HIGHWAY WORK PROPOSAL

Wisconsin Department of Transportation
06/2017 s.66.0901(7) Wis. Stats

Proposal Number: 019

COUNTY	STATE PROJECT	FEDERAL	PROJECT DESCRIPTION	HIGHWAY
Door	4140-19-71	N/A	Gibraltar - Sister Bay; Bluff Ln - Country Walk Dr	STH 042

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

Proposal Guaranty Required: $100,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Date: December 11, 2018 Time (Local Time): 9:00 am	Firm Name, Address, City, State, Zip Code SAMPLE NOT FOR BIDDING PURPOSES
Contract Completion Time September 27, 2019	
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)	(Bidder Signature)
(Print or Type Name, Notary Public, State Wisconsin)	(Print or Type Bidder Name)
(Date Commission Expires)	(Bidder Title)

Notary Seal

For Department Use Only

Type of Work:
Grading, Base, Milling, Asphalt Pavement, Culvert Pipe, Storm Sewer, Curb and Gutter, Sidewalk, Concrete Driveway, Beam Guard, Retaining Walls, Fence, Pavement Markings, Signs, Street Lighting

Notice of Award Dated	Date Guaranty Returned

PLEASE ATTACH
PROPOSAL GUARANTY HERE

Effective with November 2007 Letting

PROPOSAL REQUIREMENTS AND CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

Effective with August 2015 Letting

BID PREPARATION

Preparing the Proposal Schedule of Items

A General

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

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

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

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

The contractor is responsible for reviewing this web site for general notices as well as information regarding proposals in each letting. The department will also post special notices of all addenda to each proposal through this web site no later than 4:00 PM local time on the Thursday before the letting. Check the department's web site after 5:00 PM 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 PM 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:
https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

or by calling the department at (608) 266-1631. Addenda can ONLY be obtained from the departments web site listed above or by picking up the addenda at the Bureau of Highway Construction, 4th floor, 4822 Madison Yards Way, Madison, WI, during regular business hours.

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

B Submitting Electronic Bids

B.1 On the Internet

(1) Do the following before submitting the bid:

1. Have a properly executed annual bid bond on file with the department.

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

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

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

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

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

(1) Download the latest schedule of items from the Wisconsin pages of the Bid Express™ web site reflecting the latest addenda posted on the department's web site at:
https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

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

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

Bidder Name

BN00

Proposals: 1, 12, 14, & 22

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

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

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

1. The check code printed on the bottom of the printout of the Expedite™ generated schedule of items is not the same on each page.
2. The check code printed on the printout of the Expedite™ generated schedule of items is not the same as the check code for that proposal provided on the diskette or CD ROM.

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

C Waiver of Electronic Submittal

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

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

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

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

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

PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

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

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

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

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

(Signature of Authorized Contractor Representative) (Date)

March 2010

LIST OF SUBCONTRACTORS

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

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

Name of Subcontractor	Class of Work	Estimated Value

DECEMBER 2000

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Special Provisions

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STSP'S Revised June 28, 2018

SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 4140-19-71, STH 42, Gibraltar to Sister Bay, Bluff Lane to Country Walk Drive, STH 42, Door 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, 2019 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 (20180628)

2. Scope of Work.

The work under this contract shall consist of milling asphaltic pavement, excavation common asphaltic pavement, storm sewer, sidewalk, driveway, lighting, excavation, signing, pavement marking and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. Prosecution and Progress.

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

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

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

The contract time for completion is based on an expedited schedule and may require extraordinary forces and equipment.

Take care in protecting all building faces and adjacent privately-owned structures from damage, dirt, undermining, and wet concrete. When doing the work near these items, put a shield (plywood, sheeting, etc.) up against the building to protect it. Take caution when excavating, boring, or drilling adjacent to privately owned structures to ensure undermining does not occur. The costs for this work is incidental to the contract. The contractor is responsible for returning any privately-owned structures and building faces to its original condition if any damage/undermining occurs, or any dirt or concrete is adhered to the structure face.

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

Anticipate cold weather and early spring HMA paving, installing ancillary concrete, retaining wall construction, and storm sewer work. Plan to heat aggregates and water for concrete mixes and that the heating of the aggregate and water are incidental to those concrete items. There will be no adverse weather delay for cold weather construction.

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

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

Staging

Supplemental traffic control for the project consists of three stages and two phases, described as follows:

Stage 1 - *March 1 to noon May 24, 2019*– Begin work operations on or after March 1, 2019. Work on this stage includes, but is not limited to, the following items: common excavation, HMA milling, HMA pavement, curb and gutter, sidewalk, storm sewer (within Gibraltar and Ephraim), retaining walls, lighting, restoration items, pavement marking, and signing. Complete the following activities as listed below:

Phase A – *Complete the following items prior to noon May 3, 2019*

1) HMA pavement, curb and gutter, storm sewer, and pavement marking on Shore Road 10+00-15+56 within the Town of Gibraltar.
2) Storm sewer, asphaltic base within storm sewer trenches, and pavement markings (temporary or permanent) on STH 42 from 96+50 to 127+00 within the Town of Gibraltar.
3) Retaining walls, storm sewer, and base aggregate dense to allow for two 12-foot local traffic travel lanes from 127+00-145+00 within the Town of Gibraltar.
4) Asphaltic base within storm sewer trenches on STH 42 from 347+00-349+00 and 369+00-372+00 within the Village of Ephraim.

Phase B – *Complete the following items prior to noon May 24, 2019*

1) Storm Sewer, curb and gutter, sidewalk, lighting, HMA pavement, pavement marking, signing, restoration items and removing all traffic control devices on STH 42 from 96+50-135+00 Bluff Lane to Windmill Lane, and Shore Road from 10+00-15+56 within the Town of Gibraltar.
2) Storm Sewer, curb and gutter, sidewalk along STH 42 southbound, HMA pavement, signing, and pavement marking from 134+35-145+00 Windmill Lane to the north/west side of County F within the Town of Gibraltar.
3) Complete all work from 306+00-374+00 Brookside Lane to Anderson Lane within the Village of Ephraim.

Stage 2 – *Complete the following items prior to noon June 28, 2019* **-** Work on this stage includes, but is not limited to, the following items; common excavation, HMA milling, HMA pavement, curb and gutter, sidewalk, storm sewer, lighting, restoration items, pavement marking, and signing.

1) Complete storm sewer, curb and gutter, sidewalk along STH 42 southbound, HMA pavement, signing, lighting, pavement marking, and restoration items from 145+00-159+00, County F to the pedestrian crossing at the Door County YMCA within the Town of Gibraltar. Remove the detour and reopen STH 42 to traffic.
2) Remove the temporary pavement connection from Gibraltar Road to the North Gibraltar School Entrance to an extent that a STH 42 shoulder closure is not necessary to complete temporary connection restoration as shown in the plans.
3) Pave lower and upper layers of HMA pavement, shoulder, sign, and place permanent pavement markings at all locations where existing asphalt has been milled.
4) Grade areas along the roadway to a maximum 4:1 shoulder. There shall be no drop-offs along live traffic lanes.
5) Remove all traffic control devices from STH 42 right-of-way unless for storage at an engineer approved location.

Summer Work Restrictions – *Do not work on or adjacent to STH 42 from noon June 28 to 6:00 AM September 3, 2019.*

- Remove all traffic control devices from STH 42

Construction activities listed below will be allowed during the summer work restrictions or as the engineer allows:

- Removing and restoring temporary driveway to Fish Creek Grill
- Sidewalk construction along CTH F and Spring Rd
- Restoration of Old Gibraltar Rd Temporary Connection

Stage 3 – *September 3 to September 27, 2019.*

- Complete all remaining work prior to noon September 27, 2019.

Removal and Installation of Guardrail

The existing guardrail protecting the hazardous slopes from 475+00 – 486+00 is to remain in place at all times when the adjacent shoulders are open to traffic. Prior to removal and replacement of the guardrail, close the adjacent shoulder of STH 42. Once removal of the existing guardrail begins, complete installation of the new guardrail system within 5 calendar days. Do not open the shoulder of STH 42 until the guardrail has been replaced and the hazard is fully protected.

Liquidated Damages

Stage 1 Phase A

Complete all work as specified in Stage 1, Phase A prior to noon May 3, 2019.

If the contractor fails to complete the work listed in Stage 1, Phase A, prior to 11:59 AM May 3, the department will assess the contractor $2,750 in interim liquidated damages. If the work remains incomplete at 12:01 AM May 4, the department will assess the contractor $2,750 in interim liquidated damages for each calendar day that Stage 1, Phase A requirements are not met after 12:01 AM, May 4, 2019. An entire calendar day will be charged for any period of time within a calendar day that the requirements are not met beyond 12:01 AM. Interim liquidated damages will be assessed under administrative item Failing to Open Road to Traffic.

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

Stage 1 Phase B

Complete all work as specified in Stage 1, Phase B, prior to noon May 24, 2019.

If the contractor fails to complete the work listed in Stage 1, Phase B prior to 11:59 AM May 24, the department will assess the contractor $10,000 in interim liquidated damages. If the work remains incomplete at 12:01 AM May 25, the department will assess the contractor $10,000 in interim liquidated damages for each calendar day that Stage 1, Phase B requirements are not met after 12:01 AM, May 25, 2019. An entire calendar day will be charged for any period of time within a calendar day that the requirements are not met beyond 12:01 AM. Interim liquidated damages will be assessed under administrative item Failing to Open Road to Traffic.

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

Stage 2

Complete all work as specified in Stage 2 prior to noon June 28, 2019.

If the contractor fails to complete the work listed in Stage 2 prior to 11:59 AM June 28, the department will assess the contractor $10,000 in interim liquidated damages. If the work remains incomplete at 12:01 AM June 29, the department will assess the contractor $10,000 in interim liquidated damages for each calendar day that Stage 2 requirements are not met after 12:01 AM June 29, 2019. An entire

calendar day will be charged for any period of time within a calendar day that the requirements are not met beyond 12:01 AM. Interim liquidated damages will be assessed under administrative item Failing to Open Road to Traffic.

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

Removal and Installation of Guardrail

If the contractor fails to complete the work necessary to replace guardrail within 5 calendar days of beginning guardrail removal the department will assess the contractor $1,000 in interim liquidated damages for each calendar day the required work remains incomplete. An entire calendar day will be charged for any period of time within a calendar day that the guardrail is not fully installed beyond 12:01 AM.

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

4. Traffic.

General

A milled surface open to through traffic shall not remain in place for longer than 72 hours.

Provide an even cross-sectional profile of the roadway at the end of each day's milling and/or paving operations on roadways open to through traffic. Uneven lanes on roadways open to through traffic will not be allowed except during that days paving or milling operations.

All storm sewer and culvert trenches shall be covered with asphaltic surface base to an elevation consistent with the adjacent pavement surfaces prior to opening STH 42 to through traffic. A compacted aggregate surface at an elevation consistent with the adjacent pavement surfaces may be left over the storm sewer and culvert trenches prior to May 3, 2019 on sections or roadway open to through traffic and within detoured sections of STH 42. All trenches shall be backfilled to an elevation consistent with the adjacent pavement surfaces prior to the contractor leaving the immediate work area. Trenches within detoured sections of roadway may remain open up to 18 hours if justly blockaded from pedestrians and local traffic. The contractor shall monitor and maintain any aggregate surface, and immediately repair those surfaces at the direction of the engineer. Signing used to delineate variations in the surface material shall be incidental to the base aggregate bid item.

Maintain access to all properties throughout the duration of the project. Driveways and/or sidewalks within the project may be closed for the minimum amount of time necessary to construct the new access. Provide the property owners whose driveways and/or sidewalks will be affected by the project a 48-hour minimum notice of the impending work/closure. Allow emergency vehicles access throughout the construction zone at all times.

Close sidewalk/curb ramps in sequential order to provide adequate pedestrian detour access. Maintain a hard surface path for pedestrians along open sections of STH 42. Base aggregate dense or asphalt pavement millings are not considered a hard surface and will not fulfill this requirement. Utilize temporary pedestrian surface bid item.

From Station 96+50-134+00 do not simultaneously close STH 42 northbound and southbound parking lanes. An exception will be allowed during HMA milling and overlaying operations up to 5 calendar days, or as the engineer allows.

Peak Hours

Maintain simultaneous two-way traffic on all roadways open to through traffic during peak hours. Maintain two-way traffic along STH 42 and local roads where the roadway is open to through traffic and/or local access. The contractor may reduce traffic to one lane during daylight non-peak hours by using flagging operations. Maintain traffic with a minimum of 12-foot travel lanes. Lane rental will be assessed according to the Lane Rental Fee Assessment article for each lane closure outside of non-peak hours.

Peak hours as defined as follows:

- From May 31 through October 14
    - Fridays at noon to Sunday 9:00 PM

Non-Peak hours are defined as all times that are not peak hours.

Peninsula State Park Access

Maintain access to Peninsula State Park via Shore Road West at all times. Maintain two-way traffic along Shore Road West. Traffic may be reduced to one lane during daylight hours prior to the completion of Stage 1A by using flagging operations. Maintain traffic with a minimum of 12-foot travel lanes.

Boat Transport Access

Fish Creek Marine and Supply, located at 3859 STH 42, transports boats to Fish Creek Marina/Boat Launch and will require access through the work zone and closed sections of STH 42. Approximately 10 boat transfers will occur in April and early May of 2019. Contact owner Leigh Zielke at (920) 868-3909 to coordinate transport times.

Summer Work Restrictions

Do not work on or adjacent to STH 42 from noon June 28 to 6:00 AM September 3, 2019. The following criteria must be met/maintained through the summer work restriction timeframe:

- Fully open STH 42 to traffic and remove all traffic control devices.
- Lane or Shoulder closures will not be allowed on STH 42.
- Do not operate or store construction equipment or materials alongside STH 42.

School Bus Access

Create and maintain a minimum 15-FT wide gravel temporary school bus access driveway from the existing Gibraltar School south driveway to CTH F. The driveway can utilize existing school driveway areas, STH 42, or a combination of these areas to fulfill this requirement. Maintain the school bus access driveway for the duration of Stage 1 and as long as feasibly possible into Stage 2. The temporary driveway is to be used for School Buses only. Coordinate with Rob Rericha (920) 868-3284 Ext. 279 of the Gibraltar School district to discuss a schedule of when the buses will need to use the driveway.

Temporary Path and Crosswalk at 144+90 – Stage 2

For the duration of stage 1 and 2 or as directed by the engineer, maintain a temporary hard surface path connecting STH 42 southbound paved shoulder and Gibraltar School auditorium driveway at approximately Station 144+90 LT. Install temporary pedestrian safety fence to separate the temporary path/auditorium driveway from the workzone.

For the duration of stage 1 and 2 or as directed by the engineer, maintain a walking path that crosses STH 42 at approximately Station 144+90. Relocate the path within this general area based on work operations and traffic control.

Gibraltar School Driveway Access

Refrain from construction activities that negatively impact the use of temporary and existing roadway surfaces used to convey traffic into Gibraltar School. Receive approval from the engineer prior to disturbing any pavement from 151+00 to 151+75.

Traffic for Installation of Flashing Beacon at STH 42 and Main St.

Prior to the erection of Type 2 pole and trombone arm, the electrical contractor shall arrange and conduct a meeting between the prime contractor, the department, and on-site engineer to coordinate traffic control requirements and restrictions for the installation of poles and trombone arms over live traffic lanes. Installation of poles, monotube arms and traffic signal modifications shall occur only during non-peak periods unless approved by the engineer.

Detours

Stage 1 detour to be implemented on or after March 1, 2019.

Stage 2 detour to be implemented following the completion of Stage 1 but prior to noon May 24, 2019.

Stage 2 detour to be removed prior to noon June 28, 2019.

Access for Gibraltar School traffic to use detour route, Gibraltar Road, and Old Gibraltar Road temporary connection. Maintain access to the school at all times during roadway closure unless otherwise agreed upon with the school district. If necessary, flag traffic around construction activities.

Access to Fish Creek Grill to use detour route, CTH F, and temporary driveway connection. Maintain access to the restaurant at all times unless otherwise agreed upon with owner. Construct temporary access driveway prior to closing STH 42 from CTH F to the existing driveway.

Stage 1 Detour

Route STH 42 traffic onto CTH E from the intersection of CTH E/STH 42 in the Village of Egg Harbor to CTH A to the intersection of CTH A/STH 42 south of the Village of Ephraim.

Stage 2 Detour

Route STH 42 traffic onto CTH F from the intersection of CTH F/STH 42 in the Town of Gibraltar to CTH A to the intersection of CTH A/STH 42 south of the Village of Ephraim.

Portable Changeable Message Sign – Message Prior Approval

After coordinating with department construction field staff, notify the Northeast Region Traffic Section at (920) 266-8033 (secondary contact number is (920) 360-3107) three business days prior to deploying or changing a message on a PCMS to obtain approval of the proposed message. The Northeast Region Traffic Unit will review the proposed message and either approve the message or make necessary changes.

Wisconsin Lane Closure System Advanced Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

Discuss LCS completion dates and provide changes in the schedule to the engineer at weekly project meetings in order to manage closures nearing their completion date.

Clear Zone Working Restrictions

Do not store materials or equipment within the clear zone of traffic lanes. Remove materials from the clear zone prior to opening lane closures. Do not leave any slopes steeper than 3:1 or any drop offs at the edge of the traveled way greater than 2 inches within the clear zone prior to opening lane closures.

Park equipment and store materials, including stockpiles, a minimum of 18-feet from the edge of the traveled way unless protected by concrete barrier temporary precast.

If the contractor is 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.

