

Furnish silver-cadmium, coin silver, or equivalent material at all contact points which make, break, and carry current to the signal. Provide contact that is capable of making, breaking, and carrying a current of 10 amperes, 120 volts, without undue pitting. Provide relay coils that have a power consumption of 10 volt amperes or less and that are designed for continuous duty. Furnish contact point which make, break, and carry current to the solid state switchbacks that are capable of carrying 40 amperes of 120 volts without undue pitting. Furnish a transfer relay capable of withstanding a potential of 1500 volts at

60 Hertz between insulated parts, and between current carrying parts and grounded and non-current carrying parts. Each transfer relay will have a one cycle surge rating of 175 amperes RMS (247.5 amperes peak). Each transfer relay will be unaffected by electrical noise, having a rise time of up to 200 volts per microsecond. Each relay will be unaffected by the 500 volt power noise transient test.

The flash transfer relay will energize the flasher and transfer field signal light circuit from the controller to flasher, and permit flashing lights as programmed on the main street or highway and on the cross street or streets. Operation of the flash transfer relay circuit is not to prohibit the operation of the controller, but prohibit operation of the field signal light circuits by the controller.

Provide a flash transfer relay with a connector (Cinch-Jones Type P-408-SB, or equivalent) and intermate with Cinch-Jones Type #S-408-SB, or equivalent.

Furnish socket pin assignments as follows:

Pin Function

- 1 Relay Coil
- 2 Relay coil
- 3 NC Ckt. #1
- 4 NC Ckt. #2
- 5 Relay Common Ckt. #1
- 6 Relay Common Ckt. #2
- 7 No. Ckt. #1
- 8 No. Ckt. #2

Wire the flash circuit in a fail-safe manner so that the intersection will revert to and remain in the flashing mode whenever and for as long as either the controller or the monitor is disconnected. Support the relays with a rack at least 8½ inches out from each socket.

B.8 Flash Sequence Programming

Provide a programming means to determine if flashing yellow or red appears on the output field terminals to the signal heads. Accomplish programming with simple tools such as a screwdriver. Conform the sequence timing for flash by automatic call-up with the MUTCD.

B.9 Load Switches

Furnish eight 3-circuit load switches, discrete type, with each cabinet. Furnish a load switch panel that has a bracket support for its full length and extending out 8½ inches from the panel socket. The bracket support is intended to reduce switch loosening from vibrations and to prevent switches from falling down if disengaged from the socket.

B.10 Harness Wiring

Provide a wiring and cabinet panel arrangement capable of providing full dual ring eight phase actuated operation. Supply a 12-channel conflict monitor harness wired in each cabinet. Organized all cabinet wiring harnesses to be neat, firm and routed to minimize crosstalk and electrical interference. Route loop harnesses to the right (hinge) side of the cabinet and attached up to shelf level to avoid harnesses dangling in front of the door.

Route and bundle wiring containing AC separately from all low voltage control circuits. Furnish fuses and surge protection for all interconnect circuits. Cover all conductors and live terminals or parts, which could be hazardous to maintenance personnel, with suitable insulating material.

B.11 Terminal Blocks

Furnish terminal block connections that are located a minimum of 8 inches from the bottom of the cabinet. Provide two-position barrier type terminal blocks. Arrange the terminal blocks so that they not upset the entrance, training and connection of incoming field conductors. Clearly identify all terminals and permanently associate them with the terminal block.

Provide terminal blocks used for field wiring connections (field terminals) that are capable of securing conductors with 10-32 or larger nickel or cadmium plated brass binder head screws.

Terminal blocks used for the applied AC power will be capable of securing conductors with a 10-32 nickel or cadmium plated brass binder head screws.

Provide field terminal blocks for the connection of all loop detectors. Where a card rack is required, provide terminal blocks to accommodate 16 detector channels.

B.12 Detectors Card Rack

Provide a detector card rack that has four slots for four-channel detectors (a total of 16 detector channels) and a power supply slot. The card rack will have flanges turned out. Fully wire and connect the card rack to cabinet terminals 1 through 16. Associate terminals 1 through 8 with vehicle phases 1 through 8, respectively. Supply a four-channel power supply with per-channel fusing and output indicators for each channel. Mount the card rack on the top shelf, left side as one looks into the cabinet.

B.13 Detectors

Provide a cabinet that contains four 4 channel digital loop detector amplifiers approved for use by City of Madison Traffic Engineering and that have at the minimum the following characteristics: Rack mount design, 2" maximum width for front panel. User selection for the following must be available on the front panel without requiring auxiliary devices:

- Pulse or presence
- Sensitivity, minimum of 6 levels
- Sequentially scan channels or other suitable means to reduce crosstalk
- Display detection and faults for each channel
- Self tuning

B.14 Power Panel

Furnish a cabinet that has a power distribution panel containing the following elements:

- Surge protection provided by use of a varistor or other suitable equipment.
- Two 30 amp Radio Interference Suppressors.
- 50 amp single pole Main Breaker followed by dual 30 amp Main Circuit Breakers with single common trip.
- 15 amp Auxiliary Equipment Circuit Breaker.
- Two 30 amp Power Relays (Mercury Contactors).
- Neutral Bus Bar Isolated from Cabinet Ground.
- Ground Bus Bar.
- EDCO SHP 300-10 Power Line Surge Protector.

Provide a mercury contactor that can be normally opened and capable of switching 30 amperes at 120 volts AC.

Provide a neutral bus terminal with at least 14 terminals of the tubular clamp type able to accept up to #4 stranded wire.

B.15 Police Panel

Provide a police panel door for the main door of the cabinet. Behind this door will be a panel with a minimum of a toggle switch labeled “SIGNALS ON-OFF” and a toggle switch labeled “SIGNALS FLASH-AUTO.” The signals on-off switch will cause all intersection displays to be turned off and the controller AC power to be removed when placed in the off position.

In the flash position, the signals flash switch will cause the intersection to be placed in flashing position and the controller shall stop time.

B.16 Maintenance Panel

Provide a maintenance panel on the inside of the main door containing the following:

- GFCI duplex convenience outlet.
- Stop time switch.
- Controller on/off switch.
- Vehicle and pedestrian detector actuation test push buttons.
- Incandescent light switch.

Furnish a stop time switch that has a three-position toggle switch labeled ON, OFF, and AUTO. In the ON position, stop timing power will be applied to the controller. In the OFF position, stop timing will be removed from the controller if it has been applied by

the conflict monitor or other auxiliary device. The AUTO position will be the normal operating position and allow auxiliary devices to apply stop timing inputs to the controller. Wire the conflict monitor through the stop time switch such that when in the AUTO setting and a conflict is detected, stop timing is applied to the controller.

Provide a controller switch that has a two-position toggle switch labeled ON and OFF. In the OFF position, the intersection will be placed in flashing operation and the controller turned off.

Furnish a detector test push button or toggle switch for each vehicle and pedestrian phase. Locate these to preclude accidental activation when the door is closed.

B.17 Pedestrian Button Wiring

Pedestrian push button logic will be opto-isolated such that there will be no logic common carried out to each individual push button. The AC- from the field pedestrian push button will activate the opto-isolated pedestrian push button relays when the field button is activated.

B.18 Testing, Labeling and Wiring Diagram

Thoroughly test the cabinet wiring and auxiliary devices with a controller and monitor (if the harness is to be furnished by the vendor) in place. The vendor will perform this test. Clearly and permanently label all equipment furnished in the cabinet. Supply a good quality, reproducible 24 inch by 26 inch mylar wiring diagram to the city.

B.19 Manufacturer's Warranty

Warranty the performance and construction of the fully-wired cabinet to meet the requirements of this specification, and warrant all wiring parts, components, and appurtenances against defects in design, material and workmanship for a period of one year from the date of installation. In the event defects and failures become apparent during this time, repair and/or replace all defective parts or appurtenances at no additional expense to the department. This specification is to construe that any part, or parts, that fail to function properly will be replaced at no charge to the department.

B.20 Cabinet Design for City Review Before Manufacturing.

Supply the engineer and the city of Madison with a complete set of plans for the cabinet for review before manufacturing the cabinet. After city approval of the design, as received or as modified by joint agreement between the city and the vendor, wire the cabinets according to the approved design and specifications. The city will complete its review within five work days from receipt of the complete set of plans.

C (Vacant)

D Measurement

The department will measure Traffic Signal Control Cabinet by each individual traffic signal control 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.0060.45	Traffic Signal Control Cabinet	Each

Payment is full compensation for furnishing and delivering all materials to the City of Madison, 1120 Sayle Street.

111. Install Mounted Cabinet, Item SPV.0060.46.

A Description

This special provision describes installing department furnished aluminum enclosures on poles or Dynamic Message Sign (DMS) concrete footings for intelligent transportation systems equipment, as specified in standard spec 651, 652, 655, 670, and 675, as shown on the plans, and as provided hereinafter. For DMS locations, the cabinet will be mounted on the concrete footing of an existing sign structure base or on the pole of a new sign structure. Installation will include mounting hardware, and brackets.

B Materials

The Mounted Cabinet will be furnished by the department and will be an Eagle Cabinets Size 4 enclosure, catalog number EL 763.

Provide stainless steel bolts, nuts, and washers unless otherwise specified.

Protect all conductors, terminals, and parts with suitable insulating material.

Equip the cabinet with service panels. Provide two panels and mounted on the cabinet sidewalls. Designate the left side panel "Input/Communications", and the right side panel as "Service Panel".

Equip the service panel with a four-outlet handi-box. Wire the handi-box to the series portion of the SHA-1210 specified herein.

Protect the cabinet with a filtering surge protector, having the following minimum features:

Peak Current	20,000 amps
Life Test	5% change
Clamp Voltage (L-N)	280V @ 20KA
Response Time	Voltage never exceeds 28 volts during surge
Continuous Service Current	10 amps maximum
	120VAC 60Hz

Provide metallic conduit, fittings, and adapters required from the underground conduit transition point to the cabinet. Supply metallic conduit in accordance to standard spec 652. Size the conduit and fittings in accordance to the plan.

For DMS locations, provide controller cabinet hardware conforming to the following material requirements:

- All bolts, nuts, and washers shall be stainless steel.
- Furnish 2 galvanized steel angled support brackets. Provide brackets with a minimum horizontal length of 12-inches and a maximum of 18-inches. Provide brackets rated to support a minimum of 500-pounds.
- Furnish epoxy anchor bolts to mount the back of the cabinet to the concrete footing and to mount the vertical members of the angle brackets to the concrete footing. When installed by the manufacturer's recommended procedures, the anchor bolts must have a minimum tension strength in concrete of 10,000 pounds.

C Construction

Securely fasten the field cabinet onto a pole (pole paid separately) or DMS structure concrete footing as shown on the plans. Provide bolted stainless steel connections with lockwashers, locking nuts, or other engineer-approved means to prevent the connection nuts from backing off. Isolate dissimilar materials from one another by stainless steel fittings.

Install epoxy anchor bolts according to the manufacturer's recommended procedures.

Make all power connections in the cabinet in accordance to the National Electric Code and with all applicable requirements of 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 sharp edges, or burrs, 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 conduit exterior to the pole where required (for entrance to the cabinet from the ground) as shown in the plans, and in accordance to the applicable requirements of standard spec 652.

D Measurement

The department will measure Install Mounted Cabinet as each individual install mounted 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.0060.46	Install Mounted Cabinet	Each

Payment is full compensation for installing the mounted cabinet, providing openings in the cabinet for conduit or wire installation; for performing all internal wiring to the cabinet, for furnishing all mounting hardware, conduit, transportation, testing.

112. Install Cellular Modem, Item SPV.0060.47.

A Description

This section describes installing cellular modems and EIA-232 to EIA-422 converters at various locations along the project, as specified in standard spec 651, 670, 674, and 675, as shown on the plans, and as provided hereinafter.

B Materials

Modems, antennas, and converters are furnished by the department.

Provide a 19-Inch Rack Mountable Shelf.

Communication Connector: Provide all necessary RS-232 Patch Cables and CAT 5 (E10/100) Cables.

C Construction

Meet with the engineer and field system integrator to discuss specific requirements of the cellular modem and converter prior to installation. Make the necessary electric and communication network connections to the cellular modem. Mount the cellular modem in a 19-inch rack using a rack or shelf; all necessary hardware and shelves for mounting the modems are included in the bid item. Program and configure the cellular modem according to the manufacturers instructions. Connect the cellular modem to ITS equipment as specified on plans.

Activate the cellular modem and converter and leave on for 30 consecutive days. During this period, all materials and components of the cellular modem must operate as specified and without any failure. In event of a failure, the engineer will suspend the 30-day test until the failures are corrected, at which time the test will resume.

Install antenna according to the manufacturer's recommendation.

D Measurement

The department will measure Install Cellular Modem as each individual install cellular modem, 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.0060.47	Install Cellular Modem	Each

Payment for Install Cellular Modem is full compensation for furnishing and installing a 19-inch rack mountable shelf, installing the cellular modem and necessary converters, for making all connections, providing all necessary hardware for furnishing all programming and configuration; and for furnishing all testing.

113. Install Solar-Powered Bluetooth Sensor, Item SPV.0060.48.

A Description

This special provision describes installing a department-furnished solar-powered Bluetooth sensor with onboard cellular modem, solar panel and solar panel mounting hardware, as specified in standard spec 651, 670, 674, and 675, as shown on the plans, and as provided hereinafter.

B Materials

The department will furnish the solar-powered Bluetooth sensor with onboard cellular modem and solar panel with mounting hardware.

Provide all necessary cables and connectors between the solar-powered Bluetooth sensor and other devices.

C Construction

Install the solar-powered Bluetooth sensor as indicated on the plans and in accordance to the manufacturer's recommendations. Mount the antenna to maximize signal strength.

D Measurement

The department will measure Install Solar-Powered Bluetooth Sensor as each individual install solar-powered Bluetooth sensor, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.48	Install Solar-Powered Bluetooth Sensor	Each

Payment is full compensation for coordinating pick-up from WisDOT, transporting, installation of the solar-powered Bluetooth sensor and cellular modem, furnishing and installing all necessary hardware, and making all necessary connections.

114. Furnish Traffic Signal Trombone Arms 25-Foot, Item SPV.0060.49.

A Description

This special provision describes furnishing and delivering new trombone mast arms and necessary hardware to the Dane County Highway Department, as shown on the plans, in accordance of standard spec 657, and as hereinafter provided.

B Material

Provide traffic signal trombone arms designed to withstand loadings resulting from a 12-inch 3-section aluminum signal with backplate and an 18-inch x 90-inch aluminum street name sign mounted on the arm. Apply design factors in accordance to the AASHTO Specifications for the Design and Construction of Structural Supports for Traffic Signals, Signs, and Highway Lighting, together with a wind pressure resulting from a wind velocity of 80 miles per hour plus gust factor, to these arms, with the above signals attached.

Furnish certification of compliance with these stated AASHTO performance requirements with submission of the material list.

Submit shop drawings and include dimensions of width, depth, length and thickness of all members and ASTM designation and alloy designation of aluminum members.

Provide aluminum trombone arms consisting of round or oval upper and lower members joined by one or more tubular vertical struts welded to them. Provide a pole end of the mast arm having a mounting clamp welded to it which will permit the attachment of the mast arm to a round pole of varying diameter. Provide a lower clamp that has 5-7/8-inch I.D. and a upper clamp that has 5-1/2-inch I.D. Provide clamps able to accommodate some variation in pole diameter while still attaining full contact between the clamp and the pole. Provide a clamp with surface area contacting the pole that is sufficiently large and designed to prevent horizontal rotation in windy conditions.

Provide galvanized steel bolts connecting the arm bracket to the back bracket; stainless steel bolts are not acceptable. Provide a vertical strut, which has provision for mounting the signal head, for horizontal adjustability along the main mast arm members so that signal heads of various lengths with backplates, up to and including 5-section 12-inch heads, can be accommodated within the confines of the mast arm. The cross tees for signal heads will each have two slots on the threaded hubs that face each other.

Locate the wiring raceway entrance through the lower mounting bracket.

Provide a mast arm that has a uniform natural aluminum finish and is clean of dirt and debris. No painting or other corrosion preventive maintenance will be required.

The portion of the main members of the arm to which the arm attachment bands are welded will be one piece seamless tapered aluminum tubes.

Furnish necessary hardware to attach the main arm member to the pole using extruded aluminum clamps fastened with continuously threaded stainless steel bolts with nuts and washers meeting the requirements of ASTM Designation A-320. List the Strength and/or grade specification ratings on the shop drawings. Furnish necessary stiffeners or gussets at the joints between the main arm tubes and arm clamps to provide adequate strength to resist side loads.

Furnish shims made of an aluminum alloy.

Permanently imprint of the "Type" and "Year of Manufacture" on the underside of the lower member of each arm.

C (Vacant)

D Measurement

The department will measure Furnish Traffic Signal Trombone Arms 25-Foot by each individual furnish traffic signal trombone arms 25-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.0060.49	Furnish Traffic Signal Trombone Arms 25-Foot	Each

Payment is full compensation for furnishing and delivering all materials to the Dane County Highway Department, 2302 Fish Hatchery Road, Madison, WI.

115. Install IP Wireless 5.8 GHz Radio/Antenna, Item SPV.0060.50.

A Description

This special provision describes installing a department-furnished IP wireless (5.725-5.875 GHz) radio/antenna, as specified in standard spec 651, 652, 655, and 670, as shown on the plans, and as provided hereinafter.

B Materials

The IP wireless radio/antenna will be furnished by the department.

Provide all necessary outdoor rated cables between the IP wireless radio/antenna and other devices as shown on the plans.

C Construction

Pole mount the IP wireless radio/antenna as indicated on the plans and per the manufacturer's recommendations. Make connections between the IP wireless radio/antenna and other devices as shown in the plans, or as directed by the engineer.

D Measurement

The department will measure Install IP Wireless 5.8 GHz Radio/Antenna as each individual IP wireless 5.8 GHz radio/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.0060.50	Install IP Wireless 5.8 GHz Radio/Antenna	Each

Payment is full compensation for installation of the IP wireless radio/antenna, furnishing and installing all necessary hardware, making all necessary connections.

116. Install Overhead Freeway DMS Full Matrix and Controller, Item SPV.0060.51.

A Description

This special provision describes installing a department-furnished dynamic message sign on an existing or new sign structure, installing the department-furnished sign controller in the cabinet, all wiring and conduit, and integrating the sign and making it functional in the existing system, as specified in standard spec 651, 652, 655, and 670, as shown on the plans, and as provided hereinafter.

B Materials

Provide all required conduit and fittings, and cables recommended by the sign manufacturer between the cabinet and sign. Provide a 100 AMP 120/240 VAC load center in the controller cabinet, along with breakers recommended by the sign manufacturer.

The dynamic message sign, dynamic message sign controller, and communication cable (multimode fiber optic cable) between the sign and controller will be furnished by the department.

Use an AWG # 6 copper wire or equivalent bonding straps to bond the sign and cabinet to the structure. Use an AWG # 6 solid, bare copper wire to bond the sign structure to the ground rod(s). For the three wires carrying 120/240 VAC power from the cabinet to the sign, use single conductor, stranded copper, 120/240 VAC, XLP insulated, use rated wire. Size the wire to carry the maximum amperage permitted by the main breakers in the sign.

C Construction

Install the department-furnished sign as indicated in the plans. Install the department-furnished sign controller in the mounted cabinet as indicated in the plans.

Install the load center so that the main breakers control all power to the sign and cabinet. Provide at least three branch circuits, one for the sign, one for the controller and communication equipment, and one for the cabinet accessories, such as fan, light, and heater. Only the branch serving the controller and communication equipment shall be protected by the second stage of the surge protector.

Connect the power and control cables in accordance to the manufacturer's recommendations. Run the cables in rigid metallic conduit, flexible metallic conduit, within the sign structure, or a combination of these.

Bond the bottom of the sign structure to one or more ground rods. Use exothermic welding at each end of the ground wire (unless the steel structure has a suitable grounding lug). Use an AWG # 6 solid, bare copper wire to bond the sign structure to the ground rod(s). Use a device that measures resistance to ground using the three-point fall-of-potential method to ensure that the resistance from the sign's ground bar to ground does not exceed 4 ohms. Add more ground rods if necessary to achieve this requirement. All grounding components will be included with the Install Overhead DMS Full Matrix and Controller bid item.

D Measurement

The department will measure Install Overhead Freeway DMS Full Matrix and Controller by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.51	Install Overhead Freeway DMS Full Matrix and Controller	Each

Payment is full compensation for installation and testing of the sign and controller and controller patch cables; fabrication and installation of all mounting hardware; furnishing and installation of power cables and conduit/fittings and grounding components.

117. Install Spread Spectrum Radio, Item SPV.0060.52.

A Description

This special provision describes installing a department-furnished 900 MHz serial communications spread spectrum radio in a new or existing cabinet, as specified in standard spec 651, 670, 674, and 675, as shown on the plans, and as provided hereinafter. The department will also furnish set-up software for the radio and a lightning protector for the antenna connection.

B Materials

Spread-spectrum radios, antennas, and surge protectors as furnished by the department, and coaxial cable and connectors, and metallic conduit as supplied by the contractor.

Furnish cable connectors to fit between the coaxial cable and the state-furnished spread spectrum radio.

C Construction

Bond the surge protector to the cabinet grounding system.

Use the manufacturer's set-up software to configure the radio for its intended use.

Following installation of the radio, antenna, and cable, aim the antenna at the matching antenna, as shown on the plans. Use the signal strength indicator on the radio to find the optimum position of the antenna. Also perform a frequency analysis to determine the optimal hop pattern of the radios, and test the continuity of every link by polling the radios using the software provided by the manufacturer. The position of the antenna and the hop pattern shall be adjusted until the polls show at least 200 consecutive polling intervals have been successfully transmitted and received. Demonstrate to the engineer that the hop pattern selected corresponds to the optimal noise free frequencies identified in the frequency analysis. Deliver 3 copies of the final test results to the engineer for signal strength, frequency analysis, and test polling.

Following the installation of the spread spectrum radio assembly, antennas, and cables, perform the following tests:

- **V.S.W.R test** from the connection at the radio, with a fully configured antenna system (antenna, cable, and all connections). The V.S.W.R. shall not exceed 1.5:1 at 900 MHz.
- **Bit error rate test.** Test at 5600 bps from the radio to the matching radio shown on the block diagram in the plans. Test for 4 hours at a 2048 bit pattern. Provide a hard copy output of results of each test to the engineer. The maximum error rate will be 1 erroneous bit every 1 million bits.

D Measurement

The department will measure Install Spread Spectrum Radio as each individual install spread spectrum radio, acceptably completely.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.52	Install Spread Spectrum Radio	Each

Payment is full compensation for installing, setting up, configuring, and testing the spread spectrum radio and antenna, surge protector, cables, and connections; for testing; and for furnishing and installing cable and connectors and metallic conduit.

118. Luminaires 250-Watt HPS, Item SPV.0060.53.

A Description

This special provision describes furnishing and installing new luminaires, lamps, wiring and appurtenances for lighting, at the locations shown on the plans and in accordance to standard spec 659.

B Materials

Furnish full cutoff-type luminaires conforming to all general aspects for luminaires as specified under standard spec 659 except as modified herein. Factory-set fixtures for Type III IES light distribution.

Provide fixtures having adjustable socket positioning to vary the IES-type light distribution.

Provide single door with internal mag-reg ballasts fixtures with the housing having a charcoal filter assembly and silicone or non-hardening rubber gasket.

Provide an alzak reflector with a flat glass refractor with the outside having baked acrylic enamel or electrostatically applied paint of aluminum texture color (gray) finish. Provide NEMA decal, stating the type and wattage of the lamp, firmly affixed to the underside (outside) of each fixture and clearly visible from the ground during daylight.

Provide fixtures with mounting brackets to fit on a 2-inch slipfitter. Provide terminal block to accept a minimum No. 12 size conductor. Provide copper tabs. If multi-tap ballasts are supplied, provide spade-type connectors on the ballast. Provide ballasts that are 120-volt or pre-wired for 120 volts.

Provide clear HPS lamps that are non-cycling General Electric, Sylvania, Philips, or an approved equal. Date code the lamps for current month and year just prior to installation.

C Construction

Remove luminaires from existing street lights as shown in the plans. Install new luminaires on existing and new street light poles in accordance to the pertinent provisions of standard spec 659.3.

D Measurement

The department will measure Luminaires 250-Watt HPS as each individual luminaires 250-Watt HPS, 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.0060.53	Luminaires 250-Watt HPS	Each

Payment is full compensation for removing existing luminaires; for furnishing and installing luminaires, lamps, wiring, and appurtenances.

119. Install Yagi Antenna, Item SPV.0060.54.

A Description

This special provision describes installing a department-furnished Yagi spread spectrum radio antenna, and furnish and installing coaxial antenna cable, and metallic conduit on a new or existing cabinet or poles, as specified in standard spec 651, 652, 655, and 670, as shown on the plans, and as provided hereinafter.

B Materials

The antenna will be a Cushcraft PC9013N. It has a pigtail for connection to the antenna cable. Provide metallic conduit and stainless steel u-bolts for mounting to a new or existing cabinet as shown on the plans.

Furnish ½-inch foam dielectric 50-Ohm coaxial cable meeting the following minimum requirements:

- 50 Ohms impedance (plus / minus 1 Ohm)
- Intended for a range of frequencies including 900 MHz
- Velocity of 88%
- Peak power rating of 40 kW
- DC resistance of 0.45 Ohms / 1000 feet for the inner conductor
- DC resistance of 0.58 Ohms / 1000 feet for the outer conductor
- DC breakdown of 4000 volts
- Jacket Spark of 8000 volts RMS
- Capacitance of 23.1 pF / foot
- Inductance of 0.058 µH / foot
- Copper outer conductor
- Copper-Clad Aluminum inner conductor
- Diameter over jacket 0.63 inches (nominal)
- Diameter over Copper Outer Conductor of 0.55 inches (nominal)
- Diameter of inner conductor of 0.189 inches (nominal)
- Minimum bending radius of 5-inches
- Attenuation of 2dB / 1000 feet (nominal) at 900 MHz
- Average power of 1.10 (nominal) at 900 MHz

C Construction

For new or existing cabinets, mount the metallic conduit to the new or existing cabinet with u-bolts.

For poles, mount the antenna as shown in the plans. Mount metallic conduit to new or existing poles, as needed, with stainless steel banding straps as shown on the plans.

Install the antenna cable in the metallic conduit to the antenna.

Connect the antenna drop cable to the antenna. Fully seal the connection using methods and materials recommended by the radio manufacturer. Install the antenna so that it does not block the view of any microwave detectors on the same pole.

Aim the antenna at the matching antenna, as shown in the plans. Use the signal strength indicator on the radio to find the optimum position.

D Measurement

The department will measure Install Yagi Antenna as each individual install yagi 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.0060.54	Install Yagi Antenna	Each

Payment is full compensation for testing and installing the antenna and connections; and for furnishing and installing metallic conduit, mounting hardware.

120. Traffic Signal Dome Camera, Item SPV.0060.55.

A Description

This special provision describes furnishing and installing a dome camera on existing traffic signal poles or street light poles, associated mounting hardware, and software licenses, as specified in standard spec 651, 670, 674, and 677, as shown on the plans, and as provided hereinafter.

B Materials

Furnish the following:

- Axis P5522-E Camera MFG # AXC-0420-004.
- Axis 5502-431 Q6032-E Pendant Kit.
- All necessary mounting brackets.

For each camera, furnish the following:

- Exacq Single IP Camera License EXQ-EVIP01 (provide one of these items for each camera).
- Exacq SSA-EVIP-01 1 year software update subscription (provide two of these items for each camera).

Furnish outdoor rated cables and connectors recommended by manufacturer required to transmit video and camera control data between the camera assembly and the traffic signal control cabinet.

C Construction

This work is associated with camera assemblies in accordance to standard spec 677, as shown on the plans, and according to the manufacturer's recommendation.

Band camera assembly and arm on the pole identified on the plans. Orient direction as shown on the plans.

Contact Mike Christoph at the City of Madison Traffic Engineering shop at (608) 266-9031 a minimum of 7 working days in advance to coordinate installing equipment in existing traffic signal cabinet.

D Measurement

The department will measure Traffic Signal Dome Camera as each individual traffic signal dome camera, 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.0060.55	Traffic Signal Dome Camera	Each

Payment is full compensation for furnishing and installing the traffic signal dome camera on existing traffic signal poles or street light poles, all required mounting brackets/pendant, riser conduit/fittings as needed, control and power cables, all hardware, and fittings.

121. Traffic Signal Ethernet Switch, Item SPV.0060.56.

A Description

This special provision describes furnishing and installing an ethernet switch in an existing traffic signal cabinet, as specified in standard spec 651, 655, 670, 674, and 675, as shown on the plans, and as provided hereinafter.

B Materials

Furnish Cisco IE-2000-4TS-B Ethernet switches as shown in the plans.

Provide all necessary cables between the ethernet switch and device or devices as shown in the plans.

C Construction

Install the traffic signal ethernet switch in an existing traffic signal cabinet. Connect it to devices as shown on the plans, according to the manufacturer's recommendation, and as directed by the engineer.

Contact Mike Christoph at the City of Madison Traffic Engineering shop at (608) 266-9031 a minimum of 7 working days in advance to coordinate installing equipment in existing traffic signal cabinet.

D Measurement

The department will measure Traffic Signal Ethernet Switch as each individual traffic signal ethernet switch, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.56	Traffic Signal Ethernet Switch	Each

Payment is full compensation for furnishing and installing an ethernet switch, all necessary incidental wiring and hardware, making all necessary connections.

122. Traffic Signal Master Ethernet Switch, Item SPV.0060.57.

A Description

This special provision describes furnishing and installing an ethernet switch in an existing traffic signal cabinet, as specified in standard spec 651, 655, 670, 674, and 675, as shown on the plans, and as provided hereinafter.

B Materials

Furnish Cisco IE-3000-4TC Ethernet switches with a Cisco-compatible GLC-LX-SM-RGD (1000BASE-LX/LH long wavelength; rugged) Small Form-Factor Pluggable (SFP) Gigabit Interface converter with LC connector ends, as shown in the plans

Provide all necessary cables between the ethernet switch and device or devices as shown in the plans.

C Construction

Install the traffic signal master ethernet switch in an existing traffic signal cabinet. Connect it to devices as shown on the plans, according to the manufacturer's recommendation, and as directed by the engineer.

Contact Mike Christoph at the City of Madison Traffic Engineering shop at (608) 266-9031 a minimum of 7 working days in advance to coordinate installing equipment in existing traffic signal cabinet.

D Measurement

The department will measure Traffic Signal Master Ethernet Switch as each individual traffic signal master ethernet switch, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.57	Traffic Signal Master Ethernet Switch	Each

Payment is full compensation for furnishing and installing an ethernet switch, all necessary incidental wiring and hardware, making all necessary connections.

123. Transformer Base Steel, 16-Inch, Item SPV.0060.58; 20-Inch Steel, Item SPV.0060.59.

A Description

This special provision describes furnishing and installing steel transformer bases as shown on the plans and in accordance to standard spec 657.

B Materials

Provide hot-dipped galvanized steel transformer bases in accordance to ASTM designation A123. Provide slotted bolt openings in the bases. Furnish steel connecting bolts, size 1.25 inches by 4 inches, hold down lugs for 1.25 inch bolts and nuts and washers, which are also hot-dipped galvanized and be of sufficient size and strength to exceed the capacity of the bases. Conform the 16-inch base to the detail in the plan. Provide a Valmont M201, Union Metal 14-B2640Y2, Millerbernd 390A105, Ameron TB1316, or approved equal for the 20-inch base.

Furnish to the engineer, at the time of delivery of the bases, a manufacturer's certificate of compliance that the base and hardware as furnished meets the above requirements.

C Construction

Install transformer bases in accordance to the manufacturer's instructions, contract plans and specifications. Some of the bases will be installed under existing streetlight poles. In such cases, lift and reinstall the existing light pole as part of this bid item.

New streetlight pole wire may be needed to reconnect the luminaire to the circuit.

D Measurement

The department will measure Transformer Base Steel (Size) as each individual transformer base steel, 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.0060.58	Transformer Base Steel 16-Inch	Each
SPV.0060.59	Transformer Base Steel 20-Inch	Each

Payment is full compensation furnishing and installing transformer bases, streetlight pole wire, mechanical grounding connector and related hardware; for leveling shims when required.

124. Install Ground Mount Dynamic Message Sign and Controller, Item SPV.0060.60.

A Description

This special provision describes installing a department-furnished dynamic message sign on structural steel sign supports (paid for separately), installing the department-furnished sign controller in the cabinet, all wiring and conduit, and integrating the sign and making it functional in the existing system, as specified in standard spec 651, 652, 655, and 670, as shown on the plans, and as provided hereinafter.

B Materials

Provide all required conduit and fittings, and cables recommended by the sign manufacturer between the cabinet and sign. Provide a 100 AMP 120/240 VAC load center in the controller cabinet, along with breakers recommended by the sign manufacturer.

The dynamic message sign, dynamic message sign controller, communication and power cables (multimode fiber optic cable), between the sign and controller will be furnished by the department.

Use an AWG # 6 copper wire or equivalent bonding straps to bond the sign and cabinet to the structure. Use an AWG # 6 solid, bare copper wire to bond the sign structure to the ground rod(s). For the three wires carrying 120/240 VAC power from the cabinet to the sign, use single conductor, stranded copper, 120/240 VAC, XLP insulated, use rated wire. Size the wire to carry the maximum amperage permitted by the main breakers in the sign.

C Construction

Install the department-furnished sign as indicated in the plans. Install the department-furnished sign controller in the mounted cabinet as indicated in the plans.

Install the load center so that the main breakers control all power to the sign and cabinet. Provide at least three branch circuits, one for the sign, one for the controller and communication equipment, and one for the cabinet accessories, such as fan, light, and

heater. Only the branch serving the controller and communication equipment shall be protected by the second stage of the surge protector.

Connect the power and control cables in accordance to the manufacturer's recommendations. Run the cables in rigid metallic conduit, flexible metallic conduit, within the sign structure, or a combination of these.

Bond the bottom of the sign structure to one or more ground rods. Use exothermic welding at each end of the ground wire (unless the steel structure has a suitable grounding lug). Use an AWG # 6 solid, bare copper wire to bond the sign structure to the ground rod(s). Use a device that measures resistance to ground using the three-point fall-of-potential method to ensure that the resistance from the sign's ground bar to ground does not exceed 4 ohms. Add more ground rods if necessary to achieve this requirement. All grounding components will be included with the Install Ground Mount Dynamic Message Sign and Controller bid item.

D Measurement

The department will measure Install Ground Mount Dynamic Message Sign and Controller as each individual install ground mount dynamic message sign and controller, 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.0060.60	Install Ground Mount Dynamic Message Sign and Controller	Each

Payment is full compensation for installation and testing of the sign and controller and controller patch cables; fabrication and installation of all mounting hardware; furnishing and installation of power cables and conduit/fittings and grounding components.

125. 8-Count Fiber Optic Connector 1300-Feet, Item SPV.0060.61.

A Description

This special provision describes furnishing and installing 8-count factory terminated combination fiber optic patch panel and cable systems of the lengths described, as specified in standard spec 651, 655, 670, and 678, as shown on the plans, and as provided hereinafter.

B Materials

Furnish combination fiber optic termination patch panel and cable systems meeting the following requirements:

- 8 single mode fiber optic strands.
- Factory terminated LC connectors on panel end.
- Bare, unterminated fiber strands on non-panel end.
- Loose tube cable.
- Cable length as indicated by bid item.
- Patch panel must be designed and tested for 1,000 rematings with less than 0.2 dB change.
- Patch panel housing material must be ABS plastic.

C Construction

Follow all manufacturer's recommended installation procedures.

Install cable from control cabinet end out to fiber optic splice location to prevent damage to the termination panel.

Mount the termination panel end in the control cabinet in a space available upon receiving approval by the engineer.

Splice fiber optic strands to main fiber optic cable as shown on the plans or as directed by the engineer. Splices are paid for separately.

Contact Mike Christoph at the City of Madison Traffic Engineering shop at (608) 266-9031 a minimum of 7 working days in advance to coordinate installing equipment in existing traffic signal cabinet.

D Measurement

The department will measure 8-Count Fiber Optic Connector 1300-Feet as each individual 8-couth fiber optic connector 1300-feet, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.61	8-Count Fiber Optic Connector 1300-Feet	Each

Payment is full compensation for furnishing and installing the fiber optic cable and termination panel assembly.

126. Wood Pole, 50-FT with Service, Item SPV.0060.62.

A Description

This special provision describes furnishing and installing a 50-foot wood pole with an aerial electrical service to an existing adjacent meter breaker pedestal as specified in standard spec 656, as shown on the plans, and as provided hereinafter.

B Materials

Furnish a Class II wood pole conforming to the American Standard Specifications and Dimensions for Wood Poles (ANSI 2051), unless otherwise specified by the engineer.

Treat the wood pole in accordance to the requirements and recommendations of AWWA Standard C1 and the applicable AWWA Commodity Standards. Do not use Creosote for treatment.

Furnish all necessary riser conduit and fittings, weather heads, guy wire, span wire, tether wire, messenger wire and mounting hardware, intermediate support posts, electrical wire, and all other necessary materials to make the aerial service connection as shown on the plans.

Use metallic conduit, flexible liquid tight conduit, fittings, and adapters required from the underground conduit transition point between the existing meter breaker pedestal and adjacent wood post.

Furnish grounding electrodes that are one solid rod with a minimum 8-foot length and 5/8-inch diameter made of the copper clad type or engineer-approved equal. Furnish a separate 6 AWG stranded bare copper wire to run up the pole to attached equipment for grounding purposes.

Furnish circuit breakers in existing meter breaker pedestal as necessary with an amperage capacity of 50 A.

C Construction

Install the wood pole with 20% of the pole length below ground.

Perform work according to the WSEC. Install aerial service between wood pole and existing meter breaker pedestal at nearby traffic signal cabinet as shown on the plans. Provide and 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 traffic signal 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 Graham Heitz of the WisDOT SW Region at (608) 246-5362 a minimum of 10 working days prior to connecting into existing meter breaker pedestal service in the adjacent traffic signal cabinet at the location shown on the plans.

D Measurement

The department will measure Wood Pole, 50-FT with Service as each individual wood pole 50-foot with service, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.62	Wood Pole, 50-FT with Service	Each

Payment is full compensation for furnishing and installing the wood pole, all materials necessary for aerial service connection to existing adjacent meter breaker pedestal, for excavating, bedding, backfilling, and restoration of ground to original condition including seed, mulch and fertilizer.

127. Install Portable Changeable Message Sign, Item SPV.0060.63.

A Description

This special provision describes installing a department-furnished portable changeable message sign.

B Materials

The portable changeable message sign will be furnished by the department.

C Construction

Place the portable changeable message sign as indicated in the plans, or as directed by the engineer. Connect the portable changeable message sign to communications equipment as indicated in the plans, per manufacturer's recommendation, or as directed by the engineer.

D Measurement

The department will measure Install Portable Changeable Message Sign as each individual install portable changeable message sign, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.63	Install Portable Changeable Message Sign	Each

Payment is full compensation for installation of the portable changeable message sign, furnishing and installing all necessary hardware, making all necessary communications connections; and for testing.

128. Install Solar Power Assembly, Item SPV.0060.64.

A Description

This section describes installing department-furnished solar power assembly on a pole, as specified in standard spec 651, 652, 655, 670, and 675, as shown on the plans, and as provided hereinafter.

B (Vacant)

C Construction

Meet with the engineer to discuss specific requirements of the solar power assembly prior to installation. Install and test the charge regulator, solar battery, and DC to AC converter in the enclosure. Make the necessary electric connections between the components of the solar power assembly. Mount all solar panels and enclosure; all necessary hardware for mounting is incidental.

Program and configure the solar power assembly according to the manufacturers instructions. Coordinate with cabinet, panel and pole manufacturer and submit design shop drawings on installation of solar power cabinet and panels per AASHTO structure and wind load requirements.

The solar power assemblies shall be activated and left on for 30 consecutive days. During this period, all materials and components of the solar power assembly must operate as specified and without any failure. In event of a failure, the engineer will suspend the 30-day test until the failures are corrected, at which time the test will resume.

This item includes installation of all solar panels, batteries and cabinets of each location as required on the plans.

D Measurement

The department will measure Install Solar Power Assembly as each individual install solar power assembly, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.64	Install Solar Power Assembly	Each

Payment for Install Solar Power Assembly is full compensation for installing all solar power panels, batteries and cabinets on a pole, for furnishing all mounting hardware, for making all connections, for furnishing all programming and configuration; and for furnishing all testing.

129. Lighting Control Cabinet, Item SPV.0060.65.

A Description

This special provision describes furnishing, assembling, and installing lighting control cabinets and accessories, as specified in standard spec 651, 652, and 655, as shown on the plans, and as provided hereinafter. See other electrical special provisions for related items that shall be provided.

B Materials

Provide lighting control cabinets meeting the following minimum requirements:

1. Provide a 14 gauge enclosure, 304 stainless steel in construction, free standing, with a minimum size of 55"H x 38"W x 26"D. Grind smooth welded seams.
2. Single door, stainless steel door handle with 3-point latch and hasp and staple for padlocking.
3. Provide a door seal having a closed-cell neoprene gasket around the entire perimeter.
4. Provide a cabinet equipped with a metal back plane mounting plate.
5. Provide a cabinet as manufactured by Tri-County, Saginaw, or Hoffman enclosures, or equal.
6. Provide a cabinet having a minimum circuit interrupting capacity of 10,000A.
7. Provide all stainless steel mounting hardware.

Mount lighting control devices on steel back panel within the enclosure. Provide control and switching devices that are NEMA rated when applicable. Provide devices as specified below:

1. Panelboard: provide 12-circuit, 120/240V, single-phase panelboard (LP-1) with 100A, 2-pole service entrance rated main circuit breaker. Main circuit breaker shall not be branch mounted. Breakers shall be bolt-on type.
2. Provide 30A, electrically held lighting contactors, Square D, Class 8903, Allen Bradley 400-DP, ABB, or equal; quantity and number of poles shall be as required to control the circuits as shown on the plans plus 25% spare circuit space.
3. Accessories:
 - Provide one 20A, GFI receptacle
 - Incandescent light and switch
 - Wiring troughs to route wire between devices
 - Three position, 30mm, NEMA type 13 selector switch control station (H-O-A)
 - Terminal Strips to land all wiring and branch circuits which exit the cabinet

- TVSS unit (Square D SDSA1175, Intermatic AG24013, Citel M40-120T, or equal)
- Photocell
- Control power fusing as required. Provide indicating type fuse holders.
- Time clock 4 pole with independent bypass switch for each circuit.
- Interposing/isolation relays (Allen Bradley, 700-HK, Idec RR3B-UL, Eaton D3PR, or equal)

Furnish and install grounding electrodes for each cabinet under the item Electrical Service Meter Breaker Pedestal.

C Construction

Install Lighting Control Cabinet on Concrete Control Cabinet Base Type 8 as specified in standard spec 654 and as shown on standard detail drawing Concrete Base Type 8. Install Lighting Control Cabinet and Electrical Service Meter Breaker Pedestal upon the concrete control cabinet base as shown on standard detail drawing Cabinet Service Installation (Meter Breaker Pedestal).

D Measurement

The department will measure Lighting Control Cabinet as each individual lighting control 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.0060.65	Lighting Control Cabinet	Each

Payment is full compensation for furnishing, assembling, and installing lighting control cabinet; assembly and installation of components.

130. Decorative Pedestrian Bollard Luminaire, Item SPV.0060.66.

A Description

This special provision describes furnishing and installing decorative pedestrian bollard luminaires.

Furnish, without extra cost to the department, any materials and labor not specifically covered by the plans and standard specifications that may be found necessary to complete the work.

B Materials

Furnish proprietary Fixture Type E as shown on the plans. Provide wiring and fusing to luminaire in accordance to section 655 of the standard specifications.

Fixture Type E.

Manufacturer: Sun Valley Lighting

- 45" cast aluminum bollard with LED luminaire and dome cap
- 24W, Universal Voltage LED lamp
- Order No. B33CL-CAP
- Black powdercoat finish

C Construction

Install fixtures in accordance to standard spec 659.3, and in accordance to the manufacturer's recommendations.

Attach bollard luminaires to retaining wall coping using concrete anchors and bolt circle as recommended by manufacturer and as shown on the plans.

Coordinate installation with railing and bridge construction.

D Measurement

The department will measure Decorative Pedestrian Bollard Luminaire as each individual decorative pedestrian bollard luminaire 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.0060.66	Decorative Pedestrian Bollard Luminaire	Each

Payment is full compensation for providing wiring and fusing and appurtenances necessary to completely install the furnished bollard luminaires; for providing all luminaire wiring, mounting hardware, anchor bolts, any required coordination.

131. Concrete Weir Wall 6 1/2-Inch, Item SPV.0060.68; Concrete Weir Wall 18-Inch, Item SPV.0060.69.**A Description**

Perform work in accordance to the applicable provisions of standard spec 611 and as detailed in the plans.

B Materials

Furnish Concrete Masonry Anchors Type S 5/8-Inch in accordance to standard spec502.2.12.2.

Furnish steel reinforcement in accordance to standard spec505.2.4.

C Construction

Construct weir wall in accordance to standard spec 611 and as detailed in the plans.

Construct Concrete Masonry Anchors Type S 5/8-Inch as described in standard spec 502.3.14.1 and standard spec 502.3.14.3.

Provide a minimum new concrete weir wall vertical dimension of 6 inches.

Concrete weir shall be formed and troweled to provide a smooth finish.

Remove and dispose of all removed and excess material.

D Measurement

The department will measure Concrete Weir Wall (size) as each individual concrete weir wall, 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.0060.68	Concrete Weir Wall 6 1/2-Inch	Each
SPV.0060.69	Concrete Weir Wall 18-Inch	Each

Payment is full compensation for providing all materials to perform the work, including all concrete, all reinforcing steel, Type S anchors, for constructing, for disposing of surplus material, for cleaning out and restoring the work site.

132. Cut-In Connection, Item SPV.0060.70.

A Description

This special provision describes providing a cut-in connection to existing water main in accordance to Article 703.6 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

B Materials

Furnish materials in accordance to Article 702 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

C Construction

Provide a water-tight cut-in connection at the locations shown on the plans in accordance to Article 703 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure Cut-In Connection as each individual cut-in connection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.70	Cut-In Connection	Each

Payment is full compensation for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the contract work.

133. Hydrants, Item SPV.0060.71.

A Description

This work consists of furnishing and installing hydrants in accordance to Article 704.7 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

B Materials

Furnish materials in accordance to Article 702.4 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

C Construction

Install hydrants in accordance to Article 703.8 and Standard Detail Drawing 7.04 of the City of Madison Standard Specification for Public Works Construction – Latest Edition, unless otherwise shown or specified.

D Measurement

The department will measure Hydrants as each individual hydrant, 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.0060.71	Hydrants	Each

Payment is full compensation for excavating, backfilling, making connections, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

134. Water Valve, 8-Inch, Item SPV.0060.72; 16-Inch, Item SPV.0060.73.

A Description

This work consists of furnishing and installing water valves in accordance to Article 704.27 of the City of Madison Standard Specification for Public Works Construction – Latest Edition. Proposed valves associated with pressure taps, as indicated on the plans, are not to be included in these items.

B Materials

Furnish materials in accordance to Article 702 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

C Construction

Install water valves in accordance to section 703 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

D Measurement

The department will measure Water Valve (size) as each water valve, 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.0060.72	Water Valve, 8-Inch	Each
SPV.0060.73	Water Valve, 16-Inch	Each

Payment is full compensation for excavating, backfilling, making connections, and bedding the valves; for dewatering and compacting the trenches; all valve box adjustments; installing and removing all necessary sheeting and bracing; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

135. Adjust Water Valve Box, Item SPV.0060.74.**A Description**

Adjust Water Valve Box consists of adjusting and extending all existing water valve boxes within the project limits to between ¼ inch to ½ inch below finished grade.

B Materials

Provide materials conforming to the requirements of Article 702 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

C Construction

Construct the adjust water valve box in accordance to the applicable sections of Article 703 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

Excavate and expose the existing water valve boxes to the depth needed to adjust the valve boxes to finished grade. Extensions may be required. Backfill and compact in accordance to the City of Madison 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 Water Valve Box as each individual water 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.0060.74	Adjust Water Valve Box	Each

Payment is full compensation for excavating, backfilling, adjusting, and compacting; and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the contract work.

136. Modify Existing Sign Structure, S-13-188, Item SPV.0060.75.**A Description**

This special provision describes modifying existing sign Structure S-13-188, as shown on the plans, and as hereinafter provided.

B Materials

Provide stainless steel nuts, bolts and washers used to replace the existing catwalk railing hardware meeting the standard spec 513.2.2.5.

C Construction

Install stainless steel hardware in accordance to standard spec 513. Tighten existing loose ASTM A325 high strength steel coupling fasteners in accordance to standard spec 506.3.12.3.

D Measurement

The department will measure Modify Existing Sign Structure, S-13-188 as each individual modify existing sign Structure, S-13-188, 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.0060.75	Modify Existing Sign Structure, S-13-188	Each

Payment is full compensation for furnishing and installing all required stainless steel hardware; and for tightening bolts.

137. Traffic Signal Trombone Arms 15-Foot, Item SPV.0060.76; 20-Foot Item SPV.0060.77; 25-Foot Item SPV.0060.78.**A Description**

This special provision describes furnishing and installing trombone mast arms and all necessary miscellaneous hardware needed to complete the installation of the trombone mast arm as shown on the plans, in accordance to standard spec 657, and as hereinafter provided.

B Material

Provide traffic signal trombone arms designed to withstand loadings resulting from a 12-inch 3-section aluminum signal with backplate and an 18x90-inch aluminum street name sign mounted on the arm as shown on the drawing. Apply design factors in accordance to the AASHTO Specifications for the Design and Construction of Structural Supports for Traffic Signals, Signs, and Highway Lighting, together with a wind pressure resulting from a wind velocity of 80 miles per hour plus gust factor, to these arms, with the above signals attached.

Furnish certification of compliance with these stated AASHTO performance requirements with submission of the material list.

Submit shop drawings and include dimensions of width, depth, length and thickness of all members and ASTM designation and alloy designation of aluminum members.

Provide aluminum trombone arms consisting of round or oval upper and lower members joined by one or more tubular vertical struts welded to them. Provide a pole end of the mast arm having a mounting clamp welded to it which will permit the attachment of the mast arm to a round pole of varying diameter. Provide a lower clamp that has 5-7/8-inch I.D. and a upper clamp that has 5-1/2-inch I.D. Provide clamps able to accommodate some variation in pole diameter while still attaining full contact between the clamp and the pole. Provide a clamp with surface area contacting the pole that is sufficiently large and designed to prevent horizontal rotation in windy conditions.

Provide galvanized steel bolts connecting the arm bracket to the back bracket; stainless steel bolts are not acceptable. Provide a vertical strut, which has provision for mounting the signal head, for horizontal adjustability along the main mast arm members so that signal heads of various lengths with backplates, up to and including 5-section 12-inch heads, can be accommodated within the confines of the mast arm. The cross tees for signal heads will each have two slots on the threaded hubs that face each other.

Locate the wiring raceway entrance through the lower mounting bracket.

Provide a mast arm that has a uniform natural aluminum finish and is clean of dirt and debris. No painting or other corrosion preventive maintenance will be required.

The portion of the main members of the arm to which the arm attachment bands are welded will be one piece seamless tapered aluminum tubes.

Attach the main arm member to the pole using extruded aluminum clamps fastened with continuously threaded stainless steel bolts with nuts and washers meeting the requirements of ASTM Designation A-320. List the Strength and/or grade specification ratings on the shop drawings. Provide stiffeners or gussets at the joints between the main arm tubes and arm clamps to provide adequate strength to resist side loads.

Provide shims made of an aluminum alloy.

Permanently imprint of the "Type" and "Year of Manufacture" on the underside of the lower member of each arm.

C (Vacant)

D Measurement

The department will measure Traffic Signal Trombone Arms (Length) as each individual traffic signal trombone arm, 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.0060.76	Traffic Signal Trombone Arms 15-Foot	Each
SPV.0060.77	Traffic Signal Trombone Arms 20-Foot	Each
SPV.0060.78	Traffic Signal Trombone Arms 25-Foot	Each

Payment is full compensation furnishing and installing all materials including all hardware, fittings, mounting clamps, shims and attachments necessary to completely install the mast arm.

138. Pole 20-Foot, 7 Gauge, Item SPV.0060.79; Pole 30-Foot, 11 Gauge, Item SPV.0060.80; Pole 30-Foot, 7 Gauge, Item SPV.0060.81; Luminaire Arm 10-Foot, Item SPV.0060.82.

A Description

This special provision describes furnishing and installing poles and arms in accordance to standard spec 657, the details shown on the plans, and these special provisions.

B Materials

Provide poles that are round, with a base plate welded to the bottom end of the pole. All poles are to be a single section, with an eight-inch diameter shaft at the base and 0.14 inches per foot taper.

Provide base plates with slotted openings for anchor bolts.

Designate all 30-foot poles to withstand a 90 mile per hour sustained wind velocity and 117 mile per hour gust velocity with the bracket arm and luminaire in place. All 20-foot 7 gauge poles will be used for supporting aluminum trombone arms holding signs and/or signal heads.

Provide a 4" x 6-1/2" galvanized handhole with contoured or flat cover plate joined to the reinforced handhole frame with two bolts. Locate the handhole 90°clockwise from the bracket arm side of poles as viewed when looking down from the top of the pole. Locate

the center of the handhole 14 inches from the bottom of the pole. Provide a solid metal bracket, with a drilled and tapped hole, for securing cover plate bolts. Clips for holding these bolts is not acceptable. Furnish machine bolts that are a slotted hex-head style.

Fabricate the pole shaft from the herein specified manufacturer's best grade, hot rolled basic open hearth, or basic oxygen process steel. Provide a shaft having only one longitudinal, electrically welded joint, with the strength rated at not less than 100 percent of the yield strength of the steel and having no intermediate horizontal joints or welds. Use only one length of steel sheet formed into a continuously tapered shaft, having a taper of approximately 0.14 inches per foot. Provide a smooth weld, allowing the specified taper to be constant. Provide a pole that is within 1/4" in 10 feet of being straight and centered on its longitudinal axis.

Provide a grounding nut or nut holder for accommodating a 1/2 inch x 13 UNC threaded bolt or stud on the inside of the shaft immediately opposite the center of the handhole. Furnish a nut that is completely free of any metal residue that would prevent a bolt from easily screwing entirely into the nut.

All 30-foot poles with 10-foot arms will have a pole mounted simplex fitter welded to the pole, 6" from the top. The simplex fitter permits the positioning of the arm on the pole held only by gravity, while the arm is secured to the pole by two cap screws.

Provide arms with a single member, conforming to the drawing. Weld a steel fitting to the pole end of the arm, which will permit the positioning of the arm on the pole held only by gravity, while the arm is secured to the pole by two cap screws. Provide an arm having a weather-resistant connection and smooth wiring raceway. Provide arms able to accept a luminaire with a 2 inch slip fitter.

Place all mounting and wire raceway holes on all poles holding LED fixtures before being hot-dipped galvanized. Coordinate mounting needs with the LED luminaires selected for the project prior to ordering poles.

Furnish a pole-top cover and four nut covers and installed for each pole. Permanently imprint a metal label, attached with rivets midway between the base plate and the handhole, on each steel pole. Provide a label stating the overall pole height, shaft gauge, year of manufacture, and manufacturer's name. Conform the label to the curvature of the pole so that it does not have any sharp edges or corners. Smooth all rivets inside and outside of the pole.

After all welding has been completed, thoroughly clean the exterior surface of the pole, arm, and hardware making it free of all loose rust, mill scale, dirt, oil, grease, and other foreign substances. Provide poles and arms that are hot-dipped galvanized in accordance to the requirements of ASTM Designation A123. Provide hardware that is hot dipped galvanized in accordance to ASTM Designation A153. Provide a galvanized finish that is bright, shiny, and uniform. Matted or dull pole sections will not be accepted. Furnish non-shrink commercial grout from approved products list.

C Construction

Group lighting units to operate from branch circuits, which are energized by lighting contactors remotely controlled by photocell. Where a system is employed, no individual lighting units are to be controlled by photocells or time switches. Time switches control only the removal from service of the midnight circuits.

Wire each system in a manner that presents as near as is possible a balanced load at the source of supply during midnight and all-night operation.

Provide conductors to the luminaire consisting of two No. 14 solid annealed copper, UF, 600 volt, as manufactured by General Cable, Anaconda, Rome, Kaiser, or approved equal. On all systems, provide phase wire at the pole handhole having a secondary in-line fuse assembly, Series 64, as manufactured by Elastic Stop Nut Corporation of America, Buss Tron HEB-AA fuseholder, or approved equal, with a Bussmantype FNM or FNQ fuse, 3.2 amp for 150 watt and 5.0 amp for 250 watt luminaires.

Do not splice the phase wire between the fuse assembly and luminaire. Provide for poles with two luminaires, two fuseholders and separate wire from each fuseholder to each luminaire. Install a sufficient length of No. 14 conductor in the pole to permit removal of this fuseholder through the handhole before disconnecting.

Install a 24" length of #12 THHN Stranded Conductor tail to supply wires permitting easy removal of fixture wires and fuse holder through the handhole.

Ground a tail of #4 wire from the neutral conductor splice to each ground rod and metal street light pole.

Use the following color coding at all street light bases:

- Midnight Circuit (red)
- All night circuit (black)
- Neutral (white)

Electrically secure electrical splices and connections and make with pressure or compression fittings as manufactured by Thomas & Betts, Burndy, 3-M (scotch lock brand) or approved equal and used as recommended by the engineer. Protect taps and splices in the following manner: coat all wire connections with No-Lox Compound; build up taps and splices made with irregularly shaped connectors with insulating material, "Air Seal" #18415 manufactured by Kearney or approved equal, prior to coating; fill all sharp corners and voids; over this, install 3 half lapped layers of rubber electrical tape, dielectric strength, 300 volts per mil - self vulcanizing tape, installed as per manufacturer's instructions; over this, apply 3 half lapped layers Scotch Brand 33 Plus or approved equal, vinyl plastic electrical tape; then dip the entire splice 1" beyond the insulating material in Scotch-Kote or approved equal. Allow the constructed splice to air dry completely before insertion into the street light pole. Orient all wires leaving the

splice in one direction. Hammer and retighten three times all split bolts, when used, and provide a spacer between any copper and aluminum conductors.

Connect the fuse holder to the All-Night circuit or Midnight circuit as indicated on the plans with an approved wire nut (3M or Ideal). Dip the wire nut in Scotch-Kote or approved equal.

Connect the lighting units with the underground cable and provide a complete, operational system when finished.

Set and plumb all metal poles with the use of leveling nuts furnished with the anchor bolts. Level luminaries after erecting and leveling the metal standards with bracket arms. The proper leveling method may be obtained from the manufacturer's instruction manual. Torque nuts on anchor and transformer bolts to 175-200 foot pounds or as directed by the engineer. Provide rust, corrosion, and anti-seize protection all threaded assemblies by coating and mating surfaces with Markal (hightemp – E-Z Break), Never-Seez (Marine Grade), LPS 100, Lubriplate, or approved equal.

Attach the stranded copper ground wire that is installed as a part of base construction with an approved connector (Fargo GC 202 or approved equal) to a ground nut locate inside the pole opposite the handhole.

When transformer bases are not installed, trowel grout between the pole and concrete base and finished at an angle from the edge of the pole base to the outer edge of the foundation. Leave a ½ inch slot for drainage through the grouting on the street side at the top of the concrete base.

D Measurement

The department will measure Pole (description) and Luminaire Arm 10-Foot as each individual pole and luminaire arm, 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.0060.79	Pole 20-Foot, 7 Gauge	Each
SPV.0060.80	Pole 30-Foot, 11 Gauge	Each
SPV.0060.81	Pole 30-Foot, 7 Gauge	Each
SPV.0060.82	Luminaire Arm 10-Foot	Each

Payment is full compensation for furnishing and installing all materials, including poles, Pole and arm wire, all hardware and fittings necessary to completely install the pole; for corrosion prevention; and for installing identification plaques.

139. Reestablish Section Corner Monuments, Item SPV.0060.83.

A Description

This special provision describes reestablishing section corner monuments from existing reference monuments as shown in the plans, as directed by the engineer and as hereinafter provided.

B Materials

The department will furnish one of the following survey monuments for each location: A Berntsen Steel Nail Marker, for placement in asphalt pavement; a Berntsen BP1 Brass Marker with anchoring plug for placement in concrete pavement; or a Berntsen Aluminum Break-Off Monument for placement in locations outside the pavement area.

To obtain the required survey monuments, contact the WisDOT Southwest Region Survey Coordinator, John Moran at (608) 246-7918, a minimum of two-weeks prior to installing the monuments.

C Construction

C.1 General

All survey work required to reestablish the survey monument from the reference monuments is to be performed by, or under the direction of, a land surveyor registered in the State of Wisconsin. Provide an updated County specified tie sheet(s) to the County Surveyor and the engineer. Provide county coordinates for all ties and monuments shown on the tie sheet(s). Obtain an example of the specified tie sheet(s) from the corresponding County Surveyor.

C.2 Berntsen Steel Nail Marker

Locate the exact position for the monument on the asphalt pavement. Drive the Berntsen Steel Nail Marker into the pavement until the top of the Steel Nail Marker is countersunk below the surrounding finished asphalt pavement in accordance to the manufacturer's specifications.

C.3 Berntsen BP1 Brass Marker

Drill a hole in the finished concrete pavement using a drill bit approved by the manufacturer. Insert the ribbed plastic expansion plug into the drilled hole. Tap the brass marker stem into the expansion plug until the top of the brass marker is countersunk below the surrounding finished concrete pavement in accordance to the manufacturer's specifications.

C.4 Berntsen Aluminum Break-Off Monument

Install according to the pertinent provisions of standard spec 621.3 for Non-Driven Aluminum Monuments.

D Measurement

The department will measure Reestablish Section Corner Monuments as each individual reestablish section corner monument, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.83	Reestablish Section Corner Monuments	Each

Payment is full compensation for furnishing all excavation, backfilling, and drilling necessary to place section corner monuments; placing department furnished survey monuments; furnishing a land surveyor registered in the State of Wisconsin and all survey work; preparing and delivering tie sheets.

140. Concrete Cutoff Wall, Item SPV.0060.84.**A Description**

Perform work in accordance to the applicable provisions of standard spec 504 and as detailed in the plans.

B Materials

Provide concrete in accordance to the applicable provisions of standard spec 501 and as detailed in the plans. Provide high strength bolts and minimum 2" diameter washer in accordance to the applicable provisions of standard spec 506.2.5 and as detailed in the Construction Details.

C Construction

Drill bolt holes in the specified locations after the concrete in the concrete cutoff wall is cured and use epoxy to secure the bolts in place.

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.0060.84	Concrete Cutoff Wall	Each

Payment is full compensation for furnishing all foundation excavation and preparation; for providing all equipment and materials, including concrete and high strength bolts; for placing, finishing, protecting, and curing; and for disposing of surplus excavation material; and for restoring the work site.

141. Pull Boxes, Concrete Polymer, 24x36-Inch, SPV.0060.85.

A Description

Perform work in accordance to the applicable provisions of standard spec 653 and as detailed in the plans.

B Materials

Provide pull boxes that are gray colored polymer concrete construction. Provide box dimensions of 24 inches wide, 36 inches long, and 36 inches deep. The box and cover must be rated at or above 15,000 pounds over a 10-inch square.

Provide each cover with the logo "ELECTRICAL" imprinted on it from the manufacturer.

C (Vacant)

D Measurement

The department will measure Pull Boxes, Concrete Polymer, 24x36-Inch as each individual pull boxes, concrete polymer, 24x36-inch, 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. 85	Pull Boxes, Concrete Polymer, 24x36-Inch	Each

Payment is full compensation for providing and installing all materials including coarse aggregate; required pull box extensions, conduit extensions less than 10 feet long including fittings, for excavating, backfilling, and properly disposing of surplus materials.

142. Cover Plates, Item SPV.0060.86.

A Description

This special provision describes furnishing and installing a steel plate to cover and support asphaltic pavement and traffic loading 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 existing 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 plate, 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.0060.86	Cover Plates	Each

Payment is full compensation for furnishing and installing the cover plate.

The steel plate becomes the property of the department upon completion of the contract work.

143. Decorative Medallion, Item SPV.0060.87.**A Description**

Construct a decorative concrete masonry medallion, as detailed in the plans and as hereinafter provided.

B Materials

The City of Madison will supply the decorative medallion form liner. Contact Randy Wiesner, of the City of Madison, at (608) 267-8679 at least five business days before form liner is needed.

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.

Apply form release per manufacturer's recommendations.

Attach the form liner to the forms in accordance to the manufacturer's installation instructions.

After removing the form liner, clean and return the form liner to the City of Madison.

D Measurement

The department will measure Decorative Medallion as each individual decorative medallion, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.87	Decorative Medallion	Each

Payment is full compensation for obtaining the form liner from the City of Madison; installing and removing the form liner; protecting the form liner; cleaning the form liner; returning the form liner to the City of Madison.

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.

For Decorative Medallion on precast wall panels, the department will pay separately for the precast wall panels under the bid item Precast Panels for Post and Panel Walls.

144. Medallion Concrete Staining Multi-Color, Item SPV.0060.88.

A Description

Furnish and apply a multi-color concrete stain to the exposed concrete form lined medallion surfaces on the structures, as directed by the City of Madison 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 in accordance 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 and Seal EPX by Chem Masters
H + C Shield Plus by Sherwin-Williams

C Construction

Furnish, prepare, apply, cure, and store all materials in accordance 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 in accordance 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 in accordance 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 structures, apply the stain to a sample panel measuring a minimum of 48-inches x 48-inches and constructed to demonstrate workmanship in the use of the form liner specified on the structures. 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 structures. Do not apply stain to the structures until the department and the City of Madison approve the test panel.

C.4 Surfaces to be Coated

Apply each stain color to the specific area of the form lined concrete medallion surface in accordance to the staining pattern provided by Randy Wiesner, of the City of Madison, at (608) 267-8679.

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 measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.88	Medallion Concrete Staining Multi-Color	Each

Payment is full compensation for furnishing and applying the coloring system; for preparing the concrete surface; and for constructing and staining the sample panel.

145. Concrete Barrier Transition P32-S42 Special, Item SPV.0060.89; S56-56Vertical, Item SPV.0060.90; S56-56Vertical Special, Item SPV.0060.91; NJ32DF-S36 Special, Item SPV.0060.92; S36-S42 Special, Item SPV.0060.93; S42-S56 Special, Item SPV.0060.94.

A Description

This special provision describes furnishing, constructing and placing concrete barrier transitions in accordance to standard spec 603, as shown in the plans, and as hereinafter provided.

B (Vacant)**C (Vacant)****D Measurement**

The department will measure Concrete Barrier Transition (type) as each transition, 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.0060.89	Concrete Barrier Transition P32-S42 Special	Each
SPV.0060.90	Concrete Barrier Transition S56-56Vertical	Each
SPV.0060.91	Concrete Barrier Transition S56-56Vertical Special	Each
SPV.0060.92	Concrete Barrier Transition NJ32DF-S36 Special	Each
SPV.0060.93	Concrete Barrier Transition S36-S42 Special	Each
SPV.0060.94	Concrete Barrier Transition S42-S56 Special	Each

Payment is full compensation for constructing, hauling, delivering, placing; for providing and installing necessary reflectors.

146. Helical Tieback Anchors, Item SPV.0060.95.

A Description

This special provision describes providing, installing, and testing helical tieback anchors in accordance to the plans, applicable portions of the standard specifications, the department-approved submittals, and as hereinafter provided.

A.1 References

ASTM A 29 – Steel Bars, Carbon and Alloy, Hot-Wrought and Cold Finished.

ASTM A 36 – Standard Specification for Structural Steel.

ASTM A193/A193M – Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service.

ASTM A320/A320M Alloy-Steel Bolting Materials for Low Temperature Service.

ASTM A 325 – Standard Specification for High Strength Bolts and for Structural Steel Joints.

ASTM A500 – Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

ASTM A656 – Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability.

ASTM A958 – Standard Specification for Steel Castings, Carbon, and Alloy, with Tensile Requirements, Chemical Requirements Similar to Wrought Grades.

ASTM A1018 – Sheet and Strip, Heavy Thickness Coils, Hot Rolled, Carbon, Structural, High-Strength Low-Alloy, Columbium or Vanadium, and High-Strength Low-Alloy with Improved Formability.

AWS D1.1-90 – Structural Welding Code – Steel.

Post-Tensioning Institute – *Recommendations for Prestressed Rock and Soil Anchors*, Third Edition, Copyright 1996 by the Post-Tensioning Institute

B Materials

Submit a list of all proposed materials to be included in the helical tieback anchor construction.

B.1 Central Steel Shaft

Use a square shaft for the central steel shaft, consisting of lead sections, helical extensions, and plain extensions.

1. Use Hot rolled Round-Cornered-Square (RCS) solid steel bars meeting the dimensional and workmanship requirements of ASTM A29 required for the 1½ inch or 1¾ inch shaft. Use High Strength Low Alloy (HSLA), low to medium carbon steel grade with improved strength due to fine grain size, for the bar. Use torsional strength of 7,000 ft-lb for RCS 1½ inch and 11,000 ft-lb for RCS 1¾ inch. Use minimum yield strength of 90 ksi.

B.2 Helix Bearing Plate

Use hot rolled carbon steel sheet, strip, or plate formed on matching metal dies to true helical shape and uniform pitch for the helix bearing plate. Conform to the following ASTM specifications for the bearing plate material:

1. RCS 1½ inch and RCS 1¾ inch material per ASTM A656 or A1018 with minimum yield strength of 80 ksi. Plate thickness is 3/8 inch.

B.3 Bolts

Conform to the following ASTM specifications for the size and type of bolts used to connect the central steel shaft sections together:

1. RCS 1½ inch material: ¾ inch diameter bolt per ASTM A325.
2. RCS 1¾ inch material: 7/8 inch diameter bolt per ASTM A325.

B.4 Couplings

For type RCS 1½ inch and RCS 1¾ inch material, form the coupling as an integral part of the plain and helical extension material as hot upset forged sockets.

B.5 Thread Bar

Use a threaded stud adapter, or a combination of pre-stressing steel tendon and ductile iron or forged steel adapter for helical tieback anchor thread bars, both of which are attached to the previously installed central steel shaft via an integrally forged socket or cast steel socket and coupling bolt. Use a continuous thread steel bar of specified diameter and length depending on the application and load, per ASTM A615, for the tendon.

B.6 Anchorage

Use a steel bearing plate with a threaded anchor nut for stressing anchorages. Develop 95 percent of the guaranteed ultimate tensile strength of the thread bar for anchorage devices.

1. Design anchor nuts, bevel washers, and other threadable hardware to comply with the load carrying requirements of the anchorage.
2. Fabricate the bearing from steel conforming to ASTM A36 or A572 specifications.

B.7 Submittals

Electronically submit signed, sealed and dated design and shop drawings for the helical tieback anchor components and anchorage details, by a professional engineer, registered in the State of Wisconsin and knowledgeable of the specific site conditions and requirements, to the engineer and Structures Design Section. This includes helical tieback

anchor lead/starter and extension section identification (manufacturer's catalog numbers), a detailed description of the construction procedures and a list of the major equipment to be used.

Include in the shop drawing submittal copies of calibration reports for each torque indicator or torque motor, and all load test equipment to be used on the project. Perform the calibration tests within 45 working days of the date submitted. Do not proceed with helical tieback anchor installation and testing until the engineer has received the calibration reports. Include, at a minimum, the following information in the calibration reports:

1. Name of project and contractor
2. Name of testing agency
3. Identification (serial number) of device calibrated
4. Description of calibrated testing equipment
5. Date of calibration
6. Calibration data

Provide the engineer, copies of helical tieback anchor installation records within 24 hours after each installation is completed. Submit formal copies on a weekly basis. Include, at a minimum, the following information in the installation records:

1. Name of project and contractor.
2. Name of contractor's supervisor during installation.
3. Date and time of installation.
4. Name and model of installation equipment.
5. Type of torque indicator used.
6. Location of helical anchor by assigned identification number.
7. Elevation of anchorage.
8. Actual helical tieback anchor type and configuration – including lead/starter section (number and size of helix plates), number and type of extension sections (manufacturer's SKU number).
9. Helical tieback anchor installation duration and observations.
10. Total length of installed helical anchor.
11. Inclination of helical anchor.
12. Installation torque at one-foot intervals for the final 10 feet.
13. Comments pertaining to interruptions, obstructions, or other relevant information.
14. Rated load capacities.

Provide the engineer, copies of helical tieback anchor test reports within 24 hours after each installation is completed. Submit formal copies within a reasonable amount of time following test completion. Include, at the minimum, the following information in the test reports:

1. Name of project and contractor.
2. Name of contractor's supervisor during installation.
3. Name of third party test agency, if required.
4. Date, time, and duration of test.
5. Location of helical anchor by assigned identification number.
6. Type of test (performance or proof).
7. Description of calibrated testing equipment and test set-up.
8. Actual helical tieback anchor type and configuration – including lead/starter section, number and type of extension sections (manufacturer's SKU numbers).
9. Steps and duration of each load increment.
10. Cumulative anchor-head movement at each load step.
11. Comments pertaining to test procedure, equipment adjustments, or other relevant information.
12. Signed by third party test agency representative, registered professional engineer, or as required by local jurisdiction.

C Construction

Install all helical tieback anchors in the presence of the engineer unless the engineer informs the contractor otherwise. Provide the engineer the right of access to any and all field installation records and test reports.

C.1 Site Conditions

Prior to commencing helical anchor installation, inspect the work of all other trades and verify that all said work is completed to the point where helical tieback anchors may commence without restriction.

Verify that all helical tieback anchors may be installed in accordance with all pertinent codes and regulations regarding such items as underground obstructions, right-of-way limitations, utilities, etc.

In the event of a discrepancy, notify the engineer. Do not proceed with helical tieback anchor installation in areas of discrepancies until said discrepancies have been resolved.