(NER17-1018)

5. Lane Rental Fee Assessment.

A General

The contract designates some lane closures to perform the work. The contractor will not incur a Lane Rental Fee Assessment for closing lanes during the allowable lane closure times. The contractor will incur a Lane Rental Fee Assessment for each lane closure outside of the allowable lane closure times. If a lane is obstructed at any time due to contractor operations, it is considered a closure. The purpose of lane rental is to enforce compliance of lane restrictions and discourage unnecessary closures.

The allowable lane closure times are during non-peak hours as stated in the traffic article Peak Hours section.

B Lane Rental Fee Assessment

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

- On Peak- $375 per lane, per direction of travel, per hour broken into 15 minute increments

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

The engineer, or designated representative, will be the sole authority in determining time period length for the Lane Rental Fee Assessment.

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

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

Lane Rental Fee Assessment will be in effect from the time of the Notice to Proceed until the department issues final acceptance. If interim completion time or contract time expires before the completion of specified work in the contract, additional liquidated damages will be assessed as specified in standard spec 108.11 or as specified within this contract.

stp-108-070 (20161130)

6. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying STH 42 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Friday May 3, 2019 to 6:00 AM Monday May 6, 2019 for the Door County Half Marathon;
- From noon Friday, May 24, 2019 to 6:00 AM Tuesday, May 28, 2019 for Memorial Day;
- From noon Friday, June 14, 2019 to 6:00 AM Monday, June 17, 201 for Village of Ephraim's Fyr Bal Festival;
- From noon Friday, June 28, 2019 to 6:00 AM Monday, July 8, 2019 for Independence Day;
- From noon Friday, August 30, 2019 to 6:00 AM Tuesday, September 3, 2019 for Labor Day;
- From noon Friday, October 4, 2019 to 6:00 AM Monday, October 7, 2019 for Egg Harbor Pumpkin Patch Days;
- From noon Friday, October 11, 2019 to 6:00 AM Tuesday, October 15; 2019 for Sister Bay's Fall Fest and Columbus Day;
- From noon Friday, October 25, 2019 to 6:00 AM Monday, October 28, 2019, for Fish Creek's Jack O' Lantern Days.

stp-107-005 (20050502)

7. Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Ch. Trans 220.

107-065 (20080501)

Prospective bidders are cautioned that the arrangements set forth in this article represent the utility owners best estimate of their plans to relocate and/or adjust conflicting facilities. Contact the utility owner listed in the plans, prior to preparing bid, to obtain current information on existing and new locations and the status of any utility relocation work stated herein.

Some of the utility work described below is dependent on prior work being performed by the contractor at a specific site. In such situations, provide the engineer and the affected utility a good faith notice of when the utility is to start work at the site. Provide this notice 14 to 16 days in advance of when the prior work will be completed, and the site will be available to the utility owner, unless otherwise modified hereinafter. Follow-up with a confirmation notice to the engineer and the utility owner not less than three days before the site will be ready for the utility owner to begin its work.

Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.

Charter Communications – Communication maintains overhead and underground facilities within the project limits.

Overhead facilities are located jointly on poles maintained by Wisconsin Public Services. Charter Communications will coordinate with Wisconsin Public Service to transfer communications facilities and maintain proper clearance to overhead lighting, prior to construction.

Underground facilities are located parallel STH 42 between Station 419+00 - 420+00, Station 422+00 – 430+00, Station 500+00-Station 506+00, and Station 516+00, and crossing locations at Station 127+00, Station 371+75, Station 497+00, and Station 516+00.

Notify Charter Communications at least 7 days prior to excavation at Station 127+00 to provide a watch dog during construction of storm sewer.

The field contact is Bruce Henry, 1623 Broadway Avenue, Sheboygan, WI 53081, Telephone: (920) 263-0074, Email: bruce.henry@charter.com

Ephraim Wastewater Treatment Facility – Sewer maintains underground facilities along STH 42 from Station 295+47 to Station 459+39; to be adjusted during construction.

Adjust 31 sanitary manhole covers to match the new finished pavement elevations according to the requirements of the bid item: Adjusting Manhole Covers.

Notify Ephraim Wastewater Treatment Facility at least 3-days prior to adjusting the manholes, to be on site to inspect and approve the adjustment.

The field contact is Russell Salfi, P.O. Box 138, Ephraim, WI 54211, Telephone: (920) 854-0154, Email: rsalfi@ephraim-wisconsin.com

Fish Creek Sanitary District #1 – Sewer maintains underground facilities throughout the project limits, to be adjusted during construction.

Fish Creek Sanitary District #1 will lower the sanitary lateral at Station 135+76 LT and adjust the sanitary manholes at Station 97+45 RT, Station 140+15 LT, Station 144+00 RT, Station 145+90 RT, Station 147+75 RT, Station 144+00 LT, Station 143+95 LT, Station 143+90 LT, Station 142+40 LT, Station 137+10 LT, Station 136+00 LT, Station 10+90 RT, and Station 142+25 RT, to match final pavement grade.

Fish Creek Sanitary District #1 will rotate the sanitary manhole cover at Station 137+10, to minimize construction impact to the proposed curb and gutter.

Notify Fish Creek Sanitary District #1 at least 7 days prior to the construction of the proposed retaining wall and storm sewer excavation at Station 108+85, Station 127+00, Station 131+50, Station 142+30, Station 144+00, and Station 144+75 to protect existing facilities.

Fish Creek Sanitary District #1 will require 10 days to complete the necessary sanitary sewer adjustments during construction.

The field contact is Joe Burress, P.O. Box 55, Fish Creek, WI 54212, Telephone: (920) 868-3372.

Frontier Communications – Communications maintains overhead and underground facilities within the project limits in conflict with the proposed improvement and will be relocated prior to construction.

Frontier Communication will transfer facilities to the new pole installed by Wisconsin Public Service at Station 100+00 LT at northwest corner of Spruce Street and Main Street.

Frontier Communications will relocate poles at Station 125+25, Station 126+25, Station 127+00, Station 127+60, Station 128+30 (guy), Station 131+50, Station 134+75, Station 136+30 (remove), Station 146+25, Station 147+10, Station 148+75, and Station 11+20 (CTH F).

Frontier Communication will install poles near the end of the proposed retaining wall at Station 135+55 and Station 137+60.

Notify Frontier Communications at least 7 days prior to excavation at Station 118+50 and Station 130+00 for Frontier Communications to hold the existing poles at these locations.

Notify Frontier Communications at least 7 days prior to excavation at Station 370+00 for Frontier Communications to be on-site to protect the existing underground 25 pair cable.

Frontier Communications will require 30 days to complete the necessary relocations, prior to construction.

Frontier Communications will adjust the existing pedestal at Station 457+15 LT.

The field contact is Cal Klade,521 4th Street, Wausau, WI 54403, Telephone: (715) 573-2110, Email: calvin.klade@ftr.com

Net Lec LLC – Communication maintains overhead and underground facilities within the project limits; no conflict is anticipated.

Net Lec LLC maintains overhead facilities on Wisconsin Public Service poles from Station 140+85 to Station 142+90 and will coordinate transfer with Wisconsin Public Service prior to construction.

Net Lec LLC to adjust existing pedestal at Station 154+70 LT.

Notify Net Lec LLC at least 7 days prior to storm sewer excavation at Station 142+25, Station 143+00, Station 144+17, Station 146+13, Station 148+90, Station 150+00, Station 152+48, for Net Lec to set up a fiber watch at these locations.

The field contact is Dennis LaFave, 1700 Industrial Drive, Green Bay, WI 54302, Telephone: (920) 619-9774, Email: dlafave@mi-tech.us

Village of Sister Bay – Sewer has underground facilities along the south side of STH 42, from approximately Station 480+00 to Station 531+27. Sanitary manholes to be adjusted during construction to match final pavement grade.

Notify the Village of Sister Bay at least 10 days prior to the adjustment of 3 sanitary manholes. The Village of Sister Bay will require 3 days to complete the sanitary manhole adjustment.

The field contact is Michael C. Schell, 2124 Autumn Court, P.O. Box 91, Sister Bay, WI 54234, Telephone: (920) 854-2246, Mobile: (920) 421-0257, Email: mike.schell@sisterbaywi.gov

Village of Sister Bay – Water has underground facilities along the south side of STH 42, from approximately Station 480+00 to Station 531+27. Water valves to be adjusted during construction to match final pavement grade.

Notify the Village of Sister Bay at least 10 days prior to the adjustment of 11 water valves. The Village of Sister Bay will require 3 days to complete the water valve adjustments.

The field contact is Michael C. Schell, 2124 Autumn Court, P.O. Box 91, Sister Bay, WI 54234, Telephone: (920) 854-2246, Mobile: (920) 421-0257, Email: mike.schell@sisterbaywi.gov

Wisconsin Public Service Corporation – Electricity has overhead and underground facilities throughout the project limits on the left and right sides of STH 42. Identified utility conflicts are anticipated to be relocated prior to construction.

As part of the utility owner's general facility upgrade, Wisconsin Public Services will replace all poles along the north side of STH 42 from Station 1+38 to Station 157+00, including facilities in conflict with the proposed improvement.

Wisconsin Public Service will remove and replace the existing pole at Station 99+35 RT, to accommodate the proposed traffic control beacon.

Wisconsin Public Service will remove the existing pole and install a new pole at Station 1+38 LT, located in the proposed terrace at the northwest corner of Main Street and Spruce Street.

Wisconsin Public Service will replace existing poles at Station 109+50 LT and Station 117+00 LT directly behind the proposed curb and gutter within the lateral clearance.

Wisconsin Public Service will remove the existing poles and install new poles near the existing right-of-way at Station 134+70 LT, Station 136+80 LT (removed), Station 137+35 LT (installed), Station 140+90 LT, Station 141+60 LT, Station 142+05 LT, Station 142+80 LT (removed), Station 142+90 LT, Station 146+65 LT, Station 147+60 LT, Station 150+05 RT (removed), Station 150+60 RT, Station 152+25 LT (anchor), Station 154+70 LT, Station 156+70 LT, Station 10CF+65 (removed) and 11CF+00 (installed).

Notify Wisconsin Public Service at least 7 days prior to excavation at Station 1+38 LT, Station 129+75 RT, and Station 12+25 LT (Old Gibraltar Road temporary connection) to hold existing pole during construction.

Notify Wisconsin Public Service at least 7 days prior to excavation at Station 119+95, Station 127+65, and Station 371+60 to provide on-site monitor during the construction of storm sewer under the existing single phase electric line.

Notify Wisconsin Public Service at least 48 hours prior to rock blasting, for Wisconsin Public Service to provide watch dog and hold adjacent poles.

Wisconsin Public Service will lower the existing underground primary electric line that crosses the proposed storm sewer outfall at Station 13+50 LT (Shore Road).

The field contact is Scott Gauger, 2850 Ashland Avenue, Green Bay, WI 54307, Telephone: (920) 617-5151, Mobile: (920) 660-0430, Email: scott.gauger@wisconsinpublicservice.com

8. Work by Others.

Flashing Beacon STH 42 and Main St (STH 42 Station 99+52 RT)

At the intersection STH 42 and Main Street, the Wisconsin Department of Transportation Northeast Region Electrical Unit will perform the following work:

- Salvage the existing Flasher Control Unit
- Provide and install the Flashing Beacon Control Cabinet
- Provide and install the Signal Cable from the Control Cabinet (CB1) to the Flashing Beacon Concrete Base (FB1)

Contact the NE Region Traffic Unit at (920) 360-3107 or (920) 492-5654 three days prior to requiring any of the above work to be completed.

Town of Gibraltar Rapid Flashing Beacon (RFB) (STH 42 Station 147+69 & 156+67)

The Town of Gibraltar will be installing Rapid Flashing Beacons at the pedestrian refuge islands located at Stations 147+69 and 156+67. Contact the town of Gibraltar at (920) 868-1714 at least 30 days prior to grading operations to coordinate this work.

Restoration of Peninsula School of Art (STH 42 Station 147+32 – 150+72 RT)
The Door County Land Trust will be completing some restoration work for the conservation easement behind the sidewalk on the Peninsula School of Art Property (Station 147+32 RT to 150+72 RT). Contact Drew Reinke, Door County Land Trust, at (920) 746-1359 at least 14 days prior to final landscaping to coordinate this work.

9. Concurrent Projects.

Fish Creek Beach Renovation

The Town of Gibraltar will be renovating their Fish Creek Beach property concurrently with the STH 42 resurfacing project. Coordinate work operations, specifically relocating the storm sewer outfall at ~110+50 LT, with the town of Gibraltar. Contact the town of Gibraltar at (920) 868-1714 at least 30 days prior to the start of construction to discuss project details.

Village of Ephraim STH 42 Reconstruction (Sta. 317+25 – 342+25)

The Village of Ephraim has elected to reconstruct a portion of STH 42 from 317+25-342+25. This project will be a locally let and occur concurrently with the STH 42 resurfacing project 4140-19-71. This section of STH 42 is exempt from the STH 42 resurfacing project. Coordinate work operations and traffic control with the Village of Ephraim. Contact the Village of Ephraim 30 days prior to beginning construction at (920) 854-5501 to discuss project details.

10. Information to Bidders, WPDES General Construction Storm Water Discharge Permit.

The department has obtained coverage through the Wisconsin Department of Natural Resources to discharge storm water associated with land disturbing construction activities of this contract under the Wisconsin Pollutant Discharge Elimination System General Construction Storm Water Discharge Permit (WPDES Permit No. WI-S066796-1). A certificate of permit coverage is available from the regional office by contacting Jeremy Ashauer at (920) 412-6381. Post the permit in a conspicuous place at the construction site.

stp-107-056 (20180628)

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

The department has obtained a U.S. Army Corps of Engineers Section 404 permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit is available from the regional office by contacting Jeremy Ashauer at (920) 412-6381.

stp-107-054 (20080901)

12. Environmental Protection, Dewatering.

Supplement standard spec 107.18 as follows:

If dewatering is required, treat the water to remove suspended sediments by filtration, settlement or other appropriate best management practice prior to discharge. The means and methods proposed to be used during construction shall be submitted for approval as part of the Erosion Control Implementation Plan for dewatering at each location it is required. The submittal shall also include the details of how the intake will be managed to not cause an increase in the background level turbidity prior to treatment and any additional erosion controls necessary to prevent sediments from reaching the project limits or wetlands and waterways. Guidance on dewatering can be found on the Wisconsin Department of Natural Resources website located in the Storm Water Construction Technical Standards, Dewatering Code #1061, “Dewatering”. This document can be found at the WisDNR website: http://dnr.wi.gov/topic/stormwater/standards/const_standards.html

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

(NER12-1010)

13. Environmental Protection, By-Pass Pumping

Add to standard spec 107.18:

If by-pass pumping is required, the means and methods proposed to be used during construction shall be submitted for approval as part of the Erosion Control Implementation Plan for each location it is required. The submittal shall include how the intake will be managed to not cause an increase in the background level turbidity during pumping; equipment pumping rate capabilities; discharge energy dissipation; and erosion controls. For by-pass pumping that will extend beyond one working day, the submittal should also include how the work zone will be managed and protected should the pump fail; be shut down due to unacceptable water quality; or storm water flows exceed the pumping rate of equipment. After setup of the approved by-pass pumping operation, the contractor shall demonstrate that the means and methods will pump the water at an acceptable water quality prior to starting work that necessitates the by-pass pumping. The cost of all work and materials associated with by-pass pumping is incidental to the bid items the work is associated with. Erosion control devices beyond the discharge energy dissipation point will be paid for at the contract unit prices for the items that are included in the plan.

(NER 11-0711)

14. Erosion Control.

Perform the work according to the requirements of standard spec 107.20 and supplemented as follows:

A summer ECIP meeting will be required for this project. At this meeting, the contractor will discuss the plan to do finishing, landscaping, interim erosion control measures, and other items to address the construction site and disturbed ground areas prior to summer suspension. The contractor shall submit for approval an amendment to the contractor’s Erosion Control Implementation Plan (ECIP) within one week following this meeting. Update the ECIP as necessary prior to summer suspension to address site conditions at the time of summer suspension. Hold meeting at least 2 weeks prior to suspending work operations.

If sod is not available due to the construction schedule, protect open grades from erosion by use of soil stabilizer. Install sod as soon as it becomes available. Prior to placing sod prep the grade in accordance to standard spec 631.3.1 making sure to loosen soil at least one inch deep and removing any weeds or temporary seeding that has vegetated.

15. Coordination with Businesses and Residents.

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

stp-108-060 (20141107)

16. Notice to Contractor - Snow Removal.

The Door County Highway Department or Town of Gibraltar may place snow into the work site area via plow operations and sidewalk snow removal. The contractor shall be responsible for removing snow placed within the work site area. The snow shall not be placed on the sidewalks that are open to pedestrians or the travel lane open to traffic. The removal of the snow shall be incidental to the contract.

17. Notice to Contractor – Soil Conditions.

Soil borings completed during the design of the project are shown in the plans. Soil conservation service maps for Door County show a high percentage of udorthents, or cobble material, and rock, within the project limits. The presence of these soils are expected for storm sewer, lighting base drilling, sign base drilling and other operations requiring subsurface installation. Extraordinary efforts may be required during construction and shall be considered incidental to the contract bid items.

18. Notice to Contractor – High Ground Water.

Anticipate high ground water elevations within the project limits. Dewatering for subsurface operations is anticipated and incidental to the contract.

19. Notice to Contractor – Work Adjacent to Historical Property – 4148 Main St Fish Creek.

Work is scheduled to take place adjacent to a historical property located at 4148 Main St within Fish Creek (Station 103+25 LT). The proposed work includes replacing sidewalk and installing a light fixture/base adjacent to a stone retaining wall and pillar that were identified as being historically significant. Take all precautions necessary to avoid impacting or altering the appearance or structural stability of the wall and pedestal. If the wall or pedestal are impacted during construction the contractor must salvage as much of the original material as possible. The contractor will be required to restore or replace the wall and pillar in kind using the original, salvaged materials or similar materials at no cost to the department.

20. Notice to Contractor – Work Adjacent to Property 3976 Main Street, Fish Creek.

Do not trespass or disturb private property while installing retaining wall and driveway. Do not disturb any trees or shrubs that are located partially or entirely on private property. Stake property pins in the field (or from department supplied right-of-way plat 4140-21-00 – 4.19) and place safety fence 6-Inches offset from property line (staking property would be incidental to the contract). If access to property is to be restricted, follow department standards of notifying property owner in advance or constructing driveway/sidewalk in stages.

21. Notice to Contractor – Driveways.

There are several driveways located within the construction limits that are constructed of alternative materials, including but limited to brick pavers and field stone. Take necessary precautions to avoid damage to driveways. Repairs to damaged driveways will be considered incidental to the contract.

22. Notice to Contractor – Karst Features.

Karst features are formed from the dissolution of soluble rocks such as limestone, dolomite, and gypsum. Karst features act as natural underground drainageways and can vary in size from minor fissures to caves or caverns. Existing Karst features may be present within the project limits. Protect exposed karst features as the plans show or as the engineer directs. Do not excavate, cover, or fill known karst locations. If karst features are exposed during excavation suspend work operations in the immediate area and inform the construction engineer. The construction engineer will notify NE Region DNR liaison Matt Schaeve (920) 366-1544 of the feature and discuss further actions or precautions.

23. Notice to Contractor – Proposed Items within MSE Wall Reinforcing Zone Backfill.

Coordinate retaining wall construction operations with proposed storm sewer, light bases, conduit, and any other bid items located within the MSE reinforcing zone backfill. Items may need to be formed or placed prior to beginning MSE wall backfill operations. Design retaining wall reinforcement so that they are not in conflict with proposed items.

24. Removing Concrete Sidewalk.

Supplement standard spec 204 with the following:

Removal of the concrete sidewalk where buildings abut the right-of-way shall include performing a full depth saw cut approximately one foot from buildings, or as close as possible. Remove the remaining pieces of sidewalk adjacent to the buildings using methods approved by the engineer. Payment of the full depth saw cut will be paid for under the bid item Sawing Concrete. During the saw cutting and sidewalk removal, take extreme care to not damage the buildings. The contractor will be responsible for any damage to the buildings. Salvage rebar that extend into sidewalk from the buildings and incorporate into the new sidewalk.

25. Abandoning Sewer, Item 204.0291.S.

A Description

This special provision describes abandoning existing sewer by filling it with cellular concrete as the plans show and conforming to standard spec 204 and standard spec 501as modified in this special provision.

B Materials

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

C Construction

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

D Measurement

The department will measure Abandoning Sewer in volume by the cubic yard as specified in standard spec 109.1.3.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
204.0291.S	Abandoning Sewer	CY

Payment is full compensation for furnishing all materials and excavating and backfilling where necessary.

stp-204-050 (20080902)

26. Removing Advance Flasher Assemblies Type 1, Item 204.9001.S; Removing Advance Flasher Assemblies Type 2, Item 204.9002.S; Removing Flashing Beacon (STH 42 & Main St), Item SPV.0105.05.

A Description

This special provision describes removing advance flasher/beacon assemblies from the locations the plans show. Rewire and disconnect wiring in the control cabinet as necessary and properly dispose of materials conforming to standard spec 204.3.1.3.

B Materials

Dispose of all materials resulting from removing the Advance Flasher Assemblies or Beacons including but not limited to poles, break-a-way bases, signal assemblies, bulbs, and wire off the job site.

C Construction

Do not remove existing advance flasher/beacon assemblies until proper disconnects and wiring changes in the controller cabinet have been made.

Where an existing advance flasher/beacon assembly is mounted to a light pole, remove all signal hardware including wire, conduit, signal assemblies and mounts. Where existing conduit has been installed under concrete sidewalk or roadway, do not remove buried conduit unless directed otherwise by the engineer or unless it is not possible to install new wire through the existing conduit.

D Measurement

The department will measure Removing Advance Flasher/Beacon Assemblies by the unit, acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
204.9001.S	Removing Advance Flasher Assemblies, Type 1	EACH
204.9002.S	Removing Advance Flasher Assemblies, Type 2	EACH
SPV.0105.05	Remove Flashing Beacon (STH 42 & Main St)	LS

Payment is full compensation for removing advanced flasher/beacon assemblies; for rewiring, as necessary; for disconnecting wiring as necessary in the controller cabinet; and for properly disposing of all materials.

Removal of concrete bases and signs associated with this item will be measured and paid for separately.

stp-204-060 (20170615)

27. Removing Cables or Conduit, Item 204.9090.S.01.

A Description

This special provision describes removal of groups of existing lighting cables and conduit from the project.

B (Vacant)

C Construction

Existing lighting cables within conduit or direct buried will be removed from the project as a result of sub-cutting associated with roadway and sidewalk construction. Existing conduit in areas where permanent surfaces are not scheduled for removal shall be cut, capped, and abandoned. Existing lighting cables not planned for reuse shall be disconnected from existing lighting units, service cabinets and panels prior to removal. Existing conduit not planned for reuse shall be cleanly disconnected from remaining existing conduit, lighting units, and service cabinets prior to removal. The removal of existing conduit not planned for reuse shall be incidental to the removal of cables. Removed lighting cables and conduit shall become the property of the contractor.

D Measurement

The department will measure Removing Cables or Conduit by the linear feet of a complete branch circuit (comprised of multiple conductors), acceptably removed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.01	Removing Cables or Conduit	LF

Payment is full compensation for removing and disposing of cables and conduit.

28. General Requirements for Blasting Rock.

Add the following to standard spec 205.3.7:

Perform all blasting in compliance with the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43.

Blasting Plan Submittal

Not less than two weeks before commencing blasting operations, or at any time when changes to the drilling and blasting methods are proposed, submit a Blasting Plan to the engineer for review. The blasting plan shall contain full details of the drilling and blasting patterns and controls proposed for both the controlled and production blasting. Include the following minimum information in the blasting plan:

1. Station limits of proposed shot.
2. Plan and section views of proposed drill pattern including free face, burden, blasthole spacing, blasthole diameters, blasthole angles, lift height, and subdrill depth.
3. Loading diagram showing type and amount of explosives, primers, initiators, and location and depth of stemming.
4. Initiation sequence of blastholes including delay times and delay system.
5. Manufacturer’s data sheets for all explosives, primers, and initiators to be employed.

The blasting plan submittal is for quality control and record keeping purposes. Review of the blasting plan by the engineer does not relieve the contractor of responsibility for the accuracy and adequacy of the plan when implemented in the field.

Safety

Immediately notify the engineer of any incidents of fly rock, damage to any personal property, or existing roadway that is open to traffic, and any violations of the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43. Failure to do so shall be considered a safety violation under standard spec 107 and all work on the project may be stopped under standard spec 105.1(1).

Notify the engineer of the station, location, and ‘size’ of all blasts at least one hour before the blast.

Observe the entire blast area for a minimum of five minutes following a blast to guard against rock or debris fall before commencing work in the area.

The engineer has the authority to prohibit or halt the contractor’s blasting operations if it is apparent that through the methods being employed, the required slopes are not being obtained in a stable condition, the safety and convenience of the traveling public is being jeopardized, or vibration levels above the allowable levels occur.

Condition Surveys

Conduct and document pre-blast and post-blast surveys of any nearby buildings or structures as required by the scaled-distance equation specified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43. Make right of entry arrangements with the property owners for these condition surveys. Before any blasting, make the pre-blast survey records available to the engineer for

review. After completion of blasting operations, perform a post-blast survey and make these records available to the engineer for review. The contractor shall be responsible for any damage resulting from blasting.

These condition surveys shall consist of visually inspecting and recording all existing defects in the structures before and after blasting operations. Photographs and/or videotape may be used to assist in documentation. Submit a written report to the department detailing the visual and photographic investigation of potentially affected structures. This report will include copies of the pre-blast and post-blast surveys and discuss any discrepancies and findings of these surveys.

If at any time during the progress of the work, the methods of drilling and blasting do not produce the desired result of a uniform slope and shear face, within the tolerances specified, drill, blast, and excavate in short sections, not exceeding 100 feet in length, until a technique is arrived at that will produce the desired results. Extra cost resulting from this requirement shall be borne by the contractor.

Vibration Control and Monitoring

All vibration control and monitoring shall comply with Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43, Instrumentation and SPS 307.44, Control of Adverse Effects.

Whenever there is a potential for vibration damage to adjacent buildings, structures, or utilities, monitor each blast with an approved seismograph located, as approved, between the blast area and the closest structure subject to blast 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.

A vibration specialist, approved by the engineer, shall perform vibration monitoring. The vibration specialist shall monitor vibration levels according to the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 and interpret the seismograph records to ensure that the seismograph data shall be effectively utilized in the control of the blasting operations with respect to the existing structures and utilities.

According to the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 consult with the owner of any structure or utility not listed in SPS 307.43 to establish maximum allowable limits on ground vibrations. In no case shall these vibration limits exceed the following criteria:

Structure Type	Maximum Peak Particle Velocity (inches/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

Furnish data recorded for each shot to the engineer before the next blast; the data shall include the following:

1. Identification of vibration monitoring instrument used.
2. Name of qualified observer and interpreter.
3. Distance and direction of recording station from blast area.
4. Type of ground at recording station and material on which the instrument is sitting.
5. Peak particle velocity and principal frequency in each component.

6. A dated and signed copy of records of seismograph readings.
7. A comparison of measured seismograph readings to maximum allowable readings identified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 or as specified in this special provision.

If the recorded vibration data exceeds the allowable levels established in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 or as specified in this special provision, immediately halt blasting operations. Submit a revised blasting plan to the engineer and do not resume blasting operations until the engineer approves the revised plan.

All costs associated with the work described herein shall be considered included in the bid item Excavation Rock.

stp-205-050 (20141107)

29. Select Crushed Material, Item 312.0110.

Replace standard spec 312.2(1) with the following:

(1) Furnish crushed stone substantially free of unconsolidated overburden materials, topsoil, organic materials, steel, and other deleterious materials. A department approved source, sound and ware tests, and field acceptance testing are not required for this item. Item to be visually inspected and approved by engineer prior to placement.

Replace standard spec 312.3(2) with the following:

(2) Spread select crushed material in a manner that interlocks aggregate pieces and matches adjacent grades.

30. Asphaltic Base, Item 315.0100.

Replace standard spec 315.2 with the following:

(1) Furnish asphaltic mixture meeting the requirements specified for either type LT mix under 460.2; except the engineer will not require the contractor to conform to the quality management program specified under standard spec 460.2.8.

Submit a mix design for the Asphaltic Base bid item. Furnish asphaltic mixture meeting 3 LT gradation as specified in standard spec 460.2; except the engineer will not require the contractor to conform to the quality management program specified under standard spec 460.2.8.

Replace standard spec 315.3.1 with the following:
(1) Conform to the general requirements for asphaltic pavements specified in standard spec 450, except as modified here in standard spec 315.3. Place the mixture in 2.25-inch compacted layers unless the engineer directs
otherwise.

31. Coloring Concrete Custom, Item 405.0200.

Add the following to standard spec 405.2.1:

Integrally colored concrete shall be Butterfield Color “Uni-mix” color: U31 – weathered Terra Cotta; Solomon Colors “Dry Integral Color”: Color 775 Cedar; or Scofield “Chromix” color 5238 Sunbaked Clay.

Replace standard spec 405.2.1.1(3) with the following:

(3) The department will accept the color based on comparison to color samples available for viewing at an agreed upon location with the Town of Gibraltar. Contact Beth Hagen at (920) 868-1714.

32. Protection of Concrete.

Add to standard spec 415.3.14:

The contractor shall provide for a minimum of one concrete finisher to remain on the project site after final finishing of all concrete surfaces until the concrete has hardened sufficiently to resist surface scarring

caused by footprints, handprints, or any other type of imprint, malicious or otherwise. The finisher shall 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 incidental to the contract.

ner-415-015 (20180326)

33. Incentive Density HMA Pavement Longitudinal Joints, Item 460.2007.

A Description

This special provision incorporates longitudinal joint density requirements into the contract and describes the data collection, acceptance, and procedure used for determination of pay adjustments for HMA pavement longitudinal joint density. Pay adjustments will be made on a linear foot basis, as applicable per pavement layer and paving lane. Applicable longitudinal joints are defined as those between any two or more traffic lanes including full-width passing lanes, turn lanes, or auxiliary lanes more than 1500 lane feet. This excludes any joint with one side defined as a shoulder and ramp lanes of any length. Longitudinal joints placed during a test strip will be tested for information only to help ensure the roller pattern will provide adequate longitudinal joint density during production. Longitudinal joint density test results collected during a test strip are not eligible for pay adjustment.

Pay is determined according to standard spec 460, HMA Pavement Percent Within Limits QMP special provisions, and as modified within.

B Materials

Revise standard spec 460.3.3.1(1) table 460-3 by adding footnotes [6] & [7]:

TABLE 460-3 MINIMUM REQUIRED DENSITY[1][6][7]

LOCATION	LAYER	PERCENT OF TARGET MAXIMUM DENSITY		
		MIXTURE TYPE		
		LT and MT	HT	SMA[5]
TRAFFIC LANES[2]	LOWER	93.0[3]	93.0[4]	___
	UPPER	93.0	93.0	___
SIDE ROADS, CROSSOVERS, TURN LANES, & RAMPS	LOWER	93.0[3]	93.0[4]	___
	UPPER	93.0	93.0	___
SHOULDERS & APPURTENANCES	LOWER	91.0	91.0	___
	UPPER	92.0	92.0	___

[1] The table values are for average lot density. If any individual density test result falls more than 3.0 percent below the minimum required target maximum density, the engineer may investigate the acceptability of that material.

[2] Includes parking lanes, bike lanes as determined by the engineer

[3] Minimum reduced by 2.0 percent for a lower layer constructed directly on crushed aggregate or recycled base courses.

[4] Minimum reduced by 1.0 percent for a lower layer constructed directly on crushed aggregate or recycled base courses.

[5] The minimum required densities for SMA mixtures are determined according to CMM 8-15.

[6] Minimum reduced by 1.5 percent at longitudinal joint with lateral confinement (i.e., confined)

[7] Minimum reduced by 3.0 percent at longitudinal joint having no lateral confinement (i.e., unconfined)

C Construction

Add the following to standard spec 460.3.3.2:

(5) Establish companion density locations at each applicable joint. Each companion location shares longitudinal stationing with a QC or QV density location within each sublot, and is located transversely with the center of the gauge 6-inches from the final joint edge of the paving area. Sublot and lot numbering remains the same as mainline densities, however, in addition to conventional naming, joint identification must clearly indicate "M" for inside/median side of lane or "O" for outside shoulder side of lane, as well as "U" for an unconfined joint or "C" for a confined joint (e.g., XXXXX-MC or XXXXX-OU).

(6) Each joint will be measured, reported, and accepted under methods, testing times, and procedures consistent with the program employed for mainline density, i.e., PWL.

(7) For single nuclear density test results greater than 3.0% below specified minimums, the department will perform the following per standard spec 460.3.3.1 as modified here within:

a) Testing at 50 foot increments both ahead and behind the unacceptable site
b) Continued 50 foot incremental testing until test values indicate higher than or equal to -3.0 percent from target joint density.
c) Materials within the incremental testing indicating lower than -3.0 percent from target joint density are defined as unacceptable, and will be handled with remedial action as defined in the payment section of this document.
d) The remaining sublot average (exclusive of unacceptable material) will be determined by the first forward and backward 50 foot incremental tests that reach the criteria of higher than or equal to -3.0 percent from target joint density.

Note: If the 50 foot testing extends into a previously accepted sublot, remedial action is required up to and inclusive of such material; however, the results of remedial action must not be used to recalculate the previously accepted sublot density. When this occurs, the lane feet of any unacceptable material will be deducted from the sublot in which it is located, and the previously accepted sublot density will be used to calculate pay for the remainder of the sublot.

(8) Joint density measurements will be kept separate from all other density measurements, and entered as an individual data set into Atwood Systems.

(9) Placement and removal of excess material outside of the final joint edge, to increase joint density at the longitudinal joint nuclear testing location, will be the contractor's responsibility. This material and labor related to removal of such shall be considered waste and not the responsibility of the department. Joints with excess material placed outside of the final joint edge to increase joint density or where a notched wedge is used will be considered unconfined joints. Inlay paving operations (e.g. where one lane is milled and paved prior to the adjacent lane being milled and paved) will limit payment for additional material to 2 inches wider than the final paving lane width at the centerline and will be considered confined joints.

(10) If echelon paving is performed at the contractor's choice to increase longitudinal joint density, additional cost related to echelon paving will be the contractor's responsibility. The joint between echelon paving lanes will be placed at the centerline and both sides of the joint will be considered confined joints.

D Measurement

(1) The department will measure each side of applicable longitudinal joints, as defined in Section A of this special provision, by the linear foot of pavement acceptably placed. Measurement will be conducted independently for the inside or median side and for the outside or shoulder side of paving lanes with two applicable longitudinal joints. Each paving layer will be measured independently.