C.2 Installation Equipment

Use rotary type, hydraulic power driven torque motor with clockwise and counter-clockwise rotation capabilities for installation equipment. Continuous adjustment to revolutions per minute (RPM's) during installation is required for the torque motor. Percussion drilling equipment is not permitted. Torque capacity 15% greater than the torsional strength rating of the central steel shaft to be installed is required for the torque motor.

Use equipment capable of applying adequate down pressure (crowd) and torque simultaneously to suit project soil conditions and load requirements. Use equipment capable of continuous position adjustment to maintain proper helical anchor alignment.

C.3 Installation Tooling

Use installation tooling consisting of a kelly bar adapter (KBA) and RCS drive tool used in accordance with the manufacturers written installation instructions.

Use a torque indicator during helical tieback anchor installation. The torque indicator can be an integral part of the installation equipment or externally mounted in-line with the installation tooling.

1. Capable of providing continuous measurement of applied torque throughout the installation.
2. Capable of torque measurements in increments of at least 500 ft-lb.
3. Calibrated prior to pre-production testing or start of work. Calibrate torque indicators which are an integral part of the installation equipment on-site. Calibrate torque indicators which are mounted in-line with the installation tooling either on-site or at an appropriately equipped test facility. Calibrate indicators that measure torque as a function of hydraulic pressure at normal operating temperatures.
4. Re-calibrate, if in the opinion of the engineer and/or contractor, reasonable doubt exists as to the accuracy of the torque measurements.

C.4 Installation Procedures

C.4.1 Central Shaft

Install the helical tieback anchor to be consistent with the geotechnical, logistical, environmental, and load carrying conditions of the project.

Position the lead section at the location as shown on the plans. The lead section may be started perpendicular to the wall face to assist initial advancement into the soil. After initial penetration, establish the required inclination angle. Engage the helical tieback anchor sections and advance into the soil in a smooth, continuous manner at a rate of rotation of 5 to 20 RPM's. Provide extension sections to obtain the required minimum overall length and installation torque as shown on the plans. Connect sections together using coupling bolt and nut torqued to 40 ft-lb.

Apply sufficient down pressure to uniformly advance the helical tieback anchor sections approximately 3 inches per revolution. Adjust the rate of rotation and magnitude of down pressure for different soil conditions and depths.

C.4.2 Thread Bar

After the termination criteria as detailed in hereinafter has been met, connect the central steel shaft to the anchorage via the threaded stud adapter or via the combination of pre-stressing steel tendon and adapter.

C.5 Termination Criteria

Do not exceed the torsional strength rating of the central steel shaft as measured during the installation.

Satisfy the minimum installation torque and minimum free-length criteria as shown on the plans prior to terminating the helical tieback anchor installation. In the event any helical anchor fails these production quality control criteria, the following pre-qualified remedies are authorized:

1. The following options will be allowed to the contractor if the torsional strength rating of the central steel shaft and/or installation equipment has been reached prior to achieving the minimum free-length required:
 - a. Terminate the installation at the depth obtained subject to the review and acceptance of the engineer, or
 - b. Remove the existing helical tieback anchor and install a new one with fewer and/or smaller diameter helix plates. Obtain approval from engineer for the new helix configuration prior to installation. If re-installing in the same location, terminate the top-most helix of the new helical tieback anchor at least (3) three feet beyond the terminating depth of the original anchor without exceeding any applicable maximum embedment length requirements, or
 - c. Replace the existing helical tieback anchor with one having a shaft with a higher torque strength rating. Obtain approval from the engineer for the new shaft size/type prior to installation. If re-installing in the same location, terminate the top-most helix of the new helical tieback anchor at least (3) three feet beyond the terminating depth of the original anchor without exceeding any applicable maximum embedment length requirements.
 - d. Do not re-use helical tieback anchor shaft material that has been permanently twisted during a previous installation.
2. The following options will be allowed to the contractor if the minimum installation torque as shown on the working drawings is not achieved at the minimum overall length:
 - a. Install the helical tieback anchor deeper using additional extension sections until the minimum installation torque criterion is met, provided that, if a maximum length constraint is applicable, continued installation does not exceed said maximum length constraint, or
 - b. Remove the existing helical tieback anchor and install a new one with additional and/or larger diameter helix plates. Obtain approval from engineer for the new helix configuration prior to installation. If re-installing in the same location, terminate the top-most helix of the new helical tieback anchor at least (3) three feet beyond the terminating depth of the original anchor provided that, if a maximum length constraint is applicable, continued installation does not exceed said maximum length constraint, or
 - c. De-rate the load capacity of the helical tieback anchor and install additional helical anchors as necessary. Obtain approval from the engineer for the de-rated capacity and additional anchor location prior to installation.

3. The following options will be allowed to the contractor if the minimum installation torque as shown on the working drawings is not achieved before reaching a specified maximum embedment length:
 - a. If allowed by the engineer, remove the existing helical tieback anchor and reinstall at a position at least three times the diameter of the largest helix away from the initial location. Original embedment length and installation torque criteria must be met. Repositioning may require the installation of additional helical tieback anchors with design loads adjusted for spacing changes, or
 - b. Demonstrate acceptable helical tieback anchor performance through proof testing, or
 - c. De-rate the load capacity of the helical tieback anchor and install additional helical anchors as necessary. Obtain approval from the engineer for the de-rated capacity and additional anchor location prior to installation.

If the helical tieback anchor is refused or deflected by a subsurface obstruction, terminate the installation and remove the anchor. Remove the obstruction, if feasible, and reinstall the helical tieback anchor. If the obstruction can't be removed, install the helical tieback anchor at an adjacent location, subject to review and acceptance of the engineer.

If the torsional strength rating of the central steel shaft and/or installation equipment has been reached prior to proper positioning of the last plain extension section relative to the anchorage, the contractor may remove the last plain extension and replace it with a shorter length extension. If it is not feasible to remove the last plain extension, the contractor may cut said extension to the correct length and field drill a hole in the cut-off shaft. Do not reverse (back-out) the helical anchor to facilitate extension removal.

Use the average torque for the last three feet of penetration as the basis of comparison with the minimum installation torque as shown on the plans. Define the average torque as the average of the last three readings recorded at one-foot intervals.

C.6 Helical Tieback Anchor Load Tests

C.6.1 Load Test Equipment

Position the hydraulic jack at the beginning of the test to avoid the unloading and repositioning of the jack during the test. Use a jacking system capable of applying a tension load not less than 85 percent of the guaranteed ultimate tension capacity of the thread bar. Graduate the pressure gauge in 100 psi increments or less. Use a stroke of the jack not less than the theoretical elastic elongation of the total helical anchor length at the maximum test load.

Use load test equipment capable of increasing or decreasing the applied load incrementally. Allow for small adjustments for the incremental control, which may be necessary to maintain the applied load for a sustained period.

Design the reaction system (or retaining structure itself) so as to minimize its movement under load and to prevent bending of the thread bar. If the reaction system is the retaining structure, check said structure and connections to determine if they have sufficient strength and capacity to distribute the test loads to the ground. Test loads are normally higher than the design loads on the structure. Apply the direction of the load collinear with the helical anchor at all times.

Use a dial gauge to measure anchor movement. Use a dial gauge having an accuracy of at least ± 0.001 -in. and a minimum travel sufficient to measure all anchor movements without requiring resetting the gauge. Position the dial gauge so its stem is coaxial with the axis of the anchor. The stem may rest on a smooth plate located at the end of the anchor. Position said plate perpendicular to the axis of the anchor. Support the dial gauge by a reference apparatus to provide an independent fixed reference point. Use reference apparatus independent of the reaction system and not affected by any movement of the reaction system.

Re-calibrate the load test equipment, if in the opinion of the engineer and/or contractor, reasonable doubt exists as to the accuracy of the load or deflection measurements.

C.6.2 Testing Program

Use an anchor testing program consisting of two parts, namely, performance tests and proof tests. The testing procedures are as described hereinafter.

Helical tieback anchors selected by engineer to be performance tested within each wall area or tier. Test one anchor per wall area or tier in accordance with the performance test procedures. These anchors are to be installed, tested, and approved by the engineer prior to the installation of production anchors within that area or tier. Use all anchors, which are performance tested, as production anchors and incorporated into the retention structure. Upon completion and approval of the performance tests, the installation of production anchors may proceed.

Perform proof tests on all production helical tieback anchors which are not performance tested. Ensure that all proof tests results are approved by the engineer prior to completion.

C.6.3 Performance Test Procedures

Performance test 2 percent of the helical tieback anchors or a minimum of 2 anchors, whichever is greater, in accordance with the following procedures.

1. The helical anchors which are performance tested may be completely unloaded prior to adjusting to the lock-off load, if so warranted by the construction sequence. Final loading to the lock-off load does not require further movement readings.
2. Performance test helical tieback anchors by incrementally loading and unloading the anchor in accordance with the following schedule. Raise the load from one increment to another immediately after recording the anchor movement. Measure the anchor movement and record to the nearest 0.001 inches with respect to an

independent fixed reference point at the alignment load and at each increment load. Monitor the load with a pressure gauge. At load increments other than the maximum test load, hold the load just long enough to obtain and record the movement reading.

PERFORMANCE TEST SCHEDULE				
CYCLICAL LOAD INCREMENTS (%DL/100)				
AL 0.25DL	AL 0.25DL	AL 0.25DL	AL 0.25DL	AL 0.25DL
	0.50DL*	0.50DL 0.75DL*	0.50DL 0.75DL 1.00DL*	0.50DL 0.75DL 1.00DL 1.25DL* Reduce to lock-off load

* - See paragraph 4 below

- Except as noted in paragraph 1 above

3. AL = Alignment Load (10% - 15% DL); DL = Design (Working) Load
4. Hold the 1.25DL load increment for ten (10) minutes. Commence the ten minute observation period as soon as the 1.25DL load is applied to the anchor. Record movements at 0.5, 1, 2, 3, 4, 5, 6, and 10 minutes. If the anchor movement between the one (1) minute and ten (10) minute readings exceeds 0.05 inches, maintain the 1.25 DL test load for an additional 20 minutes. Record movements at 15, 20, 25, and 30 minutes. If the acceptance criteria given in the first paragraph under Acceptance Criteria hereinafter are not satisfied, continue the anchor test for an additional 30 minutes. Record movements at 45 and 60 minutes. If the acceptance criteria are not satisfied after this extended observation period, exercise one of the options as referenced in the second paragraph under Acceptance Criteria hereinafter.
5. Plot the helical anchor movement versus load for each load increment marked with an asterisk (*) in the performance test schedule and plot the residual movement at each alignment load versus the highest previously applied load.
6. Throughout the 1.25DL observation period, hold the load constant by adjusting the hydraulic pressure. Care must be taken so as not to exceed the 1.25DL test load.

C.6.4 Proof Test Procedures

Proof test all anchors which are not performance tested.

1. Anchors which are proof tested may be completely unloaded prior to adjusting to the lock-off load, if so warranted by the construction sequence. Final loading to the lock-off load does not require further movement readings.
2. Perform the proof test by incrementally loading the helical anchor in accordance with the following schedule. Raise the load from one increment to another after an observation period. Measure the anchor movement and record to the nearest 0.001

inches with respect to an independent fixed reference point at the alignment load and at each increment load. Monitor the load with a pressure gauge. At load increments other than the maximum test load, hold the load for a period not to exceed 2 minutes. Begin the two minute observation period when the pump begins to load the anchor to the next load increment. Take movement readings at the end of the two minute observation period.

PROOF TEST SCHEDULE	
LOAD TEST SCHEDULE (%DL/100)	OBSERVATION PERIOD (MIN)
AL	0.0
0.25DL	2.0
0.50DL	2.0
0.75DL	2.0
1.00DL	2.0
1.25DL	5.0
Reduce to lock-off load#	

- see paragraph 3 below

- except as noted in paragraph 1 above

AL = Alignment Load (10% - 15% DL)

DL = Design (Working) Load

- Maintain the 1.25DL test load for five (5) minutes. Commence this five minute observation period as soon as the 1.25DL is applied to the anchor. Record movement readings at 0.5, 1, 2, 3, 4, and 5 minutes. If the movement between the 0.5 and 5 minute reading exceeds 0.05 inches, maintain the 1.25DL test load for an additional 5 minutes. Record movement readings at 6 and 10 minutes. If the acceptance criteria given in first paragraph under Acceptance Criteria hereinafter are not satisfied, continue the anchor test for an additional 20 minutes. Record movement readings at 15, 20, 25, and 30 minutes. If the acceptance criteria are not satisfied after this extended observation period, exercise one of the options as referenced in the second paragraph under Acceptance Criteria hereinafter.
- Plot the helical anchor movement vs. load for each load increment in the proof test.
- Throughout the 1.25DL observation period, hold the load constant by adjusting the hydraulic pressure. Care must be taken so as not to exceed the 1.25DL test load.

C.6.5 Acceptance Criteria

Do not exceed 0.10 inches of net movement for the performance and proof tests during the final log cycle of time (examples, 3-min. to 30-min. for performance tests; 1-min. to 10-min. for proof tests).

If the above criteria are exceeded, continue the test for an extended period of time as defined in #3 under Performance Test Criteria and as defined under #3 under Proof Test Procedures. If the final log cycle of time movement at the end of the extended observation period exceeds 0.10 then the following options are allowed to the contractor:

1. Extend the observation period for an additional 60 minutes for the performance test with movement readings taken at 80, 90, 100, and 120 minutes. Extend the observation period for an additional 30 minutes if the proof test is involved with movement readings taken at 45 and 60 minutes. Do not exceed 0.10 inches for the net movement during the final log cycle of time.
2. Install the helical anchor deeper so as to increase its average installation torque, provided that the maximum torque capacity of the anchor and the maximum length constraint are not exceeded. Proof test this anchor.
3. Remove the helical anchor and reinstall an anchor with larger diameter and/or additional helices. If this anchor is reinstalled at the same location, then penetrate the last helix of this reinstalled anchor at least 5'-0 beyond the length of the original anchor, provided the maximum length constraint is not exceeded. Proof test this anchor.
4. Reduce the design load of the helical anchor. Performance test this anchor at the reduced design load. This option will require one or two additional anchors be installed adjacent to this reduced design load anchor. The number of additional anchors to be installed is a function of the reduced design load. Install adjacent anchor(s) at least three diameters, based on the largest helix, away from the reduced design load anchor. Adjust design loads on adjacent anchor(s) accordingly based on the revised horizontal spacing.

D Measurement

The department will measure Helical Tieback Anchors as each individual helical tieback anchor, 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.0060.95	Helical Tieback Anchors	Each

Payment is full compensation for preparing and providing all submittals; and furnishing all labor, equipment, and materials required for the installation of helical tieback anchors.

147. Outdoor Service Pedestal, Item SPV.0060.96.

A Description

This special provision describes furnishing and installing a free-standing outdoor power outlet panel pedestal as specified in standard spec 651, 652, 655, and 656, as shown on the plans, and as provided hereinafter.

B Materials

Provide an outdoor rated free-standing pedestal with circuit breakers and outlets meeting the following minimum requirements:

- Pedestal must be galvanized steel.
- Nominal above ground height of 4-feet.
- UL Listed.
- NEMA 3R rated.
- ANSI approved.
- Minimum of 1 120-VAC 20A circuit with 2 120VAC outlets.
- Minimum of 1 of the 120VAC outlets to be equipped with GFI.
- Additional circuits are acceptable but must be connected and made functional if provided.
- Outlets must be behind a weatherproof lockable protective plate.

C Construction

Install the service pedestal in accordance to the manufacturer and specifications and connect electrical conductors in accordance to state and local electrical codes.

Restore the area around the pedestal in accordance to the pertinent sections of standard spec 625, 627, 629, and 630.

D Measurement

The department will measure Outdoor Service Pedestal as each individual outdoor service pedestal, 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.0060.96	Outdoor Service Pedestal	Each

Payment is full compensation for furnishing and installing the pedestal, circuit breakers, riser conduit and fittings, wiring, and connections; and for furnishing and placing topsoil, salvaged topsoil, fertilizer, seed, and mulch.

- 148. Furnish Traffic Signal Face 3-12 Inch Vertical, Item SPV.0060.97; Furnish Traffic Signal Face 3-12 Inch Horizontal, Item SPV.0060.98; Furnish Backplates Signal Face 3-Section 12-Inch, Item SPV.0060.99; Furnish LED Modules 12-Inch Red Ball, Item SPV.0060.100; Furnish LED Modules 12-Inch Yellow Ball, Item SPV.0060.101; Furnish LED Modules 12-Inch Green Ball, Item SPV.0060.102.**

A Description

This special provision describes furnishing and delivering new traffic signal equipment and necessary miscellaneous hardware to the Dane County Highway Department, as shown on the plans, in accordance of standard spec 658, and as hereinafter provided.

B Materials

Furnish all LED lamps according to those listed in the table below:

12 inch Red Ball LED	Duralight JXC-300CAR
12 inch Yellow Ball LED	Duralight JXC-300CAY
12 inch Green Ball LED	Duralight JXC-300CAG

Provide cutaway visors for all vehicle signals.

Furnish snow-shedding shield for each signal indication. The shield shall be impact resistant polycarbonate, designed and installed specifically to reduce snow accumulation, while not allowing water to enter or reside in the signal unit.

All signal heads shall be CH-SIG, Siemens LFE/SG, McCain, or Peek/TCT, subject to review and approval by City of Madison Traffic Engineering. Provide drain channels so that rainwater does not pond on top of the units.

Provide black color for all signal heads.

Backplates for 12-inch signal heads shall provide a 5-inch wide black band around the signal head. The backplates shall be an approved black rigid material, such as vacuum formed ABS plastic. The backplates shall match the signal heads being furnished under this contract, equipped with all necessary holes and mounting devices. All mounting hardware shall be stainless steel.

All signal heads shall be made with polycarbonate material, UV stabilized, with color impregnated in the material. All features and performance shall meet the requirements outlined in the latest revision of the Institute of Transportation Engineers' publication, "Adjustable Face Vehicular Traffic Control Signal Heads." The front face and all visors (inside and outside) shall be flat or semi-gloss black. All other exterior parts shall be flat or semi-gloss black. All exterior hardware shall be stainless steel.

C (Vacant)**D Measurement**

The department will measure Furnish Traffic Signal Face 3-12 Inch Vertical, Furnish Traffic Signal Face 3-12 Inch Horizontal, Furnish Backplates Signal Face 3-Section 12-Inch, Furnish LED Modules 12-Inch Red Ball, Furnish LED Modules 12-Inch Yellow Ball, Furnish LED Modules 12-Inch Green Ball as each unit, acceptably completed and delivered to the Dane County Highway Department.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.97	Furnish Traffic Signal Face 3-12 Inch Vertical	Each
SPV.0060.98	Furnish Traffic Signal Face 3-12 Inch Horizontal	Each
SPV.0060.99	Furnish Backplates Signal Face 3-Section 12-Inch	Each
SPV.0060.100	Furnish LED Modules 12-Inch Red Ball	Each
SPV.0060.101	Furnish LED Modules 12-Inch Yellow Ball	Each
SPV.0060.102	Furnish LED Modules 12-Inch Green Ball	Each

Payment is full compensation for furnishing and delivering all materials to the Dane County Highway Department shop, 2302 Fish Hatchery Road, Madison, WI.

149. Street Sweeping, Item SPV.0075.01.

A Description

Remove dirt and dust particles from the roadway using a street sweeper periodically during the project as directed by the engineer.

B (Vacant)

C Construction

Provide a self-contained mechanical or air conveyance street sweeper and dispose the accumulated material.

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.0075.01	Street Sweeping	HRS

Payment is full compensation for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

150. Seeding Mixture Wet Detention Basin, SPV.0085.01.

A Description

This work consists of furnishing a wet detention basin seed mixture in accordance to City of Madison Specifications, and as hereinafter provided.

Perform work in accordance to the applicable provisions of the standard spec 630 and as hereinafter provided.

B Materials

Provide a seed mixture conforming to the City of Madison Standard Specifications for Public Works Construction, Latest Edition, Part II, Article 207.2(a), seed mixture 3 (Detention Basin Seed Mix). These specifications are available online at:

<http://www.cityofmadison.com/business/pw/specs.cfm>

C Construction

Perform work in accordance to the applicable sections of standard spec 630.3.

Use seeding rates that conform to the City of Madison Standard Specifications for Public Works Construction, Latest Edition, Part II, Article 207.3(b), seed mix for detention.

D Measurement

The department will measure Seeding Mixture Wet Detention Basin by the pound acceptably completed in accordance to standard spec 630.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0085.01	Seeding Mixture Wet Detention Basin	LB

Payment is full compensation for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

151. Removing Existing Timber Piling, Item SPV.0090.01.**A Description**

This special provision describes removing existing timber piling and includes removing, drilling, or coring through existing timber piles in conflict with proposed new piling for abutments and piers at Structure B-13-264. The work also includes backfilling the void left after removal with structure backfill. The purpose of this work is to clear the location so the proposed pile may be driven and installed without interference from an existing timber pile.

B (Vacant)**C Construction**

Remove any existing timber piling that is in conflict with proposed piling locations. An existing timber pile is in conflict with a proposed pile if the timber pile is within 2.5 proposed-pile diameters (center-center spacing) of a proposed pile. One of the following methods of removal shall be used:

Direct Pull: Wrap piling with a choker cable, chain, or other device attached to a crane. Pull the piling vertically, removing the piling from the soil.

Vibratory Excavation: Attach a vibratory hammer to a crane and to the existing piling. Vibrate the piling loose. Pull the piling vertically and remove the piling from the soil.

Coring: Core through existing timber piles to an elevation that will permit the installation of the proposed pile without interference. Unless directed otherwise, make the diameter of the core hole only as large as required to eliminate the pile conflict.

Contractor Proposed: The contractor may propose, in writing, an alternate method of pile removal.

When an existing pile is found to be in conflict with the proposed piling, the contractor shall notify the engineer, and receive approval on the selected removal method prior to beginning any work to remove the timber piling.

Fill any void remaining after pile removal with structure backfill.

D Measurement

The department will measure Removing Existing Timber Piling in length by the linear foot, acceptably completed. Measurement will be made along the vertical length of the timber piling removed regardless of the method used. If the coring method is used, the contractor and engineer will agree to a cored depth.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.01	Removing Existing Timber Piling	LF

Payment is full compensation for removing existing timber piling; for providing and placing necessary structure backfill material; and for disposing of all material excavated.

152. Earth Drilling 30-Inch Diameter, Item SPV.0090.02.

A Description

This special provision describes boring holes for the H-pile posts of a post and panel retaining walls R-13-235 and R-13-236 in accordance to details shown on the plans, the pertinent requirements of standard spec 550, and as hereinafter provided.

B (Vacant)

C Construction

Pre-bore holes to the diameter and depth shown on the plans. If necessary, use casing during drilling, or use other methods approved by the engineer, to prevent soil from entering the hole.

D Measurement

The department will measure Earth Drilling 30-Inch Diameter 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.0090.02	Earth Drilling 30-Inch Diameter	LF

Payment is full compensation for drilling the holes; furnishing casing as necessary.

153. Concrete Barrier Precast 12.5-FT, Item SPV.0090.03.**A Description**

This special provision describes furnishing, constructing and placing precast concrete barrier in accordance to standard spec 603 and as hereinafter provided.

B Materials

An approved concrete barrier system listed in the department's Approved Product List may be furnished as an acceptable alternate to the concrete barrier temporary system shown in standard detail drawing Concrete Barrier Temporary Precast, 12'-6". Provide new concrete barrier. New concrete barrier that is delivered may be relocated within the job site. The concrete barrier will remain, upon completion of this contract, and will become the property of the department.

C Construction

Place the barrier in accordance to the applicable sections of Standard Detail Drawing Concrete Barrier Temporary Precast, 12'-6".

Anchor Concrete Barrier Precast 12.5-FT if materials, equipment, or other items, that are a hazard, are within four-feet of the construction zone side (deflection zone) of the barrier. Any drop off exceeding two feet or slope exceeding 3H:1V within the deflection zone will be considered a hazard.

D Measurement

The department will measure Concrete Barrier Precast 12.5-FT in length by the linear foot, acceptably completed. This measurement equals the length along the base of the barrier.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.03	Concrete Barrier Precast 12.5-FT	LF

Payment is full compensation for hauling, delivering, placing; for providing and installing all connecting pins and anchors; and for providing and installing necessary reflectors.

154. Relocating Concrete Barrier Precast 12.5-FT, Item SPV.0090.04.

A Description

This special provision describes relocating concrete barrier precast 12.5-ft in accordance to standard spec 603 and as hereinafter provided.

B (Vacant)

C Construction

Remove all pavement anchors and connecting pins and relocate Concrete Barrier Precast 12.5-FT to the location shown in the drawings or as directed by the engineer.

Do not intermix concrete barrier made by different manufacturers.

Re-anchor Concrete Barrier Temporary Precast, 12.5-FT if materials, equipment, or other items, that are a hazard, are within four-feet of the construction zone side (deflection zone) of the barrier. Any drop off exceeding two feet or slope exceeding 3H:1V within the deflection zone will be considered a hazard.

D Measurement

The department will measure Relocating Concrete Barrier Precast 12.5-FT in length by the linear foot, acceptably completed. This measurement equals the length along the base of the barrier.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.04	Relocating Concrete Barrier Precast 12.5-FT	LF

Payment is full compensation for loading, hauling, and placing; for providing and installing all connecting pins and anchors; for providing and installing necessary reflectors.

155. Glare Screens Temporary, Item SPV.0090.05.

A Description

This special provision describes furnishing, installing, and moving a barrier screen on concrete barrier and removal upon completion of the project.

B Materials

Furnish Armorcast Guardian GawK-Glare Screen Part No. P6000963 and all necessary hardware and materials to install and move the glare screen.

C Construction

Furnish and deliver glare screen to worksites within the project as indicated on the plans, move to intermediate locations in conjunction with concrete barrier wall moves, and remove it upon project completion.

Install and move the screen in accordance to the manufacturer's recommendations at contract-identified locations or as the engineer directs.

Maintain the screen during construction. Repair or replace any portion of the screen that is damaged during construction as directed by the engineer. Upon removal, fill all holes in the Concrete Barrier Precast 12.5-FT left by anchorage methods with an epoxy from the departments approved products list.

D Measurement

The department will measure Glare Screens Temporary in length by the linear foot of glare screens 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.0090.05	Glare Screens Temporary	LF

Payment is full compensation for providing protective screen, delivery, trucking between worksites, initial installation, intermediate installations, and removing after contract completion, and for furnishing all hardware.

156. Trenchless Storm Sewer Construction, 48-Inch, Item SPV.0090.06.

A Description

This special provision consists of furnishing and installing storm sewer pipe using trenchless methods of construction as shown in the plans and as hereinafter provided.

The trench for installation of storm sewer pipe will not be open-cut.

B Materials

Provide class V reinforced concrete storm sewer pipe, conforming to standard spec 608.

If utilized, provide steel casing pipe conforming to ASTM A53, Grade B Steel Pipe, 35,000 psi minimum yield, with a minimum wall thickness of 0.469 inches. Provide a steel casing pipe that has an inside diameter that exceeds the outside diameter of the carrier pipe by a minimum of 4 inches. Provide class III reinforced concrete storm sewer pipe conforming to section 608 of the standard specifications if steel casing pipe is utilized.

Provide concrete slurry or blown sand in the casing pipe voids.

Verify the locations of all utilities prior to commencing with the construction. Protect all existing utilities from damage as a result of construction operations. The contractor is responsible for any utility damaged as a result of the equipment or methods used for the trenchless storm sewer construction.

C Construction

Establish reference point and bench marks required to control construction of pipe to elevations and locations indicated on drawings.

Excavate access pit, shaft or approach in accordance to standard spec 206 and provide fall protection for the public in accordance to local, state, and federal regulations.

Install the storm sewer pipe by tunneling, boring, jacking, or boring and jacking or other approved methods not using open-cut construction techniques. Complete installation in accordance to State Laws, municipal ordinances, and any permit requirements. If a casing pipe is utilized, weld joints with a continuous circumferential weld. Provide stress transfers across joints capable of resisting jacking forces applied.

Stockpile all storm sewer pipe and casing pipe (if utilized) onsite before installation begins. Once installation operations have started, complete the construction of the entire length of pipe without interruption.

Attach pipe to concrete brick supports to be used as a carrier for insertion into casing (if utilized). Support and brace pipe to prevent shifting or flotation during filler material placement.

Install pipe filler at the top of the seal at the low end of the casing and a vent pipe at the top of the seal at the other end. Add slurry or sand to the void between the casing pipe and the carrier pipe until slurry flows from the vent pipe or the angular space is filled with sand.

Backfill casing pipe ends in accordance to standard spec 206 and restore surface to original grade.

Demonstrate to satisfaction of the department that the entire length of the casing has been backfilled.

D Measurement

The department will measure Trenchless Storm Sewer Construction, 48-Inch 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.0090.06	Trenchless Storm Sewer Construction, 48-Inch	LF

Payment is full compensation for providing all materials, including carrier pipe, steel casing pipe, and connections; for furnishing all excavating except rock excavation; for sheeting and shoring; for protecting drop offs; for laying pipe; for sealing joints and making connections to new or existing fixtures; for filling annular space and constructing bulkheads; for backfilling; for providing granular backfill material; for removing sheeting and shoring; for cleaning out and restoring the worksite.

157. Concrete Curb and Gutter 4-Inch Sloped 24-Inch Type D, Item SPV.0090.07; 32-Inch Special, Item SPV.0090.08.

A Description

Perform work in accordance to the applicable provisions of standard spec 601 and as detailed in the plans.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Concrete Curb and 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.0090.07	Concrete Curb and Gutter 4-Inch Sloped 24-Inch Type D	LF
SPV.0090.08	Concrete Curb and Gutter 32-Inch Special	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.

158. Sanitary Sewer Pipe, 8-Inch, Item SPV.0090.09; 10-Inch, Item SPV.0090.10.

A Description

This special provisions describes installing Sanitary Sewer Pipe (size) at the alignment and grades shown on the plan.

All sections of the sewer mainline are required to pass a low pressure air test, mandrel test, and a visual inspection via televising as specified in Article 501.3(b) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition. Costs associated with the testing of the gravity main are included in the contract unit price bid for this item.

B Materials

Provide solid-wall Poly (Vinyl Chloride) (PVC) sanitary sewer pipe and fittings meeting the requirements for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings, ASTM D 3034.

Provide pipe and fittings having a standard dimension ratio of 26.

Assemble solvent cement joints using solvent cement obtained from the pipe manufacturer, which conforms to the requirements of ASTM D2564.

The assembled joint shall pass the performance tests as required in ASTM D3212.

C Construction

Install the sanitary sewer pipe in accordance to all applicable provisions of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

Remove all abandoned or existing material located in the new sanitary sewer alignment. Removal of material (including existing sanitary sewer/watermain/etc) is incidental to this bid item.

Use manufactured wye fittings to install new laterals to the new main as called for on the plans; provide and place in accordance to standard spec 503 for Public Works Construction – Latest Edition. Do not install saddle type wyes without prior approval from the city of Madison.

Complete testing and televising of new sewer lines in accordance to Article 501 of the City 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, from the center of sanitary sewer casting to center of sanitary sewer casting. Sanitary Sewer Pipe (Size) not terminating at a sanitary sewer structure will be measured to the end of pipe. Deductions from the measure length will not be made for wye installations.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.09	Sanitary Sewer Pipe, 8-Inch	LF
SPV.0090.10	Sanitary Sewer Pipe, 10-Inch	LF

Payment is full compensation for furnishing all materials, necessary to perform the work; excavation of the trench, except tunneling and jacking; installation and removal of sheeting and bracing; removal of water from the trench; disposal of surplus material from the trench; backfilling the trench and compaction of the backfill material; embankment over the sewer using surplus material from the excavation of the trench; bedding the pipe; laying the pipe and installing the fittings and accessories; jointing and sealing of joints in pipe, fittings and accessories; encasement, where specified; connections to existing structures; cleaning out the sewer; restoring the site; and all other work incidental to the installation of sanitary sewers.

159. Sanitary Sewer Lateral, Item SPV.0090.11.

A Description

This work consists of excavating required trenches, connecting the lateral to the mainline pipe, placing bedding material, connecting the new lateral to the existing lateral, all required fittings, and bends, backfilling and compacting the trenches and restoring the work site as provided by the plans, specifications and contract. This work also consists of locating, identifying, and abandoning “inactive” laterals.

B Materials

Furnish sanitary sewer pipe and fittings that are solid-wall Poly Vinyl Chloride (PVC) and that conform to the requirements of the Specification for PVC Sewer Pipe and Fittings, ASTM D 3034.

Provide sanitary sewer pipe and fittings having a standard dimension ratio of 26.

Furnish elastomeric or solvent cement joints made as recommended by the manufacturer.

C Construction

Sewer laterals shall be installed in accordance to Article 503.3 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

The use of 45-degree bends is not permitted except with 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 a minimum diameter of four inches that is also greater than or equal to the diameter of the adjoining lateral. Connecting a new lateral pipe to an existing lateral having a smaller diameter than the existing lateral is not permitted.

D Measurement

The department will measure Sanitary Sewer Lateral, 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.0090.11	Sanitary Sewer Lateral	LF

Payment is full compensation for determining whether laterals are “active”, “inactive”, or abandoned, and the exact location and size of “active” lateral reconnections; all labor, tools, equipment and incidentals necessary to complete the work.

Connection of lateral to the proposed sewer main and the first 5 feet of lateral pipe associated with the connection is paid under bid item Sanitary Lateral Reconnect.

Select fill for sanitary sewer later is paid under bid item Select Fill For Sanitary Sewer.

The quantity for this item may be increased or decreased beyond the limits set forth in Article 104 of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

160. Select Fill for Sanitary Sewer, Item SPV.0090.12.

A Description

This special provisions describes furnishing and placing select fill over the sanitary sewer main and laterals along the entire length of the pipe.

B Materials

Provide select fill meeting the requirements of Article 202.2(b) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition for select fill for sanitary sewer mains and laterals.

C Construction

Install select fill for sanitary sewer in accordance to all applicable provisions of Article 502.1(e) of the City of Madison Standard Specifications for Public Works Construction – Latest Edition.

D Measurement

The department will measure Select Fill for Sanitary Sewer in length by the linear foot acceptably completed. Measurement will be completed along the centerline of the installed sanitary sewer pipe and includes the length through Sewer Access Structures.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.12	Select Fill for Sanitary Sewer	LF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.

161. Electrical Wire Lighting - Aluminum 2 AWG, Item SPV.0090.13.

A Description

This special provision describes furnishing and installing aluminum electrical wire for lighting in accordance to standard spec 655.

B Materials

Furnish aluminum 2 AWG conductors with insulation as described in standard spec 655.2.6.

C (Vacant)

D Measurment

The department will measure Electrical Wire Lighting - Aluminum 2 AWG 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.0090.13	Electrical Wire Lighting - Aluminum 2 AWG	LF

Payment is full compensation for providing electrical wire; for making all connections; for providing all connectors, including wire nuts, fuses, fuse holders, splices, tape, insulating varnish or sealant, and for testing the circuits.

162. Water Main Insulation, Item SPV.0090.14.

A Description

This special provision describes furnishing and installing Styrofoam insulation in order to insulate water mains and/or water service laterals in accordance to Article 704.13 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

B Materials

Provide insulation in accordance to Article 702.12 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

C Construction

Provide water main insulation at locations where there is 5 feet or less of cover to finished grade, where water main crosses below existing or proposed storm sewer pipe, or where specified in accordance to Article 703.13 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

D Measurement

The department will measure Water Main Insulation 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.0090.14	Water Main Insulation	LF

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

163. Water Main, 6-Inch, Item SPV.0090.15; 8-Inch, Item SPV.0090.16; 16-Inch, Item SPV.0090.17.

A Description

This special provision describes furnishing and installing water main (size) in accordance to Article 704.6 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

B Materials

Furnish materials in accordance to Article 702.2 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

C Construction

Install water main in accordance to section 703 of the City of Madison Standard Specification for Public Works Construction – Latest Edition.

D Measurement

The department will measure Water Main (Size) in length as linear foot of water main, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.15	Water Main, 6-Inch	LF
SPV.0090.16	Water Main, 8-Inch	LF
SPV.0090.17	Water Main, 16-Inch	LF

Payment is full compensation for furnishing all materials, excavation, dewatering, bedding, laying, jointing, backfilling, and maintenance of surface; for furnishing all special connections to existing mains, fittings, bends, tees, and appurtenances; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

164. Select Fill for Water Main, Item SPV.0090.18.

A Description

This special provision describes furnishing and placing select backfill over the water main and water services along the entire length of the pipe.

B Materials

Provide select fill meeting the requirements of Article 202.2(b) of the City of Madison Standard Specifications for Public Works Construction - Latest Edition for select fill for water main and water services.

C Construction

Place select fill for water main in accordance to all applicable provisions of Article 703 of the City of Madison Standard Specifications for Public Works Construction - Latest Edition.

D Measurement

The department will measure Select Fill for Water Main in length by the linear foot, acceptably completed. Measurement is along the centerline of the installed water main and includes the length through bends, tees, valves, and 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.0090.18	Select Fill for Water Main	LF

Payment is full compensation for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.

165. Sand and Trash Collector, Item SPV.0105.01.

A Description

Perform work in accordance to standard spec 206, 209, 312, 501, 502, 505, 611, 612, 616, 645, and 716 and plan details the applicable provisions of the standard specifications and as detailed in the plans.

B Materials

Provide granular backfill meeting standard spec 209.

Provide select crushed material meeting standard spec 312.

Pipe underdrain wrapped meeting standard spec 612.

Trash Screen: Trash Screen shall be as manufactured by Hydrosceen, LLC, Coanda, Inc., Cook Legacy Water and Energy, or equal.

The screens shall be self-supporting and shall be suitably framed for mounting on concrete supporting frames or walls. Provide screen, weir crest plate, supporting framing, and fasteners. Screen, weir crest plate, supporting framing and fasteners shall be 304 Stainless Steel. The wedge shaped profile wire screen material shall be Type #63 having 0.5 mm wire spacing. The wires shall be tilted 7 degrees from a plan perpendicular to the supporting bars, with all wires welded in a workman like manner. The support bars shall be sized to accommodate the potential head on the screen based on the structure geometry. The screen shall be free of weld splatter. All screen shall be manufactured in a flat condition; screen that is cut and straightened after a cylindrical manufacturing process is not acceptable.

Concrete Structure Rigid Foam Insulation: Provide extruded polystyrene insulation meeting ASTM C538 Type V, 100 psi compressive strength, R=5.0 per inch of thickness.

Concrete Structure Chain Link Fence and Appurtenances: Chain Link fence shall conform to standard spec 616.2.3.

Concrete Structure Aluminum Railing and Appurtenances: Provide complete aluminum railing system including posts and rails, toe board, base flanges, and all required attachment hardware. All aluminum shall be 6063-T6. All hardware shall be stainless steel. Railing system shall be Tabco 2500 by Tuttle aluminum and Bronze Company, Tuffrail by Thompson Fabricating, LLC, Internarail by The Wagner Companies, or equal.

Concrete Structure Aluminum Tread Plate Hatches and Appurtenances: Aluminum treadplate shall be 1/4-inch aluminum checkered plate, alloy 6061-T6. All aluminum angles and other appurtenances shall be alloy 6061-T6. All hardware and fasteners shall be Type 316L stainless steel.

Concrete Structure Outfall Grate: Grate shall be fabricated from galvanized steel piping (schedule 40) and galvanized A36 steel round bar stock. Accessories and hardware shall be galvanized A36 steel.

C Construction

Construct in accordance to standard spec 206, 209, 312, 501, 502, 505, 611, 612, 616, 645, and 716 and as detailed in the plans. Provide construction staking in accordance to the applicable provisions of standard spec 650.

Provide shop drawings for the sand and trash collector that includes details of the reinforcing steel, aluminum tread plates, railing, trash screen, outfall grate, and fencing.

Prior to starting construction achieve approval of the shop drawings. Prior to fabrication, submit a manufacturer's certification of compliance to engineer for all insulation and metal fabrications.

Trash Screen: The manufacturer shall supply engineering installation assistance.

Backfill according to standard spec 206.3.13. Provide granular backfill up to the bottom of the proposed topsoil layer. Coordinate with adjacent work surrounding the structure.

Dewater the excavation as required.

Maintenance of Flow: Maintain flow of existing storm sewers at all times during construction. Means and methods to maintain flow during construction are incidental to the bid item and subject to approval by the engineer. As part of the Erosion Control Implementation Plan (ECIP) submittal, supply all information for maintaining the existing storm sewer flow and for the erosion control best management practices for work preformed on the trash collector.

D Measurement

The department will measure Sand and Trash Collector, completed in accordance to the contract and accepted, as a 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
SPV.0105.01	Sand and Trash Collector	LS

Payment is full compensation for providing and placing all materials to perform the work, including all concrete masonry, steel reinforcement, trash screen and fittings, aluminum railing, chain link fence on structure, aluminum tread plate hatch, outfall grate, underdrain, apron end walls for underdrain, steps and other fittings; for furnishing all excavating, select crushed material, rigid insulation, granular backfill, pipe underdrain, geotextile fabric, backfilling, disposing of surplus material, dewatering as required; for maintaining existing culvert flow, for locating and setting all construction stakes, for cleaning out and restoring the work site.

The following items will be paid separately: temporary shoring south of structure, retaining walls adjacent to the structure, concrete slope paving, barrier wall, storm sewer connections, storm sewer leading to the structure, right-of-way fence, topsoil and restoration around the structure, and rip rap.

- 166. Construction Staking Structure, R-13-204, Item SPV.0105.02; R-13-235, Item SPV.0105.03; R-13-236, Item SPV.0105.04; R-13-242, Item SPV.0105.05; R-13-243, Item SPV.0105.06; R-13-244, Item SPV.0105.07; R-13-245, Item SPV.0105.08; R-13-1000-TW1, Item SPV.0105.09; R-13-1000-TW2, Item SPV.0105.10; R-13-1000-TW3, Item SPV.0105.11; R-13-1000-TW4, Item SPV.0105.12; N-13-2, Item SPV.0105.013; N-13-3, Item SPV.0105.14; N-13-4, Item SPV.0105.15.**

A Description

Preform work in accordance to the applicable provisions of standard specn 650.

B (Vacant)

C Construction

Set construction stakes or marks on a line offset from the structure centerline or on a reference line, whichever is appropriate.

Establish horizontal and vertical accuracy to support the method of operations. Maintain and set additional construction stakes as necessary to establish location and grade of the structure in accordance to the method of operations. Locate stakes to within 0.02 feet horizontally and establish the grade elevation to within 0.01 feet vertically.

Stake all alignments, footings, and vertical components to construct the structures in accordance to the plans.

D Measurement

The department will measure Construction Staking Structure (Structure) as a single complete lump sum unit of work for construction staking, completed in accordance 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
SPV.0105.02	Construction Staking Structure, R-13-204	LS
SPV.0105.03	Construction Staking Structure, R-13-235	LS
SPV.0105.04	Construction Staking Structure, R-13-236	LS
SPV.0105.05	Construction Staking Structure, R-13-242	LS
SPV.0105.06	Construction Staking Structure, R-13-243	LS
SPV.0105.07	Construction Staking Structure, R-13-244	LS
SPV.0105.08	Construction Staking Structure, R-13-245	LS
SPV.0105.09	Construction Staking Structure, R-13-1000-TW1	LS
SPV.0105.10	Construction Staking Structure, R-13-1000-TW2	LS
SPV.0105.11	Construction Staking Structure, R-13-1000-TW3	LS
SPV.0105.12	Construction Staking Structure, R-13-1000-TW4	LS

SPV.0105.13	Construction Staking Structure, N-13-2	LS
SPV.0105.14	Construction Staking Structure, N-13-3	LS
SPV.0105.15	Construction Staking Structure, N-13-4	LS

Payment for Construction Staking Structure (structure) bid item is full compensation for locating and setting all construction stakes; for relocating and resetting damaged or missing construction stakes.

167. Railing Steel Type C1 Galvanized Pedestrian, R-13-204, Item SPV.0105.16; Railing Steel Type C3 Galvanized Pedestrian, B-13-666, Item SPV.0105.17; R-13-242, Item SPV.0105.18; R-13-243, Item SPV.0105.19; Railing Steel Special Galvanized Pedestrian, B-13-666, Item SPV.0105.20.

A Description

This special provision describes fabricating, galvanizing, painting and installing railing in accordance to standard spec 506, 513 and 517 and the plan details, as directed by the engineer, and as hereinafter provided.

B Materials

Provide railing materials from new stock, free from defects impairing strength, durability and appearance. Furnish railing assemblies that are galvanized and capable of receiving a two-coat paint system. Bubbles, blisters and flaking in the coating will be a basis for rejection.

B.1 Coating System

B.1.1 Galvanizing

After fabrication, blast clean steel railing assemblies per SSPC-SP6 and galvanize according to ASTM A123. Drill vent holes in members as required to facilitate galvanizing and drainage. Location and size of vent holes are to be shown on the shop drawings. Remove all burrs at component edges, corners and at holes. Chamfer sharp edges before galvanizing. Condition any thermal cut edges before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed in accordance to AASHTO M 160 prior to blast cleaning. Lumps, projections, globules, or heavy deposits of galvanizing, which will provide surface conditions that when painted, will produce unacceptable aesthetic and/or visual qualities, will not be permitted.

B.1.2 Two-Coat Paint System

After galvanizing, paint all exterior surfaces of steel railing assemblies and inside of rail elements at field erection and expansion joints as hereinafter provided. Clean all galvanized surfaces to be painted per SSPC-SP1 to remove chlorides, sulfates, zinc salts, oil, dirt, organic matter and other contaminants. Brush blast the cleaned surface per SSPC-SP16 to create a slight angular surface profile per manufacturer's recommendation for adhesion of the tie coat. Do not fracture the galvanized finish or remove any dry film thickness when blasting. After cleaning, apply a tie coat from an approved coating system

that is specifically intended to be used on a galvanized surface, per manufacturer's recommendations. Etch the galvanized rail with the tie coat and prepare the surface for the top coat. Apply a top coat per manufacturer's recommendations, matching the specified color shown on the plans. Use a preapproved top coat that is resistant to the effects of the sun and is suitable for a marine environment. The tie and top coats should be of contrasting colors, and come from the same manufacturer.

Ensure that the paint manufacturer reviews the process to be used for surface preparation and application of the paint coating system with the paint applier. Include a visit to the facility performing the work if requested by the paint manufacturer. Provide written confirmation, from the paint manufacturer to the engineer, that the review has taken place and that issues raised have been addressed before beginning coating work under the contract. Use one of the qualified paint manufacturers and products given below. An equivalent system may be used with the written approval of the engineer.

Manufacturer	Coat	Products	Dry Film Minimum Thickness (mils)	Min. Time¹ Between Coats (hours)
Sherwin Williams 1051 Perimeter Drive Suite 710 Schaumburg, IL 60173 (847) 330-1562	Tie	Recoat Epoxy Primer B67-5 Series / B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carboline 350 Hanley Industrial St. Louis, MO 63144 (314) 644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Tie	Carboguard 60	4.0 to 6.0	10
	Tie	Carboguard 635	4.0 to 6.0	1
	Top	Carbothane 133 LH(satin)	4	NA
Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001 (253) 850-2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA
PPG Protective and Marine Coatings P.O. Box 192610 Little Rock, AR 72219-2610 (414) 339-5084	Tie	Amercoat 399	3.0 to 5.0	3
	Top	Amercoat 450H	2.0 to 4.0	NA

Provide a representative test section of painted railing to the engineer for review of the color before beginning coating work under the contract. The coating manufacturer and color utilized for the railings associated with B-13-666, R-13-242 and R-13-243 shall match the coating manufacturer and color for Structure B-13-666.

Provide one gallon of the tie coat and top coat material for each color utilized for the railing to the engineer.

B.2 Shop Drawings

Submit shop drawings showing the details of railing construction. Show the railing height post spacing, rail location, weld sizes and locations and all dimensions necessary for the construction of the railing. Show location of shop rail splices, field erection joints and expansion joints. State the name of the paint manufacturer and the product name of the tie coat and top coat used along with the color. State the size and material type used for all components. Also show the size and location of any vent or drainage holes provided.

C Construction

C.1 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Thoroughly inspect all materials upon receipt at the job site to ensure that no damage occurred during shipping or handling and conditions of materials is in conformance with these specifications. If coating is damaged, repair or replace railing assemblies to the approval of the engineer at no additional cost. Carefully store the material off the ground to ensure proper ventilation and drainage. Exercise care so as not to damage the coated surface during railing installation. No field welding, field cutting or drilling will be permitted without the approval of the engineer.

C.2 Touch-up and Repair

For minor damage caused by shipping, handling or installation to coated surfaces, touch-up the surface in conformance with the manufacturer's recommendations. If damage is excessive, replace the railing assembly at no additional cost. Provide the engineer with a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings.

D Measurement

The department will measure Railing Steel Type (type) Galvanized Pedestrian (structure) and Railing Steel Special Galvanized Pedestrian, B-13-666 as a single complete lump sum unit of work, completed in accordance 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
SPV.0105.16	Railing Steel Type C1 Galvanized Pedestrian, R-13-204	LS
SPV.0105.17	Railing Steel Type C3 Galvanized Pedestrian, B-13-666	LS
SPV.0105.18	Railing Steel Type C3 Galvanized Pedestrian, R-13-242	LS
SPV.0105.19	Railing Steel Type C3 Galvanized Pedestrian, R-13-243	LS
SPV.0105.20	Railing Steel Special Galvanized Pedestrian, B-13-666	LS

Payment is full compensation for providing shop drawings, test sections, additional coating material, fabricating, galvanizing, painting, transporting, and installing the railing, including any touch-up and repairs.

168. Salvage Cantilever Sign Truss S-13-174, Item SPV.0105.21; S-13-175, Item SPV.0105.22.

A Description

This special provision describes removing and re-erecting a cantilever sign truss and all attached signs for existing sign Structures S-13-174 located at 990+45 VR RT and S-13-175 located at 994+67 VR RT. Perform work in accordance to the pertinent provisions of standard spec 204, 637 and 641 and as hereinafter provided.

B Materials

Provide materials in accordance to standard spec 641.2 and 637.2.

C Construction

Notify the engineer 5 working days prior to the desired date of removal of the sign truss and attached signs.

Install Traffic Control Signs PCMS prior to removal of the sign truss and attached signs for S-13-174 or S-13-175. Place the Traffic Control Signs PCMS near Station 990+45 VR (S-13-174) and Station 994+67 VR (S-13-175) conveying a similar message as the signs on S-13-174 and S-13-175 meeting the approval of the engineer.

Remove and store the cantilever sign truss, connections and attached signs prior to beginning storm sewer trunk line installation between Station 990+20 VR RT to 990+70 VR RT for S-13-174 and between Station 994+42 VR RT to 994+92 VR RT for S-13-175. The existing sign base and sign column shall not be removed or damaged during excavation operations or during removal and re-erection of the sign truss and signs. The time between removal and re-erection of the sign truss and attached signs shall not exceed 48 hours. Trusses and attached signs on S-13-174 and S-13-175 are not to be removed at the same time. Coordinate removal of sign trusses and attached signs on S-13-174 and S-13-175 so that at all times at least one of the sign structures is maintained. Replace 3/4-inch high strength nuts and bolts for the truss to column connections and install in

accordance to section 641 of the standard specifications. If the attached signs are removed from the truss, provide new mounting hardware when reattached in accordance to section 637 of the standard specifications.

Store the removed sign trusses and attached signs in a manner that prevents damage to them. If necessary, to prevent damage, remove the attached signs from the sign truss and also store in a manner to prevent damage. Replace any materials damaged during the storage process.

When installation of the storm sewer trunk line between Station 990+20 VR RT to 990+70 VR RT is complete, re-erect the cantilever sign truss S-13-174 and signs. When installation of the storm sewer trunk line between Station 994+42 VR RT to 994+92 VR RT is complete, re-erect the cantilever sign truss S-13-175 and signs. The department will inspect the sign bridge prior to removal and after re-erection. Any damage shall be repaired by the contractor.

D Measurement

The department will measure Salvage Cantilever Sign Truss (Number), as a single complete lump sum unit of work, completed in accordance 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
SPV.0105.21	Salvage Cantilever Sign Truss S-13-174	LS
SPV.0105.22	Salvage Cantilever Sign Truss S-13-175	LS

Payment is full compensation for removing, storing, and protecting the sign truss and all attached signs; for re-erecting the sign truss and all attached signs on the existing support column; for furnishing all mounting hardware necessary; for coordinating before and after inspections by the department; for repairing any damage occurring during construction; for furnishing all required traffic control devices necessary for lane closures and rolling stops required for removal and re-erection including Traffic Control Signs PCMS necessary to complete the work in accordance to the contract.

169. Research and Locate Existing Property Monuments, Item SPV.0105.23.

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 complete lump sum unit of work, completed in accordance 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.0105.23	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.

170. Verify and Replace Existing Property Monuments, Item SPV.0105.24.

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 complete lump sum unit of work, completed in accordance 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.0105.24	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.

171. B-13-666 Lighting, Item SPV.0105.25.

A Description

This special provision describes furnishing and installing luminaires as noted below, conduit, wire, fusing, and lighting control panels at the locations shown on the plans, and supplying and making all connections for a complete and operable lighting system on the Military Ridge Path bridge (Structure B-13-666). Expansion fittings, junction boxes, wiring, and all associated electrical items are included in this item of work. Conduit to all B-13-666 Lighting fixtures located on the bridge span are included in this item.

Conduit and wire not included in this item is denoted by quantity points (QP) as shown on the plans. All conduit and wire north of quantity points 1 through 3 and south of quantity points 4 through 6 are not included in this item of work and will be paid separately.

This item also includes removal of the existing roadway lighting wire on CTH PD that will be disturbed by construction of the center bridge pier as shown on the plans. New conduit and wire to restore operation of the affected roadway lighting are quantified separately and are not included in this item of work.

Provide detailed equipment submittals for all components. Provide complete project-specific wiring diagrams.

B Materials

Luminaires.

Furnish proprietary Fixtures Type A, B, C, and D as shown on the plans.

Fixture Type A.

LED Handrail Luminaire

Manufacturer: iLight Technologies

48-inch handrail LED light fixture in flexible tube

Plexineon White 2X Series, 4500K

Order No. T-24-X45-S-4F-SC-00

Furnish wire as recommended by manufacturer to connect fixtures in series in runs of four or five as shown on the plans.

Stainless steel mounting clips

Order No. 75-CLP-13/16-050-00

Furnish maximum 18-inch O.C. clips as recommended by manufacturer.

Fixture Types B, C, and D.

Decorative Pillar Luminaires

Manufacturer: Urban Fabrication

Contact: Doug Brown (303) 720-3363

Lantern Luminaire - 48W LED lamp

Aluminum housing with LED fixture and internal power supply

Logo designs supplied by the City of Fitchburg

City-approved shop drawings included with the plans

Fixture Type B - Train and bicycle images

Fixture Type C - City logo and train images

Fixture Type D - City logo and bicycle images

Furnish conduit and wire from QP points as shown on the plans to junction boxes as shown on the plans. Furnish wiring and all necessary miscellaneous materials required for a complete operating lighting unit.

Lighting Control Panels (LCPs).

Furnish lighting control panels completely assembled, wired, and tested in the system supplier's shop prior to installation and connection of field wiring to termination strip. LCPs shall have neatly trained, labeled, and supported power wiring with wiring troughs. LCPs shall house power supplies for Fixture Type A and all associated overcurrent protection devices as shown on the plans and as specified herein.

Provide conduit and wire as shown on the plans to bring electrical service to both LCPs from the lighting control cabinet as shown on the plans.

Furnish panels meeting the following minimum requirements:

- Furnish enclosure of 14 gauge stainless steel in construction, wall-mount, with a minimum size of 30"H x 20"W x 8"D. Grid smooth all welded seams.
- Single door, stainless steel door handle with 3-point latch and hasp and staple for padlocking.
- Furnish door seal with a closed-cell neoprene gasket around the entire perimeter.
- Equip cabinet with a metal back plane mounting plate.
- Furnish cabinet manufactured by Tri-County, Saginaw, or Hoffman enclosures, or equal.
- Furnish cabinet with a minimum circuit interrupt capacity of 10,000A.
- Furnish mounting hardware made of stainless steel.
- Custom color finish as selected by owner.

Furnish lighting control equipment mounted on the metal back plane mounting plate within the enclosure. Furnish NEMA rated control devices when applicable. Furnish devices as specified below:

- Equip panel with a 30A, 2-pole main overcurrent protection device. The main overcurrent protection device will power individual overcurrent protection devices required for each Fixture Type A power supply and other circuits as shown on the drawings to allow for adequate maintenance and testing of the system. Furnish overcurrent protection devices that are DIN rail mounted. Furnish a separate neutral landing buss and ground buss.
- Furnish an adequate number of 100W Electronic Xitanium power supplies, 120-277V AC input, 24V DC output, as required to power the bridge lighting as shown on the plans and as recommended by Fixture Type A manufacturer. Mount inside LCPs as described above. Contractor must purchase power supplies from Fixture Type A manufacturer (iLight Technologies Order No. ADV100W24V).
- Compact cooling fan. Fan shall be 15W and powered by 115V AC, single phase, 60 Hz motor. Furnish fan with finger guard and all mounting hardware.
- Intake louver. Shroud intake louver and exhaust fan louver opening to prevent water penetration into the enclosure.

Conduit.

Furnish conduit and all mounting hardware in accordance to standard spec 652 and as shown on the plans.

Junction Boxes.

Furnish junction boxes in accordance to standard spec 653.

C Construction

Install fixtures in accordance to standard spec 659, and in accordance to the manufacturer's recommendations.

Install Fixture Type A recessed in top handrail and centered between rail posts. Install conduit and wire from QP points as shown on the plans through the end posts of the railing to fixture mounting location in the upper handrail. Join wiring splices with silicon filled compression connectors. Mount fixture support clips to 1/8-inch plate with self-tapping screw inside railing, aiming fixture as shown on the plans.

Install Fixture Types B, C, and D on top of bridge pilaster columns as shown on the plans and in accordance to the manufacturer's recommendations. Mount junction boxes accessibly under the bridge deck. Install conduit from junction box into the bridge pier and up the pilaster column to fixture mounting location as shown on the plans. Orient fixtures as shown on the plans.

Install all equipment and conduits that are mounted on exterior surfaces as specified herein. Where lighting control panels and conduit are mounted on exterior surfaces, use the following devices:

- Expansion anchors or preset inserts in solid masonry walls;
- Self-drilling anchors or expansion anchors on concrete surfaces;
- Wood screws in wood construction.

Install surface-mounted equipment and conduit in accordance to the following:

- Do not use powder-actuated anchors.
- Do not drill structural steel members.
- Use hexagon head bolts with steel spring-lock washers under all nuts.
- Anchor all equipment to adjacent walls with standoffs and caulk. One-inch standoffs shall be provided to mount panels to exterior surfaces.
- Install surface-mounted panels with a minimum of four anchors.
- All mounting hardware and standoffs shall be stainless steel.

Coordinate installation of LCPs with bridge structure and retaining wall operations.

Remove existing roadway lighting conductors in accordance to standard spec 674.3.3.

D Measurement

The department will measure B-13-666 Lighting as a single complete lump sum unit of work, completed in accordance to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.25	B-13-666 Lighting	LS

Payment is full compensation for providing and installing all materials including luminaires, lamps, fuses, and fittings; for furnishing and installing Fixtures Type A, B, C, and D; for providing LCPs and all associated equipment including wiring, mounting hardware, and power supplies; and for any required coordination.

172. Temporary Lighting (Freeport Connector), Item SPV.0105.26.

A Description

This special provision describes maintaining the existing lighting system operations during construction; furnishing and installing lighting materials and operating a temporary lighting system during construction; and providing for temporary operations of the existing and temporary lighting systems during construction in accordance to the pertinent standard specifications noted within this special provision.

B Materials

B.1 Wood Poles

Furnish wood poles as needed to provide temporary supports for luminaires and overhead wiring. Furnish poles conforming to the requirements in standard spec 661.2.1.1. All poles shall be a minimum of 40-feet in length.

B.2 Aerial Cable

Furnish aerial cable consisting of an assembly of three No. 4 XLP insulated power conductors with an ACSR messenger (grounding) wire. Furnish a quantity of parallel cable assemblies as needed to maintain lighting circuits. Furnish a plastic cable guard to

protect all cable that extends to/from grade to 10 feet above grade. Furnish guy, span and messenger wire conforming to the requirements in standard spec 661.2.1.3. Furnish aerial cable mounting hardware conforming to the requirements in standard spec 661.2.1.4.

B.3 Luminaire Arms

Furnish 15-foot luminaire arms as needed to provide temporary supports for luminaires. Furnish arms conforming to the requirements in standard spec 657.2.2.3.

B.4 Luminaires Utility

Furnish luminaires as needed to maintain temporary illumination. Furnish luminaires conforming to the requirements under standard spec 659.2. All luminaires shall be 250 watt high pressure sodium. Luminaries shall operate by photo cell.

B.5 Existing Lighting Equipment

Existing street lighting equipment shall remain in use for as long as possible. The department must approve the use of any existing street lighting equipment beyond the time the equipment is noted to be removed; or if it is to be used at other locations on the project. Removal of the existing lighting equipment shall be paid under separate bid items in this contract.

B.6 Underground Electrical System Equipment

Furnish conduit in accordance to standard spec 652, furnish electrical wiring in accordance to standard spec 655, furnish junction boxes and pull boxes in accordance to standard spec 653 and as noted on the plans.

C Construction

C.1 General

Maintain the existing and temporary lighting systems within the construction limits for the duration of the project. Maintenance includes, but is not limited to:

- Coordinating utility service modifications
- Rerouting existing conduit and wiring
- Installing temporary conduit and wiring
- Adjusting or relocating existing street lights
- Installing temporary street lights
- Replacement of burned out lamps
- Replacement of knocked down poles
- Maintaining continuous lighting for the duration of the project

Supply an off-hours contact(s) for repair purposes. Respond within 1 hour to the project site for knockdowns or other work that must be completed in a timely manner. Provide the name, address, and telephone number(s) of the persons qualified and assigned to maintaining the temporary lighting to the engineer and local police. Ensure the persons are available 24 hours a day, 7 days a week, from the start of the project through completion. Ensure that emergency calls are received by an individual and not by an answering machine. Complete all other maintenance needs within 6 hours of notification.

Continuously monitor the existing and temporary lighting systems until construction is complete.

The City of Madison will approve the configuration of the temporary lighting system prior to work starting. Contact Dan Dettmann (608) 266-4058 at least 7 days prior to starting any work that will modify elements of the existing City of Madison street lighting system including, but not limited to: removing existing lights, installing temporary lights, making underground conduit connections and electrical service modifications.

C.2 Wood Poles

Install poles conforming to the requirements in standard spec 661.3. The engineer will determine final pole positions after marking the utilities in the field.

C.3 Aerial Cable

Install aerial cable and mounting hardware conforming to all requirements under standard spec 661.3.

C.4 Luminaire Arms

Install arms conforming to all requirements under standard spec 657.3. Orient arms to be 90 degrees to the adjacent roadway unless shown otherwise on the plan.

C.5 Luminaires Utility

Install luminaires conforming to all requirements under standard spec 659.3.

C.6 Existing Lighting Equipment

Use existing street lighting equipment as required to maintain illumination over the active travel lanes. Obtain approval from the engineer to modify any existing lighting equipment. Modifications include, but are not limited to; drilling holes, attaching aerial wiring, and attaching conduit risers. Do not damage any existing equipment in a manner which renders it useless unless the item has been scheduled for disposal after the completion of the project. Removal of the existing lighting equipment shall be paid under separate bid items in this contract.

C.7 Underground Electrical System Equipment

Install conduit in accordance to standard spec 652.3, install electrical wiring in accordance to standard spec 655.3, install junction boxes and pull boxes in accordance to standard spec 653.3 and as noted on the plans.

C.8 Electrical Services

Assume all maintenance obligations for the existing street lighting services as well as any temporary street lighting services during the project construction. The City of Madison will pay all energy charges to the utility for existing and temporary lighting systems.

All street lighting changes need to be tracked continuously for energy billing purposes. Maintain a weekly record of lighting changes for the entire duration of the project. Note

the date of any installation or removal of a light fixture. Also note the type and wattage of the light fixture being removed or installed. Use the record of lighting changes to determine accurate energy charges. Provide all documentation of lighting changes to the City of Madison throughout the project.

C.9 Equipment Transfer

Upon post construction approval, transfer the temporary lighting system in-kind to the department. All contractor furnished materials will become the property of the department. The department will assume all maintenance and operational responsibilities of the temporary lighting system upon completion and transfer.

D Measurement

The department will measure Temporary Lighting (Freeport Connector) as a single complete lump sum unit of work, completed in accordance to the contract accepted.

E Payment

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

ITEM UMBER	DESCRIPTION	UNIT
SPV.0105.26	Temporary Lighting (Freeport Connector)	LS

Payment is full compensation for providing, operating, maintaining, and repairing the complete temporary installation. Payment also includes furnishing and installing all replacement equipment; as well as all utility installation fees through completion of the project.

173. Painting Epoxy System Pedestrian Bridge B-13-666, Item SPV.0105.27.

A Description

This special provision describes the shop application of a three coat paint system on new structural carbon steel in accordance to standard spec 517 and as hereinafter provided.

B Materials

B.1 Coating System

Furnish a complete coating system from the department's approved product list. Use the same coating system for all repairs due to handling, shipping and erecting, and for all other uncoated areas. Provide epoxy white in color and a urethane coating material that matches the color number shown on the plans. Supply the engineer with the product data sheets before any coating is applied. Provide the engineer with the product data sheets indicating the mixing and thinning directions, the recommended spray nozzles and pressures, the minimum drying time for shop or field applied coats, and the recommended procedures for coating galvanized bolts, nuts, and washers.

Provide a representative test section of the coating system to the engineer for review of the color before beginning coating work under the contract. The coating manufacturer and color utilized for Structure B-13-666 shall match the coating manufacturer and color for the railings associated with B-13-666, R-13-242 and R-13-243.

Provide one gallon of each portion of the three coat system to the engineer.

C Construction

Apply coating at slip critical field splices where one or all of the coatings may have to be omitted from faying surfaces.

D Measurement

The department will measure Painting Epoxy System Pedestrian Bridge B-13-666 as a single complete lump sum unit of work, completed in accordance to the contract accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.27	Painting Epoxy System Pedestrian Bridge B-13-666	LS

Payment is full compensation for cleaning, surface preparation, furnishing and applying the paint materials to the new structural carbon steel, for test sections, additional coating materials, and field repairs.

174. Prefabricated Steel Truss Pedestrian Bridge, B-13-666 LRFD, Item SPV.0105.28.

A Description

Furnish a fully engineered, fabricated steel truss pedestrian bridge structure, including bearings, and transport and erect it as shown in the plans, in accordance to Part 5 Structures of the standard specifications, and as hereinafter provided. These specifications shall be regarded as minimum standards for design and construction.

B Materials

B.1 Approved Manufacturers

Furnish a bridge that has been designed and manufactured by an approved designer and supplier selected from the department's approved products list.

To be eligible for this project, pre-fabricated bridges from other manufacturers must be pre-approved prior to the bid opening date. Applications for pre-approval may be submitted at any time. Prepare the application in accordance to the department requirements. If needed, obtain information and assistance with the pre-approval process from the Structures Design Section in the Bureau of Structures, Room 601 of the Hill Farms State Transportation Building in Madison, or by calling (608) 266-8494.

B.2 Design Requirements

Provide a structural design of the pedestrian bridge that has been designed by a professional engineer registered in the State of Wisconsin.

Design the bridge in accordance to the most recent edition of the AASHTO LRFD Bridge Design Specifications, all current interims, and the AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges, except as modified herein.

Design welded tubular connections in accordance to the Structural Welding Code-Steel ANSI/AWS D1.1. The fracture critical requirements of ANSI/AWS D1.5 do not apply, and Charpy V-notch impact testing will not be required. Indicate the loading as stated in Section 3 of the AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges. Furnish a half-through truss bridge with profile as shown on the plans with one diagonal per panel. Chords, diagonals, verticals, bracing, and floor beams may be tube steel. Provide tube steel with a minimum thickness of ¼-inch and a minimum thickness of 5/16-inch for all other steel shapes. Bolt field splices with ASTM A325 high strength bolts in accordance to the “Specifications for Structural Joints Using ASTM A325 or A490 Bolts”. Type 3 bolts are required for weathering steel. For top and bottom chord field splices, splice plates are required on both the inside and outside surface of all four sides of the spliced tubing so that each bolt will be acting in double shear. Nuts may be welded to the splice plates to hold them in place during installation. When the collection of water inside a structural tube is a possibility, either during construction or during service, provide the tube with a drain hole at its lowest point.

If the profile grade line is on a crest vertical curve, camber the bridge to match the profile grade line shown on the plans plus the calculated dead load deflection. For a single span bridge, if the profile grade line has a constant slope (no vertical curve), camber the bridge to offset the calculated dead load deflection plus an amount equal to 1% of the bridge length. For a bridge with two or more spans, if the profile grade line has a constant slope (no vertical curve), camber the bridge to offset the calculated dead load deflection only. Provide bridge decks that are continuous over the floor beams and supported by 20-gauge, 1½-inch deep corrugated galvanized steel stay-in-place deck forms or removable deck forms if specified on the contract plans. Provide a slab with a minimum thickness of 5½-inches measured from the bottom of the deck form. Design the longitudinal reinforcing steel in the slab based on a wheel load located 1 foot from the face of the curb or toe plate, or a pedestrian live load of 90 psf, whichever controls.

Use concrete with a minimum strength (f'_c) of 4,000 psi and F_y of bar steel of 60,000 psi. A concrete mix with a unit weight of 120 pcf or 150 pcf may be used at the option of the manufacturer/contractor. Use a design dead load of 120 pcf or 150 pcf to match the concrete mix selected. Use load factors of 1.25 for dead load and 1.75 for live load for the design of the concrete slab. Provide concrete slabs with a minimum concrete cover of 2 inches for top reinforcement and 1 inch for bottom reinforcement. Design the bridge for expansion and contraction with a temperature range of -30° F to 120° F. Utilize Teflon slip pads or other approved material on the sliding surface of the expansion bearing assembly.

Install protective screening, as shown on the plans. Use 8-gauge (min.) stainless steel mesh with 2-inch openings. Protective screening shall be attached to steel truss.

B.3 Plan Requirements and Submittals

Electronically submit the superstructure plans/shop drawings and design computations to the engineer for acceptance by the Structures Design Section. Make the submittal no later than 12 weeks after date of notice of contract approval. Allow the following time period in the construction schedule: 20 calendar days after the first receipt of plans by the Structures Design Section for a complete initial review of the design and plans submittal, and an additional 20 calendar days for any necessary revisions and/or corrections.

In the submittal, include the following:

1. Basic design criteria shown on the design plans.
2. Complete detailed drawings of all structural steel connections, sizes of members, span lengths between bearing points, skews, walkway widths, height of handrails and safety rails, bearing assembly details, anchor bolt locations, concrete deck reinforcement, design data, materials data, and dead and live load bearing reactions.
3. Engineer's certification. Furnish plans that are sealed, signed, and dated by a professional engineer registered in the State of Wisconsin.
4. One set of design calculations with independent checks.

The department will return plans (electronically) from this submittal, and any subsequent submittals, to the contractor, either indicating acceptance or marked with required revisions and/or corrections. Provide the engineer copies of final plans to be used in fabrication and construction.

B.4 Weld Testing

Have nondestructive weld testing performed by an independent agency, paid for by the manufacturer. All welds are to be visually inspected except as noted below.

Magnetic particle test 10 percent of all fillet welds.

Ultrasonically or radiographically test all full penetration welds of chords.

Radiographically test all bottom chord welded tube splices for tube thicknesses less than 3/8-inches thick, or cover the fillet welded splice plates with non intersecting welds which develop 75% of the spliced member strength.

Submit electronically a written testing report upon completion.

C Construction

C.1 Delivery and Erection

Deliver the bridge by truck to the location that is nearest to the site and accessible by road. The contractor is responsible for unloading the bridge from the trucks at the time of arrival.

Notify the installation contractor in advance of the expected arrival time. Information regarding delays after the trucks depart the plant such as inclement weather, delays in permits, rerouting by public agencies, or other circumstances shall be passed on to the contractor as soon as possible.

Provide an erection procedure to the installation contractor and advise the installation contractor of the actual lifting weights, attachment points, and all other pertinent information needed to install the bridge. Unloading, splicing, bolting, and providing proper lifting equipment as well as all tools, equipment, labor, and miscellaneous items required to complete the work is the responsibility of the installation contractor. Provide the procedure for bolting field splices to the installation contractor.

C.2 Finishes

When unpainted steel is specified on the plans, produce all fabrications from high strength, low alloy, atmospheric corrosion resistant ASTM A847 cold-formed welded square and rectangular tubing. ASTM A606 sheet, and/or ASTM A588, ASTM A242, or ASTM A709 Grade 50W plate and structural steel shapes ($F_y=50,000$ psi) with a minimum corrosion index of 5.8 per ASTM G101.

Blast-clean all exposed surfaces of weathering steel in accordance to Steel Structures Painting Council Surface Preparation Specifications No. 7 Brush-Off Blast Cleaning (SSPC-SP7), latest edition. Exposed surfaces of weathering steel shall be defined as those surfaces seen from the deck and from outside the structure. Stringers, floor beams, lower brace diagonals and the inside face of the truss below the deck, and bottom of the bottom chord do not need to be blasted.

When painted steel is specified on the plans, paint the bridge with an approved three-coat epoxy system as specified in this contract under the separate bid item Painting Epoxy System Pedestrian Bridge B-13-666.

D Measurement

The department will measure Prefabricated Steel Truss Pedestrian Bridge, B-13-666 LRFD as a single complete lump sum unit of work, completed in accordance to the contract accepted. The portion of the bridge covered under Pedestrian Bridge Decorative Arch will be measured separately.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.28	Prefabricated Steel Truss Pedestrian Bridge, B-13-666 LRFD	LS

Payment is full compensation for preparing the design drawings and calculations; manufacturing, transporting, and erecting the pedestrian bridge; including furnishing bearing plates, pads, bolts, anchor bolts, grout, concrete deck and reinforcement.