E Payment

Add the following as 460.5.2.4 Pay Adjustment for HMA Pavement Longitudinal Joint Density:

(1) The department will administer longitudinal joint density adjustments under the Incentive Density HMA Pavement Longitudinal Joints and Disincentive Density HMA Pavement Longitudinal Joints items. The department will adjust pay based on density relative to the specified targets in Section B of this special provision, and linear foot of the HMA Pavement bid item for that sublot as follows:

PAY ADJUSTMENT FOR HMA PAVEMENT LONGITUDINAL JOINT DENSITY

PERCENT SUBLOT DENSITY ABOVE/BELOW SPECIFIED MINIMUM	PAY ADJUSTMENT PER LINEAR FOOT
Equal to or greater than +1.0 confined, +2.0 unconfined	$0.40
From 0.0 to +0.9 confined, 0.0 to +1.9 unconfined	$0
From -0.1 to -1.0	$(0.20)
From -1.1 to -2.0	$(0.40)
From -2.1 to -3.0	$(0.80)
More than -3.0	*REMEDIAL ACTION*[1]

[1] Remedial action must be approved by the engineer and agreed upon at the time of the pre-pave meeting, and may include partial sublots as determined and defined in 460.3.3.2(7) of this document

(2) The department will not assess joint density disincentives for pavement placed in cold weather because of a department-caused delay as specified in standard spec 450.5.2(3).

(3) The department will not pay incentive on the longitudinal joint density if the traffic lane is in disincentive A disincentive may be applied for each mainline lane and all joint densities if both qualify for a pay reduction.

The department will pay incentive for longitudinal joint density under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL

The department will administer disincentives under the Disincentive Density HMA Pavement Longitudinal Joints administrative item.

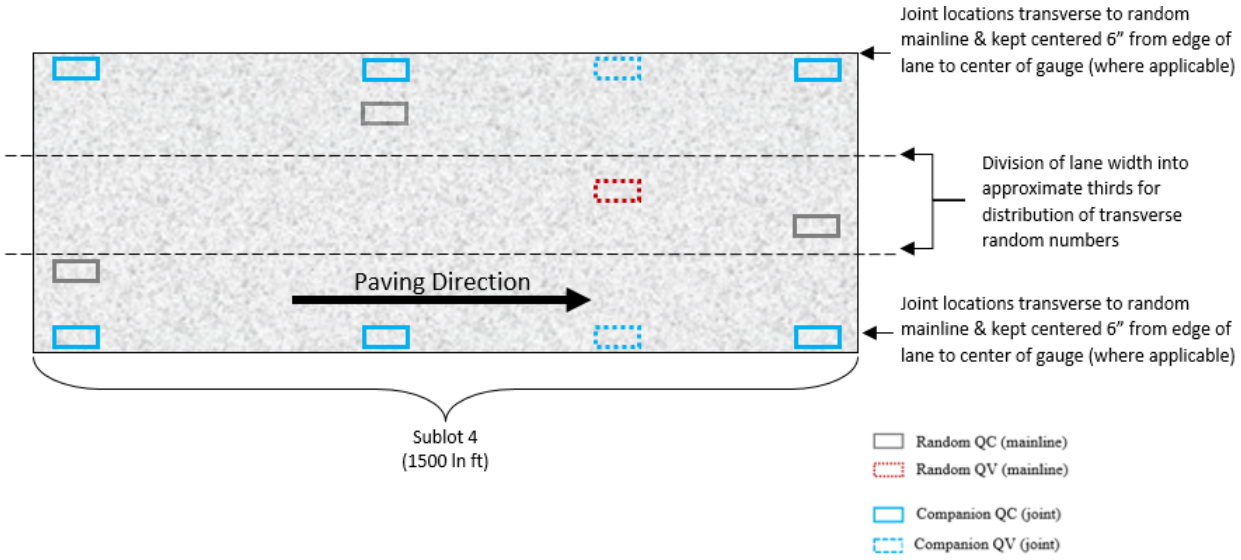
bts-Longitudinal Joint Density (20181030)

Appendix

WisDOT Longitudinal Joint – Nuclear Gauge Density Layout

Each QC and QV density location must have a companion density location at any applicable joint. This companion location must share longitudinal stationing with each QC or QV density location, and be located transversely with the center of the gauge 6-inches from the edge of the paving area.

For HMA Pavement Percent Within Limits QMP projects, this appears as follows:



Further Explanation of *PAY ADJUSTMENT FOR HMA PAVEMENT LONGITUDINAL JOINT DENSITY* Table

	Confined				
	Lower Layer (On Base)		Upper Layer		
	LT/MT	HT	LT/MT	HT	Pay Adjust
Mainline Target (SS 460-3)	91.0	92.0	93.0	93.0	-
Confined Target (mainline - 1.5)	89.5	90.5	91.5	91.5	-
Equal to or greater than +1.0	≥ 90.5	≥ 91.5	≥ 92.5	≥ 92.5	$0.40
From 0.0 to +0.9	90.4 - 89.5	91.4 - 90.5	92.4 - 91.5	92.4 - 91.5	$0
From -0.1 to -1.0	89.4 - 88.5	90.4 - 89.5	91.4 - 90.5	91.4 - 90.5	($0.20)
From -1.1 to -2.0	88.4 - 87.5	89.4 - 88.5	90.4 - 89.5	90.4 - 89.5	($0.40)
From -2.1 to -3.0	87.4 - 86.5	88.4 - 87.5	89.4 - 88.5	89.4 - 88.5	($0.80)
More than -3.0	< 86.5	< 87.5	< 88.5	< 88.5	REMEDIAL ACTION

	Unconfined				
	Lower Layer (On Base)		Upper Layer		
	LT/MT	HT	LT/MT	HT	Pay Adjust
Mainline Target (SS 460-3)	91.0	92.0	93.0	93.0	-
Unconfined Target (Mainline -3.0)	88.0	89.0	90.0	90.0	-
Equal to or greater than +2.0	≥ 90.0	≥ 91.0	≥ 92.0	≥ 92.0	$0.40
From 0.0 to +1.9	89.9 - 88.0	90.9 - 89.0	91.9 - 90.0	91.9 - 90.0	$0
From -0.1 to -1.0	87.9 - 87.0	88.9 - 88.0	89.9 - 89.0	89.9 - 89.0	($0.20)
From -1.1 to -2.0	86.9 - 86.0	87.9 - 87.0	88.9 - 88.0	88.9 - 88.0	($0.40)
From -2.1 to -3.0	85.9 - 85.0	86.9 - 86.0	87.9 - 87.0	87.9 - 87.0	($0.80)
More than -3.0	< 85.0	< 86.0	< 87.0	< 87.0	REMEDIAL ACTION

34. Storm Sewer

Replace standard spec 608.2.2.2(1) and (2) with the following:

(1) Furnish foundation backfill material that conforms with standard spec 305.2 for 1 ¼-Inch Base Aggregate Dense.

Replace standard spec 608.2.2.3(1) with the following:

(1) Furnish trench backfill material that conforms with standard spec 305.2 for 1 ¼-Inch Base Aggregate Dense.

Revise standard spec 608.5(2) as follows:

Payment for the Storm Sewer Pipe bid items is full compensation for providing storm sewer; for excavating, except for rock excavation; for forming foundation; for providing and removing sheeting and shoring; for laying pipe; for sealing joints and making connections to new or existing fixtures; for backfilling; providing base aggregate dense 1 1/4 –inch base aggregate dense granular backfill material, including bedding material; for cleaning out; and absent the pertinent contract bid items, for restoring the work site.

35. Adjusting Manhole Covers.

This special provision describes adjusting manhole covers conforming to standard spec 611 as modified in this special provision.

Adjust manhole covers located in pavement areas in two separate operations. Initially, remove designated manhole covers along with sufficient pavement to permit installation of temporary cover plate over the opening. Fill the excavated area with asphaltic pavement mixture, which shall remain in place until contract milling and paving operations permit setting the manhole frames to grade. During the second phase, remove the asphaltic pavement mixture surrounding the manhole plus the temporary cover plate, and set the manhole cover to final grade. The department will measure and pay for the items of asphaltic pavement mixture, temporary cover plate, milling, and paving separately.

Revise standard spec 611.3.7 by deleting the last paragraph.

Set the manhole frames so that they comply with the surface requirements of standard spec 450.3.2.9. At the completion of the paving, a 6-foot straightedge shall be placed over the centerline of each manhole frame parallel to the direction of traffic. A measurement shall be made at each side of the frame. The two measurements shall be averaged. If this average is greater than 5/8 inches, reset the manhole frame to the correct plane and elevation. If this average is 5/8 inches or less but greater than 3/8 inches, the manhole frame shall be allowed to remain in place but shall be paid for at 50 percent of the contract unit price.

If the manhole frame is higher than the adjacent pavement, the two measurements shall be made at each end of the straightedge. These two measurements shall be averaged. The same criteria for acceptance and payment as above, shall apply.

stp-611-005 (20030820)

36. Cover Plates Temporary, Item 611.8120.S.

A Description

This special provision describes providing and removing steel plates to cover and support asphaltic pavement and traffic loading at manholes, inlets and similar structures during milling and paving operations.

B Materials

Provide a 0.25 inch minimum thickness steel plate that extends to the outside edge of the existing masonry.

C (Vacant)

D Measurement

The department will measure Cover Plates Temporary as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
611.8120.S	Cover Plates Temporary	EACH

Payment is full compensation for furnishing, installing, and removing the cover plates.

The steel plates shall become the property of the contractor when no longer needed in the contract work.

stp-611-006 (20151210)

37. Fence Safety, Item 616.0700.S.

A Description

This special provision describes providing plastic fence at locations the plans show.

B Materials

Furnish notched conventional metal "T" or "U" shaped fence posts.

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3 inch max
Resin/Construction:	High density polyethylene mesh
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction

Drive posts into the ground 12 to 18 inches. Space posts at 7 feet.

Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.

Overlap two rolls at a post and secure with wire ties.

D Measurement

The department will measure Fence Safety by the linear foot along the base of the fence, center-to-center of posts, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

Payment is full compensation for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; and for removing and disposing of fence and posts at project completion.

stp-616-030 (20160607)

38. Insulation Board Polystyrene, 2-Inch, Item 612.0902.S.01.

A Description

This special provision describes furnishing and placing polystyrene insulation board as the plans show.

B Materials

Provide polystyrene insulation board 2-Inch x 4-ft x 8-ft dimensions that is suitable for underground use. The insulation board shall have a minimum strength of 40 PSI, R-Value of 5, and a max water absorption of 0.17% by volume.

Delete flammability requirement.

B.1 Certification

Before installation, obtain from the manufacturer a certification indicating compliance and furnish it to the engineer.

Place the insulation board at the bottom of the storm sewer granular backfill bedding material.

Place insulation board at locations where the proposed bottom of storm sewer pipe is within 1.5-FT depth of existing sanitary pipes where plans show or as the engineer directs.

C (Vacant)

D Measurement

The department will measure Insulation Board Polystyrene (size) by area in square yards of work, completed and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
612.0902.S.01	Insulation Board Polystyrene 2-Inch	SY

Payment is full compensation for all excavation; and for furnishing and placing the insulation board.

stp-612-005 (20030820)

39. Survey Monument Coordination.

The contractor is to notify the Northeast Regional Survey Coordinator, Cormac McInnis, (920) 492-5638, at least 30 days before the beginning of construction activities. The Regional Survey Coordinator will then make the arrangements to have the Public Land Survey Monument and Landmark Reference Monuments tied out.

After the majority of construction is complete (before restoration) the contractor is again to notify the Survey Coordinator that the site is ready for the replacement of the monuments. The Survey Coordinator will then make arrangements to have the Public Land Survey Monument and Landmark Reference Monuments reset.

ner-621-010 (20171213)

40. Traffic Control.

Perform this work according to the requirements of standard spec 643, and as shown on the plans or as approved by the engineer, except as hereinafter modified.

Submit to engineer for approval a detailed traffic control plan for any changes to the proposed traffic control detail as shown on the plans. Submit this plan ten days prior to the preconstruction conference.

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 above items shall be considered incidental to the item as bid and no additional payment will be made therefore.

Supply the name and telephone number of a local contact person for traffic control repair before starting 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.

The turning of traffic control devices when not in use to obscure the message will not be allowed under this contract.

Obtain prior approval from the engineer for the location of egress and ingress for construction vehicles to prosecute the work.

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

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

a. Do not park or store any vehicle, piece of equipment, or construction materials on the right-of-way, unless otherwise specified in the traffic control article or without approval of the engineer.
b. All construction vehicles and equipment entering or leaving live traffic lanes shall yield to through traffic.
c. 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.
   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.
   The traffic requirements are subject to change at the direction of the engineer in the event of an emergency.

(NER17-1018)

41. Temporary Portable Rumble Strips, Item 643.0310.S.

A Description

This special provision describes providing, relocating, maintaining, and removing temporary portable rumble strips.

B Materials

Furnish RoadQuake2 or Roadquake2F temporary portable rumble strips, by Plastic Safety Systems. Do not use alternate products or methods without preapproval by the Bureau of Traffic Operations.

C Construction

C.1 Placement

Provide rumble strips where the plans show or the engineer directs as follows:

1. Before placing rumble strips, clean the roadway of sand and other materials that may cause slippage.
2. Place one end of the rumble strips 6 inches from the roadway centerline. Extend the strips perpendicular to the direction of travel. Ensure strips lay flat on the roadway surface.

3. Only one series of rumble strips, placed before the first work zone, is required per direction of travel for multiple work zones spaced 1 mile or less apart. Work zones spaced greater than 1 mile apart require a separate series of rumble strips.

C.2 Maintenance

Maintain rumble strips as follows:

1. If rumble strips slide, become out of alignment, or are no longer in the wheel path of approaching vehicles during the work period, thoroughly clean both sides of the rumble strips and reset on a clean roadway.
2. Repair or replace damaged rumble strips immediately.

D Measurement

The department will measure temporary portable rumble strips as a single lump sum unit of work, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
643.0310.S	Temporary Portable Rumble Strips	LS

Payment is full compensation for providing, relocating, maintaining or replacing, and removing temporary portable rumble strips.

stp-643-020 (20161130)

42. Temporary Pedestrian Asphalt, Item 644.1410; Temporary Pedestrian Surface Plate, Item 644.1430.S.

A Description

This special provision describes providing, maintaining, and removing temporary pedestrian surface.

B Materials

Furnish 1 1/4-inch dense graded aggregate conforming to standard spec 305.2. Furnish:

- Asphaltic surface conforming to standard spec 465.2.
- Pressure treated 2x4 framing lumber, pressure treated 3/4 inch plywood with skid resistant surface coating, and weather resistant deck screws 3 1/2 inch minimum for framing and 1 5/8 inch minimum for plywood.
- 1/4 inch minimum steel plate or commercially available prefabricated plates with skid resistant surface coating conforming to Americans with Disabilities Act Accessibility Guidelines. If placed in the roadway, must be able to handle a vehicle weight of 88,000 lbs.

C Construction

Place, compact, and level a dense graded aggregate foundation before placing the surface.

Provide a firm, stable, and slip-resistant surface layer with vertical joints no higher than 1/4 inch and horizontal joints no wider than 1/2 inch. Sheet materials up to 1 inch thick may be lapped if the edge is beveled at 45 degrees or flatter. Asphalt may also be used to ramp up to materials up to 1 inch thick. Construct conforming to the following:

- Asphalt surface a minimum of 2 inches thick compacted with compactors, tampers, or rollers.
- Framed plywood panels 4 feet wide with a skid resistant surface coating.
- Steel or prefabricated plate with a skid resistant surface coating.

Align parallel to the existing roadway grade or, if outside of a street or highway right-of-way, do not exceed 5 percent longitudinal slope. Provide cross slope of 1 to 2 percent unless the engineer approves a steeper cross slope in writing.

Maintain the surface with a 4 foot minimum clear width and the specified joint and slope requirements. Repair or reconstruct installations disturbed during construction operations. Remove and dispose of as specified in standard spec 203.3.4 when no longer required.

D Measurement

The department will measure temporary pedestrian surface by the square foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
644.1410.S	Temporary Pedestrian Asphalt	SF
644.1430.S	Temporary Pedestrian Surface Plate	SF

Payment is full compensation for providing, maintaining, and removing temporary pedestrian surface.

stp-644-010 (20150630)

43. Temporary Curb Ramp, Item 644.1601.S.

A Description

This special provision describes providing, maintaining, and removing temporary curb ramps.

B Materials

Furnish materials as follows:

- Asphaltic surface conforming to standard spec 465.2.
- Engineer-approved ready mixed concrete or ancillary concrete conforming to standard spec 602.2 except no QMP is required.
- Commercially available prefabricated curb ramps conforming to Americans with Disabilities Act Accessibility Guidelines.

Furnish yellow detectable warning fields conforming to Americans with Disabilities Act Accessibility Guidelines. Use either an engineer-approved surface-applied type or cast iron from the department's approved products list.

C Construction

Provide and maintain temporary curb ramps, including detectable warning fields, throughout the project duration. Place and compact a dense graded aggregate foundation before placing the curb ramp, unless the curb ramp is to be placed on existing roadway surface.

Remove and dispose temporary curb ramps and associated detectable warning fields when no longer required.

D Measurement

The department will measure temporary curb ramps by each individual ramp acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
644.1601.S	Temporary Curb Ramp	EACH

Payment is full compensation for providing, maintaining, and removing temporary curb ramps.

stp-644-020 (20150630)

44. Temporary Pedestrian Safety Fence, Item 644.1616.S.

A Description

This special provision describes providing, maintaining, and removing the temporary pedestrian safety fence.

B Materials

Furnish notched metal "T" or "U" shaped fence posts weighing 1 1/3 pounds per foot or more.

Furnish select 2x4 dimensional lumber.