175. Dewatering for Sanitary Sewer Construction, Item SPV.0105.29.

A Description

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

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

The contractor is responsible for all work, materials, and equipment required to comply with permit conditions to dewater the site. At a minimum, pump water into a settling tank as described below to remove suspended solids prior to discharging the water into the storm sewer system.

B General

The contractor is responsible for obtaining all applicable State of Wisconsin permits for all groundwater control wells including if necessary the Wisconsin Department of Natural Resources (WDNR). In accordance to Paragraph 144.025(2)(e), Wisconsin Statutes, permits are required for all groundwater control wells that singly or in aggregate produce 70 or more gallons per minute. Drill and seal all wells in accordance to requirements of the WDNR for installing and abandoning well.

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

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

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

Where requested on the WDNR Dewater Permit Application, list the contractor as the owner. Adhere to all of the requirements of the dewatering permit including reporting requirements.

C Construction

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

Design, install, and operate all dewatering methods in such a manner to provide satisfactory working conditions and to maintain the progress of work. Design dewatering methods to avoid settlement or damage to adjacent property in accordance to the applicable legislative statutes and judicial decisions of the State of Wisconsin. Complete all required pumping, drainage and disposal of groundwater without damage to adjacent property or structures, or to the operations of other contractors and without interference with the access rights of public or private parties.

Dewater in such a manner that assures safe working conditions and provides stable trench side slopes and trench bottom for adequate support of the pipe and appurtenances. Dewater sufficiently to minimize or eliminate groundwater pressures below the proposed trench bottom which otherwise may tend to cause boiling or “quick” condition at the trench bottom.

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

Notify the engineer at least 3 days in advance of any proposed changes to the dewatering plan.

The contractor is responsible for removal and/or abandonment of dewatering wells. Remove and/ or abandon wells in accordance to all state and local regulations.

Obtain permission to use any storm sewers, or drains, for groundwater disposal purposes from the engineer and the city of Madison. The contractor is responsible for identifying and obtaining any permits required for the discharge of groundwater to the surface or to a sewerage system. Complete dewatering operations without causing flooding by overloading or blocking the flow in the drainage facilities. Leave the facilities unrestricted and as clean as originally found. Upon completion of dewatering operations, repair any damage to facilities and restore facilities as directed by the engineer or the City of Madison Engineering Department. Costs for cleaning, repairing and restoring existing facilities will be considered incidental.

D Measurement

The department will measure Dewatering for Sanitary Sewer Construction as a single complete lump sum unit of work, completed in accordance to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.29	Dewatering for Sanitary Sewer Construction	LS

Payment is considered full compensation for furnishing all work necessary for pumping, settling and discharging water; for paying permit fees required; for eliminating and correcting all flooding or erosion damage caused by dewatering operations.

176. Heavy Wastewater Control, Item SPV.0105.30.**A Description**

Work under this item includes all equipment, labor, materials, coordination, and incidentals required to control or divert, to the engineer's satisfaction, sanitary sewer flows during reconstruction of the sanitary sewer.

B (Vacant)**C Construction**

Provide a pump with a capacity of 500 gallons per minute and all associated equipment required to maintain a functioning sanitary sewer system during construction. It is not acceptable, at any time, to disrupt normal flow of wastewater in sanitary sewer service laterals without prior approval from the city of Madison. This condition also holds at the time of connection of an existing lateral to the new sewer main.

If the contractor elects to use bypass pumping as a means of wastewater control, the methods, equipment, type of hose, etc. are subject to approval by the city of Madison Engineer. Ramp any hoses crossing streets, driveways, parking areas, etc., to prevent damage to hoses. Contain spillage of wastewater to be within the utility trench and dispose of spillage into existing sewer downstream to previously installed sewer piping. Spillage of wastewater to adjacent streets, lawns, etc. not will be tolerated. Should spillage occur, cease all construction operations immediately and begin cleanup operations. Clean site thoroughly to the satisfaction of the engineer prior to the resumption of any construction operations.

D Measurement

The department will measure Heavy Wastewater Control as a single complete lump sum unit of work, completed in accordance to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.30	Heavy Wastewater Control	LS

Payment is full compensation for furnishing all labor, tools, equipment and other incidentals to complete the contract work.

177. Construction Staking Sanitary Sewer, Item SPV.0105.31.

A Description

Perform work in accordance 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 in accordance to the plans and details for sanitary sewer structures. Set and maintain construction stakes to establish location and grade of sanitary sewer main. Provide stakes that establish the horizontal and grade elevation of sanitary main at intervals of 25 feet for a minimum of 100 feet from each structure and at intervals of 50 feet thereafter. Determine offsets in conjunction with contractor requirements. Verify the invert elevations of existing structures which are to remain and be connected into. Locate all stakes included in this bid item to within 0.02 feet horizontally and establish the grade elevation to within 0.01 feet vertically.

Place additional intermittent stakes as necessary to provide staking information at critical areas such as utility, driveway, roadway, and structure crossings.

D Measurement

The department will measure Construction Staking Sanitary Sewer as a single complete lump sum unit of work, completed in accordance 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.0105.31	Construction Staking Sanitary Sewer	LS

Payment is full compensation for locating and setting all construction stakes; and for relocating and resetting damaged or missing construction stakes.

178. Construction Staking Water Main, Item SPV.0105.32.

A Description

Perform work in accordance 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, 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 as utility, driveway, roadway, and structure crossings.

D Measurement

The department will measure Construction Staking Water Main as a single complete lump sum unit of work, completed in accordance 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.0105.32	Construction Staking Water Main	LS

Payment is full compensation for locating and setting all construction stakes; and for relocating and resetting damaged or missing construction stakes.

179. Concrete Stain, Item SPV.0105.33.**A Description**

Furnish concrete stain to the engineer as hereinafter provided.

B Materials

Provide top coat concrete stain from the same manufacturer as provided for bid item Concrete Staining (structure) in the volumes listed below:

Federal Color Number	Amount
Federal Standard Color No. 26622, Pearl Gray	10 gallons
Federal Standard Color No. 36373, Medium Gray	10 gallons
Federal Standard Color No. 33448, Light Stone	20 gallons
Federal Standard Color No. 20122, Brown	15 gallons

Should a color above be replaced with a different color during the test panel approval process, replace the color listed above with the replacement color, and provide the same volume of stain as listed above.

C Construction

Provide Concrete Stain to the engineer within 30 calendar days of acceptance of the test panel.

D Measurement

The department will measure Concrete Stain as a single complete lump sum unit of work, completed in accordance to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.33	Concrete Stain	LS

Payment is full compensation for furnishing Concrete Stain to the engineer.

180. Pedestrian Bridge Decorative Arch, Item SPV.0105.34.**A Description**

This special provision describes furnishing a decorative steel arch on the two-span pedestrian bridge B-13-666. The section of the bridge covered by this special provision is the portion of the middle arch and framing which is located above the main span top chord and extends to the quarter points on each side of the median pier as indicated on the plans.

B Materials

Provide steel framing and stainless steel mesh in accordance to the special provision “Prefabricated Steel Truss Pedestrian Bridge B-13-666, LRFD.”

C Construction

Construct the decorative steel arch in accordance to the special provision “Prefabricated Steel Truss Pedestrian Bridge B-13-666, LRFD.”

D Measurement

The department will measure Pedestrian Bridge Decorative Arch as a single complete lump sum unit of work, completed in accordance 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.0105.34	Pedestrian Bridge Decorative Arch	LS

Payment is full compensation for constructing the decorative steel arch, for furnishing and installing the stainless steel mesh screening; and for placing the arch as part of B-13-666.

The department will pay separately for the main steel truss framing under the bid item “Prefabricated Steel Truss Pedestrian Bridge B-13-666, LRFD.”

181. Wastewater Control, Item SPV.0105.35.

A Description

Work under this item includes controlling or diverting, to the city of Madison's satisfaction, sanitary sewer flows during reconstruction of the sanitary sewer.

B (Vacant)

C Construction

Provide a pump with a capacity of 200 gallons per minute and all associated equipment required to maintain a functioning sanitary sewer system during construction. It is not acceptable, at any time, to disrupt normal flow of wastewater in sanitary sewer service laterals without prior approval from the city of Madison. This condition also holds at the time of connection of an existing lateral to the new sewer main.

If the contractor elects to use bypass pumping as a means of wastewater control, the methods, equipment, type of hose, etc. are subject to approval by the city of Madison Engineer. Ramp any hoses crossing streets, driveways, parking areas, etc., to prevent damage to hoses. Contain spillage of wastewater to be within the utility trench and dispose of spillage into existing sewer downstream to previously installed sewer piping. Spillage of wastewater to adjacent streets, lawns, etc. not will be tolerated. Should spillage occur, cease all construction operations immediately and begin cleanup operations. Clean site thoroughly to the satisfaction of the engineer prior to the resumption of any construction operations.

D Measurement

The department will measure Wastewater Control as a single complete lump sum unit of work completed in accordance 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.0105.35	Wastewater Control	LS

Payment is full compensation for furnishing all labor, tools, equipment and other incidentals to complete the contract work.

182. Pile Driving Vibration Monitoring B-13-666, Item SPV.0105.36.

A Description

This special provision describes vibration monitoring for pile driving activities associated with Structure B-13-666 in accordance to the Wisconsin Administrative Code, Chapter COMM 7.

B (Vacant)

C Construction

C.1 Pile Driving Plan Submittal

Not less than two weeks prior to commencing pile driving operations, or at any time there is a change pile driving methods, submit a Pile Driving Plan to the engineer for review. The pile-driving plan shall contain full details of the steel pile driving operations and the methods employed to control and monitor vibration levels. The pile-driving plan shall contain the following minimum information:

1. Listing and description of equipment and tools used.
2. Description of proposed pile driving methods and operations.
3. Discussion of methods employed to control and monitor vibration levels.

The pile driving plan submittal is for quality control and record keeping purposes. Review of this plan by the engineer shall not relieve the contractor of responsibility for the accuracy and adequacy of the plan when implemented in the field.

C.2 Safety

The engineer will, at all times, have the authority to prohibit or halt the pile driving operations if it is apparent that through the methods being employed, the safety and convenience of the traveling public is being jeopardized or that vibration levels are excessive or above allowable levels.

C.3 Condition Surveys

Conduct and document preconstruction and post-construction surveys of any nearby buildings or structures that have a potential for vibration damage. The engineer may require condition surveys of facilities not deemed to have damage potential by the contractor. Make right of entry arrangements with the property owners for these condition surveys. Prior to any pile driving, the pre-construction survey records shall be made available to the engineer for review. During the pile driving operations meet with the property owners once a day to document potential affects on the facilities and contents. Document observations of the building, contents and conversations with the property owners and provide the documentation to the engineer each day of piling operations. Engineer may suspend required visits during the piling operations if immediate visual affects to the facilities appear to be unchanged. After completion of pile driving work, perform a post-construction survey and make these records available to the engineer for review. The contractor shall be responsible for any damage resulting from pile driving operations.

These condition surveys shall consist of visually inspecting and recording all existing defects in the structures before, during and after construction. Photographs and/or videotape may be used to assist in documentation. Condition surveys will be performed on structures within 100 feet of pile driving operations. Submit a written report to the engineer, detailing the visual and photographic investigation of potentially affected structures. This report will include copies of the pre-construction, during construction and post-construction surveys and discuss any discrepancies and findings.

Three properties are anticipated to be within 100 feet of pile driving operations for B-13-666 as follows:

- Midwest Decorative Stone, 6149 McKee Road.
- General Beer Distributors, 6169 McKee Road.
- Certco (Sara Properties), 6064 McKee Road.

C.4 Vibration Control and Monitoring

All vibration control and monitoring shall comply with COMM 7.63, Instrumentation and COMM 7.64, Control of Adverse Effects.

Whenever there is a potential for vibration damage to adjacent buildings, structures, or utilities, monitor the piling installation operations with an approved seismograph located between the pile driving work and the closest structure subject to vibration damage, and as close as practical to the subject structure. Peak particle velocity shall not be allowed to exceed the safe limits of the nearest structure subject to vibration damage. Monitor vibrations when using a pile hammer and structures are within 100 feet of the pile driving operations.

Vibration monitoring shall be performed by a qualified vibration specialist, subject to the engineer's approval. The qualified vibration specialist shall provide credentials based on industry standards. The vibration specialist shall monitor vibration levels in accordance to Chapter COMM 7.64(4) of the Wisconsin Administrative Code and interpret the seismograph records to ensure that the seismograph data shall be effectively utilized in the control of pile driving operations with respect to the existing structures and utilities.

Chapter COMM 7.64 (4)-2 of the Wisconsin Administrative Code states that the maximum allowable limit on ground vibration for structures not listed in Chapter COMM 7.64 (4)-1 shall be established after consulting with the owner of the structure or utility. In no case shall these vibration limits exceed the following criteria:

STRUCTURE TYPE	MAXIMUM PEAK PARTICLE VELOCITY (INCHES PER SECOND)
Reinforced Concrete Structures, Unoccupied	4.0
Steel Structures, Unoccupied	4.0
Buried Utilities	2.0
Wells and Aquifers	2.0
Green Concrete (Less Than 7 Days)	1.0

Data recorded for each vibration occurrence shall be furnished to the engineer prior to the next vibration-causing work and shall include 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 Chapter COMM 7 of the Wisconsin Administrative Code or as specified in this special provision.
9. If the maximum allowable vibration levels are exceeded, the contractor will halt further pile driving operations until he documents the operational changes to be used to reduce the next vibration levels to below the acceptable levels.

If the recorded vibration data exceeds the allowable levels established in Chapter COMM 7 of the Wisconsin Administrative Code or as specified in this Special Provision, immediately halt all work creating the excessive vibrations until such time that changes to the pile driving operations and can show that acceptable vibration levels will be maintained.

D Measurement

The department will measure Piling Driving Vibration Monitoring B-13-666 as a single complete lump sum unit of work, completed in accordance 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.0105.36	Pile Driving Vibration Monitoring B-13-666	LS

Payment is full compensation for preparing, furnishing and updating the pile driving plan; for conducting condition surveys; for vibration control monitoring and documentation; for adjusting pile driving operations; and for repair of any damage resulting from pile driving operations.

183. Railing Tubular Screening Galvanized B-13-664, Item SPV.0105.37.

A Description

This special provision describes fabricating, galvanizing, painting and installing railing in accordance to standard spec 506, 513 and 517 and the plan details, as directed by the engineer, and as hereinafter provided.

B Materials

All materials for railing shall be new stock, free from defects impairing strength, durability and appearance. Railing assemblies shall be galvanized and receive a two-coat paint system. Bubbles, blisters and flaking in the coating will be a basis for rejection.

B1 Coating System

B1.1 Galvanizing

After fabrication, blast clean steel railing assemblies per SSPC-SP6 and galvanize according to ASTM A123. Vent holes shall be drilled in members as required to facilitate galvanizing and drainage. Location and size of vent holes are to be shown on the shop drawings. All burrs at component edges, corners and at holes shall be removed and sharp edges chamfered before galvanizing. Condition any thermal cut edges before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed in accordance to AASHTO M 160 prior to blast cleaning. Lumps, projections, globules, or heavy deposits of galvanizing, which will provide surface conditions that when painted, will produce unacceptable aesthetic and/or visual qualities, will not be permitted.

B1.2 Two-Coat Paint System

After galvanizing, paint all exterior surfaces of steel railing assemblies and inside of rail elements at field erection and expansion joints as hereinafter provided. All galvanized surfaces to be painted shall be cleaned per SSPC-SP1 to remove chlorides, sulfates, zinc salts, oil, dirt, organic matter and other contaminants. The cleaned surface shall then be brush blast cleaned per SSPC-SP16 to create a slight angular surface profile per manufacturer's recommendation for adhesion of the tie coat. Blasting shall not fracture the galvanized finish or remove any dry film thickness. After cleaning, apply a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface, per manufacturer's recommendations. The tie coat shall etch the galvanized rail and prepare the surface for the top coat. Apply a top coat per manufacturer's recommendations, matching the specified color shown on the plans. Use a preapproved top coat that is resistant to the effects of the sun and is suitable for a marine environment. The tie and top coats should be of contrasting colors, and come from the same manufacturer.

Ensure that the paint manufacturer reviews the process to be used for surface preparation and application of the paint coating system with the paint applicator. The review shall include a visit to the facility performing the work if requested by the paint manufacturer. Provide written confirmation, from the paint manufacturer to the engineer, that the review has taken place and that issues raised have been addressed before beginning coating work under the contract.

Use one of the qualified paint manufacturers and products given below. An equivalent system may be used with the written approval of the engineer.

Manufacturer	Coat	Products	Dry Film Minimum Thickness (mils)	Min. Time¹ Between Coats (hours)
Sherwin Williams 1051 Perimeter Drive Suite 710 Schaumburg, IL 60173 (847) 330-1562	Tie	Recoatable Epoxy Primer	2.0 to 4.0	6
	Top	B67-5 Series / B67V5 Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carboline 350 Hanley Industrial St. Louis, MO 63144 (314) 644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Tie	Carboguard 60	4.0 to 6.0	10
	Tie	Carboguard 635	4.0 to 6.0	1
	Top	Carbothane 133 LH(satin)	4	NA
Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001 (253) 850-2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA
PPG Protective and Marine Coatings P.O. Box 192610 Little Rock, AR 72219-2610 (414) 339-5084	Tie	Amercoat 399	3.0 to 5.0	3
	Top	Amercoat 450H	2.0 to 4.0	NA

¹ Time is dependent on temperature and humidity. Contact manufacturer for more specific information.

B2 Shop Drawings

Submit shop drawings showing the details of railing construction. Show the railing height post spacing, rail location, weld sizes and locations and all dimensions necessary for the construction of the railing. Show location of shop rail splices, field erection joints and expansion joints. State the name of the paint manufacturer and the product name of the tie coat and top coat used along with the color. State the size and material type used for all components. Also show the size and location of any vent or drainage holes provided.

C Construction

C1 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Upon receipt at the job site, all materials shall be thoroughly inspected to ensure that no damage occurred during shipping or handling and conditions of materials is in conformance with these specifications. If coating is damaged, contractor shall repair or replace railing assemblies to the approval of the engineer at no additional cost to the Owner. Carefully store the material off the ground to ensure proper ventilation and drainage. Exercise care so as not to damage the coated surface during railing installation. No field welding, field cutting or drilling will be permitted without the approval of the engineer.

C2 Touch-up and Repair

For minor damage caused by shipping, handling or installation to coated surfaces, touch-up the surface in conformance with the manufacturer's recommendations. If damage is excessive, the railing assembly shall be replaced at no additional cost to the Owner. The contractor shall provide the engineer with a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings.

D Measurement

The department will measure Railing Tubular Screening Galvanized B-13-664, completed in accordance to the contract and accepted, as a single complete lump sum 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
SPV.0105.37	Railing Tubular Screening Galvanized B-13-664	LS

Payment is full compensation for fabricating, galvanizing, painting, transporting, and installing the railing, including any touch-up and repairs.

184. Water for Seeded Areas, Item SPV.0120.01.

A Description

This special provision describes furnishing, hauling and applying water to seeded areas as directed by the engineer, and as hereinafter provided.

B Materials

When watering seeded areas, use clean water, free of impurities or substances that might injure the seed.

C Construction

If rainfall is not sufficient, keep all seeded areas thoroughly moist by watering or sprinkling. Water for 30 days after seed placement or as the engineer directs. Apply water in a manner to preclude washing or erosion. The topsoil shall not be left un-watered for more than 3 days during this 30-day period unless the engineer determines that it is excessively wet and does not require watering. The equivalent of 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. The department will determine volume by meters or from tanks of known capacity.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0120.01	Water for Seeded Areas	MGAL

Payment is full compensation for furnishing, hauling, and applying the water.

185. Temporary Shoring Soil Nail Wall R-13-1000-TW2, Item SPV.0165.01.

A Description

This special provision describes designing, furnishing materials, and erecting a temporary soil nail retaining wall as shown on the plans. A minimum design life of 5 years is required for the wall and all wall components.

Soil properties, strength parameters, design requirements and other criteria are shown on the plans. In addition to the subsurface information presented in the plans, additional geotechnical information is available upon request from WisDOT's SW Region.

B Materials

B.1 Shoring Design

Provide a soil nail wall under existing Structures B-13-356 and B-13-455 as shown on the plans. Have a professional engineer, registered in the State of Wisconsin and knowledgeable of the specific site conditions and requirements, design the wall or verify the adequacy of the design. Submit one copy of the soil nail wall design, signed and sealed by the same professional engineer, to the engineer for incorporation into the permanent project record.

C Construction

Take special care during structure excavation under existing Structures B-13-356 and B-13-455 due to the anticipated close proximity of the existing piles to the soil nails.

Pothole all existing north abutment pile locations for Structures B-13-356 and B-13-455 prior to construction. Obtain approval from engineer and the Structure Design Section for pothole method prior to construction. Locate existing piles to avoid damage during construction. If any damage to existing piles occurs during construction stop all work immediately and notify the engineer and Structures Design Section. Repair any damage to existing piles as directed by the department at no expense to the department.

The soil nail wall will remain in place under this Contract. After completion of the wall face, restore the retained foreslope above the top of wall to promote positive drainage over the wall face. Provide adequate drainage behind soil nail wall using geocomposite drain strips or similar systems. Remove any remaining slope paving crushed aggregate and shotcrete the entire foreslope, measured from the top of wall to the front face of existing abutments.

D Measurement

The department will measure Temporary Shoring Soil Nail Wall R-13-1000-TW2 by the square foot, acceptably completed, at locations shown in the plans, measured as the area of the shoring from the bottom of the shoring to the retained grade.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.01	Temporary Shoring Soil Nail Wall R-13-1000-TW2	SF

Payment is full compensation for providing a signed and sealed copy of the design; for potholing; for constructing the soil nail wall; for restoring remaining bridge foreslope; for removal of existing slope paving crushed aggregate; and for shotcrete of foreslope.

186. Wall Concrete Panel Mechanically Stabilized Earth LRFD R-13-204, Item SPV.0165.02; R-13-242, Item SPV.0165.03; R-13-243, Item SPV.0165.04; R-13-244, Item SPV.0165.05; R-13-245, Item SPV.0165.06.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system in accordance 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.

B Materials

B.1 Proprietary Mechanically Stabilized Earth Concrete Panel Wall Systems

The supplied wall system must be from the department's approved list of concrete panel mechanically stabilized earth wall systems.

Proprietary wall systems may be used for this work, but must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures, Structures Design Section. The department maintains a list of pre-approved systems of retaining walls. To be eligible for use on this project, a system must have been pre-approved and added to that list prior to the bid opening date. 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.

To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision. Applications for pre-approval may be submitted at any time. Applications must be prepared in accordance 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 Structures Design Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

Supply a design and supporting documentation as required by this special provision, for review by the department, to show the proposed wall design is in compliance with the design specifications. Submit four copies of the following to the engineer for review and acceptance no later than 60 days from the date of notification to proceed with the project.

Prepare the design/shop plans on reproducible sheets 11 inch x 17 inch, including borders. Each sheet must have a title block in the lower right corner. The title block must include the project identification number and structure number. Provide design calculations and notes on 8 ½ inch x 11 inch sheets, containing 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. Provide all plans, shop drawings, and calculations, signed, sealed, and dated by a professional engineer licensed in the State of Wisconsin.

Provide a design in compliance with the *AASHTO LRFD Bridge Design Specifications 5th Edition 2010*, (AASHTO LRFD) with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current *Standard Specifications for Highway and Structure Construction* (Standard Specifications), 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. Define the associated resistance factors in accordance to Table 11.5.6-1 LRFD.

Design and construct the walls in accordance to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the department. 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. Design the corner element to 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, design the wall to resist the applied abutment/bridge lateral forces specified on the contract plans.

Design walls parallel to supporting highway traffic for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. Consider, in the design, the traffic barrier impact where applicable. Design walls that do not carry highway traffic for a live load surcharge of 100 psf in accordance 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 or its consultant and is provided on the wall plans.

Consider the internal and compound stability of the wall mass in accordance to AASHTO LRFD 11.10.6. Include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level in the internal stability analysis. Use the Simplified Method or Coherent Gravity Method to design the wall. Base calculations for factored stresses and resistances upon assumed conditions at the end of the design life. Compute compound stability for the applicable strength limits.

Provide facing panels meeting the design requirements of AASHTO LRFD 11.10.2.3. Design the facing panels 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. Base the design of the steel reinforcement within the panels 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 the wall height or as shown on the plan. This length cannot be less than eight feet. Design the soil reinforcement length to be the same from the bottom to the top of the wall. Extend the soil reinforcement a minimum of 3.0 feet beyond the theoretical failure plane in all cases. Design the soil reinforcement layers to have a maximum vertical spacing of 31 inches between layers. Locate the uppermost layer of the reinforcement a minimum of six inches below the bottom of an overlying slab, footing or top of the wall. Check the upper layers of the soil reinforcement to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

Connect all soil reinforcement steel required for the reinforced soil zone to the face panels. Design the reinforcement and the reinforcement/facing connection strength to resist maximum factored reinforcement loads in accordance to AASHTO LRFD Section 11.10.6. Facing connection strength is defined as the resistance factor times the failure load or the load at 0.5 inch deformation times 0.9, whichever is less. Base the nominal long term design strength in steel reinforcement and connections upon assumed conditions at the end of the design life.

Prefabricate soil reinforcement into single or multiple elements before galvanizing. Fabricate or design the soil reinforcement avoid piling, drainage structures or other obstacles in the fill without field modifications. Cutting or altering of the basic structural section of either the strip or grid at the site is prohibited unless approved by the Structures Design Section. A minimum clearance of 3" shall be maintained between any obstruction and reinforcement unless otherwise approved. Splicing steel reinforcement is not allowed unless approved by the Structures Design Section.

Install MSE facing panels on concrete leveling pads with a minimum cross section of 6-inches deep by 1-foot wide. Do not consider potential depth of frost penetration at the wall location in designing the wall for depth of leveling pad.

Submit the following to the engineer for review: complete design calculations, explanatory notes, supporting materials, specifications, and detailed plans and shop drawings for the proposed wall system. Submit sample analyses and hand output to verify the output by the software. Clearly indicate, in the design calculations and notes, the Capacity to Demand Ratios (CDR) for all internal stabilities as defined in AASHTO LRFD.

Submit the wall submittal package electronically to the engineer and Structures Design Section. Submit all required information no later than 30 days prior to beginning construction of the wall. Include all details, dimensions, quantities and cross-sections necessary to construct the walls with the submitted detailed plans and shop drawings.

B.3 Wall System Components

Provide materials furnished for wall system components under this contract conforming to the requirements of this specification. Submit all certifications related to material and components of the wall systems specified in this subsection to the engineer.

B.3.1 General

Provide walls that have modular precast concrete face panels produced by a wet cast process, and have cast-in-place concrete pads or footings. Provide concrete panels that have a minimum strength of 4000 psi at 28 days. Configure the panel edges to conceal the joints. The detail will 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 greater than 0.75 inches will not be allowed. 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.

Use a minimum of two bearing pads per panel with the allowable bearing stress not exceeding 900 psi. Provide bearing pads manufactured from 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/in³ in accordance to ASTM 1505.

Use an 18-inch wide geotextile on the backface of the wall panels to cover all panel joints. Provide a geotextile meeting 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. Attach the geotextile with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. Apply the adhesive to the panels, not to the geotextile.

Provide galvanized steel for all steel portions of the wall system exposed to earth. Carefully inspect all soil reinforcement and attachment devices to ensure they are true size and free from defects that may impair the strength and durability.

For cast in place sections of cap and coping use poured concrete masonry Grade A, A-FA, A-S, A-T, A-IS or A-IP 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 masonry , Grade A, A-FA, A-S, A-T, A-IS or A-IP 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 II Concrete.

Embed the leveling pad at a minimum depth of 1 foot 6 inches or as given on the plan or given in AASHTO LRFD 11.10.2.2 whichever is greater. Step the leveling pad to follow the general slope of the ground line. Design the leveling pad's steps to 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 but will not be measured for payment.

B.3.2 Backfill

Furnish and place backfill for mechanically stabilized earth concrete panel walls as shown on the plans and as hereinafter provided.

Provide and use backfill that consists of natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. It shall not contain foundry sand, bottom ash, blast furnace slag or other potentially corrosive material.

Provide material conforming to the following gradation requirements:

SieveSize	Percentage by Weight Passing
1 inch	100
No. 40	0 - 60
No. 200	0 - 15

Provide material that has a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. In addition, provide backfill material meeting 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.

Prior to placement of the backfill, obtain and furnish to the engineer a current certified report of test results that the backfill material complies with the requirements of this specification. Tests will be performed by a certified independent laboratory. When backfill characteristics and/or sources change, a certified report of tests will be provided for the new backfill material.

B.4 Sample Panels

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. Match or exceed the stain manufacturers minimum recommended curing time of the concrete or 28 days, whichever is greater, prior to staining the sample panel. 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 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 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.

C Construction

C.1 Excavation and Backfill

Excavation will encompass the preparation of the foundation for the leveling pad and the reinforcing strips in accordance 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.

Compact all backfill behind the wall as specified in standard spec 207.3.6.

Backfill placement shall closely follow the erection of each course of panels. Compact the backfill to 95.0% of maximum density as determined by AASHTO T-99, Method C. 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.

Perform compaction testing on the backfill. When performing nuclear testing, use a nuclear gauge from the department's approved list, ensure that the operator is a HTCP certified Nuclear Density Technician I, and conform to CMM 8.15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 2 feet of vertical wall height, per 200 feet length of wall, or major portion thereof. At least one test for every 2-foot of vertical wall height is required. Test sites will be selected using ASTM Method D3665. Deliver documentation of all compaction testing results to the engineer at the time of testing. The cost of compaction testing shall be considered incidental to the cost of the wall.

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. 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 skew angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

C.2 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. Specify the back batter so that the final position of the wall is vertical. Vertical tolerances and horizontal alignment tolerances exceeding $\frac{3}{4}$ -inch when measured along a 10-foot straight edge will not be accepted. The maximum allowable offset in any panel joint is $\frac{3}{4}$ -inch. The overall vertical tolerance of the wall (plumbness from top to bottom) is not

allowed to 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 may cause the engineer to require the contractor to disassemble and re-erect the affected portions of the wall. In addition, panels with imperfect molding, honeycombing, cracking or severe chipping will be cause for rejecting.

C.3 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.

C.4 Name Plates

Furnish and install name plates conforming to the requirements of standard spec 506.2.4. at the locations the plans show. Embed or epoxy the plate lugs in the concrete.

Compensation for furnishing and placing of name plates shall be included in the contract price for Wall Concrete Panel Mechanically Stabilized Earth LRFD (structure) and no additional compensation therefore will be allowed.

D Measurement

The department will measure Wall Concrete Panel Mechanically Stabilized Earth LRFD (Structure) in area by the square foot acceptably completed, measured as the vertical area within the pay limits the contract plan show. No other measurement of quantities will 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 measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.02	Wall Concrete Panel Mechanically Stabilized Earth LRFD, R-13-204	SF
SPV.0165.03	Wall Concrete Panel Mechanically Stabilized Earth LRFD, R-13-242	SF
SPV.0165.04	Wall Concrete Panel Mechanically Stabilized Earth LRFD, R-13-243	SF
SPV.0165.05	Wall Concrete Panel Mechanically Stabilized Earth LRFD, R-13-244	SF
SPV.0165.06	Wall Concrete Panel Mechanically Stabilized Earth LRFD, R-13-245	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 system including concrete masonry and steel reinforcement for cap and copings; constructing the retaining system and drainage system; providing backfill, backfilling, compacting, performing compaction testing, performing QMP testing; for name plates; and for sample panels and coordination for staining the sample panels. 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.

187. Precast Panels for Post and Panel Walls, Item SPV.0165.07.

A Description

This special provision describes manufacturing, transporting and erecting precast concrete panels incorporated into the post and panel walls. Perform the work in accordance to the plans, the pertinent requirements of the standard specifications, and these special provisions.

B Materials

Furnish concrete as specified in standard spec 501. Finish the exposed surface of the precast panels with a vertical broomed finish unless otherwise noted in the plans.

C Construction

Brace the precast panels tightly against the steel post flanges. Permanently block panels to maintain bottom of panel elevation as shown on the plans. Bevel ends of panels at wall bend locations to match wall alignment and provide a bearing surface square to post flanges.

D Measurement

The department will measure Precast Panels for Post and Panel Walls in area by the square foot of panels in place, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.07	Precast Panels for Post and Panel Walls	SF

Payment is full compensation for furnishing all materials, including all concrete, reinforcement steel, shims, and leveling blocks; for casting and curing concrete; and for furnishing all handling, hauling, and erecting precast panels.

188. Shoring Left In Place, Item SPV.0165.08.

A Description

This special provision describes furnishing and installing shoring that will remain in place upon project completion at the locations shown on the plan and in accordance to the shoring design and standard spec 512.

B Materials

B.1 Shoring Design

The locations of required Shoring Left in Place will be shown on the contract plans. Provide a shoring design for each required shoring. The adequacy of each shoring design shall be verified by a professional engineer registered in the State of Wisconsin and knowledgeable of the specific site conditions and requirements. Submit to the engineer for documentation one copy of each shoring design that is signed and sealed by the same professional engineer verifying the design.

C Construction

Construct or install shoring at a required location in accordance to the design developed for that location.

Upon completion of the installation of shoring at a required location, the shoring shall be left in place. Maintenance of the shoring will be the responsibility of the contractor until final acceptance of the project is granted by the department. The shoring will become the property of the department upon final acceptance of the project.

D Measurement

The department will measure Shoring Left in Place by the square foot, acceptably completed, and the quantity to be paid for shall be the sum of the areas of exposed faces of shoring constructed at the locations shown on the plans. Area will be determined from measurements taken in the plane of the exposed face of the shoring.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.08	Shoring Left In Place	SF

Payment is full compensation for providing a stamped and sealed design and necessary copies of the shoring design; furnishing and hauling materials to each location; installing or constructing the shoring; maintaining the shoring until project final acceptance; and for leaving shoring in place.

Shoring not required by the plans and installed for the convenience of the contractor's operations shall be considered incidental to work under the contract and will not be measured and paid for under this item.

189. Stamped Colored Concrete Sidewalk 4-Inch, Item SPV.0165.09.

A Description

This special provision describes the construction of stamped colored concrete sidewalk, on a prepared foundation in accordance to standard spec 405 and standard spec 602.

B Materials

Provide all materials in accordance to standard spec 602.

Provide a running bond stamping pattern and color in accordance to standard spec 405.2.1 for red. Color the concrete in accordance to standard spec 405.

B.1 Concrete

Conform to standard spec 501 and as hereinafter provided:

Supply a powder antiquing form release agent. Apply form release agent according to manufacturer's instructions using manufacturer's recommended application techniques.

Do not cure colored concrete using plastic sheeting, unless necessary due to weather conditions.

Use admixtures designed for use and compatible with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides. Use the same admixtures for colored concrete pavement throughout the project.

C Construction

Prepare trial batches and test panels in accordance to standard spec 405.2.4.3. Test panels will be approved by the engineer and city of Fitchburg prior to placement.

Colored concrete mixes for the entire project are to be consistent. If the contractor chooses to provide mixes with High Early Strength, then all colored concrete will be provided as High Early Strength. Switching from regular colored concrete to High Early Strength colored concrete or High Early Strength colored concrete to regular colored concrete will not be allowed.

If additional water is added to the colored concrete once a truck is on site, this concrete will be rejected.

If the engineer allows, minimal amounts of water may be applied to the surface of the colored concrete to complete the final surface finishing operations. If too much water is added to the surface of the colored concrete during final surface finishing operations, such that the colored concrete no longer conforms to the sample panel, the colored concrete may be rejected and removed at the direction of the engineer.

Cover and protect adjacent construction and concrete from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored concrete as the engineer directs.

Uniformly apply liquid release agent onto the colored still plastic state concrete to provide clean release of imprinting tools from the concrete surface without lifting imprint or tearing concrete.

While initially finished concrete is in plastic state, accurately align and place imprinting stamps. Contractor will need to monitor the setting up of the concrete. Once the concrete has set to the point it can be stamped begin stamping. Uniformly pound or press imprint tools into concrete to produce required pattern and depth of imprint on concrete surface. Remove platform tools immediately. Hand texture and stamp edges and surfaces unable to be imprinted by stamp mats. Touch up imperfections such as broken corners, double imprints and surface cracks.

Stamp concrete consistently so that stamped concrete does not have a vertical elevation difference of 1/2 inch or depressions in concrete capable of causing ponding water or ice.

For concrete hand stamp edges and surfaces that are unable to be imprinted by platform tools, use texture mats and single blade hand stamps to match platform tool stamping pattern. Finish imprinting to match sample panels.

After concrete has been stamped and the sheen has left the surface of the colored concrete, seal colored concrete. Apply per manufacturer's recommendations. Apply two coats of seal. Apply second coat after first coat has dried. Do not seal over blemishes or imperfections caused by rainfall or protection materials.

D Measurement

The department will measure Stamped Colored Concrete Sidewalk 4-Inch by the square foot acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.09	Stamped Colored Concrete Sidewalk 4-Inch	SF

Payment is full compensation for excavation, forming, for providing placing and finishing stamped colored concrete; for furnishing materials including concrete masonry, colored pigments, stamping and patterning, curing and release agents, and necessary admixtures; for providing sample panels; for protecting adjacent pavements and curb and gutter.

190. Piling Steel Sheet Temporary Left In Place, Item SPV.0165.10.

A Description

This special provision describes furnishing and installing temporary steel sheet piling at locations shown on the drawings, in accordance to standard spec 512, and as hereinafter provided.

B Materials

Furnish temporary steel sheet piling with a section modulus equal to or greater than the plans show. The contractor may employ previously used steel sheet piling in good condition in lieu of new material.

C Construction

Install temporary steel sheet piling in accordance to section 512.3.1 of ASP-6 or as specified on the plans.

Where the plans require, excavate to the minimum sheet pile depth and place steel sheet pile at the plan elevation. Excavation will encompass the preparation of the foundation for the steel sheet pile in accordance to standard spec 206. The volume of excavation covered is limited to the excavation required to install the steel sheet pile to the grade shown on the plans.

After completion of Manhole VR346.1, notify Mark Moder, City of Madison Department of Public Works at the City-County Building, Room 115, 210 Martin Luther King Jr. Boulevard, Madison, Wisconsin 53710. Provide a minimum of 5 working days before starting construction on R-13-1000-TW3 to allow the city of Madison the opportunity to televise local sanitary sewer facilities.

The sheet piling will remain in place upon completion of the project and become the property of the department.

D Measurement

The department will measure Piling Steel Sheet Temporary Left In Place in area by the square foot acceptably completed. The department will measure the area from the sheet pile tip elevation to the top of wall elevation shown on the plans. The department will make no allowance for overlap of the piles.

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.0165.10	Piling Steel Sheet Temporary Left In Place	SF

Payment is full compensation for providing, preparing the site, including all necessary excavation and disposal of materials; driving, placing, backfilling and compacting to existing grade, cutting off, disposing of cutoffs, and leaving in place.

191. Temporary Pedestrian/Bicycle Access, Item SPV.0180.01.

A Description

Work under this item consists of furnishing, maintaining, moving, and removing material at locations where temporary pedestrian crosswalks, sidewalks and multi-use paths shall be maintained as designated by the engineer and as shown on the plans. Provide a temporary walkway or path, constructed to match the width of the existing facility being maintained, located outside the immediate work area as approved by the engineer and as shown on the plans, and meeting the requirements of the current Americans with Disabilities Act (ADA) Accessibility Guidelines (ADAAG).

Reconstruct or move the temporary crosswalk access if required for work operations.

B Materials

Provide a hard surface material approved by the engineer, of either asphalt or concrete in accordance to the pertinent sections of the standard specifications for these items.

C (Vacant)

D Measurement

The department will measure Temporary Bicycle/Pedestrian Access 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.0180.01	Temporary Bicycle/Pedestrian Access	SY

Payment is full compensation for furnishing, loading, and hauling; for excavation and preparing the foundation; for placing, maintaining, removing, and restoring the temporary site; for reconstructing or moving; and for providing concrete or asphalt.

192. Concrete Approach Slab, 6-Inch, Item SPV.0180.02.

A Description

This special provision describes furnishing, constructing, and placing Concrete Approach Slab, 6-Inch in accordance to standard spec 415, 501, and 505, as shown in the plans, and as hereinafter provided.

B Materials

Furnish and use materials in accordance to the plans and conforming to the requirements of standard spec 501 and 505.

C Construction

Construct Concrete Approach Slab, 6-Inch in accordance to the plans and standard spec 415.

D Measurement

The department will measure Concrete Approach Slab, 6-Inch 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.0180.02	Concrete Approach Slab, 6-Inch	SY

Payment is full compensation for providing concrete; for reinforcement; for joints, and joint materials; for hauling, mixing, placing, finishing, curing, and protecting the concrete; for hauling and placing reinforcement and joint materials, including fillers and for preparing the foundation.

193. Excavation, Hauling, and Disposal of Contaminated Soil and Management of Contaminated Groundwater, Item SPV.0195.01.**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 in accordance to standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

This special provision also describes and includes pumping and disposing of contaminated groundwater (if dewatering is necessary).

Perform this work in accordance 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 and groundwater (if dewatering is necessary) is potentially present at the following locations:

1. (Site-1) Station 94+00 EE to 98+50 EE reference line to construction limits LT at the Former Fiore Coal and Oil Company (4716 and 4740 Verona Road).
2. (Site-2) Station 986+50 VR to 989+00 VR 100 feet LT of reference line to construction limits at Summit Road Properties.
3. (Site-3) Station 989+00 VR to 991+50 VR 100 feet LT of reference line to construction limits LT at the Marathon (4602 Verona Road).
4. (Site-4) Station 991+50 VR to 993+00 VR 100 feet RT of reference line to construction limits RT at the Mobil Exxon Station (4601 Verona Road).
5. (Site-5) Station 102+00 to 103+00 at H&D Partnership (2102 and 2106 Allied Drive).
6. (Site-6) Station 115+00 EE to 118+00 EE at Verona Road BP Mart (Former Amoco #15518) (4501 Verona Road).
7. (Site-7) Station 97+00 W to 99+50 W at Morrison's Auto Parts (Former Amoco #15883) (1002 South Whitney Way).
8. (Site-8) Station 93+00 MR to 107+00 MR along the Military Ridge Path.

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: Daniel 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 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.
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.

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 when

groundwater monitoring wells are encountered. Protect all groundwater monitoring wells to maintain their integrity. For wells that conflict with the previously mentioned items, notify the environmental consultant, and coordinate with the environmental consultant. For wells that require abandonment or adjustment, notify the environmental consultant and coordinate the abandonment or adjustment with the environmental consultant. The environmental consultant will provide maps indicating the locations of all known monitoring wells, if requested by the contractor.

Known lost or not properly abandoned groundwater monitoring wells are present at the following locations and as shown on the plans:

1. (Site-1) Station 94+00 EE to 99+50 EE reference line to construction limits LT and 96+50 WN to 97+50 WN reference line to construction limits RT at the Former Fiore Coal and Oil Company (4716 and 4740 Verona Road).
2. (Site-2) Station 988+00 VR to 989+50 VR 100 feet LT of reference line to construction limits at Summit Road Properties.
3. (Site-7) Station 96+50 W to 100+00 W at Morrison's Auto Parts (Former Amoco #15883) (1002 South Whitney Way).

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

Supplement standard spec 107.1 with the following:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for 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:

- i. 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 in accordance 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 under highway pavements, behind retaining walls, or in back-slopes with 2-foot thick soil cover, including 4 inches of topsoil and grass 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 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 in accordance 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 10 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.

Where materials are stockpiled for future on-site reuse, these long-term temporary stockpiles may store material for approximately 1 to 2 years. The long-term temporary stockpiles shall be constructed in a manner to minimize depressions in the surface, and shall have a 1-foot thick vegetated soil cover. The soil cover shall be maintained until the material can be moved and reused.

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 in accordance 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 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 in accordance 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, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.01	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; dewatering of soils prior to transport, if necessary.

ADDITIONAL SPECIAL PROVISION 4

Payment to all Subcontractors. Within 10 calendar days of receipt by a contractor of a progress payment for work performed, materials furnished, or materials stockpiled by a subcontractor, the contractor shall pay that subcontractor for all work satisfactorily performed and for all materials furnished or stockpiled.

The contractor agrees further to release retainage amounts to each subcontractor within 10 calendar days after the subcontractor's work is satisfactorily completed. In addition, whenever the Department reduces the contract retainage amount, within 10 calendar days of receipt by a contractor of a retainage payment, the contractor must reduce the total amount retained from subcontractors to no more than remains retained by the Department.

The contractor shall pay the subcontractor within the time frames described above unless the contractor complies with both of the following within 10 calendar days of receiving the Department's progress payment:

- 1) The contractor notifies the subcontractor in writing that the work is not satisfactorily completed.
- 2) The contractor requests approval from the Department to delay payment because the subcontractor has not satisfactorily completed the work.

The contractor's request for approval should include the written notification to the subcontractor and shall provide sufficient documentation of good cause to assist the engineer in making a timely decision. If the engineer does not grant approval, the contractor shall pay the subcontractor within 10 calendar days of the Department's decision.

All subcontracting agreements made by a contractor shall include the above provisions and shall be binding on all contractors and subcontractors.

The contractor certifies compliance with the requirements of this Additional Special Provision by signing the contract. This clause applies to both DBE and non-DBE subcontractors.

ADDITIONAL SPECIAL 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
209.0100	Backfill Granular	CY	0.23
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
SPV.0035.02	Excavation Special	CY	0.23
SPV.0035.04	Rock Excavation Special	CY	0.39

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 \$2.90 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:

$$FA = \left(\frac{CFI}{BFI} - 1 \right) \times Q \times BFI$$

(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 2013 edition of the standard specifications:

106.3.4.3.1 General

Replace paragraph two with the following effective with the November 2012 letting:

- (2) Required sampling and testing methodologies and documentation are specified in CMM chapter 8.
 - (3) If disputed, approval of materials and components, as well as acceptance of the work incorporating those materials or components, is subject to review under the QMP dispute resolution process.
-

107.17.3 Railroad Insurance Requirements

Replace the entire text with the following effective with the August 2012 letting:

- (1) If required by the special provisions, provide or arrange for a subcontractor to provide railroad protective liability insurance in addition to the types and limits of insurance required in 107.26. Keep railroad protective liability insurance coverage in force until completing all work, under or incidental to the contract, on the railroad right of way or premises of the railroad and until the department has accepted the work as specified in 105.11.2.4.
- (2) Provide railroad protective liability insurance coverage written as specified in 23 CFR part 646 subpart A. Provide a separate policy for each railroad owning tracks on the project. Ensure that the railroad protective liability insurance policies provide the following minimum limits of coverage:
 - 1. Coverage A, bodily injury liability and property damage liability; \$2 million per occurrence.
 - 2. Coverage B, physical damage to property liability; \$2 million per occurrence.
 - 3. An annual aggregate amount of \$6 million that shall apply separately to each policy renewal or extension.
- (3) Obtain coverage from insurance companies licensed to do business in Wisconsin that have an A.M. Best rating of A- or better. The cost of providing the required insurance coverage and limits is incidental to the contract. The department will make no additional or special payment for providing insurance.
- (4) Submit the following to each railroad owning tracks on the project as evidence of that railroad's respective coverage:
 - 1. A certificate of insurance for the types and limits of insurance specified in 107.26.
 - 2. The railroad protective liability insurance policy or other acceptable documentation to the railroad company.
- (5) Submit the following to the region as evidence of the required coverage:
 - 1. A copy of the letter to the railroad company transmitting the submittal documents specified in 107.17.3(4).
 - 2. A certificate of insurance for the required railroad protective liability coverages.
- (6) Do not begin work on the right of way or premises of the railroad company until the region receives the submittals specified in 107.17.3(5) and notification from the railroad company that the contractor has provided sufficient insurance information to begin work.
- (7) Notify the railroad and the region immediately upon cancellation or initiating cancellation, whichever is earlier, or any material change in coverage. Cease operations within 50 feet of the railroad right of way immediately if insurance is cancelled or reduced. Do not resume operations until the required coverage is in force.

460.2.8.3.1.4 Department Verification Testing Requirements

Replace paragraph four with the following effective with the December 2012 letting:

- (4) The department will randomly test each design mixture at the following minimum frequency:
- FOR TONNAGES TOTALING:
- Less than 501 tons no tests required
- From 501 to 5,000 tons..... one test
- More than 5,000 tons..... add one test for each additional 5,000-ton increment

501.2.1 Portland Cement

Replace paragraph one with the following effective with the March 2013 letting:

- (1) Use cement conforming to ASTM specifications as follows:
- Type I portland cement; ASTM C150.
 - Type II portland cement; ASTM C150.
 - Type III portland cement; ASTM C150, for high early strength.
 - Type IP portland-pozzolan cement; ASTM C595, except maximum loss on ignition is 2.0 percent.
 - Type IS portland blast-furnace slag cement; ASTM C595.
 - Type IL portland-limestone cement; ASTM C595, except maximum nominal limestone content is 10 percent with no individual test result exceeding 12.0 percent.

501.2.5.5 Sampling and Testing

Replace the entire text with the following effective with the January 2013 letting:

- (1) Sample and test aggregates for concrete according to the following:
- | | |
|--|---------------------------|
| Sampling aggregates | AASHTO T2 |
| Lightweight pieces in aggregate | AASHTO T113 |
| Material finer than No. 200 sieve | AASHTO T11 |
| Unit weight of aggregate | AASHTO T19 |
| Organic impurities in sands | AASHTO T21 |
| Sieve analysis of aggregates | AASHTO T27 |
| Effect of organic impurities in fine aggregate | AASHTO T71 |
| Los Angeles abrasion of coarse aggregate | AASHTO T96 |
| Freeze-thaw soundness of coarse aggregate..... | AASHTO T103 |
| Sodium sulfate soundness of aggregates..... | AASHTO T104 |
| Specific gravity and absorption of fine aggregate | AASHTO T84 |
| Specific gravity and absorption of coarse aggregate | AASHTO T85 |
| Flat & elongated pieces based on a 3:1 ratio..... | ASTM D4791 ^[1] |
| Sampling fresh concrete | AASHTO R60 |
| Making and curing concrete compressive strength test specimens | AASHTO T23 |
| Compressive strength of molded concrete cylinders | AASHTO T22 |

^[1] As modified in CMM 8-60.

501.2.6 Fly Ash

Replace paragraph three with the following effective with the March 2013 letting:

- (3) Test fly ash using a recognized laboratory, as defined in 501.2.2(1), starting at least 30 days before its proposed use, and continuing at ASTM-required frequencies as the work progresses. The manufacturer shall test the chemical and physical properties listed in tables 1 and 2 of ASTM C618 at the frequencies and by the test methods prescribed in ASTM C311.

501.3.1.1.1 Air-Entrained Concrete

Replace paragraph one with the following effective with the March 2013 letting:

- (1) Prepare air-entrained concrete with type I, IL, II, IS, or IP portland cement and sufficient air-entraining admixture to produce concrete with the air content specified in 501.3.2.4.

503.2.2 Concrete

Replace paragraph five with the following effective with the March 2013 letting:

- (5) Furnish prestressed concrete members cast from air-entrained concrete, except I-type girders may use non-air-entrained concrete. Use type I, IL, IS, , IP, II, or III portland cement. The contractor may replace up to 30 percent of type I, IL, II, or III portland cement with an equal weight of fly ash, slag, or a combination of fly ash and slag, except for prestressed box girders and slabs, the contractor shall replace 20-30 percent of the cement with fly ash, slag, or a combination of fly ash and slag. Ensure that fly ash conforms to 501.2.6 and slag conforms to 501.2.7. Use only one source and replacement rate for work under a single bid item. Use a department-approved air-entraining admixture conforming to 501.2.2 for air-entrained concrete. Use only size No. 1 coarse aggregate conforming to 501.2.5.4.

506.3.22 Shop Inspection

Replace paragraph one with the following effective with the July 2010 letting:

- (1) The engineer or an independent inspection agency under department contract may inspect all structural steel and miscellaneous metals furnished. The department will provide the contractor with monthly consultant inspection invoices and identify any quality deficiencies at the fabrication facility.

506.5 Payment

Add paragraph nine as follows effective with the June 2010 letting:

- (9) The department will limit costs for inspections conducted under 506.3.2 to \$0.05 per pound of material and deduct costs in excess of that amount from payment due the contractor. The department will determine costs for in-house inspections based on hourly rates for department staff plus overhead and use invoiced costs for contracted-out inspections. The department will administer deductions for the contractor's share of the total inspection cost under the Excess Costs For Fabrication Shop Inspection administrative item.

507.2.2.1 General

Replace paragraph four with the following effective with the December 2012 letting:

- (4) Ensure that there are no unsound knots or knot holes. Also ensure that there are no tight knots of a diameter exceeding one-quarter of the greater dimension at the point where they occur. Measure a knot by taking its diameter at right angles to the length of the timber. Ensure that the sum of sizes of all knots in any one-foot length does not exceed 2 times the size of the largest allowed single knot. The engineer will treat cluster knots as if they were a single knot. A cluster knot is 2 or more knots grouped together, with the fibers of the wood deflected around the entire unit.

512.3.1 Driving and Cutting Off

Replace the entire text with the following effective with the December 2012 letting:

512.3.1.1 General

- (1) Coordinate driving operations to prevent damage or displacement of concrete in substructure units or damage to adjacent facilities due to vibrations.
- (2) Drive sheeting with a variation of 1/4 inch or less per foot from the vertical or from the batter the plans show. Ensure that the sheetpiles are within 6 inches of the plan position after driving. Do not damage sheetpiles attempting to correct for misalignment.

- (3) Remove and replace, or otherwise correct, sheetpiles the engineer deems unacceptable under 105.3. Submit details of planned corrections to the engineer for review and approval before initiating any corrective actions.
- (4) Drive sheetpiles to or beyond the required tip elevation the plans show.

512.3.1.2 Driving System

- (1) Furnish a sheetpile driving system capable of driving the sheetpiles to the required minimum tip elevation the plans show.
- (2) The engineer may order the contractor to remove a pile driving system component from service if it causes insufficient energy transfer or damages the sheetpiles. Do not return a component to service until the engineer determines that it has been satisfactorily repaired or adjusted.
- (3) Drive sheetpiles with diesel, air, steam, gravity, hydraulic, or vibratory hammers.

512.3.1.3 Cut-Offs

- (1) Cut off sheetpiles at the elevations the plans show or as the engineer directs. Pile cut-offs become the property of the contractor. Dispose of cut-offs not incorporated into the work.

518.2.1 General

Replace paragraph one with the following effective with the March 2013 letting:

- (1) Furnish portland cement and water as specified in 501.2. Unless the engineer allows an alternate, use either type I, IL, IS, , or IP portland cement.

526.3.3 Temporary Structures

Replace paragraphs two through four with the following effective with the January 2013 letting:

- (2) Inspect temporary structures conforming to the National Bridge Inspection Standards (NBIS) and the department's structure inspection manual before opening to traffic. Perform additional inspections, as the department's structure inspection manual requires, based on structure type and time in service. Submit inspection reports on department form DT2007 to the engineer and electronic copies to the department's bureau of structures maintenance section. Ensure that a department-certified active team leader, listed online in the department's highway structures information system (HSIS), performs the inspections.
- (3) Maintain temporary structures and approaches in place until no longer needed. Unless the engineer directs otherwise, completely remove and dispose of as specified in 203.3.4. Contractor-furnished materials remain the contractor's property upon removal.

614.2.5 Wood Posts and Offset Blocks

Retitle and replace the entire text with the following effective with the July 2012 letting:

614.2.5 Posts and Offset Blocks

614.2.5.1 Wood Posts and Offset Blocks

- (1) Furnish sawed posts and offset blocks of one of the following species:

Douglas fir	Southern pine	Ponderosa pine	Jack pine	White pine
Red pine	Western hemlock	Western larch	Hem-fir	Oak
- (2) Ensure that posts are the size the plans show and conform to the nominal and minimum dimensions tabulated in 507.2.2.3. The contractor does not have to surface the posts. Provide posts of the net length the plans show after setting and cut off.
- (3) Use stress graded posts rated at 1200 psi f_b or higher. Determine the stress grade rating for douglas fir, western larch, and southern pine as specified in 507.2.2.4.
- (4) For hem-fir, hemlock, red pine, white pine, jack pine, ponderosa pine, and oak conform to the following:

TABLE 614-1 PROPERTIES FOR WOOD POSTS AND BLOCKS

SPECIES		WESTERN HEMLOCK, HEM-FIR, RED PINE, WHITE PINE, JACK PINE, PONDEROSA PINE		OAK	
MAXIMUM SLOPE OF GRAIN		1 in 15		1 in 12	
NOMINAL WIDTH OF FACE		6"	8"	6"	8"
SHAKES, CHECKS, AND SPLITS	GREEN	1"	1 3/8"	2 3/8"	3 1/8"
	SEASONED	1 1/2"	2"	2 5/8"	3 1/2"
MAXIMUM WANE		1"	1 3/8"	1 1/8"	1 5/8"
MAXIMUM ALLOWABLE KNOTS	NARROW FACE	MIDDLE 1/3 OF LENGTH	1 3/8"	1 5/8"	2 1/8"
		END ^[1]	2 3/4"	3 1/4"	4 1/4"
		SUM IN MIDDLE 1/2 OF LENGTH ^[2]	11"	13"	17"
	WIDE FACE	EDGE KNOT N MIDDLE 1/3 OF LENGTH	1 3/8"	1 5/8"	
		EDGE KNOT AT END ^[1]	2 3/4" 7	3 1/4"	
		CENTERLINE	1 3/8"	1 7/8"	2 1/4"
		SUM IN MIDDLE 1/2 OF LENGTH	5 1/2"	7 1/2"	9"
					11 1/2"

^[1] But do not exceed the maximum allowable knot on the centerline of the wide face of the same piece.

^[2] But do not exceed 4 times the maximum allowable knot on the centerline of the wide face of the same piece.

- (5) Pressure treat posts and offset blocks as specified in 507.2.2.6. Use one of the oil-soluble preservatives or chromated copper arsenate conforming to 507.2.3. Use the same material for offset blocks and posts and treat material used in each continuous installation with the same type of preservative.

614.2.5.2 Steel Posts

- (1) Furnish steel posts conforming to AASHTO M270 Grade 36 and galvanized according to AASTHO M111.

614.2.5.3 Plastic Offset Blocks

- (1) Furnish plastic offset blocks from the department's approved products list.

614.3.1 General

Replace the entire text with the following effective with the July 2012 letting:

- (1) Paint the ends of cut-off galvanized posts, rail, bolts, cut or drilled surfaces of galvanized components, and areas of damaged zinc coating with 2 coats of zinc dust/zinc oxide paint. Clean the damaged and adjacent areas thoroughly before applying paint.
- (2) Apply 2 coats of wood preservative to cut surfaces of wood components. Use the same preservative originally used to treat that component or use a 2-percent solution of copper naphthenate conforming to AWWA Standard P8 or P36.

614.3.2.1 Installing Posts

Replace paragraph four with the following effective with the July 2012 letting:

- (4) Cut post tops to the finished elevation the plans show.

628.2.13 Rock Bags

Replace paragraph one with the following effective with the November 2012 letting:

- (1) Furnish rock bags made of a porous, ultraviolet resistant, high-density polyethylene or geotextile fabric that will retain 70% of its original strength after 500 hours of exposure according to ASTM D4355 and a minimum in-place filled size of 18-inches long by 12-inches wide by 6-inches high. Ensure that the fabric conforms to the following:

TEST REQUIREMENT	METHOD	VALUE
Minimum Tensile	ASTM D4632	
Machine direction		70 lb minimum
Cross direction		40 lb minimum
Elongation	ASTM D4632	
Machine direction		20% minimum
Cross direction		10 % min
Puncture	ASTM 4833	65 lbs minimum
Minimum Apparent Opening		0.0234 inches (No. 30 sieve)
Maximum Apparent Opening		0.0787 inches (No. 10 sieve)

639.2.1 General

Replace paragraph two with the following effective with the March 2013 letting:

- (2) For grout use fine aggregate conforming to 501.2.5.3 and type I, IL, IS, or IP portland cement.

649.3.1 General

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

- (3) For pavements open to all traffic, apply centerline and no-passing barrier line markings as follows:
- On intermediate pavement layers, including milled surfaces, on the same day the pavement is placed or milled.
 - On the upper layer of pavement, on the same day the pavement is placed unless the contractor applies permanent marking on the same day the pavement is placed.

If weather conditions preclude same-day application, apply as soon as weather allows. Do not resume next-day construction operations until these markings are completed unless the engineer allows otherwise.

- (4) If required to apply no passing zone temporary pavement marking, reference the beginning and end of all existing no-passing barrier lines. Apply temporary no-passing barrier lines at those existing locations. If the contract contains the Locating No-Passing Zones bid item, relocate the no-passing zones as specified in section 648 for permanent marking.

701.4.2 Verification Testing

Replace paragraph two with the following effective with the December 2012 letting:

- (2) The department will sample randomly at locations independent of the contractor's QC tests and use separate equipment and laboratories. The department will conduct a minimum of one verification test for each 5 contractor QC tests unless specific QMP provisions specify otherwise.

715.2.3.1 Pavements

Replace paragraph two with the following effective with the March 2013 letting:

- (2) Provide a minimum cement content of 565 pounds per cubic yard, except if using type I, IL, or III portland cement in a mix where the geologic composition of the coarse aggregate is primarily igneous or metamorphic materials, provide a minimum cement content of 660 pounds per cubic yard.

715.3.1.3 Department Verification Testing

Replace paragraph one with the following effective with the December 2012 letting:

- (1) The department will perform verification testing as specified in 701.4.2 except as follows:
 - Air content, slump, and temperature: a minimum of 1 verification test per lot.
 - Compressive strength: a minimum of 1 verification test per lot.

Errata

Make the following corrections to the 2013 edition of the standard specifications:

102.12 Public Opening of Proposals

Correct 102.12(1) errata by changing htm to shtm in the web link.

- (1) The department will publicly open proposals at the time and place indicated in the notice to contractors. The department will post the total bid for each proposal on the Bid Express web site beginning at 9:30 AM except as specified in 102.8. If a proposal has no total bid shown, the department will not post the bid. After verification for accuracy under 103.1, the department will post bid totals on the department's HCCI web site.

<http://roadwaystandards.dot.wi.gov/hcci/bid-letting/index.shtm>

107.22 Contractor's Responsibility for Utility Facilities, Property, and Services

Correct errata by eliminating references to the department. Costs are determined by statute.

- (3) If the contractor damages or interrupts service, the contractor shall notify the utility promptly. Coordinate and cooperate with the utility in the repair of the facility. Determine who is responsible for repair costs according to Wisconsin statutes 66.0831 and 182.0175(2).
-

204.3.2.2 Removing Items

Correct errata by changing the reference from 490.3.2 to 490.3.

- (5) Under the Removing Asphaltic Surface Milling bid item, remove and dispose of existing asphaltic pavement or surfacing by milling at the location and to the depth the plans show. Mill the asphaltic pavement or surfacing as specified for milling salvaged asphaltic pavement in 490.3.
-

501.2.9 Concrete Curing Materials.

Correct errata by changing AASHTO M171 to ASTM C171.

- (4) Furnish polyethylene-coated burlap conforming to ASTM C171 for white burlap-polyethylene sheets.
-

506.2.6.5.2 Pad Construction

Correct errata by changing ASTM A570 to ASTM A1011.

- (4) For the internal steel plates use rolled mild steel conforming to ASTM A36, or ASTM A1011 grade
-

512.3.3 Painting

Correct errata by changing 511.3.5 to 550.3.11.3.

- (1) Paint permanent steel sheet piling as specified for painting steel piling in 550.3.11.3.

513.2.2.8 Toggle BoltsCorrect errata by changing ASTM A570 to ASTM A1011.

- (1) Use toggle bolts made of steel, conforming to the plans. Make the assembly from the material specified below:

Toggle bolt and pin Cold finished steel heat-treated Brinell 311-363 ASTM A354.
 Toggle washer Hot rolled steel ASTM A1011. Manufacturer's standard washer.
 Spacer nut Grade 1213, ASTM A108. Cold finished steel heat-treated ASTM A325.

660.2.1 GeneralCorrect errata by changing section 511 to 550.

- (1) Furnish materials conforming to the following:

Concrete section 501
 Concrete bridges section 502
 Luminaires section 659
 Steel piling section 550
 Steel reinforcement section 505

660.3.2.3 Pile Type FoundationsCorrect errata by changing section 511 to 550.

- (1) Drive piles as specified in for steel piling in section 550.

701.3 Contractor TestingCorrect errata by updating AASHTO T141 to AASHTO R60 and changing AASHTO T309 to ASTM C1064.

- (1) Perform contract required QC tests for samples randomly located according to CMM 8-30. Also perform other tests as necessary to control production and construction processes, and additional testing enumerated in the contractor's quality control plan or that the engineer directs. Use test methods as follows:

TABLE 701-2 TESTING STANDARDS

TEST	TEST STANDARD
Washed P 200 analysis	AASHTO T11 ^[1]
Sieve analysis of fine and coarse aggregate	AASHTO T27 ^[1]
Aggregate moisture	AASHTO T255 ^[1]
Sampling freshly mixed concrete	AASHTO R60
Air content of fresh concrete	AASHTO T152 ^[2]
Concrete slump	AASHTO T119 ^[2]
Concrete temperature	ASTM C1064
Concrete compressive strength	AASHTO T22
Making and curing concrete cylinders	AASHTO T23
Standard moist curing for concrete cylinders	AASHTO M201

^[1] As modified in CMM 8-60.

^[2] As modified in CMM 8-70.

ADDITIONAL SPECIAL PROVISION 7

- A. Reporting 1st Tier and DBE Payments During Construction
1. Comply with reporting requirements specified in the department's Civil Rights Compliance, Contractor's User Manual, Sublets and Payments.
 2. Report payments to all DBE firms within 10 calendar days of receipt of a progress payment by the department or a contractor for work performed, materials furnished, or materials stockpiled by a DBE firm. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.
 3. Report payments to all first tier subcontractor relationships within 10 calendar days of receipt of a progress payment by the department for work performed. Report the payment as specified in A(1) for all work satisfactorily performed.
 4. All tiers shall report payments as necessary to comply with the DBE payment requirement as specified in A(2).
 5. Require all first tier relationships, DBE firms and all other tier relationships necessary to comply with the DBE payment requirement in receipt of a progress payment by contractor to acknowledge receipt of payment as specified in A(1), (2), (3) and (4).
 6. All agreements made by a contractor shall include the provisions in A(1), (2), (3), (4) and (5), and shall be binding on all first tier subcontractor relationships and all contractors and subcontractors utilizing DBE firms on the project.
- B. Costs for conforming to this special provision are incidental to the contract.

ADDITIONAL SPECIAL PROVISION 9
Electronic Certified Payroll Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to submit certified payrolls electronically. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at:

<http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm>

(2) Ensure that all tiers of subcontractors, as well as all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Tess Mulrooney at 608-267-4489 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator send several sample electronic files to Tess two months before a payroll needs to be submitted. Not every contractor's payroll system is capable of producing export files. For details, see pages 17-22 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at:

<http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/crc-basic-info.pdf>

Effective with September 2004 Letting

**WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS AND TRANSPORTATION FACILITIES**

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

- I. Wage Rates, Hours of labor and payment of Wages
- II. Payroll Requirements
- III. Postings at the Site of the Work
- IV. Affidavits
- V. Wage Rate Redistribution
- VI. Additional Classifications

I. WAGE RATES, HOURS OF LABOR AND PAYMENT OF WAGES

The schedule of "Minimum Wage Rates" attached hereto and made a part hereof furnishes the prevailing wage rates that have been determined pursuant to Section 103.50 of the Wisconsin Statutes. These wage rates are the minimum required to be paid to the various laborers, workers, mechanics and truck drivers employed by contractors and subcontractors on the construction work embraced by the contract and subject to prevailing hours and wages under Section 103.50, Stats. If necessary to employ laborers, workers, mechanics or truck drivers whose classification is not listed on the schedule, they shall be paid at rates conformable to those listed for similar classifications. Apprentices shall be paid at rates not less than those prescribed in their state indenture contracts.

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 103.50 of the Wisconsin Statutes, the prevailing hours of labor have been determined to be up to 10 hours per day and 40 hours per calendar week Monday through Friday. If any laborer, worker, mechanic or truck driver is permitted or required to work more than the prevailing number of hours per day or per calendar week on this contract, they shall be paid for all hours in excess of the prevailing hours at a rate of at least one and one-half (1 1/2) times their hourly rate of pay. All work on Saturday, Sunday and the following holidays is to be paid at time and a half: (1) January 1, (2) the last Monday in May, (3) July 4, (4) the first Monday in September, (5) the fourth Thursday in November, (6) December 25, (7) the day before if January 1, July 4 or December 25 falls on a Saturday and (8) the day following if January 1, July 4 or December 25 falls on a Sunday.

All laborers, workers, mechanics and truck drivers shall be paid unconditionally not less often than once a week. Persons who own and operate their own trucks must receive the prevailing truck driver rate for the applicable type of truck (i.e. 2 axle, 3 or more axle, articulated, eculid or dumptor) he or she operates, plus an agreed upon amount for the use of his or her truck. Every owner-operator MUST be paid separately for their driving and for the use of their truck.

For those projects subject to the requirements of the Davis-Bacon Act, the Secretary of Labor will also have determined "Minimum Wage Rates" for work to be performed under the contract. These rates are, for all or most of the labor, worker, mechanic or truck driver classifications, identical to those established under Section 103.50 of the Wisconsin Statutes. In the event the rates are not identical, the higher of the two rates will govern.

II. PAYROLL REQUIREMENTS

All contractors and subcontractors must submit weekly Certified Payrolls and Compliance Statement verifying that all laborers, workers, mechanics and truck drivers working on the project have been paid the prevailing wage rates for all work performed under the contract required by Section 103.50 of the Wisconsin Statutes.

III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the Department, the contractor shall post the following in at least one conspicuous place at the site of work:

- a. "NOTICE TO EMPLOYEES," which provides information required to be posted by the provisions of Section 103.50 of the Wisconsin Statutes.
- b. A copy of the State of Wisconsin Minimum Wages Rates. (Four pages.)
- c. A copy of the contractor's Equal Employment Opportunity Policy.
- d. On any project involving federal aid, in addition to the furnished postings, the contractor shall post a copy of the "Davis-Bacon Act, Minimum Wage Rates". (Three pages.)

IV. WAGE RATE REDISTRIBUTION

The amount specified as the hourly basic rate of pay and the amount(s) specified as the fringe benefit contribution(s), for all classes of laborers, workers, mechanics or truck drivers may be redistributed, when necessary, to conform to those specified in any applicable collective bargaining agreement, provided that both parties to such agreement

request and receive the approval for any such redistribution from both the Department of Transportation and the Department of Workforce Development prior to the implementation of such redistribution.

V. ADDITIONAL CLASSIFICATIONS

Any unlisted laborer or mechanic classification that is needed to perform work on this project, and is not included within the scope of any of the classifications listed in the application prevailing wage rate determination, may be added after award only if all of the following criteria have been met:

1. The affected employer(s) must make a written request to WisDOT Central Office to utilize the unlisted classification on this project.
2. The request must indicate the scope of the work to be performed by the unlisted classification and must indicate the proposed wage/fringe benefit package that the unlisted classification is to receive.
3. The work to be performed by the unlisted classification must not be performed by a classification that is included in the applicable prevailing wage rate determination.
4. The unlisted classification must be commonly employed in the area where the project is located.
5. The proposed wage/fringe benefit package must bear a reasonable relationship to those set forth in the applicable prevailing wage rate determination.
6. The request should be made prior to the actual performance of the work by the unlisted classification.
7. DWD must approve the use of the unlisted classification and the proposed wage/fringe benefit package. USDOL also must approve the use of the unlisted classification and the proposed wage/fringe benefit package on federal aid projects.
8. WisDOT and DWD may amend the proposed wage/fringe benefit package, as deemed necessary, and may set forth specific employment ratios and scope of work requirements in the approval document.

The approved wage/fringe benefit package shall be paid to all laborers, workers, mechanics or truck drivers performing work within the scope of that performed by the unlisted classification, from the first day on which such work is performed. In the event that work is performed by the unlisted classification prior to approval, the wage/fringe benefit package to be paid for such work must be in conformance with the wage/fringe

benefit package approved for such work. Under this arrangement a retroactive adjustment in wages and/or fringe benefits may be required to be made to the affected laborers, workers, mechanics or truck drivers by the affected employer(s).

**ANNUAL PREVAILING WAGE RATE DETERMINATION
FOR ALL STATE HIGHWAY PROJECTS
DANE COUNTY**

Compiled by the State of Wisconsin - Department of Workforce Development
for the Department of Transportation
Pursuant to s. 103.50, Stats.
Issued on May 1, 2013

CLASSIFICATION: Contractors are required to call the Department of Workforce Development if there are any questions regarding the proper trade or classification to be used for any worker on a public works project.

OVERTIME: Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

FUTURE INCREASE: If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

PREMIUM PAY: If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

SUBJOURNEY: Wage rates may be available for some of the classifications indicated below. Any employer that desires to use any subjourney classification on a project MUST request the applicable wage rate from the Department of Workforce Development PRIOR to the date such classification is used on such project. Form ERD-10880 is available for this purpose and can be obtained by writing to the Department of Workforce Development, Equal Rights Division, P.O. Box 8928, Madison, WI 53708.