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3 inch max
Resin/Construction:	High density polyethylene mesh
Tensile Yield:	Avg. 2000 lb per 4-ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4-ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

The engineer may allow prefabricated fencing systems conforming to Americans with Disabilities Act Accessibility Guidelines.

C Construction

Provide a continuous safety fence with the top edge free of sharp or rough edges.

Repair or reconstruct installations disturbed during construction operations. Remove and dispose of as specified in standard spec 204.3 when no longer required.

D Measurement

The department will measure Temporary Pedestrian Safety Fence by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
644.1616.S	Temporary Pedestrian Safety Fence	LF

Payment is full compensation for providing, maintaining, and removing the temporary pedestrian safety fence.

stp-644-025 (20150630)

45. Pavement Marking and Centerline Rumble Strip.

Before installing Centerline Rumble Strips place centerline Temporary Marking Line (Epoxy) 4-Inch. Except where removed with the rumble application, do not remove the centerline Temporary Marking Line (Epoxy) 4-Inch. After the Centerline Rumble Strips have been installed, place permanent centerline Marking Line (Epoxy) 4-Inch.

ner-646-001 (20180205)

46. Locating No-Passing Zones, Item 648.0100.

For this project, the spotting sight distance in areas with a 55 mph posted speed limit is 0.21 miles (1108 feet). stp-648-005 (20060512)

47. Electrical Service for Meter Breaker Pedestal (STH 42 & Main St), Item 656.0200.01.

Add the following to standard spec 656:

A Description

Work under this item shall be according to standard spec 656 with the following addition.

B (Vacant)

C Construction

The contractor is responsible for making early application for the electric service lateral.

Contact Wisconsin Public Service at (877) 444-0888 or email at businesscenter@wisconsinpublicservice.com to make application and request a time of use meter, Option 1. The future monthly invoices can go to the following address:

Wisconsin Dept of Transportation
Expenditure Acct (F15-0198)
P.O. Box 7366
Madison, WI 53707-7366

D (Vacant)

E Payment

The contractor shall pay the utility company promptly for the electric service lateral installation cost.

48. Stormwater Treatment Device, Item SPV.0060.01.

A Description

This special provision describes labor, materials, equipment and incidentals required and install all precast concrete stormwater treatment systems and appurtenances according to the drawings and these specifications.

B Materials

The stormwater treatment system shall be of a type that has been installed and used successfully for a minimum of 5 years. The manufacturer of said system shall have been regularly engaged in the engineering design and production of systems for the physical treatment of stormwater runoff during the aforementioned period.

The stormwater treatment system shall be a Vortechs® Model Offline VX 7000 System protected under U.S. Patent #5,759,415 as manufactured by:

Contech Engineered Solutions
9025 Centre Pointe Drive, Suite 400 West Chester, Ohio 45069
(800) 338-1122

or approved equal.

Furnish and use materials in the work that conform to the following requirements:

Concrete for precast stormwater treatment systems shall conform to ASTM C 857 and C 858 and meet the following additional requirements:

The wall thickness shall not be less than 6 inches (152 mm) or as shown on the dimensional drawings. In all cases the wall thickness shall be no less than the minimum thickness necessary to sustain HS20-44 (MS18) loading requirements as determined by a licensed professional engineer.

Sections shall have tongue and groove or ship-lap joints with a butyl mastic sealant conforming to ASTM C 990.

Cement shall be Type II Portland cement conforming to ASTM C 150.

All sections shall be cured by an approved method. Sections shall not be shipped until the concrete has attained a compressive strength of 4,000 psi (28 MPa) or until 5 days after fabrication and/or repair, whichever is the longer.

Pipe openings shall be sized to accept pipes of the specified size(s) and material(s), and shall be sealed by the contractor with a hydraulic cement conforming to ASTM C 595M

Internal aluminum plate components shall be aluminum alloy 5052-H32 according to ASTM B 209.

Sealant to be utilized at the base of the swirl chamber shall be 60 durometer extruded nitrile butadiene rubber (Buna N) and shall be provided to the concrete precaster for installation.

Brick or masonry used to build the manhole frame to grade shall conform to ASTM C 32 or ASTM C 139 and shall be installed in conformance with all local requirements.

Casting for manhole frames and covers shall be according to ASTM A48, CL.30B and AASHTO M105. The manhole frame and cover shall be equivalent to Campbell Foundry Pattern #1009A or #1012D custom cast with the Contech Engineered Solutions logo and the words “Vortechs® Stormwater Treatment System”.

A bitumen sealant in conformance with ASTM C 990 shall be utilized in the sealing of the joint between the swirl chamber and the vault at the long wall tangent points. The butyl material shall be 3/4-inch thick by 3/4-inch wide.

C Construction

Equipment and tools necessary for performing all parts of the work will be satisfactory as to design, capacity and mechanical condition for the purposes intended; repair, replace, improve, or supplement any equipment that is not maintained in full working order, or which as used by the contractor is proven inadequate to obtain the results prescribed, to obtain the progress and workmanship contemplated by the contract.

The Stormwater Treatment Device shall be constructed according to the sizes shown on the drawings and as specified herein. Install at elevations and locations shown on the drawings or as otherwise directed by the engineer.

Place the precast base unit on a granular subbase of minimum thickness of six inches after compaction or of greater thickness and compaction if specified elsewhere. The granular subbase shall be checked for level prior to setting and the precast base section of the trap shall be checked for level at all four corners after it is set. If the slope from any corner to any other corner exceeds 0.5% the base section shall be removed and the granular subbase material re-leveled.

Prior to setting subsequent sections place bitumen sealant in conformance with ASTM C 990 along the construction joint in the section that is already in place.

After setting the base and wall or riser sections, prepare to install the swirl chamber. Place the 3/4-inch thick by 3/4-inch wide butyl mastic seal vertically on the outside of the swirl chamber starting 1 inch above the bottom of the swirl chamber and continuing to a height equal to the elevation of the bottom of the upper aperture of the swirl chamber. The butyl mastic seal should abut the downstream side of the pre-drilled mounting holes that attach the swirl chamber to the long walls of the concrete vault. Next, install the extruded Buna N seal on the bottom edge of the 180 degree downstream section of the swirl chamber by first applying a bead of Sikaflex-1a polyurethane elastomeric sealant into the extruded slot then slide the seal onto the swirl chamber. The extruded seal should extend 3-inches upstream of the mounting holes, toward the inlet end of the vault. Set the swirl chamber into position and keep the seal

approximately ½-inch above the floor of the concrete vault. Apply a continuous bead of Sikaflex-1a sealant under the cupped bottom of the seal. Set the circular swirl chamber on the floor of the vault and anchor it by bolting the swirl chamber to the side walls of the concrete vault at the three tangent points and at the inlet tab using HILTI brand stainless steel drop-in wedge anchors or equivalent 3/8-inch diameter by 2-3/4 inch minimum length at heights of approximately 3 inches off the floor and at 15 inch intervals to approximately the same height of the butyl mastic sealant (at locations of pre- drilled holes in aluminum components). Apply a continuous bead of Sikaflex-1a sealant to the intersection of the inside bottom edge of the extruded seal and the vault floor.

If the oil baffle wall (Baffle A) and flow control wall (Baffle B) are not integrally cast-in to riser/wall sections then the Baffle wall panels shall be placed in the formed keyways or between bolted-in-place angle flanges as provided by the manufacturer. Apply non-shrink grout or Sikaflex-1a sealant to each end of Baffle A and Baffle B at the upstream intersection with the side walls of the concrete vault.

Prior to setting the precast roof section, bitumen sealant equal to ASTM C 990 shall be placed along the top of the oil baffle wall (Baffle A), using more than one layer of mastic if necessary, to a thickness at least 1-inch greater than the nominal gap between the top of the baffle and the roof section. The nominal gap shall be determined either by field measurement or the shop drawings. Do not seal the top of Baffle B unless specified on the shop drawings to do so. After placement of the roof section has compressed the butyl mastic sealant in the gap over Baffle A, finish sealing the gap with an approved non- shrink grout on both sides of the gap using the butyl mastic as a backing material to which to apply the grout. If roof section is “clamshell” or “bathtub” halves, then finish sealing the ends of the Baffle walls by applying non-shrink grout or Sikaflex-1a sealant to each end of Baffle A at the upstream intersection with the side walls of the concrete vault and to each end of Baffle B at the downstream intersection with the side walls of the concrete vault.

After setting the precast roof section of the stormwater treatment system, set precast concrete manhole riser sections, to the height required to bring the cast iron manhole covers to grade, so that the sections are vertical and in true alignment with a ¼-inch maximum tolerance allowed. Backfill in a careful manner, bringing the fill up in 6- inch lifts on all sides. If leaks appear, clean the inside joints and caulk with lead wool to the satisfaction of the Engineer. Precast sections shall be set in a manner that will result in a watertight joint. In all instances, installation of Stormwater Treatment Systems shall conform to ASTM specification C 891 “Standard Practice for Installation of Underground Precast Utility Structures”.

Holes made in the concrete sections for handling or other purposes shall be plugged with a nonshrink grout or by using grout in combination with concrete plugs.

Where holes must be cut in the precast sections to accommodate pipes, do all cutting before setting the sections in place to prevent any subsequent jarring which may loosen the mortar joints. The contractor shall make all pipe connections.

D Measurement

The department will measure Stormwater Treatment Device by each separate device, 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	Stormwater Treatment Device	EACH

Payment is full compensation for furnishing labor, materials, excavation, bedding, backfill, shoring, dewatering, connections to existing or proposed storm sewer, device baffles, mastic, cleanup, and any other incidentals necessary to complete required work.

The department will pay for topsoil, sod and fertilizer over the device under separate bid items.

49. Salvage Lighting Unit, Item SPV.0060.02.

A Description

This special provision describes salvaging lighting units from the project, as shown on the plans and as hereinafter described.

B (Vacant)

C Construction

Under the bid item Salvage Lighting Unit, disconnect and salvage the complete lighting unit (pole, luminaire, and lamp) from the locations shown in the Plan and/or as designated by the engineer.

Pole wiring and fusing within the salvaged lighting units shall be discarded. Disconnect from existing branch circuits prior to salvaging.

Salvaged materials shall be disassembled as direct by the engineer and shall be delivered to 3626 Gibraltar Road, Fish Creek, WI 54212. Coordinate delivery with Maintenance Supervisor Patrick Strantz at (920) 421-2139. Any damage to the salvaged materials resulting from the hauling and storage operation shall be repaired or replaced in-kind at the contractor's expense.

D Measurement

The department will measure Salvage Lighting Unit as each individual lighting unit, acceptably salvaged and delivered.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.02	Salvage Lighting Unit	EACH

Payment is full compensation for salvaging and storage of all existing lighting unit components including poles, luminaires, lamps, seasonal display receptacle, transformer bases, internal pole wiring and fusing, and all pole accessories, and hardware and fittings.

50. Reconnecting Existing Storm Sewer Laterals, Item SPV.0060.03.

A Description

This special provision describes reconnecting existing storm sewer laterals to new structures or existing pipe.

B Materials

Provide culvert pipe concrete collars according to standard spec 520.2.4.

Provide couplings that meet standard spec 608.2.

C Construction

Identify all private laterals in existing structures prior to that structure’s removal. Remove existing lateral pipes to the next good joint and replace in-kind. Verify that positive drainage is achieved when connecting to the new inlet or curb outlet structure. The contractor will be allowed to salvage any structurally sound pipe that was removed with prior approval by the engineer. Connect the existing pipes to the new pipes with the appropriate coupling, concrete collar or by means approved by the engineer. Any additional pipe or materials required to reconnect the storm sewer laterals are considered incidental to this bid item.

D Measurement

The department will measure Reconnect Existing Storm Sewer Laterals by each lateral, acceptably connected and approved in the field.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.03	Reconnect Existing Storm Sewer Lateral	EACH

Payment is full compensation for removal of existing pipes, furnishing and installing all materials, couplings, concrete collars, and pipe.

(NER13-0813)

51. Remove Lighting Unit, Item SPV.0060.04.

A Description

This special provision describes removing lighting units from the project as shown in the plans and hereinafter described.

B (Vacant)

C Construction

Under the bid item Remove Lighting Unit, disconnect and remove the complete lighting unit (pole, luminaire, and lamp) from the locations shown in the Plan and/or as designated by the engineer.

Pole wiring and fusing within the removed lighting units shall be discarded. Disconnect from existing branch circuits prior to removing.

Removed materials shall become the property of the contractor and disposed of properly.

D Measurement

The department will measure Remove Lighting Unit as each individual lighting unit, acceptably removed.

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	Remove Lighting Unit	EACH

Payment is full compensation for removing lighting unit components including poles, luminaires, lamps, seasonal display receptacle, transformer bases, internal pole wiring and fusing, and all pole accessories, hardware and fittings.

52. Install Lighting Unit Type Special- Item SPV.0060.05.

A Description

This special provision describes installing a Town furnished lighting unit complete with LED acorn luminaire, pole, and accessories as shown in the plans and hereinafter described.

B Materials

A decorative lighting unit complete with pole, luminaire and wireless control node will be furnished to the contractor by the Town. A detail of Lighting Unit Type Special is shown in the plans. Lighting units will be available at the start of the construction project and will be located at the Town maintenance facility - 3626 Gibraltar Road, Fish Creek, WI 54212. Coordinate access to maintenance facility with Maintenance Supervisor Patrick Strantz at (920) 421-2139.

C Construction

Under the bid item Install Lighting Unit, furnish and install all necessary miscellaneous accessories and hardware to complete the installation of the lighting units. Lighting Unit Type Special shall be installed at locations indicated in the Plans.

Three 1/c No. 12 stranded, type XHHW-2, wires shall be used to connect the luminaires and receptacles to their respective branch conductors in the pole base. Each luminaire shall be protected by two 6-amp fuses. Each GFCI receptacle shall be protected by one 10-amp fuse.

All threaded stainless steel hardware and dissimilar metal, threaded hardware shall be coated with an approved zinc-based anti-seize compound (Loctite or Jet-Lube) by the contractor prior to assembly.

After completing pole erection using normal pole shaft raking techniques, ensure the centerline of the shaft is plumb.

The contractor shall follow manufacturer's instructions regarding luminaire and pole installation.

D Measurement

The department will measure Install Lighting Unit Type Special as each individual lighting 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.0060.05	Install Lighting Unit Type Special	EACH

Payment is full compensation for installing all Town furnished materials, including luminaire, pole, wireless node, and all pole accessories, and furnishing all hardware and fittings necessary to install the lighting unit in a workable first class condition.

53. Lighting Control Cabinet Base Type Special, Item SPV.0060.06.

A Description

This special provision describes furnishing and installing a concrete lighting control cabinet foundation as shown on the plans and as hereinafter provided.

B Materials

Supply materials that comply with standard spec 654.2.

C Construction

The Lighting Control Cabinet Base Type Special shall have an anchor bolt pattern, size, exposure and orientation that will accommodate the lighting control cabinet identified in the details in the plan.

D Measurement

The department will measure Lighting Control Cabinet Base Type Special, acceptably completed according to the contract and accepted as each individual unit.

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	Lighting Control Cabinet Base Type Special	EACH

Payment is full compensation for furnishing and installing all materials, including anchor bolts, conduit, ground rods, hardware and fittings.

54. Concrete Base Type Special, Item SPV.0060.07.

A Description

This special provision describes furnishing and installing lighting a concrete light foundation as shown on the plans and as hereinafter provided.

B Materials

Supply materials that comply with standard spec 654.2.

C Construction

The Concrete Base Type Special shall be modified to have an anchor bolt circle, orientation, and anchor bolt size that will accommodate the pole manufacturer's requirements. Anchor bolt exposure shall accommodate the specified pole base requirements. Bar steel reinforcement shall be modified as necessary to accommodate new anchor bolt placement. In locations where lighting units are installed near retaining walls, the rigid concrete forms shall be placed prior to backfilling straps for the retaining wall. Coordinate schedule with general contractor and engineer.

D Measurement

The department will measure Concrete Base Type Special, acceptably completed according to the contract and accepted, as each individual unit.

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	Concrete Base Type Special	EACH

Payment is full compensation for furnishing and installing all materials, including anchor bolts, conduit, hardware and fittings.

55. Trimming Trees, Item SPV.0060.08.

A Description

This special provision describes trimming and disposing of tree limbs as shown on the plans and as hereinafter described.

B (Vacant)

C Construction

Trim tree limbs up to a height of 3-FT from the ground, measured at the trunk of the tree, that are located within the slope intercept and hinder construction activities.

Dispose of the tree limbs as specified in standard spec 201.3.

D Measurement

The department will measure Trimming Trees by each tree trunk where limbs were acceptably removed and disposed from.

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	Trimming Trees	EACH

Payment is full compensation for handling, hauling, piling, burning, burying, trimming, chipping, wound treatment, rehandling, and disposing of waste debris.

56. Pipe Inlet Structure, Item SPV.0060.09.

A Description

This special provision describes installing pipe inlet drainage structure as shown in the plans and as hereinafter described.

B Materials

Furnish reinforced concrete pipe 12-Inch C-III conforming to the material requirements of standard spec 608.2.1.

Furnish pipe inlet grate covers meeting ASTM A-48 Class 35B, cast gray iron, meeting plan dimensions.

Furnish concrete collars and concrete structure base according to standard spec 520.2.4.

For granular backfill use a maximum size of any gravel or stone that meets gradation for 1 ¼-Inch base listed under standard spec 305.2.2.1.

Furnish Brick conforming to standard spec 519.

Furnish base aggregate dense that conform to 1 ¼-Inch Base aggregate dense material specified in standard spec 305 manual. QMP testing for base aggregate dense is waived for this item.

C Construction

Provide culvert pipe inlet structures with pipe inlet grate. Excavate, place granular backfill, and backfill as the plans show. Dispose of surplus or unsuitable material as specified under standard spec 205.3.12.

Construct concrete collars and concrete structure base using concrete conforming to standard spec 520.2.4 where and as the plans show.

D Measurement

The department will measure Pipe Inlet Structure as each individual pipe inlet structure, acceptably completed.

E Payment

The department will pay for measured quanttieis at the contract unit price under the follow bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.09	Pipe Inlet Structure	EACH

Payment for Pipe Inlet Structure is full compensation for providing reinforced concrete pipe, pipe grate inlet (iron casting), granular backfill, concrete collars, concrete structure base, excavating, backfilling, and disposing of surplus material.

57. Inlets Median 1 Grate, Special, Item SPV.0060.10.

A Description

This special provision describes installing Inlets Median 1 Grate Special as shown in the plans and as hereinafter described.

B Materials

Furnish materials according to standard spec 611.2.

C Construction

Construct according to standard spec 611.3.

Structure will include a 2’ sump below lowest pipe invert as shown in the plan construction detail.

D Measurement

The department will measure Inlets Median 1 Grate Special as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.10	Inlets Median 1 Grate	EACH

Payment for Inlets Median 1 Grate will meet requirements for inlets shown in standard spec 611.5.

58. Manhole Special 8-FT, Item SPV.0060.11.

A Description

This special provision describes installation of Manholes 8-FT Special as shown in the plans and as hereinafter described.

B Materials

Furnish materials according to standard spec 611.2.

C Construction

Construct according to standard spec 611.3.

Structure lid will have a 2-FTx3FT opening to accommodate Type H-S casting.

Structure will have a 2-FT sump below lowest connecting pipes invert elevation.

See construction details.

D Measurement

The department will measure Manholes 8-FT Special as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.11	Manhole Special 8-FT	EACH

Payment for Manhole Special 8-FT will meet requirements for manholes shown in standard spec 611.5.

59. Removing Landscape Rocks, Item SPV.0060.12.

A Description

This special provision describes removing and disposing the existing landscape rocks as shown in the plans and according to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C Construction

Remove landscaping rocks within the project limits as shown on the plans or as directed by the engineer. Rocks shall be removed from the grading limits of the project and disposed of as specified for disposing of materials under standard spec 203.3.4.

D Measurement

The department will measure Remove Landscape Rocks as each individual unit acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.12	Remove Landscape Rocks	EACH

Payment is full compensation for removing landscape rocks from the grading limits, and for disposal of the land scape rock.

60. Lighting Control Cabinet Type Special, Item SPV.0060.13.

A Description

This special provision describes furnishing and installing a lighting control cabinet complete with a meter socket as shown on the plans and as hereinafter provided. Work under this item shall be according to standard spec 656 with the following additions.

B Materials

The cabinet type shall be detailed in the plans. A rigid steel or Schedule 80 PVC conduit shall be stubbed out of the control cabinet base to accommodate the energy provider's service conduit and conductors.

C Construction

The contractor is responsible for making early application for the electric service lateral. Contact Wisconsin Public Service at (877) 444-0888 or email at businesscenter@wisconsinpublicservice.com to make application and request a time of use meter, Option 1. The future monthly invoices can go to the following address:

Town of Gibraltar
PO Box 850
Fish Creek, WI 54212-0850

D Measurement

The department will measure Lighting Control Cabinet Type Special, acceptably completed according to the contract and accepted as each unit.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.13	Lighting Control Cabinet Type Special	EACH

Payment is full compensation for furnishing and installing all materials, including lighting control cabinets, meter socket, hardware and fittings; and for coordination with and/or any payments to energy provider necessary to complete the contract work.

61. Concrete Base Spread Footing, Item SPV.0060.14.

A Description

This special provision describes furnishing and installing lighting a concrete spread footing light foundation as shown on the plans and as hereinafter provided.

B Materials

The concrete light foundation shall be constructed with materials and methods as specified in the details in the plan.

C Construction

The Concrete Base Type Spread Footing shall be constructed to have an anchor bolt circle, orientation, and anchor bolt size that will accommodate the pole manufacturer's requirements. Anchor bolt exposure shall accommodate the specified pole base requirements. Bar steel reinforcement shall be modified as necessary to accommodate anchor bolt placement. In locations where lighting units are installed near retaining walls, the rigid concrete forms shall be placed prior to backfilling straps for the retaining wall. Coordinate schedule with general contractor and engineer.

D Measurement

The department will measure Concrete Base Type Spread Footing, acceptably completed according to the contract and accepted, as each unit.

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	Concrete Base Type Spread Footing	EACH

Payment is full compensation for furnishing and installing all materials, including anchor bolts, conduit, ground rod, hardware and fittings.

62. HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item SPV.0060.15; HMA Percent Within Limits (PWL) Test Strip Density Item SPV.0060.16.

A Description

This special provision describes the Hot Mix Asphalt (HMA) density and volumetric testing tolerances required for an HMA test strip. An HMA test strip is required for projects constructed under HMA Percent Within Limits (PWL) QMP. A density test strip is required for each pavement layer placed over a specific, uniform underlying material, unless specified otherwise in the plans. Each project is restricted to a single mix design per mix type per layer (e.g., upper layer and lower layer may have different mix type specified or may have the same mix type with different mix designs). Each mix design requires a separate test strip. Density and volumetrics testing will be conducted on the same test strip whenever possible.

Perform work according to standard spec 460 and as hereinafter modified.

B Materials

Use materials conforming to HMA Pavement Percent Within Limits (PWL) QMP special provision.

C Construction

C.1 Test Strip

Submit the test strip start time and date to the department in writing at least 5 calendar days in advance of construction of the test strip. If the contractor fails to begin paving within 2 hours of the submitted start time, the test strip is delayed and the department will be credited $2,000 according to Section E of this document. Alterations to the start time and date must be submitted to the department in writing a minimum of 24 hours prior to the start time. The contractor will not be liable for changes in start time related to adverse weather days as defined by standard spec 101.3 or equipment breakdown verified by the department.

On the first day of production for a test strip, produce approximately 750 tons of HMA. (Note: tonnage shall be adjusted to accommodate natural break points in the project.) Test strips shall be located in a section of the roadway to allow a representative rolling pattern (i.e. not a ramp or shoulder, etc.).

C.1.1 Sampling and Testing Intervals

C.1.1.1 Volumetrics

Laboratory testing will be conducted from a split sample yielding three components, with portions designated for QC (quality control), QV (quality verification), and retained.

During production for the test strip, sufficient HMA mixture for three-part split samples shall be obtained from trucks prior to departure from the plant. Three split samples shall be collected during the production of test strip material. Sampling from the truck box and three-part splitting of HMA samples shall be done in accordance with CMM 8-36. These three samples will be randomly selected by the engineer from each *third* of the test strip tonnage (T), excluding the first 50 tons:

Sample Number	Production Interval (tons)
1	50 to $\frac{T}{3}$
2	$\frac{T}{3}$ to $\frac{2T}{3}$
3	$\frac{2T}{3}$ to T

C.1.1.2 Density

Required field tests include contractor QC and department QV nuclear density gauge tests and pavement coring at ten individual locations (five in each half of the test strip length) in accordance with Appendix A: *Test Methods and Sampling for HMA PWL QMP Projects*. Both QV and QC teams shall have two nuclear density gauges present for correlation at the time the test strip is constructed. QC and QV teams may

wish to scan with additional gauges at the locations detailed in Appendix A, as only gauges used during the test strip correlation phase will be allowed on the remainder of the project.

C.1.2 Field Tests

C.1.2.1 Density

A gauge comparison according to CMM 8-15.7 shall be completed prior to the day of test strip construction. Daily standardization of gauges on reference blocks and a project reference site shall be performed in accordance with CMM 8-15.8. A standard count shall be performed for each gauge on the material placed for the test strip, prior to any additional data collection. Nuclear gauge readings and pavement cores shall be used to determine nuclear gauge correlation in accordance with Appendix A. The two to three readings for the five locations across the mat for each of two zones shall be provided to the engineer. The engineer will analyze the readings of each gauge relative to the densities of the cores taken at each location. The engineer will determine the average difference between the nuclear gauge density readings and the measured core densities to be used as a constant offset value. This offset will be used to adjust raw density readings of the specific gauge for the remainder of the project and shall appear on the density data sheet along with gauge and project identification. An offset is specific to the mix and layer, therefore a separate value shall be determined for each layer of each mix placed over a differing underlying material for the project. This constitutes correlation of that individual gauge for the given layer. Two gauges per team are not required to be onsite daily after completion of the test strip. Any data collected without a correlated gauge will not be accepted.

The contractor is responsible for coring the pavement from the footprint of the density tests and filling core holes according to Appendix A. Coring and filling of pavement core holes must be approved by the engineer. The QV team is responsible for the labeling and safe transport of the cores from the field to the QC laboratory. Testing of cores shall be conducted by the contractor and witnessed by department personnel. The contractor is responsible for drying the cores following testing. The department will take possession of cores following laboratory testing and will be responsible for any verification testing at the discretion of the engineer.

The target maximum density to be used in determining core density is the average of the three volumetric/mix Gmm values from the test strip multiplied by 62.24 lb/ft^3. In the event mix and density portions of the test strip procedure are separated, or if an additional density test strip is required, the mix portion must be conducted prior to density determination. The target maximum density to determine core densities shall then be the Gmm four-test running average (or three-test average from a PWL volumetric-only test strip) from the end of the previous day's production multiplied by 62.24 lb/ft^3. If no PWL production volumetric test is to be taken in a density-only test strip, a non-random three-part split mix sample will be taken and tested for Gmm by the department representative. The department Gmm test results from this non-random test will be entered in the HMA PWL Test Strip Spreadsheet and must conform to the Acceptance Limits presented in C.2.1.

Exclusions such as shoulders and appurtenances shall be tested and reported in accordance with CMM 8-15. However, all acceptance testing of shoulders and appurtenances will be conducted by the department, and average lot (daily) densities must conform to standard spec Table 460-3. No density incentive or disincentive will be applied to shoulders or appurtenances. However, unacceptable shoulder material will be handled according to standard spec 460.3.3.1 and CMM 8-15.11.

C.1.3 Laboratory Tests

C.1.3.1 Volumetrics

Obtain random samples according to C.1.1.1 and Appendix A. Perform tests the same day as taking the sample.

Theoretical maximum specific gravities of each mixture sample will be obtained according to AASHTO T 209. Bulk specific gravities of both gyratory compacted samples and field cores shall be determined in accordance with AASHTO T 166. The bulk specific gravity values determined from field cores shall be used to calculate a correction factor (i.e., offset) for each QC and QV nuclear density gauge. The correction factor will be used throughout the remainder of the layer.

C.2 Acceptance

C.2.1 Volumetrics

Produce mix conforming to the following limits based on individual QC and QV test results (tolerances based on most recent JMF):

ITEM	ACCEPTANCE LIMITS
Percent passing given sieve:	
37.5-mm	+/- 8.0
25.0-mm	+/- 8.0
19.0-mm	+/- 7.5
12.5-mm	+/- 7.5
9.5-mm	+/- 7.5
2.36-mm	+/- 7.0
75-µm	+/- 3.0
Asphaltic content in percent[1]	- 0.5
Air Voids	-1.5 & +2.0
VMA in percent[2]	- 1.0
Maximum specific gravity	+/- 0.024

[1] Asphalt content more than -0.5% below the JMF will be referee tested by the department's AASHTO accredited laboratory and HTCP certified personnel using automated extraction according to WisDOT Modified ASTM D8159.

[2] VMA limits based on minimum requirement for mix design nominal maximum aggregate size in table 460-1.

QV samples will be tested for Gmm, Gmb, and AC. Air voids and VMA will then be calculated using these test results.

Calculation of air voids shall use either the QC, QV, or retained split sample test results, as identified by conducting the paired t-test with the WisDOT PWL Test Strip Spreadsheet.

If QC and QV test results do not correlate as determined by the split sample comparison, the retained split sample will be tested by the department's AASHTO accredited laboratory and HTCP certified personnel as a referee test. Additional investigation shall be conducted to identify the source of the difference between QC and QV data. Referee data will be used to determine material conformance and pay.

C.2.2 Density

Compact all layers of test strip HMA mixture to the applicable density shown in the following table:

TABLE 460-3 MINIMUM REQUIRED DENSITY[1]

	MIXTURE TYPE	
LAYER	LT & MT	HT
LOWER	93.0[2]	93.0[3]
UPPER	93.0	93.0

[1] If any individual core density test result falls more than 3.0 percent below the minimum required target maximum density, the engineer will investigate the acceptability of that material per CMM 8-15.11.

[2] Minimum reduced by 2.0 percent for a lower layer constructed directly on crushed aggregate or recycled base courses.

[3] Minimum reduced by 1.0 percent for lower layer constructed directly on crushed aggregate or recycled base courses.

Nuclear density gauges are acceptable for use on the project only if correlation is completed for that gauge during the time of the test strip and the department issues documentation of acceptance stating the correlation offset value specific to the gauge and mix design. The offset is not to be entered into any nuclear density gauge as it will be applied by the department-provided Field Density Worksheet.

C.2.3 Test Strip Approval and Material Conformance

All applicable laboratory and field testing associated with a test strip shall be completed prior to any additional mainline placement of the mix. All test reports shall be submitted to the department upon completion, and approved before paving resumes. The department will notify the contractor within 24 hours from start of test strip regarding approval to proceed with paving, unless an alternate time frame is agreed upon in writing with the department. The 24-hour approval time includes only working days as defined in standard spec 101.3.

The department will evaluate material conformance and make pay adjustments based on the PWL value of air voids and density for the test strip. The QC core densities and QC and QV mix results will be used to determine the PWL values as calculated in accordance with Appendix A.

The PWL values for air voids and density shall be calculated after determining core densities. An approved test strip is defined as the individual PWL values for air voids and density both being equal to or greater than 75, mixture volumetric properties conforming to the limits specified in C.2.1, and an acceptable gauge-to-core correlation. Further clarification on PWL test strip approval and appropriate post-test strip actions are shown in the following table:

PWL Test Strip Approval and Material Conformance Criteria

PWL Value for Air Voids and Density	Test Strip Approval	Material Conformance	Post-Test Strip Action
Both PWL ≥ 75	Approved[1]	Material paid for according to Section E.	Proceed with Production
50 ≤ Either PWL < 75	Not Approved	Material paid for according to Section E.	Consult BTS to determine need for additional test strip.
Either PWL < 50	Not Approved	Unacceptable material removed and replaced or paid for at 50% of the contract unit price according to Section E.	Construct additional Volumetrics or Density test strip as necessary.

[1] In addition to these PWL criteria, mixture volumetric properties must conform to the limits specified in C.2.1, split sample comparison must have a passing result and an acceptable gauge-to-core correlation must be completed.

A maximum of two test strips will be allowed to remain in place per pavement layer per project. If material is removed, a new test strip shall replace the previous one at no additional cost to the department. If the contractor changes the mix design for a given mix type during a project, no additional compensation will be paid by the department for the required additional test strip and the department will be credited $2,000 for the additional test strip according to Section E of this document. For simultaneously conducted density and volumetric test strip components, the following must be achieved:

i. Passing/Resolution of Split Sample Comparison
ii. Volumetrics/mix PWL value ≥ 75
iii. Density PWL value ≥ 75
iv. Acceptable correlation

If not conducted simultaneously, the mix portion of a test strip must accomplish (i) & (ii), while density must accomplish (iii) & (iv). If any applicable criteria are not achieved for a given test strip, the engineer, with authorization from the Department's Bureau of Technical Services, will direct an additional test strip (or alternate plan approved by the department) be conducted to prove the criteria can be met prior to additional paving of that mix. For a density-only test strip, determination of mix conformance will be according to main production, i.e., HMA Pavement Percent Within Limits (PWL) QMP special provision.

D Measurement

The department will measure HMA Percent Within Limits (PWL) Test Strip as each unit of work, acceptably completed as passing the required air void, VMA, asphalt content, gradation, and density correlation for a Test Strip. Material quantities shall be determined in accordance with standard spec 450.4 and detailed here within.

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	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH
SPV.0060.16	HMA Percent Within Limits (PWL) Test Strip Density	EACH

These items are intended to compensate the contractor for the construction of the test strip for projects paved under the HMA Pavement Percent Within Limits QMP article.

Payment for HMA Percent Within Limits (PWL) Test Strip Volumetrics is full compensation for volumetric sampling, splitting, and testing; for proper labeling, handling, and retention of split samples.

Payment for HMA Percent Within Limits (PWL) Test Strip Density is full compensation for collecting and measuring of pavement cores, acceptably filling core holes, providing of nuclear gauges and operator(s), and all other work associated with completion of a core-to-gauge correlation, as directed by the engineer.

Acceptable HMA mixture placed on the project as part of a volumetric or density test strip will be compensated by the appropriate HMA Pavement bid item with any applicable pay adjustments. If a test strip is delayed as defined in C.1 of this document, the department will also be credited $2,000 for each instance, under the Delayed Test Strip administrative item. If an additional test strip is required because the initial test strip is not approved by the department or the mix design is changed by the contractor, the department will be credited $2,000 for each additional test strip (i.e. $2,000 for each individual volumetrics or density test strip) under the Additional Test Strip administrative item.