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
Bricklayer, Blocklayer or Stonemason	35.58	19.20	54.78
Carpenter	30.16	15.31	45.47
Cement Finisher	32.09	16.13	48.22
Future Increase(s): Add \$1.87 on 6/1/13; Add \$1.87 on 6/1/14; Add \$1.87 on 6/1/15; Add \$1.75 on 6/1/16.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Electrician	32.94	18.80	51.74
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Fence Erector	28.00	4.50	32.50
Ironworker	30.90	19.11	50.01
Line Constructor (Electrical)	31.29	15.34	46.63
Painter	26.65	13.10	39.75
Pavement Marking Operator	29.22	16.71	45.93
Piledriver	30.66	15.31	45.97
Roofer or Waterproofing	30.40	2.23	32.63
Teledata Technician or Installer	21.26	11.75	33.01
Tuckpointer, Caulker or Cleaner	32.01	16.85	48.86
Underwater Diver (Except on Great Lakes)	37.45	19.45	56.90
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	29.64	17.00	46.64
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	35.50	15.09	50.59
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.94	13.57	39.51
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.08	12.96	37.04

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	\$	\$	\$
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	11.90	33.65

TRUCK DRIVERS

Single Axle or Two Axle	33.22	18.90	52.12
Three or More Axle	23.31	17.13	40.44
Future Increase(s): Add \$1.85/hr on 6/1/2013. Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Articulated, Euclid, Dumptror, Off Road Material Hauler	27.77	19.90	47.67
Future Increase(s): Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm .			
Pavement Marking Vehicle	23.84	14.94	38.78
Shadow or Pilot Vehicle	33.22	18.90	52.12
Truck Mechanic	22.50	16.19	38.69

LABORERS

General Laborer	28.35	13.90	42.25
Future Increase(s): Add \$1.70/hr on 6/1/2013; Add \$1.60/hr on 6/1/2014. Premium Pay: Add \$.10/hr for topman, air tool operator, vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add \$.15/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add \$.20/hr for blaster and powderman; Add \$.25/hr for bottomman; Add \$.35/hr for line and grade specialist; Add \$.45/hr for pipelayer. / DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Asbestos Abatement Worker	18.00	0.00	18.00
Landscaper	28.35	13.90	42.25
Future Increase(s): Add \$1.70/hr on 6/1/13; Add \$1.60/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Flagperson or Traffic Control Person	24.70	13.90	38.60
Future Increase(s): Add \$1.70/hr on 6/1/2013; Add \$1.60/hr on 6/1/2014. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.81	12.22	30.03
Railroad Track Laborer	23.41	6.91	30.32

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
HEAVY EQUIPMENT OPERATORS			
Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Traveling Crane (Bridge Type). Future Increase(s): Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm .	35.22	19.90	55.12
Backhoe (Track Type) Having a Mfr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs., & Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm .	34.72	19.90	54.62
Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boatmen (NOT Performing Work on the Great Lakes); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A- Frames. Future Increase(s): Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.	34.22	19.90	54.12

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm .			
Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine.	33.96	19.90	53.86
Future Increase(s): Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm .			
Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	33.67	19.90	53.57
Future Increase(s): Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm .			
Fiber Optic Cable Equipment.	25.74	15.85	41.59

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS

SECTION 0001 CONTRACT ITEMS

0010	108.4400 CPM PROGRESS SCHEDULE	1.000 EACH	.		.	
0020	201.0105 CLEARING	53.000 STA	.		.	
0030	201.0120 CLEARING	118.000 ID	.		.	
0040	201.0205 GRUBBING	53.000 STA	.		.	
0050	201.0220 GRUBBING	118.000 ID	.		.	
0060	203.0100 REMOVING SMALL PIPE CULVERTS	22.000 EACH	.		.	
0070	203.0200 REMOVING OLD STRUCTURE (STATION) 01. STA 10+00	LUMP	LUMP		.	
0080	203.0225.S DEBRIS CONTAINMENT (STRUCTURE) 01. B-13-0264	LUMP	LUMP		.	
0090	204.0100 REMOVING PAVEMENT	1,475.000 SY	.		.	

SCHEDULE OF ITEMS

CONTRACT:

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1206-00-72

N/A

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0100	204.0105 REMOVING PAVEMENT BUTT JOINTS	1,250.000 SY	.		.	
0110	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS	1,730.000 SY	.		.	
0120	204.0120 REMOVING ASPHALTIC SURFACE MILLING	18,055.000 SY	.		.	
0130	204.0130 REMOVING CURB	71.000 LF	.		.	
0140	204.0150 REMOVING CURB & GUTTER	9,347.000 LF	.		.	
0150	204.0155 REMOVING CONCRETE SIDEWALK	1,678.000 SY	.		.	
0160	204.0157 REMOVING CONCRETE BARRIER	2,455.000 LF	.		.	
0170	204.0165 REMOVING GUARDRAIL	4,135.000 LF	.		.	
0180	204.0170 REMOVING FENCE	5,995.000 LF	.		.	
0190	204.0175 REMOVING CONCRETE SLOPE PAVING	260.000 SY	.		.	

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1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0200	204.0180 REMOVING DELINEATORS AND MARKERS	45.000 EACH	.		.	
0210	204.0185 REMOVING MASONRY	5.000 CY	.		.	
0220	204.0195 REMOVING CONCRETE BASES	23.000 EACH	.		.	
0230	204.0210 REMOVING MANHOLES	16.000 EACH	.		.	
0240	204.0220 REMOVING INLETS	40.000 EACH	.		.	
0250	204.0235 REMOVING BUILDINGS (PARCEL) 01. PARCEL NO. 7	LUMP	LUMP		.	
0260	204.0235 REMOVING BUILDINGS (PARCEL) 02. PARCEL NO. 10	LUMP	LUMP		.	
0270	204.0235 REMOVING BUILDINGS (PARCEL) 03. PARCEL NO. 13	LUMP	LUMP		.	
0280	204.0235 REMOVING BUILDINGS (PARCEL) 04. PARCEL NO. 15	LUMP	LUMP		.	
0290	204.0240 SITE CLEARANCE (PARCEL) 01. PARCEL NO. 7	LUMP	LUMP		.	

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1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0300	204.0240 SITE CLEARANCE (PARCEL) 02. PARCEL NO. 10	LUMP	LUMP			.
0310	204.0240 SITE CLEARANCE (PARCEL) 03. PARCEL NO. 13	LUMP	LUMP			.
0320	204.0240 SITE CLEARANCE (PARCEL) 04. PARCEL NO. 15	LUMP	LUMP			.
0330	204.0245 REMOVING STORM SEWER (SIZE) 01. 12-INCH	604.000 LF		.		.
0340	204.0245 REMOVING STORM SEWER (SIZE) 02. 15-INCH	98.000 LF		.		.
0350	204.0245 REMOVING STORM SEWER (SIZE) 03. 18-INCH	348.000 LF		.		.
0360	204.0245 REMOVING STORM SEWER (SIZE) 04. 21-INCH	720.000 LF		.		.
0370	204.0245 REMOVING STORM SEWER (SIZE) 05. 24-INCH	1,583.000 LF		.		.
0380	204.0245 REMOVING STORM SEWER (SIZE) 06. 30-INCH	675.000 LF		.		.
0390	204.0245 REMOVING STORM SEWER (SIZE) 07. 36-INCH	90.000 LF		.		.

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0400	204.0245 REMOVING STORM SEWER (SIZE) 08. 42-INCH	170.000 LF	.		.	
0410	204.0245 REMOVING STORM SEWER (SIZE) 09. 48-INCH	487.000 LF	.		.	
0420	204.0245 REMOVING STORM SEWER (SIZE) 10. 54-INCH	85.000 LF	.		.	
0430	204.0245 REMOVING STORM SEWER (SIZE) 11. 60-INCH	655.000 LF	.		.	
0440	204.0245 REMOVING STORM SEWER (SIZE) 12. 72-INCH	6.000 LF	.		.	
0450	204.0245 REMOVING STORM SEWER (SIZE) 13. 14" X 23" CPRCHE	60.000 LF	.		.	
0460	204.0245 REMOVING STORM SEWER (SIZE) 15. 24" X 38" CPRCHE	25.000 LF	.		.	
0470	204.0245 REMOVING STORM SEWER (SIZE) 16. 29" X 45" CPRCHE	109.000 LF	.		.	
0480	204.0245 REMOVING STORM SEWER (SIZE) 17. 34" X 53" CPRCHE	190.000 LF	.		.	
0490	204.0280 SEALING PIPES	23.000 EACH	.		.	

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N/A

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0500	204.9060.S REMOVING (ITEM DESCRIPTION) 01. OVERHEAD SIGN SUPPORT	2.000 EACH	.		.	
0510	204.9060.S REMOVING (ITEM DESCRIPTION) 02. STORM SEWER JUNCTION CHAMBER	1.000 EACH	.		.	
0520	204.9060.S REMOVING (ITEM DESCRIPTION) 03. CRASH CUSHION	1.000 EACH	.		.	
0530	204.9060.S REMOVING (ITEM DESCRIPTION) 04. INLET COVERS	4.000 EACH	.		.	
0540	204.9060.S REMOVING (ITEM DESCRIPTION) 05. APRON ENDWALLS	26.000 EACH	.		.	
0550	204.9090.S REMOVING (ITEM DESCRIPTION) 01. REMOVING MODULAR BLOCK RETAINING WALL, STA. 64+50 WP TO STA. 65+50 WP	100.000 LF	.		.	
0560	204.9090.S REMOVING (ITEM DESCRIPTION) 02. MODULAR BLOCK RETAINING WALL, STA. 1166+85 TO STA. 1174+20	620.000 LF	.		.	
0570	205.0100 EXCAVATION COMMON	94,101.000 CY	.		.	

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N/A

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N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0580	206.1000 EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-13-664	LUMP	LUMP			.
0590	206.1000 EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 17. B-13-666	LUMP	LUMP			.
0600	206.3000 EXCAVATION FOR STRUCTURES RETAINING WALLS (STRUCTURE) 03. R-13-235	LUMP	LUMP			.
0610	206.3000 EXCAVATION FOR STRUCTURES RETAINING WALLS (STRUCTURE) 04. R-13-236	LUMP	LUMP			.
0620	206.6000.S TEMPORARY SHORING	SF 1,172.000	.		.	.
0630	208.0100 BORROW	CY 4,713.000	.		.	.
0640	209.0100 BACKFILL GRANULAR	CY 3,025.000	.		.	.
0650	209.0300.S BACKFILL COARSE AGGREGATE (SIZE) 01. NO. 1	CY 788.000	.		.	.
0660	210.0100 BACKFILL STRUCTURE	CY 4,169.000	.		.	.

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1206-00-72

N/A

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0670	213.0100 FINISHING ROADWAY (PROJECT) 01. 1206-07-77	1.000 EACH	.		.	
0680	213.0100 FINISHING ROADWAY (PROJECT) 02. 1206-07-83	1.000 EACH	.		.	
0690	214.0100 OBLITERATING OLD ROAD	1.000 STA	.		.	
0700	305.0110 BASE AGGREGATE DENSE 3/4-INCH	5,265.000 TON	.		.	
0710	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	47,728.000 TON	.		.	
0720	305.0130 BASE AGGREGATE DENSE 3-INCH	20,950.000 TON	.		.	
0730	312.0110 SELECT CRUSHED MATERIAL	28,569.000 TON	.		.	
0740	390.0203 BASE PATCHING ASPHALTIC	240.000 SY	.		.	
0750	415.1080 CONCRETE PAVEMENT HES 8-INCH	465.000 SY	.		.	
0760	415.1410 CONCRETE PAVEMENT APPROACH SLAB HES	178.000 SY	.		.	

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N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0770	416.0270 CONCRETE DRIVEWAY HES 7-INCH	142.000 SY	.		.	
0780	416.0610 DRILLED TIE BARS	8.000 EACH	.		.	
0790	440.4410.S INCENTIVE IRI RIDE	14,250.000 DOL	1.00000		14250.00	
0800	455.0105 ASPHALTIC MATERIAL PG58-28	167.200 TON	.		.	
0810	455.0115 ASPHALTIC MATERIAL PG64-22	764.900 TON	.		.	
0820	455.0120 ASPHALTIC MATERIAL PG64-28	488.200 TON	.		.	
0830	455.0605 TACK COAT	4,103.000 GAL	.		.	
0840	460.1101 HMA PAVEMENT TYPE E-1	3,008.000 TON	.		.	
0850	460.1103 HMA PAVEMENT TYPE E-3	6,753.000 TON	.		.	
0860	460.1110 HMA PAVEMENT TYPE E-10	14,916.000 TON	.		.	

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N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0870	460.2000 INCENTIVE DENSITY HMA PAVEMENT	15,376.000 DOL	1.00000		15376.00	
0880	465.0110 ASPHALTIC SURFACE PATCHING	35.000 TON	.		.	
0890	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	475.000 TON	.		.	
0900	465.0305 ASPHALTIC SURFACE SAFETY ISLANDS	8.000 TON	.		.	
0910	465.0310 ASPHALTIC CURB	2,202.000 LF	.		.	
0920	465.0315 ASPHALTIC FLUMES	118.000 SY	.		.	
0930	465.0400 ASPHALTIC SHOULDER RUMBLE STRIP	17,485.000 LF	.		.	
0940	465.0450 ASPHALTIC INTERSECTION RUMBLE STRIP	132.000 SY	.		.	
0950	502.0100 CONCRETE MASONRY BRIDGES	1,301.000 CY	.		.	
0960	502.3100 EXPANSION DEVICE (STRUCTURE) 17. B-13-666	LUMP	LUMP		.	

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1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0970	502.3200 PROTECTIVE SURFACE TREATMENT	2,186.000 SY	.		.	
0980	503.0137 PRESTRESSED GIRDER TYPE I 36W-INCH	1,360.000 LF	.		.	
0990	504.0500 CONCRETE MASONRY RETAINING WALLS	494.000 CY	.		.	
1000	504.2000.S PRECAST CONCRETE BOX CULVERT (FT X FT) 01. 3FT X 6FT	245.000 LF	.		.	
1010	505.0405 BAR STEEL REINFORCEMENT HS BRIDGES	21,340.000 LB	.		.	
1020	505.0605 BAR STEEL REINFORCEMENT HS COATED BRIDGES	213,660.000 LB	.		.	
1030	505.0615 BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	8,538.000 LB	.		.	
1040	506.0105 STRUCTURAL STEEL CARBON	16,422.000 LB	.		.	
1050	506.0605 STRUCTURAL STEEL HS	386,460.000 LB	.		.	
1060	506.2605 BEARING PADS ELASTOMERIC NON-LAMINATED	34.000 EACH	.		.	

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N/A

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1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1070	506.4000 STEEL DIAPHRAGMS (STRUCTURE) 01. B-13-664	28.000 EACH	.		.	
1080	512.0500 PILING STEEL SHEET PERMANENT DELIVERED	3,472.000 SF	.		.	
1090	512.0600 PILING STEEL SHEET PERMANENT DRIVEN	3,472.000 SF	.		.	
1100	516.0500 RUBBERIZED MEMBRANE WATERPROOFING	46.000 SY	.		.	
1110	517.0600 PAINTING EPOXY SYSTEM (STRUCTURE) 03. R-13-235	LUMP	LUMP		.	
1120	517.0600 PAINTING EPOXY SYSTEM (STRUCTURE) 04. R-13-236	LUMP	LUMP		.	
1130	517.1010.S CONCRETE STAINING (STRUCTURE) 01. B-13-664	9,885.000 SF	.		.	
1140	517.1010.S CONCRETE STAINING (STRUCTURE) 02. B-13-666	4,522.000 SF	.		.	
1150	517.1010.S CONCRETE STAINING (STRUCTURE) 03. R-13-204	5,650.000 SF	.		.	
1160	517.1010.S CONCRETE STAINING (STRUCTURE) 04. R-13-235	1,893.000 SF	.		.	

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION		APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
				DOLLARS	CTS	DOLLARS	CTS
1170	517.1010.S CONCRETE STAINING (STRUCTURE) R-13-236	05. SF	5,986.000	.		.	
1180	517.1010.S CONCRETE STAINING (STRUCTURE) R-13-242	06. SF	6,030.000	.		.	
1190	517.1010.S CONCRETE STAINING (STRUCTURE) R-13-243	07. SF	1,990.000	.		.	
1200	517.1010.S CONCRETE STAINING (STRUCTURE) S-13-383	08. SF	828.000	.		.	
1210	517.1010.S CONCRETE STAINING (STRUCTURE) S-13-406	09. SF	225.000	.		.	
1220	517.1010.S CONCRETE STAINING (STRUCTURE) S-13-407	10. SF	225.000	.		.	
1230	517.1010.S CONCRETE STAINING (STRUCTURE) S-13-376	12. SF	440.000	.		.	
1240	517.1010.S CONCRETE STAINING (STRUCTURE) S-13-384	13. SF	1,000.000	.		.	
1250	517.1010.S CONCRETE STAINING (STRUCTURE) S-13-394	14. SF	1,000.000	.		.	
1260	517.1010.S CONCRETE STAINING (STRUCTURE) S-13-0395	15. SF	1,020.000	.		.	

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N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1270	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 01. B-13-664	SF 230.000	.		.	
1280	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 02. B-13-666	SF 2,323.000	.		.	
1290	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 03. R-13-204	SF 3,015.000	.		.	
1300	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 04. R-13-242	SF 4,820.000	.		.	
1310	517.1050.S ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 05. R-13-243	SF 1,420.000	.		.	
1320	520.1012 APRON ENDWALLS FOR CULVERT PIPE 12-INCH	EACH 2.000	.		.	
1330	520.4042 CULVERT PIPE TEMPORARY 42-INCH	LF 120.000	.		.	
1340	520.8000 CONCRETE COLLARS FOR PIPE	EACH 75.000	.		.	
1350	521.0112 CULVERT PIPE CORRUGATED STEEL 12-INCH	LF 921.000	.		.	

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N/A

1206-07-81

N/A

1206-07-83

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1360	521.0115 CULVERT PIPE CORRUGATED STEEL 15-INCH	241.000 LF	.		.	
1370	521.0118 CULVERT PIPE CORRUGATED STEEL 18-INCH	24.000 LF	.		.	
1380	521.0124 CULVERT PIPE CORRUGATED STEEL 24-INCH	49.000 LF	.		.	
1390	521.0142 CULVERT PIPE CORRUGATED STEEL 42-INCH	6.000 LF	.		.	
1400	521.0721 PIPE ARCH CORRUGATED STEEL 21X15-INCH	172.000 LF	.		.	
1410	521.0735 PIPE ARCH CORRUGATED STEEL 35X24-INCH	56.000 LF	.		.	
1420	521.0749 PIPE ARCH CORRUGATED STEEL 49X33-INCH	48.000 LF	.		.	
1430	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	4.000 EACH	.		.	
1440	521.1015 APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH	2.000 EACH	.		.	
1450	521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	1.000 EACH	.		.	

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1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1460	521.1221 APRON ENDWALLS FOR PIPE ARCH STEEL 21X15-INCH	12.000 EACH	.		.	
1470	521.1235 APRON ENDWALLS FOR PIPE ARCH STEEL 35X24-INCH	2.000 EACH	.		.	
1480	521.1249 APRON ENDWALLS FOR PIPE ARCH STEEL 49X33-INCH	2.000 EACH	.		.	
1490	522.0124 CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	8.000 LF	.		.	
1500	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH	8.000 EACH	.		.	
1510	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	5.000 EACH	.		.	
1520	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	2.000 EACH	.		.	
1530	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	4.000 EACH	.		.	
1540	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	1.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1550	522.1060 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 60-INCH	1.000 EACH	.		.	
1560	522.1066 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 66-INCH	1.000 EACH	.		.	
1570	523.0414 CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 14X23-INCH	38.000 LF	.		.	
1580	523.0429 CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 29X45-INCH	58.000 LF	.		.	
1590	523.0514 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 14X23-INCH	7.000 EACH	.		.	
1600	523.0524 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 24X38-INCH	3.000 EACH	.		.	
1610	523.0529 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 29X45-INCH	4.000 EACH	.		.	

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20130514008

1206-00-72

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1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1620	523.0538 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 38X60-INCH	3.000 EACH	.		.	
1630	531.0300.S NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE (STRUCTURE) 01. N-13-2	14,050.000 SF	.		.	
1640	531.0300.S NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE (STRUCTURE) 02. N-13-3	10,160.000 SF	.		.	
1650	531.0300.S NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE (STRUCTURE) 03. N-13-4	9,340.000 SF	.		.	
1660	550.1100 PILING STEEL HP 10-INCH X 42 LB	7,400.000 LF	.		.	
1670	601.0407 CONCRETE CURB & GUTTER 18-INCH TYPE D	475.000 LF	.		.	
1680	601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A	303.000 LF	.		.	
1690	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D	7,942.000 LF	.		.	
1700	601.0553 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D	2,009.000 LF	.		.	

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20130514008

1206-00-72

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1206-07-77

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1206-07-81

N/A

1206-07-83

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1710	601.0557 CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	828.000 LF	.		.	
1720	601.0576 CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE J	315.000 LF	.		.	
1730	602.0410 CONCRETE SIDEWALK 5-INCH	20,620.000 SF	.		.	
1740	602.0420 CONCRETE SIDEWALK 7-INCH	2,575.000 SF	.		.	
1750	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW	192.000 SF	.		.	
1760	602.1500 CONCRETE STEPS	25.000 SF	.		.	
1770	603.0105 CONCRETE BARRIER SINGLE-FACED 32-INCH	527.000 LF	.		.	
1780	603.1142 CONCRETE BARRIER TYPE S42	5,580.000 LF	.		.	
1790	603.3113 CONCRETE BARRIER TRANSITION TYPE NJ32SF TO S36	1.000 EACH	.		.	
1800	603.3313 CONCRETE BARRIER TRANSITION TYPE NJ32DF TO S36	2.000 EACH	.		.	

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20130514008

1206-00-72

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1206-07-77

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1206-07-81

N/A

1206-07-83

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1810	603.3535 CONCRETE BARRIER TRANSITION TYPE S36 TO S42	3.000 EACH	.		.	
1820	603.3559 CONCRETE BARRIER TRANSITION TYPE S42 TO S56	2.000 EACH	.		.	
1830	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	7,520.000 LF	.		.	
1840	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	14,370.000 LF	.		.	
1850	604.0400 SLOPE PAVING CONCRETE	159.000 SY	.		.	
1860	606.0100 RIPRAP LIGHT	160.000 CY	.		.	
1870	606.0200 RIPRAP MEDIUM	166.000 CY	.		.	
1880	606.0300 RIPRAP HEAVY	53.000 CY	.		.	
1890	608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH	1,696.000 LF	.		.	
1900	608.0315 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH	310.000 LF	.		.	

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20130514008

1206-00-72

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1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1910	608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	654.000 LF	.		.	
1920	608.0324 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH	1,337.000 LF	.		.	
1930	608.0330 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 30-INCH	683.000 LF	.		.	
1940	608.0336 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 36-INCH	565.000 LF	.		.	
1950	608.0342 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 42-INCH	300.000 LF	.		.	
1960	608.0348 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 48-INCH	1,844.000 LF	.		.	
1970	608.0354 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 54-INCH	210.000 LF	.		.	
1980	608.0360 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 60-INCH	492.000 LF	.		.	
1990	608.0366 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 66-INCH	274.000 LF	.		.	
2000	608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH	747.000 LF	.		.	

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1206-00-72

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1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2010	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH	444.000 LF	.		.	
2020	608.0418 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH	933.000 LF	.		.	
2030	608.0424 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH	362.000 LF	.		.	
2040	608.0430 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 30-INCH	548.000 LF	.		.	
2050	608.0436 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 36-INCH	92.000 LF	.		.	
2060	608.0442 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 42-INCH	113.000 LF	.		.	
2070	608.0448 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 48-INCH	233.000 LF	.		.	
2080	608.0460 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 60-INCH	40.000 LF	.		.	
2090	608.0472 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 72-INCH	11.000 LF	.		.	
2100	610.0114 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 14X23-INCH	369.000 LF	.		.	

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20130514008

1206-00-72

N/A

1206-07-77

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1206-07-81

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1206-07-83

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2110	610.0124 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 24X38-INCH	589.000 LF	.		.	
2120	610.0129 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 29X45-INCH	6.000 LF	.		.	
2130	610.0138 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 38X60-INCH	515.000 LF	.		.	
2140	610.0424 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 24X38-INCH	163.000 LF	.		.	
2150	610.0429 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 29X45-INCH	31.000 LF	.		.	
2160	610.0434 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 34X53-INCH	9.000 LF	.		.	
2170	611.0420 RECONSTRUCTING MANHOLES	4.000 EACH	.		.	
2180	611.0530 MANHOLE COVERS TYPE J	59.000 EACH	.		.	

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2190	611.0535 MANHOLE COVERS TYPE J-SPECIAL	4.000 EACH	.		.	
2200	611.0545 MANHOLE COVERS TYPE L	4.000 EACH	.		.	
2210	611.0600 INLET COVERS TYPE A	1.000 EACH	.		.	
2220	611.0606 INLET COVERS TYPE B	3.000 EACH	.		.	
2230	611.0612 INLET COVERS TYPE C	24.000 EACH	.		.	
2240	611.0624 INLET COVERS TYPE H	25.000 EACH	.		.	
2250	611.0627 INLET COVERS TYPE HM	18.000 EACH	.		.	
2260	611.0630 INLET COVERS TYPE HM-GJ	1.000 EACH	.		.	
2270	611.0633 INLET COVERS TYPE HM-GJ-S	1.000 EACH	.		.	
2280	611.0639 INLET COVERS TYPE H-S	14.000 EACH	.		.	

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20130514008

1206-00-72

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1206-07-77

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1206-07-81

N/A

1206-07-83

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2290	611.0642 INLET COVERS TYPE MS	30.000 EACH	.		.	
2300	611.0654 INLET COVERS TYPE V	11.000 EACH	.		.	
2310	611.2003 MANHOLES 3-FT DIAMETER	7.000 EACH	.		.	
2320	611.2004 MANHOLES 4-FT DIAMETER	33.000 EACH	.		.	
2330	611.2005 MANHOLES 5-FT DIAMETER	15.000 EACH	.		.	
2340	611.2006 MANHOLES 6-FT DIAMETER	12.000 EACH	.		.	
2350	611.2007 MANHOLES 7-FT DIAMETER	15.000 EACH	.		.	
2360	611.2008 MANHOLES 8-FT DIAMETER	14.000 EACH	.		.	
2370	611.3003 INLETS 3-FT DIAMETER	6.000 EACH	.		.	
2380	611.3230 INLETS 2X3-FT	47.000 EACH	.		.	

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20130514008

1206-00-72

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1206-07-77

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1206-07-81

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1206-07-83

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2390	611.3901 INLETS MEDIAN 1 GRATE	16.000 EACH	.		.	
2400	611.3902 INLETS MEDIAN 2 GRATE	7.000 EACH	.		.	
2410	611.8110 ADJUSTING MANHOLE COVERS	8.000 EACH	.		.	
2420	611.8115 ADJUSTING INLET COVERS	8.000 EACH	.		.	
2430	611.9800.S PIPE GRATES	40.000 EACH	.		.	
2440	612.0106 PIPE UNDERDRAIN 6-INCH	9,293.000 LF	.		.	
2450	612.0206 PIPE UNDERDRAIN UNPERFORATED 6-INCH	80.000 LF	.		.	
2460	612.0406 PIPE UNDERDRAIN WRAPPED 6-INCH	2,885.000 LF	.		.	
2470	612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH	10.000 EACH	.		.	
2480	614.0305 STEEL PLATE BEAM GUARD CLASS A	126.000 LF	.		.	

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20130514008

1206-00-72

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1206-07-77

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1206-07-81

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1206-07-83

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2490	614.0340 STEEL PLATE BEAM GUARD OVER LOW-FILL CULVERTS CLASS A	176.000 LF	.		.	
2500	614.0395 GUARDRAIL MOW STRIP CONCRETE	61.000 SY	.		.	
2510	614.0396 GUARDRAIL MOW STRIP ASPHALT	4,407.000 SY	.		.	
2520	614.0800 CRASH CUSHIONS PERMANENT	8.000 EACH	.		.	
2530	614.0905 CRASH CUSHIONS TEMPORARY	13.000 EACH	.		.	
2540	614.2300 MGS GUARDRAIL 3	10,673.000 LF	.		.	
2550	614.2500 MGS THRIE BEAM TRANSITION	117.000 LF	.		.	
2560	614.2610 MGS GUARDRAIL TERMINAL EAT	15.000 EACH	.		.	
2570	614.2620 MGS GUARDRAIL TERMINAL TYPE 2	10.000 EACH	.		.	
2580	616.0206 FENCE CHAIN LINK 6-FT	3,256.000 LF	.		.	

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20130514008

1206-00-72

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1206-07-77

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1206-07-81

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1206-07-83

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2590	616.0208 FENCE CHAIN LINK 8-FT	46.000 LF	.		.	
2600	616.0329 GATES CHAIN LINK (WIDTH) 01. 3-FT	2.000 EACH	.		.	
2610	616.0406 FENCE CHAIN LINK SALVAGED 6-FT	609.000 LF	.		.	
2620	616.0700.S FENCE SAFETY	7,107.000 LF	.		.	
2630	619.1000 MOBILIZATION	1.000 EACH	.		.	
2640	620.0200 CONCRETE MEDIAN BLUNT NOSE	60.000 SF	.		.	
2650	620.0300 CONCRETE MEDIAN SLOPED NOSE	335.000 SF	.		.	
2660	624.0100 WATER	950.000 MGAL	.		.	
2670	625.0100 TOPSOIL	7,310.000 SY	.		.	
2680	625.0500 SALVAGED TOPSOIL	100,515.000 SY	.		.	

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1206-00-72

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1206-07-77

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1206-07-81

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1206-07-83

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2690	627.0200 MULCHING	4,650.000				
		SY	.		.	
2700	628.1504 SILT FENCE	18,833.000				
		LF	.		.	
2710	628.1520 SILT FENCE MAINTENANCE	37,666.000				
		LF	.		.	
2720	628.1905 MOBILIZATIONS EROSION CONTROL	38.000				
		EACH	.		.	
2730	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL	23.000				
		EACH	.		.	
2740	628.2004 EROSION MAT CLASS I TYPE B	80,645.000				
		SY	.		.	
2750	628.2006 EROSION MAT URBAN CLASS I TYPE A	42,825.000				
		SY	.		.	
2760	628.2027 EROSION MAT CLASS II TYPE C	4,336.000				
		SY	.		.	
2770	628.7005 INLET PROTECTION TYPE A	174.000				
		EACH	.		.	
2780	628.7010 INLET PROTECTION TYPE B	48.000				
		EACH	.		.	

SCHEDULE OF ITEMS

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20130514008PROJECT(S):
1206-00-72
1206-07-77
1206-07-81
1206-07-83FEDERAL ID(S):
N/A
N/A
N/A
N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2790	628.7015 INLET PROTECTION TYPE C	162.000 EACH	.		.	
2800	628.7020 INLET PROTECTION TYPE D	24.000 EACH	.		.	
2810	628.7504 TEMPORARY DITCH CHECKS	1,230.000 LF	.		.	
2820	628.7555 CULVERT PIPE CHECKS	118.000 EACH	.		.	
2830	628.7560 TRACKING PADS	4.000 EACH	.		.	
2840	629.0210 FERTILIZER TYPE B	87.370 CWT	.		.	
2850	630.0120 SEEDING MIXTURE NO. 20	2,163.000 LB	.		.	
2860	630.0140 SEEDING MIXTURE NO. 40	819.000 LB	.		.	
2870	630.0171 SEEDING MIXTURE NO. 70A	15.000 LB	.		.	
2880	630.0200 SEEDING TEMPORARY	3,641.000 LB	.		.	

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2890	630.0400 SEEDING NURSE CROP	30.000 LB	.		.	
2900	633.0100 DELINEATOR POSTS STEEL	31.000 EACH	.		.	
2910	633.0500 DELINEATOR REFLECTORS	76.000 EACH	.		.	
2920	633.1000 DELINEATOR BRACKETS	26.000 EACH	.		.	
2930	633.5200 MARKERS CULVERT END	47.000 EACH	.		.	
2940	634.0612 POSTS WOOD 4X6-INCH X 12-FT	16.000 EACH	.		.	
2950	634.0614 POSTS WOOD 4X6-INCH X 14-FT	29.000 EACH	.		.	
2960	634.0616 POSTS WOOD 4X6-INCH X 16-FT	78.000 EACH	.		.	
2970	634.0618 POSTS WOOD 4X6-INCH X 18-FT	48.000 EACH	.		.	
2980	634.0620 POSTS WOOD 4X6-INCH X 20-FT	29.000 EACH	.		.	

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

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			DOLLARS	CTS	DOLLARS	CTS
2990	634.0622 POSTS WOOD 4X6-INCH X 22-FT	6.000 EACH	.		.	
3000	634.0810 POSTS TUBULAR STEEL 2X2-INCH X 10-FT	1.000 EACH	.		.	
3010	634.0812 POSTS TUBULAR STEEL 2X2-INCH X 12-FT	1.000 EACH	.		.	
3020	634.0814 POSTS TUBULAR STEEL 2X2-INCH X 14-FT	2.000 EACH	.		.	
3030	635.0200 SIGN SUPPORTS STRUCTURAL STEEL HS	2,000.000 LB	.		.	
3040	636.0100 SIGN SUPPORTS CONCRETE MASONRY	370.500 CY	.		.	
3050	636.0500 SIGN SUPPORTS STEEL REINFORCEMENT	190.000 LB	.		.	
3060	636.1000 SIGN SUPPORTS STEEL REINFORCEMENT HS	15,940.000 LB	.		.	
3070	636.1500 SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	54,710.000 LB	.		.	
3080	637.0101 SIGNS TYPE I	1,466.000 SF	.		.	

SCHEDULE OF ITEMS

CONTRACT:
20130514008PROJECT(S):
1206-00-72
1206-07-77
1206-07-81
1206-07-83FEDERAL ID(S):
N/A
N/A
N/A
N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3090	637.0202 SIGNS REFLECTIVE TYPE II	2,163.890 SF	.		.	
3100	637.0402 SIGNS REFLECTIVE FOLDING TYPE II	108.470 SF	.		.	
3110	638.2101 MOVING SIGNS TYPE I	2.000 EACH	.		.	
3120	638.2102 MOVING SIGNS TYPE II	55.000 EACH	.		.	
3130	638.2601 REMOVING SIGNS TYPE I	15.000 EACH	.		.	
3140	638.2602 REMOVING SIGNS TYPE II	189.000 EACH	.		.	
3150	638.3000 REMOVING SMALL SIGN SUPPORTS	153.000 EACH	.		.	
3160	638.3100 REMOVING STRUCTURAL STEEL SIGN SUPPORTS	6.000 EACH	.		.	
3170	638.3620 ERECTING STATE OWNED SIGNS TYPE II	2.000 EACH	.		.	
3180	638.4000 MOVING SMALL SIGN SUPPORTS	42.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3190	641.0600 SIGN BRIDGE SINGLE POLE SIGN SUPPORT TWO SIGNS (STRUCTURE) 01. S-13-406	LUMP	LUMP			.
3200	641.0600 SIGN BRIDGE SINGLE POLE SIGN SUPPORT TWO SIGNS (STRUCTURE) 02. S-13-407	LUMP	LUMP			.
3210	641.1200 SIGN BRIDGE CANTILEVERED (STRUCTURE) 01. S-13-376	LUMP	LUMP			.
3220	641.6600 SIGN BRIDGE (STRUCTURE) 01. S-13-384	LUMP	LUMP			.
3230	641.6600 SIGN BRIDGE (STRUCTURE) 02. S-13-394	LUMP	LUMP			.
3240	641.6600 SIGN BRIDGE (STRUCTURE) 03. S-13-0395	LUMP	LUMP			.
3250	641.6600 SIGN BRIDGE (STRUCTURE) 04. S-13-383	LUMP	LUMP			.
3260	642.5401 FIELD OFFICE TYPE D	1.000 EACH		.		.
3270	643.0100 TRAFFIC CONTROL (PROJECT) 01. 1206-07-77	1.000 EACH		.		.