Pay adjustment will be calculated using 65 dollars per ton of HMA pavement. The department will pay for measured quantities of mix based on $65/ton multiplied by the following pay adjustment:

PAY ADJUSTMENT FOR HMA PAVEMENT AIR VOIDS & DENSITY

PERCENT WITHIN LIMITS (PWL)	*PAYMENT FACTOR, PF (percent of $65/ton)*
≥ 90 to 100	PF = ((PWL – 90) * 0.4) + 100
≥ 50 to 90	(PWL * 0.5) + 55
<50	50%[1]

where, PF is calculated per air voids and density, denoted $PF_{air\ voids}$ & $PF_{density}$

[1] Material resulting in PWL value less than 50 shall be removed and replaced, unless the engineer allows for such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement.

For air voids, PWL values will be calculated using lower and upper specification limits of 2.0 and 4.3 percent, respectively. Lower specification limits for density will be in accordance with Table 460-3 as modified herein. Pay adjustment will be determined for an acceptably completed test strip and will be computed as shown in the following equation:

Pay Adjustment = (PF-100)/100 x (WP) x (tonnage) x ($65/ton)*

*Note: If Pay Factor <50, the contract unit price will be used in lieu of $65/ton

The following weighted percentage (WP) values will be used for the corresponding parameter:

Parameter	WP
Air Voids	0.5
Density	0.5

Individual Pay Factors for each air voids ($PF_{air\ voids}$) and density ($PF_{density}$) will be determined. $PF_{air\ voids}$ will be multiplied by the total tonnage produced (i.e., from truck tickets), and $PF_{density}$ will be multiplied by the calculated tonnage used to pave the mainline only (i.e., traffic lane excluding shoulder) as determined in accordance with Appendix A.

The department will pay incentive for air voids under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
460.2005	Incentive Density PWL HMA Pavement	DOL
460.2010	Incentive Air Voids HMA Pavement	DOL

The department will administer disincentives under the Disincentive Density HMA Pavement and the Disincentive Air Voids HMA Pavement administrative items.

bts-PWL Test Strip (20181030)

63. HMA Pavement Percent Within Limits (PWL) QMP.

A Description

This special provision describes percent within limits (PWL) pay determination, providing and maintaining a contractor Quality Control (QC) Program, department Quality Verification (QV) Program, required sampling and testing, dispute resolution, corrective action, pavement density, and payment for HMA pavements. Pay is determined by statistical analysis performed on contractor and department test results conducted according to the Quality Management Program (QMP) as specified in standard spec 460, except as modified below.

B Materials

Conform to the requirements of standard specs 450, 455, and 460 except where superseded by this special provision. The department will allow only one mix design for each HMA mixture type per layer

required for the project, unless approved by the engineer. The use of more than one mix design for each HMA pavement layer will require the contractor to construct a new test strip in accordance with HMA Pavement Percent Within Limits (PWL) QMP Test Strip Volumetrics and HMA Pavement Percent Within Limits (PWL) QMP Test Strip Density articles at no additional cost to the department.

Replace standard spec 460.2.8.2.1.3.1 for contracts with 5000 Tons of Mixture or Greater with the following:

460.2.8.2.1.3.1 Contracts under Percent within Limits

(1) Furnish and maintain a laboratory at the plant site fully equipped for performing contractor QC testing. Have the laboratory on-site and operational before beginning mixture production.

(2) Obtain random samples and perform tests according to this document and further defined in Appendix A: *Test Methods & Sampling for HMA PWL QMP Projects*. Obtain HMA mixture samples from trucks at the plant. For the sublot in which a QV sample is collected, the QC sample shall be discarded, and the QC team shall test a split of the QV sample.

(3) Sampling from the truck box and three-part splitting of HMA samples shall be done in accordance with CMM 8-36. Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per sublot. All QC samples shall provide the following: QC, QV, and Retained. The contractor shall take possession and test the QC portions. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each sample) and the Retained portions. Additional sampling details are found in Appendix A. Samples shall be labeled in accordance with CMM 8-36. Additional handling instructions for retained samples are found in CMM 8-36.

(4) Use the test methods identified below to perform the following tests at a frequency greater than or equal to that indicated:

- Blended aggregate gradations in accordance with AASHTO T 30
- Asphalt content (AC) in percent according to WisDOT Modified AASHTO T 308 per CMM 8-36.6.3.6 (ignition oven), AASHTO T 164 Method A or B (chemical extraction), or WisDOT Modified ASTM D8159 per CMM 8-36.6.3.1 (automated extraction).
- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166.
- Maximum specific gravity (Gmm) according to AASHTO T 209.
- Air voids (V_a) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R35.

(5) Lot size shall consist of 3750 tons with sublots of 750 tons. Test each design mixture at a frequency of 1 test per 750 tons of mixture type produced and placed on the project. Add a random sample for any fraction of 750 tons at the end of production for a specific mixture design for each project. Partial lots with less than three sublot tests will be included into the previous lot for data analysis and pay adjustment. Volumetric lots will include all tonnage of mixture type under specified bid item unless otherwise specified in the plan.

(6) Conduct field tensile strength ratio tests according to AASHTO T283, without freeze-thaw conditioning cycles, on each qualifying mixture in accordance with CMM 8-36.6.14. Test each full 50,000 ton production increment, or fraction of an increment, after the first 5,000 tons of production. Perform required increment testing in the first week of production of that increment. If field tensile strength ratio values are below the spec limit, notify the engineer. The engineer and contractor will jointly determine a corrective action.

Delete standard spec 460.2.8.2.1.5 and 460.2.8.2.1.6.

Replace standard spec 460.2.8.2.1.7 Corrective Action with the following:

460.2.8.2.1.7 Corrective Action

(1) Material must conform to the following action and acceptance limits based on individual QC and QV test results (tolerances relative to the JMF used on the PWL Test Strip):

ITEM	ACTION LIMITS	ACCEPTANCE LIMITS
Percent passing given sieve:		
37.5-mm	+/- 8.0	
25.0-mm	+/- 8.0	
19.0-mm	+/- 7.5	
12.5-mm	+/- 7.5	
9.5-mm	+/- 7.5	
2.36-mm	+/- 7.0	
75-µm	+/- 3.0	
AC in percent[1]	-0.3	-0.5
Va		- 1.5 & +2.0
VMA in percent[2]	- 0.5	-1.0

[1] The department will not adjust pay based on a QC AC in percent test results; however corrective action will be applied to nonconforming material according to 460.2.8.2.1.7(3) as modified herein.
[2] VMA limits based on minimum requirement for mix design nominal maximum aggregate size in table 460-1.

(2) QV samples will be tested for Gmm, Gmb, and AC. Air voids and VMA will then be calculated using these test results.
(3) Notify the engineer if any individual test result falls outside the action limits, investigate the cause and take corrective action to return to within action limits. If two consecutive test results fall outside the action limits, stop production. Production may not resume until approved by the engineer. Additional QV samples may be collected upon resuming production, at the discretion of the engineer.
(4) For any additional tests outside the random number testing conducted for volumetrics, the data collected will not be entered into PWL calculations. Additional QV tests must meet acceptance limits or be subject to production stop and/or remove and replace.
(5) Remove and replace unacceptable material at no additional expense to the department. Unacceptable material is defined as any individual QC or QV tests results outside the acceptance limits or a PWL value < 50. The engineer may allow such material to remain in place with a price reduction. The department will pay for the such HMA Pavement allowed to remain in place at 50 percent of the contract unit price.

Replace standard spec 460.2.8.3.1.2 Personnel Requirements with the following:

460.2.8.3.1.2 Personnel Requirements

(1) The department will provide at least one HTCP-certified Transportation Materials Sampling (TMS) Technician, to observe QV sampling of project mixtures.

(2) Under departmental observation, a contractor TMS technician will collect and split samples.
(3) A department HTCP-certified Hot Mix Asphalt, Technician I, Production Tester (HMA-IPT) technician will ensure that all sampling is performed correctly and conduct testing, analyze test results, and report resulting data.
(4) The department will provide an organizational chart to the contractor before mixture production begins. The organizational chart will include names, telephone numbers, and current certifications of all QV testing personnel. The department will update the chart with appropriate changes, as they become effective.

Replace standard spec 460.2.8.3.1.4 Department Verification Testing Requirements with the following:

460.2.8.3.1.4 Department Verification Testing Requirements

(1) HTCP-certified department personnel will obtain QV random samples by directly supervising HTCP-certified contractor personnel sampling from trucks at the plant. Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per sublot. All QV samples shall provide the following: QC, QV, and Retained. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each

sample) and the Retained portions. The department will take possession of retained samples accumulated to date each day QV samples are collected. Retention of samples will be provided until surpassing the analysis window of up to 5 lots, as defined in 460.2.8.3.1.7(2) of this document. Additional sampling details are found in Appendix A.

(2) The department will verify product quality using the test methods specified here in 460.2.8.3.1.4(3). The department will identify test methods before construction starts and use only those methods during production of that material unless the engineer and contractor mutually agree otherwise.

(3) The department will perform all testing conforming to the following standards:

- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166.
- Maximum specific gravity (Gmm) according to AASHTO T 209.
- Air voids (Va) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R 35.
- Asphalt Content (AC) in percent by ignition oven according to WisDOT Modified AASHTO T 308 per CMM 8-36.6.3.6 (ignition oven), AASHTO T 164 Method A or B (chemical extraction), or WisDOT Modified ASTM D 8159 per CMM 8-36.6.3.1 (automated extraction).

(4) The department will randomly test each design mixture at the minimum frequency of one test for each lot.

Delete standard spec 460.2.8.3.1.6.

Replace standard spec 460.2.8.3.1.7 Dispute Resolution with the following:

460.2.8.3.1.7 Data Analysis for Volumetrics

(1) Analysis of test data for pay determination will be contingent upon QC and QV test results. Statistical analysis will be conducted on Gmm and Gmb test results for calculation of Va. If either Gmm or Gmb analysis results in non-comparable data as described in 460.2.8.3.1.7(2), subsequent testing will be performed for both parameters as detailed in the following paragraph.

(2) The engineer, upon completion of the first 3 lots, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. Additional comparisons incorporating the first 3 lots of data will be performed following completion of the 4th and 5th lots (i.e., lots 1-3, 1-4, and 1-5). A rolling window of 5 lots will be used to conduct F & t comparison for the remainder of the project (i.e., lots 2-6, then lots 3-7, etc.), reporting comparison results for each individual lot. Analysis will use a set alpha value of 0.025. If the F- and t-tests report comparable data, the QC and QV data sets are determined to be statistically similar and QC data will be used to calculate the Va used in PWL and pay adjustment calculations. If the F- and t-tests result in non-comparable data, proceed to the *dispute resolution* steps found below. Note: if both QC and QV Va PWL result in a pay adjustment of 102% or greater, dispute resolution testing will not be conducted. Dispute resolution via further investigation is as follows:

[1] The Retained portion of the split from the most recent lot in the analysis window (specifically the sublot identifying that variances or means do not compare) shall be referee tested by the bureau's AASHTO accredited laboratory and certified personnel. If the non-comparison occurs following Lot 3, 4, or 5, all previous lots are subject to referee testing. Referee test results will replace the QV data of the sublot(s).

[2] Statistical analysis will be conducted with referee test results replacing QV results.

i. If the F- and t-tests indicate variances and means compare, no further testing is required for the lot and QC data will be used for PWL and pay factor/adjustment calculations.

ii. If the F- and t-tests indicate non-comparable variances or means, the Retained portion of the random QC sample will be tested by the department’s regional lab for the remaining 4 sublots of the lot which the F- and t- tests indicate non-comparable datasets. The department’s regional lab and the referee test results will be used for PWL and pay factor/adjustment calculations. Upon the second instance of non-comparable variance or means and for every instance thereafter, the department will be credited for the additional testing of the remaining 4 sublots at $2,000/lot under the Regional Testing administrative item.

[3] The contractor may choose to *dispute* the regional test results on a lot basis. In this event, the retained portion of each sublot will be referee tested by the department's AASHTO accredited laboratory and certified personnel. The referee Gmm and Gmb test results will supersede the regional lab results for the disputed lot.

i. If referee testing results in an increased calculated pay factor, the department will absorb the cost of the additional referee testing.

ii. If referee testing of a disputed lot results in an equal or lower calculated pay factor, the contractor pays for the additional referee testing at $2,000/lot. This will be credited to the department under the Referee Testing administrative item.

(3) The department will notify the contractor of the referee test results within 3 working days after receipt of the samples by the department's AASHTO accredited laboratory. The intent is to provide referee test results within 7 calendar days from completion of the lot.

(4) The department will determine mixture conformance and acceptability by analyzing referee test results, reviewing mixture project data, and inspecting the completed pavement according to Standard Spec, this special provision, and accompanying Appendix A.

(5) Unacceptable material (i.e., resulting in a PWL value less than 50 or individual QC or QV test results not meeting the Acceptance Requirements of 460.2.8.2.1.7 as modified herein) will be referee tested by the bureau's AASHTO accredited laboratory and certified personnel. Such material may be subject to remove and replace, at the discretion of the engineer. If the engineer allows the material to remain in place, it will be paid at 50% of the HMA Pavement contract unit price. Replacement or pay adjustment will be conducted on a sublot basis. If an entire PWL sublot is removed and replaced, the test results of the newly placed material shall replace the original data for the sublot. Any remove and replace shall be performed at no additional cost to the department. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test will be conducted and under such circumstances will be entered into the HMA PWL Production spreadsheet for data analysis and pay determination.] The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this material.

Delete standard spec 460.2.8.3.1.8 Corrective Action.

C Construction

Replace standard spec 460.3.3.2 Pavement Density Determination with the following:

460.3.3.2 Pavement Density Determination

(1) The engineer will determine the target maximum density using department procedures described in CMM 8-15. The engineer will determine density as soon as practicable after compaction and before placement of subsequent layers or before opening to traffic.

(2) Do not re-roll compacted mixtures with deficient density test results. Do not operate continuously below the specified minimum density. Stop production, identify the source of the problem, and make corrections to produce work meeting the specification requirements.

(3) A lot is defined as 7500 lane feet with sublots of 1500 lane feet (excluding shoulder, even if paved integrally) and placed within a single layer for each location and target maximum density category indicated in table 460-3. The contractor is required to complete three tests randomly per sublot and the department will randomly conduct one QV test per sublot. A partial quantity less than 750 lane feet will be included with the previous sublot. Partial lots with less than three sublots will be included into the previous lot for data analysis/acceptance and pay, by the engineer. If density lots/sublots are determined prior to construction of the test strip, any random locations within the test strip shall be omitted. Exclusions such as shoulders and appurtenances shall be tested and recorded in accordance with CMM 8-15. However, all acceptance testing of shoulders and appurtenances will be conducted by the department, and average lot (daily) densities must conform to standard spec Table 460-3. No density incentive or disincentive will be applied to shoulders or appurtenances. Offsets will not be applied to nuclear density gauge readings for shoulders or appurtenances. Unacceptable shoulder material will be handled according to standard spec 460.3.3.1 and CMM 8-15.11.

(4) The three QC locations per sublot will represent the outside, middle, and inside of the paving lane. The QC density testing procedures are detailed in Appendix A.
(5) QV nuclear testing will consist of one randomly selected location per sublot. The QV density testing procedures will be the same as the QC procedure at each testing location and are also detailed in Appendix A.
(6) An HTCP-certified nuclear density technician (NUCDENSITYTEC-I) shall identify random locations and perform the testing for both the contractor and department. The responsible certified technician shall ensure that sample location and testing is performed correctly, analyze test results, and provide density results to the contractor weekly, or at the completion of each lot.
(7) For any additional tests outside the random number testing conducted for density, the data collected will not be entered into PWL calculations. However, additional QV testing must meet the tolerances for material conformance as specified in the Standard Specification and this document. If additional density data identifies unacceptable material, proceed in accordance with CMM 8-15.11.

Replace standard spec 460.3.3.3 Waiving Density Testing with Acceptance of Density Data with the following:

460.3.3.3 Analysis of Density Data

(1) Analysis of test data for pay determination will be contingent upon test results from both the contractor (QC) and the department (QV).
(2) As random density locations are paved, the data shall be recorded in the HMA PWL Production Spreadsheet for analysis in chronological order. The engineer, upon completion of the analysis lot, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. Analysis will use a set alpha value of 0.025.

i. If the F- and t-tests indicate variances and means compare, the QC and QV data sets are determined to be statistically similar and QC data will be used for PWL and pay adjustment calculations.
ii. If the F- and t-tests indicate variances or means do not compare, the QV data will be used for subsequent calculations.

(3) The department will determine mixture density conformance and acceptability by analyzing test results, reviewing mixture project data, and inspecting the completed pavement according to Standard Spec, this document, and accompanying Appendix.
(4) Density resulting in a PWL value less than 50 or not meeting the requirements of 460.3.3.1 (any individual density test result falling more than 3.0 percent below the minimum required target maximum density as specified in standard spec Table 460-3) is unacceptable and may be subject to remove and replace at no additional cost to the department, at the discretion of the engineer.

i. Replacement may be conducted on a sublot basis. If an entire PWL sublot is removed and replaced, the test results of the newly placed material shall replace the original data for the sublot.
ii. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test must be conducted and under such circumstances will be entered into the data analysis and pay determination.]
iii. If the engineer allows such material to remain in place, it will be paid for at 50% of the HMA Pavement contract unit price. The extent of unacceptable material will be addressed in accordance with CMM 8-15.11. The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this material.

D Measurement
The department will measure the HMA Pavement bid items acceptably completed by the ton as specified in standard spec 450.4 and as follows in standard spec 460.5 as modified here within.