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3280	643.0100 TRAFFIC CONTROL (PROJECT) 02. 1206-07-83	1.000 EACH	.		.	
3290	643.0300 TRAFFIC CONTROL DRUMS	79,897.000 DAY	.		.	
3300	643.0410 TRAFFIC CONTROL BARRICADES TYPE II	417.000 DAY	.		.	
3310	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	7,402.000 DAY	.		.	
3320	643.0453 TRAFFIC CONTROL BARRICADES PERMANENT TYPE III	11.000 EACH	.		.	
3330	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	50.000 EACH	.		.	
3340	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	50.000 EACH	.		.	
3350	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	9,438.000 DAY	.		.	
3360	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C	11,657.000 DAY	.		.	
3370	643.0800 TRAFFIC CONTROL ARROW BOARDS	1,695.000 DAY	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3380	643.0900 TRAFFIC CONTROL SIGNS	37,224.000 DAY	.		.	
3390	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	7.000 EACH	.		.	
3400	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE	504.000 SF	.		.	
3410	643.1050 TRAFFIC CONTROL SIGNS PCMS	1,250.000 DAY	.		.	
3420	643.2000 TRAFFIC CONTROL DETOUR (PROJECT) 02. 1206-07-77	1.000 EACH	.		.	
3430	643.2000 TRAFFIC CONTROL DETOUR (PROJECT) 04. 1206-07-83	1.000 EACH	.		.	
3440	643.3000 TRAFFIC CONTROL DETOUR SIGNS	10,392.000 DAY	.		.	
3450	645.0112 GEOTEXTILE FABRIC TYPE DF SCHEDULE B	6,283.000 SY	.		.	
3460	645.0120 GEOTEXTILE FABRIC TYPE HR	560.000 SY	.		.	
3470	646.0106 PAVEMENT MARKING EPOXY 4-INCH	104,090.000 LF	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3480	646.0116 PAVEMENT MARKING EPOXY 6-INCH	6,110.000 LF	.		.	
3490	646.0126 PAVEMENT MARKING EPOXY 8-INCH	8,289.000 LF	.		.	
3500	646.0406 PAVEMENT MARKING SAME DAY EPOXY 4-INCH	1,070.000 LF	.		.	
3510	646.0600 REMOVING PAVEMENT MARKINGS	88,700.000 LF	.		.	
3520	646.0881.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH	3,810.000 LF	.		.	
3530	646.0883.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH	1,764.000 LF	.		.	
3540	647.0166 PAVEMENT MARKING ARROWS EPOXY TYPE 2	36.000 EACH	.		.	
3550	647.0206 PAVEMENT MARKING ARROWS BIKE LANE EPOXY	13.000 EACH	.		.	
3560	647.0306 PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY	13.000 EACH	.		.	
3570	647.0356 PAVEMENT MARKING WORDS EPOXY	18.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3580	647.0456 PAVEMENT MARKING CURB EPOXY	70.000 LF	.		.	
3590	647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH	992.000 LF	.		.	
3600	647.0606 PAVEMENT MARKING ISLAND NOSE EPOXY	12.000 EACH	.		.	
3610	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH	2,268.000 LF	.		.	
3620	647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	1,636.000 LF	.		.	
3630	647.0796 PAVEMENT MARKING CROSSWALK EPOXY 24-INCH	84.000 LF	.		.	
3640	649.0200 TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH	46,440.000 LF	.		.	
3650	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	20,651.000 LF	.		.	
3660	649.0600 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 6-INCH	52.000 LF	.		.	
3670	649.0801 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH	1,250.000 LF	.		.	

SCHEDULE OF ITEMS

CONTRACT:
20130514008PROJECT(S):
1206-00-72
1206-07-77
1206-07-81
1206-07-83FEDERAL ID(S):
N/A
N/A
N/A
N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3680	649.2100 TEMPORARY RAISED PAVEMENT MARKERS	317.000 EACH	.		.	
3690	650.4000 CONSTRUCTION STAKING STORM SEWER	221.000 EACH	.		.	
3700	650.4500 CONSTRUCTION STAKING SUBGRADE	34,756.000 LF	.		.	
3710	650.5000 CONSTRUCTION STAKING BASE	34,756.000 LF	.		.	
3720	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	13,134.000 LF	.		.	
3730	650.6000 CONSTRUCTION STAKING PIPE CULVERTS	16.000 EACH	.		.	
3740	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-13-664	LUMP	LUMP		.	
3750	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 02. B-13-666	LUMP	LUMP		.	
3760	650.7500 CONSTRUCTION STAKING CONCRETE BARRIER	6,427.000 LF	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3770	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE	6,615.000 LF	.		.	
3780	650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 01. 1206-07-77	LUMP	LUMP		.	
3790	650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 02. 1206-07-83	LUMP	LUMP		.	
3800	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1206-00-72	LUMP	LUMP		.	
3810	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 02. 1206-07-77	LUMP	LUMP		.	
3820	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 04. 1206-07-83	LUMP	LUMP		.	
3830	650.9920 CONSTRUCTION STAKING SLOPE STAKES	32,788.000 LF	.		.	
3840	652.0105 CONDUIT RIGID METALLIC 3/4-INCH	1,413.000 LF	.		.	
3850	652.0115 CONDUIT RIGID METALLIC 1 1/4-INCH	515.000 LF	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3860	652.0120 CONDUIT RIGID METALLIC 1 1/2-INCH	635.000 LF	.		.	
3870	652.0125 CONDUIT RIGID METALLIC 2-INCH	78.000 LF	.		.	
3880	652.0135 CONDUIT RIGID METALLIC 3-INCH	180.000 LF	.		.	
3890	652.0205 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3/4-INCH	15.000 LF	.		.	
3900	652.0215 CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/4-INCH	15.000 LF	.		.	
3910	652.0220 CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/2-INCH	73.000 LF	.		.	
3920	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	6,951.000 LF	.		.	
3930	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	3,119.000 LF	.		.	
3940	652.0325 CONDUIT RIGID NONMETALLIC SCHEDULE 80 2-INCH	93.000 LF	.		.	
3950	652.0605 CONDUIT SPECIAL 2-INCH	704.000 LF	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
3960	652.0615 CONDUIT SPECIAL 3-INCH	1,468.000 LF	.		.	
3970	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM	51.000 EACH	.		.	
3980	652.0800 CONDUIT LOOP DETECTOR	1,958.000 LF	.		.	
3990	652.0900 LOOP DETECTOR SLOTS	863.000 LF	.		.	
4000	653.0135 PULL BOXES STEEL 24X36-INCH	16.000 EACH	.		.	
4010	653.0140 PULL BOXES STEEL 24X42-INCH	7.000 EACH	.		.	
4020	653.0222 JUNCTION BOXES 18X12X6-INCH	2.000 EACH	.		.	
4030	653.0905 REMOVING PULL BOXES	7.000 EACH	.		.	
4040	654.0101 CONCRETE BASES TYPE 1	2.000 EACH	.		.	
4050	654.0105 CONCRETE BASES TYPE 5	19.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:
20130514008PROJECT(S):
1206-00-72
1206-07-77
1206-07-81
1206-07-83FEDERAL ID(S):
N/A
N/A
N/A
N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4060	654.0210 CONCRETE CONTROL CABINET BASES TYPE 8	1.000 EACH	.		.	
4070	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG	1,122.000 LF	.		.	
4080	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG	1,208.000 LF	.		.	
4090	655.0250 CABLE TRAFFIC SIGNAL 9-14 AWG	375.000 LF	.		.	
4100	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG	1,057.000 LF	.		.	
4110	655.0270 CABLE TRAFFIC SIGNAL 15-14 AWG	390.000 LF	.		.	
4120	655.0305 CABLE TYPE UF 2-12 AWG GROUNDED	1,722.000 LF	.		.	
4130	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	3,992.000 LF	.		.	
4140	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	9,090.000 LF	.		.	
4150	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	770.000 LF	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4160	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG	8,850.000 LF	.		.	
4170	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG	900.000 LF	.		.	
4180	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG	5,320.000 LF	.		.	
4190	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG	8,275.000 LF	.		.	
4200	655.0640 ELECTRICAL WIRE LIGHTING 1 AWG	2,600.000 LF	.		.	
4210	655.0700 LOOP DETECTOR LEAD IN CABLE	8,519.000 LF	.		.	
4220	655.0800 LOOP DETECTOR WIRE	6,520.000 LF	.		.	
4230	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 01. SEMINOLE & SENTINEL	LUMP	LUMP		.	
4240	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 02. SEMINOLE & NAKOMA	LUMP	LUMP		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4250	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 03. CTH PB & CTH M	LUMP	LUMP			.
4260	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 04. FISH HATCHERY & CTH M	LUMP	LUMP			.
4270	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 05. DMS-13-0037	LUMP	LUMP			.
4280	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 06. DMS-13-0031	LUMP	LUMP			.
4290	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 07. STA 96+66 MR	LUMP	LUMP			.
4300	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 08. DMS-13-0034/0035	LUMP	LUMP			.
4310	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 09. DMS-13-0036	LUMP	LUMP			.
4320	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 10. PCMS-01-1038	LUMP	LUMP			.

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4330	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 11. PCMS-01-1039	LUMP	LUMP			.
4340	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 01. CCTV-13-0061	LUMP	LUMP			.
4350	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 02. CCTV-13-0062	LUMP	LUMP			.
4360	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 03. DMS-13-0037	LUMP	LUMP			.
4370	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 04. DMS-13-0031	LUMP	LUMP			.
4380	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 05. DMS-13-0032/0033	LUMP	LUMP			.
4390	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 06. DMS-13-0034/0035	LUMP	LUMP			.

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4400	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 07. DMS-13-0036	LUMP	LUMP			.
4410	657.0100 PEDESTAL BASES	11.000 EACH	.		.	
4420	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	10.000 EACH	.		.	
4430	657.0322 POLES TYPE 5-ALUMINUM	10.000 EACH	.		.	
4440	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	9.000 EACH	.		.	
4450	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	2.000 EACH	.		.	
4460	657.0710 LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 12-FT	5.000 EACH	.		.	
4470	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL	24.000 EACH	.		.	
4480	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL	6.000 EACH	.		.	

SCHEDULE OF ITEMS

REVISED:

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4490	658.0120 TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL	1.000 EACH	.		.	
4500	658.0155 TRAFFIC SIGNAL FACE 3-12 INCH HORIZONTAL	5.000 EACH	.		.	
4510	658.0165 TRAFFIC SIGNAL FACE 5-12 INCH HORIZONTAL	1.000 EACH	.		.	
4520	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH	29.000 EACH	.		.	
4530	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH	6.000 EACH	.		.	
4540	658.0225 BACKPLATES SIGNAL FACE 5 SECTION 12-INCH	2.000 EACH	.		.	
4550	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH	8.000 EACH	.		.	
4560	658.0500 PEDESTRIAN PUSH BUTTONS	8.000 EACH	.		.	
4570	658.0600 LED MODULES 12-INCH RED BALL	33.000 EACH	.		.	
4580	658.0605 LED MODULES 12-INCH YELLOW BALL	33.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4590	658.0610 LED MODULES 12-INCH GREEN BALL	33.000 EACH	.		.	
4600	658.0615 LED MODULES 12-INCH RED ARROW	4.000 EACH	.		.	
4610	658.0620 LED MODULES 12-INCH YELLOW ARROW	10.000 EACH	.		.	
4620	658.0625 LED MODULES 12-INCH GREEN ARROW	8.000 EACH	.		.	
4630	658.0660 LED MODULES COUNTDOWN TIMER 12-INCH	8.000 EACH	.		.	
4640	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 01. SEMINOLE & SENTINEL	LUMP	LUMP		.	
4650	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 02. SEMINOLE & NAKOMA	LUMP	LUMP		.	
4660	658.5069 SIGNAL MOUNTING HARDWARE (LOCATION) 03. CTH PB & CTH M	LUMP	LUMP		.	
4670	659.0115 LUMINAIRES UTILITY HPS 150 WATTS	5.000 EACH	.		.	
4680	659.0802 PLAQUES SEQUENCE IDENTIFICATION	50.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4690	670.0100 FIELD SYSTEM INTEGRATOR	LUMP	LUMP			.
4700	670.0200 ITS DOCUMENTATION	LUMP	LUMP			.
4710	671.0300 FIBER OPTIC CABLE MARKER	11.000 EACH	.			.
4720	672.0250 BASE CAMERA POLE 50-FT	2.000 EACH	.			.
4730	673.0105 COMMUNICATION VAULT TYPE 1	1.000 EACH	.			.
4740	674.0200 CABLE MICROWAVE DETECTOR	1,005.000 LF	.			.
4750	674.0300 REMOVE CABLE	2,715.000 LF	.			.
4760	674.0400 REINSTALL CABLE	219.000 LF	.			.
4770	675.0300 INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR ASSEMBLY	12.000 EACH	.			.
4780	675.0400.S INSTALL ETHERNET SWITCH	6.000 EACH	.			.

SCHEDULE OF ITEMS

CONTRACT:

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4790	677.0100 INSTALL CAMERA POLE	2.000 EACH	.		.	
4800	677.0200 INSTALL CAMERA ASSEMBLY	3.000 EACH	.		.	
4810	677.0300.S INSTALL VIDEO ENCODER	3.000 EACH	.		.	
4820	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT	2,769.000 LF	.		.	
4830	678.0200 FIBER OPTIC SPLICE ENCLOSURE	2.000 EACH	.		.	
4840	678.0300 FIBER OPTIC SPLICE	23.000 EACH	.		.	
4850	678.0400 FIBER OPTIC TERMINATION	30.000 EACH	.		.	
4860	678.0500 COMMUNICATION SYSTEM TESTING	LUMP	LUMP		.	
4870	690.0150 SAWING ASPHALT	25,106.000 LF	.		.	
4880	690.0250 SAWING CONCRETE	3,786.000 LF	.		.	

SCHEDULE OF ITEMS

CONTRACT:

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1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4890	SPV.0035 SPECIAL 01. POND LINER CLAY	6,000.000 CY	.		.	
4900	SPV.0035 SPECIAL 02. EXCAVATION SPECIAL	22,700.000 CY	.		.	
4910	SPV.0035 SPECIAL 03. ABANDON SANITARY SEWER -SLURRY	4.000 CY	.		.	
4920	SPV.0035 SPECIAL 04. ROCK EXCAVATION SPECIAL	25.000 CY	.		.	
4930	SPV.0045 SPECIAL 01. PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS	1,209.000 DAY	.		.	
4940	SPV.0060 SPECIAL 01. UTILITY LINE OPENING (ULO)	32.000 EACH	.		.	
4950	SPV.0060 SPECIAL 02. REMOVE EXISTING CITY-OWNED LIGHT POLE ASSEMBLY	9.000 EACH	.		.	
4960	SPV.0060 SPECIAL 03. REMOVE EXISTING WISDOT-OWNED LIGHT POLE ASSEMBLY	2.000 EACH	.		.	
4970	SPV.0060 SPECIAL 04. RELOCATING EXISTING LIGHT POLE ASSEMBLY	10.000 EACH	.		.	

SCHEDULE OF ITEMS

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1206-00-72

N/A

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
4980	SPV.0060 SPECIAL 05. RELOCATING EXISTING TRAFFIC SIGNAL POLE	2.000 EACH	.		.	
4990	SPV.0060 SPECIAL 06. POSTS GALVANIZED STEEL FOR BARRIER WALL	1.000 EACH	.		.	
5000	SPV.0060 SPECIAL 07. CONSTRUCTION STAKING CURB RAMP	11.000 EACH	.		.	
5010	SPV.0060 SPECIAL 08. CONSTRUCTION STAKING SIGN STRUCTURE	13.000 EACH	.		.	
5020	SPV.0060 SPECIAL 10. STORM SEWER TAP	8.000 EACH	.		.	
5030	SPV.0060 SPECIAL 100. FURNISH LED MODULES 12-INCH RED BALL	12.000 EACH	.		.	
5040	SPV.0060 SPECIAL 101. FURNISH LED MODULES 12-INCH YELLOW BALL	12.000 EACH	.		.	
5050	SPV.0060 SPECIAL 102. FURNISH LED MODULES 12-INCH GREEN BALL	12.000 EACH	.		.	
5060	SPV.0060 SPECIAL 11. MANHOLE ML205	1.000 EACH	.		.	
5070	SPV.0060 SPECIAL 12. MANHOLE ML215	1.000 EACH	.		.	

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5080	SPV.0060 SPECIAL 13. MANHOLE VR346.1	1.000 EACH	.		.	
5090	SPV.0060 SPECIAL 14. MANHOLES 9-FT DIAMETER	12.000 EACH	.		.	
5100	SPV.0060 SPECIAL 15. SLOTTED VANE DRAIN TYPE A 6-FT	1.000 EACH	.		.	
5110	SPV.0060 SPECIAL 16. WEIR WALL ML204.1	1.000 EACH	.		.	
5120	SPV.0060 SPECIAL 17. WEIR WALL VR344.1	1.000 EACH	.		.	
5130	SPV.0060 SPECIAL 18. APRON ENDWALLS FOR STORM SEWER PIPE REINFORCED CONCRETE BOX 3X6-FT	1.000 EACH	.		.	
5140	SPV.0060 SPECIAL 19. CLAY ANTI-SEEPAGE COLLAR	3.000 EACH	.		.	
5150	SPV.0060 SPECIAL 20. COVERING STORM SEWER	38.000 EACH	.		.	
5160	SPV.0060 SPECIAL 21. LOCATING STORM SEWER	42.000 EACH	.		.	
5170	SPV.0060 SPECIAL 22. SANITARY SEWER ACCESS STRUCTURE (4-FOOT DIAMETER)	7.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:

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1206-00-72

N/A

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5180	SPV.0060 SPECIAL 23. MANHOLE COVERS TYPE MAD	8.000 EACH	.		.	
5190	SPV.0060 SPECIAL 24. SANITARY SEWER INTERNAL CHIMNEY SEAL	6.000 EACH	.		.	
5200	SPV.0060 SPECIAL 25. SANITARY SEWER TAP	10.000 EACH	.		.	
5210	SPV.0060 SPECIAL 26. SANITARY LATERAL ELECTRONIC MARKER	1.000 EACH	.		.	
5220	SPV.0060 SPECIAL 27. SANITARY LATERAL RECONNECT	1.000 EACH	.		.	
5230	SPV.0060 SPECIAL 28. REMOVE SANITARY SEWER STRUCTURE	3.000 EACH	.		.	
5240	SPV.0060 SPECIAL 29. ABANDON SANITARY SEWER-PIPE PLUG	4.000 EACH	.		.	
5250	SPV.0060 SPECIAL 30. ABANDON WATER MAIN	2.000 EACH	.		.	
5260	SPV.0060 SPECIAL 31. POSTS ROUND TUBULAR STEEL 2-INCH 10-FT	27.000 EACH	.		.	
5270	SPV.0060 SPECIAL 32. POSTS ROUND TUBULAR STEEL 2-INCH 12-FT	21.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:
20130514008PROJECT(S):
1206-00-72
1206-07-77
1206-07-81
1206-07-83FEDERAL ID(S):
N/A
N/A
N/A
N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5280	SPV.0060 SPECIAL 33. POSTS ROUND TUBULAR STEEL 2-INCH 14-FT	20.000 EACH	.		.	
5290	SPV.0060 SPECIAL 34. POSTS ROUND TUBULAR STEEL 2-INCH 16-FT	4.000 EACH	.		.	
5300	SPV.0060 SPECIAL 35. PRECAST SIGN POST BASE	82.000 EACH	.		.	
5310	SPV.0060 SPECIAL 36. CONCRETE BASE TYPE G	15.000 EACH	.		.	
5320	SPV.0060 SPECIAL 37. CONCRETE BASE TYPE LB-3	2.000 EACH	.		.	
5330	SPV.0060 SPECIAL 38. CONCRETE BASE TYPE LB-8	16.000 EACH	.		.	
5340	SPV.0060 SPECIAL 39. CONCRETE BASE TYPE P	4.000 EACH	.		.	
5350	SPV.0060 SPECIAL 40. LOOP DETECTOR SPLICE	10.000 EACH	.		.	
5360	SPV.0060 SPECIAL 41. PULL BOX TYPE I	4.000 EACH	.		.	
5370	SPV.0060 SPECIAL 42. PULL BOX TYPE III	19.000 EACH	.		.	

SCHEDULE OF ITEMS

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1206-00-72

N/A

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5380	SPV.0060 SPECIAL 43. PULL BOX TYPE V	7.000 EACH	.		.	
5390	SPV.0060 SPECIAL 44. PULL BOX MARKER	19.000 EACH	.		.	
5400	SPV.0060 SPECIAL 45. TRAFFIC SIGNAL CONTROL CABINET	4.000 EACH	.		.	
5410	SPV.0060 SPECIAL 46. INSTALL MOUNTED CABINET	8.000 EACH	.		.	
5420	SPV.0060 SPECIAL 47. INSTALL CELLULAR MODEM	7.000 EACH	.		.	
5430	SPV.0060 SPECIAL 48. INSTALL SOLAR-POWERED BLUETOOTH SENSOR	32.000 EACH	.		.	
5440	SPV.0060 SPECIAL 49. FURNISH TRAFFIC SIGNAL TROMBONE ARMS 25-FOOT	4.000 EACH	.		.	
5450	SPV.0060 SPECIAL 50. INSTALL IP WIRELESS 5.8 GHZ RADIO/ANTENNA	8.000 EACH	.		.	
5460	SPV.0060 SPECIAL 51. INSTALL OVERHEAD FREEWAY DMS FULL MATRIX AND CONTROLLER	6.000 EACH	.		.	
5470	SPV.0060 SPECIAL 52. INSTALL SPREAD SPECTRUM RADIO	4.000 EACH	.		.	

SCHEDULE OF ITEMS

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N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5480	SPV.0060 SPECIAL 53. LUMINAIRES 250-WATT HPS	17.000 EACH	.		.	
5490	SPV.0060 SPECIAL 54. INSTALL YAGI ANTENNA	2.000 EACH	.		.	
5500	SPV.0060 SPECIAL 55. TRAFFIC SIGNAL DOME CAMERA	2.000 EACH	.		.	
5510	SPV.0060 SPECIAL 56. TRAFFIC SIGNAL ETHERNET SWITCH	3.000 EACH	.		.	
5520	SPV.0060 SPECIAL 57. TRAFFIC SIGNAL MASTER ETHERNET SWITCH	1.000 EACH	.		.	
5530	SPV.0060 SPECIAL 58. TRANSFORMER BASE STEEL, 16-INCH	2.000 EACH	.		.	
5540	SPV.0060 SPECIAL 59. TRANSFORMER BASE STEEL, 20-INCH	13.000 EACH	.		.	
5550	SPV.0060 SPECIAL 60. INSTALL GROUND MOUNT DYNAMIC MESSAGE SIGN AND CONTROLLER	1.000 EACH	.		.	
5560	SPV.0060 SPECIAL 61. 8-COUNT FIBER OPTIC CONNECTOR 1300-FEET	1.000 EACH	.		.	
5570	SPV.0060 SPECIAL 62. WOOD POLE, 50-FT WITH SERVICE	1.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5580	SPV.0060 SPECIAL 63. INSTALL PORTABLE CHANGEABLE MESSAGE SIGN	4.000 EACH	.		.	
5590	SPV.0060 SPECIAL 64. INSTALL SOLAR POWER ASSEMBLY	1.000 EACH	.		.	
5600	SPV.0060 SPECIAL 65. LIGHTING CONTROL CABINET	1.000 EACH	.		.	
5610	SPV.0060 SPECIAL 66. DECORATIVE PEDESTRIAN BOLLARD LUMINAIRE	10.000 EACH	.		.	
5620	SPV.0060 SPECIAL 68. CONCRETE WEIR WALL 6 1/2-INCH	1.000 EACH	.		.	
5630	SPV.0060 SPECIAL 69. CONCRETE WEIR WALL 18-INCH	1.000 EACH	.		.	
5640	SPV.0060 SPECIAL 70. CUT-IN CONNECTION	3.000 EACH	.		.	
5650	SPV.0060 SPECIAL 71. HYDRANTS	1.000 EACH	.		.	
5660	SPV.0060 SPECIAL 72. WATER VALVE, 8-INCH	3.000 EACH	.		.	
5670	SPV.0060 SPECIAL 73. WATER VALVE, 16-INCH	2.000 EACH	.		.	

SCHEDULE OF ITEMS

CONTRACT:
20130514008PROJECT(S):
1206-00-72
1206-07-77
1206-07-81
1206-07-83FEDERAL ID(S):
N/A
N/A
N/A
N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5680	SPV.0060 SPECIAL 74. ADJUST WATER VALVE BOX	2.000 EACH	.		.	
5690	SPV.0060 SPECIAL 75. MODIFY EXISTING SIGN STRUCTURE, S-13-188	1.000 EACH	.		.	
5700	SPV.0060 SPECIAL 76. TRAFFIC SIGNAL TROMBONE ARMS 15-FOOT	7.000 EACH	.		.	
5710	SPV.0060 SPECIAL 77. TRAFFIC SIGNAL TROMBONE ARMS 20-FOOT	1.000 EACH	.		.	
5720	SPV.0060 SPECIAL 78. TRAFFIC SIGNAL TROMBONE ARMS 25-FOOT	4.000 EACH	.		.	
5730	SPV.0060 SPECIAL 79. POLE 20-FOOT, 7 GAUGE	3.000 EACH	.		.	
5740	SPV.0060 SPECIAL 80. POLE 30-FOOT, 11 GAUGE	2.000 EACH	.		.	
5750	SPV.0060 SPECIAL 81. POLE 30-FOOT, 7 GAUGE	13.000 EACH	.		.	
5760	SPV.0060 SPECIAL 82. LUMINAIRE ARM 10-FOOT	17.000 EACH	.		.	
5770	SPV.0060 SPECIAL 83. REESTABLISH SECTION CORNER MONUMENTS	1.000 EACH	.		.	

SCHEDULE OF ITEMS

REVISED:

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5780	SPV.0060 SPECIAL 84. CONCRETE CUTOFF WALL	11.000 EACH	.		.	
5790	SPV.0060 SPECIAL 85. PULL BOXES, CONCRETE POLYMER, 24X36-INCH	2.000 EACH	.		.	
5800	SPV.0060 SPECIAL 86. COVER PLATES	4.000 EACH	.		.	
5810	SPV.0060 SPECIAL 87. DECORATIVE MEDALLION	4.000 EACH	.		.	
5820	SPV.0060 SPECIAL 88. MEDALLION CONCRETE STAINING MULTI-COLOR	4.000 EACH	.		.	
5830	SPV.0060 SPECIAL 89. CONCRETE BARRIER TRANSITION P32-S42 SPECIAL	1.000 EACH	.		.	
5840	SPV.0060 SPECIAL 90. CONCRETE BARRIER TRANSITION S56-56VERTICAL	2.000 EACH	.		.	
5850	SPV.0060 SPECIAL 91. CONCRETE BARRIER TRANSITION S56-56VERTICAL SPECIAL	2.000 EACH	.		.	
5860	SPV.0060 SPECIAL 92. CONCRETE BARRIER TRANSITION NJ32DF-S36 SPECIAL	2.000 EACH	.		.	

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1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5870	SPV.0060 SPECIAL 93. CONCRETE BARRIER TRANSITION S36-S42 SPECIAL	2.000 EACH	.		.	
5880	SPV.0060 SPECIAL 94. CONCRETE BARRIER TRANSITION S42-S56 SPECIAL	2.000 EACH	.		.	
5890	SPV.0060 SPECIAL 95. HELICAL TIEBACK ANCHORS	31.000 EACH	.		.	
5900	SPV.0060 SPECIAL 96. OUTDOOR SERVICE PEDESTAL	2.000 EACH	.		.	
5910	SPV.0060 SPECIAL 97. FURNISH TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL	8.000 EACH	.		.	
5920	SPV.0060 SPECIAL 98. FURNISH TRAFFIC SIGNAL FACE 3-12 INCH HORIZONTAL	4.000 EACH	.		.	
5930	SPV.0060 SPECIAL 99. FURNISH BACKPLATES SIGNAL FACE 3-SECTION 12-INCH	12.000 EACH	.		.	
5940	SPV.0075 SPECIAL 01. STREET SWEEPING	80.000 HRS	.		.	
5950	SPV.0085 SPECIAL 01. SEEDING MIXTURE WET DETENTION BASIN	280.000 LB	.		.	

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1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
5960	SPV.0090 SPECIAL 01. REMOVING EXISTING TIMBER PILING	600.000 LF	.		.	
5970	SPV.0090 SPECIAL 02. EARTH DRILLING 30-INCH DIAMETER	1,992.000 LF	.		.	
5980	SPV.0090 SPECIAL 03. CONCRETE BARRIER PRECAST 12.5-FT	6,775.000 LF	.		.	
5990	SPV.0090 SPECIAL 04. RELOCATING CONCRETE BARRIER PRECAST 12.5-FT	5,679.000 LF	.		.	
6000	SPV.0090 SPECIAL 05. GLARE SCREENS TEMPORARY	4,510.000 LF	.		.	
6010	SPV.0090 SPECIAL 06. TRENCHLESS STORM SEWER CONSTRUCTION 48-INCH	334.000 LF	.		.	
6020	SPV.0090 SPECIAL 07. CONCRETE CURB & GUTTER 4-INCH SLOPED 24-INCH TYPE D	1,507.000 LF	.		.	
6030	SPV.0090 SPECIAL 08. CONCRETE CURB & GUTTER 32-INCH SPECIAL	38.000 LF	.		.	
6040	SPV.0090 SPECIAL 09. SANITARY SEWER PIPE, 8-INCH	101.000 LF	.		.	
6050	SPV.0090 SPECIAL 10. SANITARY SEWER PIPE, 10-INCH	112.000 LF	.		.	

SCHEDULE OF ITEMS

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1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6060	SPV.0090 SPECIAL 11. SANITARY SEWER LATERAL	2.000 LF	.		.	
6070	SPV.0090 SPECIAL 12. SELECT FILL FOR SANITARY SEWER	213.000 LF	.		.	
6080	SPV.0090 SPECIAL 13. ELECTRICAL WIRE LIGHTING - ALUMINUM 2 AWG	2,000.000 LF	.		.	
6090	SPV.0090 SPECIAL 14. WATER MAIN INSULATION	20.000 LF	.		.	
6100	SPV.0090 SPECIAL 15. WATER MAIN, 6-INCH	7.000 LF	.		.	
6110	SPV.0090 SPECIAL 16. WATER MAIN, 8-INCH	38.000 LF	.		.	
6120	SPV.0090 SPECIAL 17. WATER MAIN, 16-INCH	476.000 LF	.		.	
6130	SPV.0090 SPECIAL 18. SELECT FILL FOR WATER MAIN	500.000 LF	.		.	
6140	SPV.0105 SPECIAL 01. SAND AND TRASH COLLECTOR	LUMP	LUMP		.	
6150	SPV.0105 SPECIAL 02. CONSTRUCTION STAKING STRUCTURE, R-13-204	LUMP	LUMP		.	

SCHEDULE OF ITEMS

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1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6160	SPV.0105 SPECIAL 03. CONSTRUCTION STAKING STRUCTURE, R-13-235	LUMP	LUMP			.
6170	SPV.0105 SPECIAL 04. CONSTRUCTION STAKING STRUCTURE, R-13-236	LUMP	LUMP			.
6180	SPV.0105 SPECIAL 05. CONSTRUCTION STAKING STRUCTURE, R-13-242	LUMP	LUMP			.
6190	SPV.0105 SPECIAL 06. CONSTRUCTION STAKING STRUCTURE, R-13-243	LUMP	LUMP			.
6200	SPV.0105 SPECIAL 07. CONSTRUCTION STAKING STRUCTURE, R-13-244	LUMP	LUMP			.
6210	SPV.0105 SPECIAL 08. CONSTRUCTION STAKING STRUCTURE, R-13-245	LUMP	LUMP			.
6220	SPV.0105 SPECIAL 09. CONSTRUCTION STAKING STRUCTURE, R-13-1000-TW1	LUMP	LUMP			.
6230	SPV.0105 SPECIAL 10. CONSTRUCTION STAKING STRUCTURE, R-13-1000-TW2	LUMP	LUMP			.
6240	SPV.0105 SPECIAL 11. CONSTRUCTION STAKING STRUCTURE, R-13-1000-TW3	LUMP	LUMP			.
6250	SPV.0105 SPECIAL 12. CONSTRUCTION STAKING STRUCTURE, R-13-1000-TW4	LUMP	LUMP			.

SCHEDULE OF ITEMS

CONTRACT:

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1206-00-72

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N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6260	SPV.0105 SPECIAL 13. CONSTRUCTION STAKING STRUCTURE, N-13-2	LUMP	LUMP			.
6270	SPV.0105 SPECIAL 14. CONSTRUCTION STAKING STRUCTURE, N-13-3	LUMP	LUMP			.
6280	SPV.0105 SPECIAL 15. CONSTRUCTION STAKING STRUCTURE, N-13-4	LUMP	LUMP			.
6290	SPV.0105 SPECIAL 16. RAILING STEEL TYPE C1 GALVANIZED PEDESTRIAN, R-13-204	LUMP	LUMP			.
6300	SPV.0105 SPECIAL 17. RAILING STEEL TYPE C3 GALVANIZED PEDESTRIAN, B-13-666	LUMP	LUMP			.
6310	SPV.0105 SPECIAL 18. RAILING STEEL TYPE C3 GALVANIZED PEDESTRIAN, R-13-242	LUMP	LUMP			.
6320	SPV.0105 SPECIAL 19. RAILING STEEL TYPE C3 GALVANIZED PEDESTRIAN, R-13-243	LUMP	LUMP			.
6330	SPV.0105 SPECIAL 20. RAILING STEEL SPECIAL GALVANIZED PEDESTRIAN, B-13-666	LUMP	LUMP			.
6340	SPV.0105 SPECIAL 21. SALVAGE CANTILEVER SIGN TRUSS S-13-174	LUMP	LUMP			.

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6350	SPV.0105 SPECIAL 22. SALVAGE CANTILEVER SIGN TRUSS S-13-175	LUMP	LUMP			.
6360	SPV.0105 SPECIAL 23. RESEARCH AND LOCATE EXISTING PROPERTY MONUMENTS	LUMP	LUMP			.
6370	SPV.0105 SPECIAL 24. VERIFY AND REPLACE EXISTING PROPERTY MONUMENTS	LUMP	LUMP			.
6380	SPV.0105 SPECIAL 25. B-13-666 LIGHTING	LUMP	LUMP			.
6390	SPV.0105 SPECIAL 26. TEMPORARY LIGHTING (FREEPORT CONNECTOR)	LUMP	LUMP			.
6400	SPV.0105 SPECIAL 27. PAINTING EPOXY SYSTEM PEDESTRIAN BRIDGE B-13-666	LUMP	LUMP			.
6410	SPV.0105 SPECIAL 28. PREFABRICATED STEEL TRUSS PEDESTRIAN BRIDGE, B-13-666 LRFD	LUMP	LUMP			.
6420	SPV.0105 SPECIAL 29. DEWATERING FOR SANITARY SEWER CONSTRUCTION	LUMP	LUMP			.
6430	SPV.0105 SPECIAL 30. HEAVY WASTEWATER CONTROL	LUMP	LUMP			.

SCHEDULE OF ITEMS

CONTRACT:

PROJECT(S):

FEDERAL ID(S):

20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6440	SPV.0105 SPECIAL 31. CONSTRUCTION STAKING SANITARY SEWER	LUMP	LUMP			.
6450	SPV.0105 SPECIAL 32. CONSTRUCTION STAKING WATER MAIN	LUMP	LUMP			.
6460	SPV.0105 SPECIAL 33. CONCRETE STAIN	LUMP	LUMP			.
6470	SPV.0105 SPECIAL 34. PEDESTRIAN BRIDGE DECORATIVE ARCH	LUMP	LUMP			.
6480	SPV.0105 SPECIAL 35. WASTEWATER CONTROL	LUMP	LUMP			.
6490	SPV.0105 SPECIAL 36. PILE DRIVING VIBRATION MONITORING B-13-666	LUMP	LUMP			.
6500	SPV.0105 SPECIAL 37. RAILING TUBULAR SCREENING GALVANIZED B-13-664	LUMP	LUMP			.
6510	SPV.0120 SPECIAL 01. WATER FOR SEEDED AREAS	1,237.900 MGAL	.			.
6520	SPV.0165 SPECIAL 01. TEMPORARY SHORING SOIL NAIL WALL R-13-1000-TW2	2,260.000 SF	.			.

SCHEDULE OF ITEMS

CONTRACT:

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20130514008

1206-00-72

N/A

1206-07-77

N/A

1206-07-81

N/A

1206-07-83

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6530	SPV.0165 SPECIAL 02. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD, R-13-204	SF 5,160.000	.		.	
6540	SPV.0165 SPECIAL 03. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD, R-13-242	SF 6,950.000	.		.	
6550	SPV.0165 SPECIAL 04. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD, R-13-243	SF 2,430.000	.		.	
6560	SPV.0165 SPECIAL 05. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD, R-13-244	SF 510.000	.		.	
6570	SPV.0165 SPECIAL 06. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD, R-13-245	SF 460.000	.		.	
6580	SPV.0165 SPECIAL 07. PRECAST PANELS FOR POST AND PANEL WALLS	SF 6,633.000	.		.	
6590	SPV.0165 SPECIAL 08. SHORING LEFT IN PLACE	SF 1,400.000	.		.	
6600	SPV.0165 SPECIAL 09. STAMPED COLORED CONCRETE SIDEWALK 4-INCH	SF 35.000	.		.	
6610	SPV.0165 SPECIAL 10. PILING STEEL SHEET TEMPORARY LEFT IN PLACE	SF 24,228.000	.		.	

SCHEDULE OF ITEMS

CONTRACT:

20130514008

PROJECT(S):

1206-00-72

1206-07-77

1206-07-81

1206-07-83

FEDERAL ID(S):

N/A

N/A

N/A

N/A

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
6620	SPV.0180 SPECIAL 01. TEMPORARY PEDESTRIAN/BICYCLE ACCESS	765.000 SY		.		.
6630	SPV.0180 SPECIAL 02. CONCRETE APPROACH SLAB 6-INCH	33.000 SY		.		.
6640	SPV.0195 SPECIAL 01. EXC, HAUL & DISPOSAL OF CONTAMINATED SOIL & MGMT OF CONTAMINATED GROUNDWATER	2,000.000 TON		.		.
	SECTION 0001 TOTAL					.
	TOTAL BID					.

PLEASE ATTACH SCHEDULE OF ITEMS HERE