E Payment
Replace standard spec 460.5.2 HMA Pavement with the following:

460.5.2 HMA Pavement

460.5.2.1 General

(1) Payment for HMA Pavement Type LT, MT, and HT mixes is full compensation for providing HMA mixture designs; for preparing foundation; for furnishing, preparing, hauling, mixing, placing, and compacting mixture; for HMA PWL QMP testing and aggregate source testing; for warm mix asphalt additives or processes; for stabilizer, hydrated lime and liquid antistripping agent, if required; and for all materials including asphaltic materials.
(2) If provided for in the plan quantities, the department will pay for a leveling layer, placed to correct irregularities in an existing paved surface before overlaying, under the pertinent paving bid item. Absent a plan quantity, the department will pay for a leveling layer as extra work.

460.5.2.2 Calculation of Pay Adjustment for HMA Pavement using PWL

(1) Pay adjustments will be calculated using 65 dollars per ton of HMA pavement. The HMA PWL Production Spreadsheet, including data, will be provided to the contractor by the department as soon as practicable upon completion of each lot. The department will pay for measured quantities of mix based on this price multiplied by the following pay adjustment calculated in accordance with the HMA PWL Production Spreadsheet:

PAY FACTOR FOR HMA PAVEMENT AIR VOIDS & DENSITY

PERCENT WITHIN LIMITS (PWL)	*PAYMENT FACTOR, PF (percent of $65/ton)*
≥ 90 to 100	PF = ((PWL – 90) * 0.4) + 100
≥ 50 to 90	(PWL * 0.5) + 55
<50	50%[1]

where PF is calculated per air voids and density, denoted $PF_{air\ voids}$ & $PF_{density}$

[1] Any material resulting in PWL value less than 50 shall be removed and replaced unless the engineer allows such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement.

For air voids, PWL values will be calculated using lower and upper specification limits of 2.0 and 4.3 percent, respectively. Lower specification limits for density shall be in accordance with standard spec Table 460-3. Pay adjustment will be determined on a lot basis and will be computed as shown in the following equation.

Pay Adjustment = (PF-100)/100 x (WP) x (tonnage) x ($65/ton)*

*Note: If Pay Factor <50, the contract unit price will be used in lieu of $65/ton

The following weighted percentage (WP) values will be used for the corresponding parameter:

Parameter	WP
Air Voids	0.5
Density	0.5

Individual Pay Factors for each air voids ($PF_{air\ voids}$) and density ($PF_{density}$) will be determined. $PF_{air\ voids}$ will be multiplied by the total tonnage placed (i.e., from truck tickets), and $PF_{density}$ will be multiplied by the calculated tonnage used to pave the mainline only (i.e., travel lane excluding shoulder) as determined in accordance with Appendix A.

The department will pay incentive for air voids and density under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
460.2005	Incentive Density PWL HMA Pavement	DOL
460.2010	Incentive Air Voids HMA Pavement	DOL

The department will administer disincentives under the Disincentive Density HMA Pavement and the Disincentive Air Voids HMA Pavement administrative items.

The department will administer a disincentive under the Disincentive HMA Binder Content administrative item for each individual QV test result indicating asphalt binder content below the Action Limit in 460.2.8.2.1.7 presented herein. The department will adjust pay per sublot of mix at 65 dollars per ton of HMA pavement multiplied by the following pay adjustment calculated in accordance with the HMA PWL Production Spreadsheet:

AC Binder Relative to JMF	Pay Adjustment / Sublot
-0.4% to -0.5%	75%
More than -0.5%	50%[1]

[1] Any material resulting in an asphalt binder content more than 0.5% below the JMF AC content shall be removed and replaced unless the engineer allows such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement. Such material will be referee tested by the department's AASHTO accredited laboratory and HTCP certified personnel using automated extraction according to WisDOT Modified ASTM D8159.

Note: PWL value determination is further detailed in the *Calculations* worksheet of the HMA PWL Production spreadsheet.

bts-HMA PWL QMP (20181030)

64. Appendix A.

Test Methods & Sampling for HMA PWL QMP Projects.

The following procedures are included with the HMA Pavement Percent Within Limits (PWL) Quality Management Program (QMP) special provision:

- WisDOT Procedure for Nuclear Gauge/Core Correlation – Test Strip
- WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production
- Sampling for WisDOT HMA PWL QMP
- Calculation of PWL Mainline Tonnage Example

WisDOT Procedure for Nuclear Gauge/Core Correlation – Test Strip

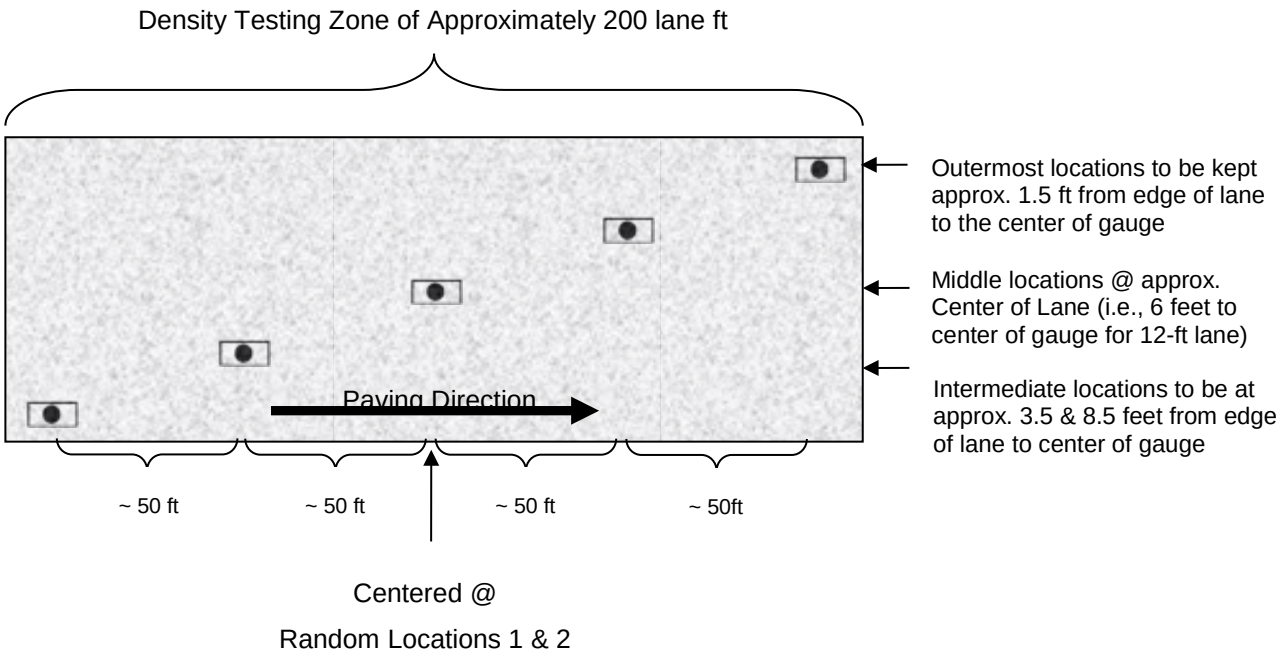


Figure 1: Nuclear/Core Correlation Location Layout

The engineer will identify two zones in which gauge/core correlation is to be performed. These two zones will be randomly selected within each *half* of the test strip length. (Note: Density zones shall not overlap and must have a minimum of 100 feet between the two zones; therefore, random numbers may be shifted (evenly) in order to meet these criteria.) Each zone shall consist of five locations across the mat as identified in Figure 1. The following shall be determined at each of the five locations within both zones:

- two one-minute nuclear density gauge readings for QC team*
- two one-minute nuclear density gauge readings for QV team*
- pavement core sample

*If the two readings exceed 1.0 pcf of one another, a third reading is conducted in the same orientation as the first reading. In this event, all three readings are averaged, the individual test reading of the three which falls farthest from the average value is discarded, and the average of the remaining two values is used to represent the location for the gauge.

The zones are supposed to be undisclosed to the contractor/roller operators. The engineer will not lay out density/core test sites until rolling is completed and the cold/finish roller is beyond the entirety of the zone. Sites are staggered across the 12-foot travel lane, and do not include shoulders. The outermost locations should be 1.5-feet from the center of the gauge to the edge of lane. [NOTE: This staggered layout is only applicable to the test strip. All mainline density locations after test strip should have a longitudinal- as well as transverse-random number to determine location as detailed in the *WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production* section of this document.]

Individual locations are represented by the  symbol as seen in Figure 1 above. The symbol is two-part, comprised of the nuclear test locations and the location for coring the pavement, as distinguished here:

The nuclear site is the same for QC and QV readings for the test strip, i.e., the QC and QV teams are to take nuclear density gauge readings in the same footprint. Each of the QC and QV teams are to take a minimum of two one-minute readings per nuclear site, with the gauge rotated 180 degrees between readings, as seen here:

(a) (b)

Figure 2: Nuclear gauge orientation for (a) 1st one-minute reading and (b) 2nd one-minute reading

Photos should be taken of each of the 10 core/gauge locations of the test strip. This should include gauge readings (pcf) and a labelled core within the gauge footprint. If a third reading is needed, all three readings should be recorded and documented. Only raw readings in pcf should be written on the pavement during the test strip, with a corresponding gauge ID/SN (generalized as QC-1 through QV-2 in the following Figure) in the following format:

Figure 3: Layout of raw gauge readings as recorded on pavement

Each core will then be taken from the center of the gauge footprint, and will be used to correlate each gauge with laboratory-measured bulk specific gravities of the pavement cores. One core in good condition must be obtained from each of the 10 locations. If a core is damaged at the time of extracting from the pavement, a replacement core should be taken immediately adjacent to the damaged core, i.e., from the same footprint. If a core is damaged during transport, it should be recorded as damaged and excluded from the correlation. Coring after traffic is on the pavement should be avoided. The contractor is responsible for coring of the pavement. Coring and filling of core holes must be approved by the engineer. The QV team is responsible for the labeling and safe transport of the cores from the field to the QC laboratory. Core density testing will be conducted by the contractor and witnessed by department personnel. The contractor is responsible for drying the cores following testing. The department will take possession of cores following initial testing and is responsible for any verification testing.

Each core 150 mm (6 inches) in diameter will be taken at locations as identified in Figure 1. Each random core will be full thickness of the layer being placed. The contractor is responsible for thoroughly drying cores obtained from the mat in accordance with ASTM D 7227 prior to using specimens for in-place density determination in accordance with AASHTO T 166.

Cores must be taken before the pavement is open to traffic. Cores are cut under Department/project staff observation. Relabel each core immediately after extruding, or ensure that labels applied to pavement prior to cutting remain legible. The layer interface should also be marked immediately following extrusion. Cores should be cut at this interface, using a wet saw, to allow for density measurement of only the most recently placed layer. Cores should be protected from excessive temperatures such as direct sunlight. Also, there should be department custody (both in transport and storage) for the cores until they are tested, whether that be immediately after the test strip or subsequent day if agreed upon between Department and Contractor. Use of concrete cylinder molds works well to transport cores. Cores should be placed upside down (flat surface to bottom of cylinder mold) in the molds, one core per mold, cylinder molds stored upright, and ideally transported in a cooler. Avoid any stacking of pavement cores.

Fill all core holes with non-shrink rapid-hardening grout, mortar or concrete, or with HMA. When using grout, mortar or concrete, remove all water from the core holes prior to filling. Mix the mortar or concrete in a separate container prior to placement in the hole. If HMA is used, fill all core holes with hot-mix matching the same day's production mix type at same day compaction temperature +/- 20 F. The core holes shall be dry and coated with tack before filling, filled with a top layer no thicker than 2.25 inches, lower layers not to exceed 4 inches, and compacted with a Marshall hammer or similar tamping device using approximately 50 blows per layer. The finished surface shall be flush with the pavement surface. Any deviation in the surface of the filled core holes greater than 1/4 inch at the time of final inspection will require removal of the fill material to the depth of the layer thickness and replacement.

WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production

For nuclear density testing of the pavement beyond the test strip, QC tests will be completed at three locations per sublot, with a sublot defined as 1500 lane feet. The three locations will represent the outside, middle, and inside of the paving lane (i.e., the lane width will be divided into thirds as shown by the dashed longitudinal lines in Figure 3 and random numbers will be used to identify the specific transverse location within each third in accordance with CMM 8-15). Longitudinal locations within each sublot shall be determined with 3 independent random numbers. The PWL Density measurements do not include the shoulder and other appurtenances. Such areas are tested by the department and are not eligible for density incentive or disincentive. Each location will be measured with two one-minute gauge readings oriented 180 degrees from one another, in the same footprint as detailed in Figure 2 above. Each location requires a minimum of two readings per gauge. The density gauge orientation for the first test be with the source rod towards the direction of paving. QV nuclear testing will consist of one randomly selected location per sublot. The QV is also comprised of two one-minute readings oriented 180 degrees from one another. For both QC and QV test locations, if the two readings exceed 1.0 pcf of one another, a third reading is conducted in the same orientation as the first reading. In this event, all three readings are averaged, the individual test reading of the three which falls farthest from the average value is discarded, and the average of the remaining two values is used to represent the location for the gauge. The sublot density testing layout is depicted in Figure 4, with QC test locations shown as solid lines and QV as dashed.

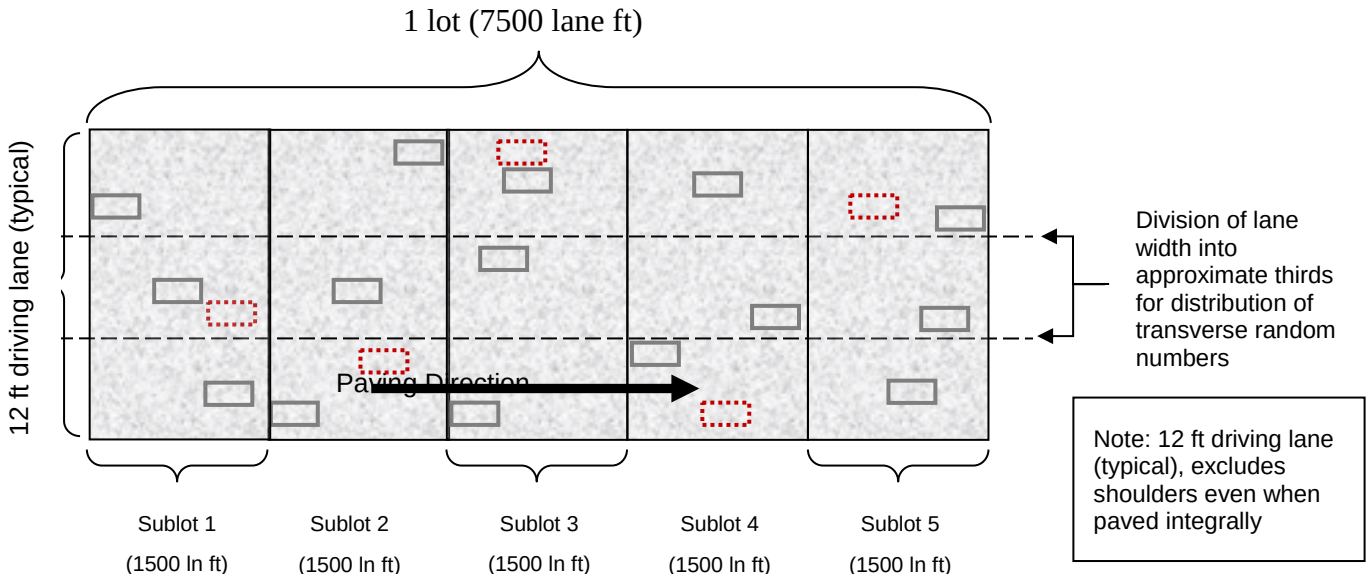


Figure 4: Locations of main lane HMA density testing (QC=solid lines, QV=dashed)

QC and QV nuclear density gauge readings will be statistically analyzed in accordance with Section 460.3.3.3 of the HMA PWL QMP SPV. (Note: For density data, if F- and t-tests compare, QC data will be used for the subsequent calculations of PWL value and pay determination. However, if an F- or t-test does not compare, the QV data will be used in subsequent calculations.)

Sampling for WisDOT HMA PWL QMP Production

Sampling of HMA mix for QC, QV and Retained samples shall conform to CMM 8-36 except as modified here.

Delete CMM 8-36.4 Sampling Hot Mix Asphalt and replace with the following to update sublot tonnages:

Sampling Hot Mix Asphalt

At the beginning of the project, the contractor determines the anticipated tonnage to be produced. The frequency of sampling is 1 per 750 tons (sublot) for QC and Retained Samples and 1 per 3750 tons (lot or 5 sublots) for QV as defined by the HMA PWL QMP SPV. A test sample is obtained randomly from each sublot. Each random sample shall be collected at the plant according to CMM 8-36.4.1 and 8-36.4.2. The contractor must submit the random numbers for all mix sampling to the department before production begins.

Example 1

Expected project production is 12,400 tons. The number of required samples is determined based on this expected production (per HMA PWL QMP SPV) and is determined by the random sample calculation.

Sample 1 –	from 50 to 750 tons
Sample 2 –	from 751 to 1500 tons
Sample 3 –	from 1501 to 2250 tons
Sample 4 –	from 2251 to 3000 tons
Sample X –	……
Sample 16 –	from 11,251 to 12,000 tons
Sample 17 –	from 12,001 to 12,400 tons

The approximate location of each sample within the prescribed sublots is determined by selecting random numbers using ASTM Method D-3665 or by using a calculator or computerized spreadsheet that has a random number generator. The random numbers selected are used in determining when a sample is to be taken and will be multiplied by the sublot tonnage. This number will then be added to the final tonnage of the previous sublot to yield the approximate cumulative tonnage of when each sample is to be taken.

To allow for plant start-up variability, the procedure calls for the first random sample to be taken at 50 tons or greater per production day (not intended to be taken in the first two truckloads). Random samples calculated for 0-50 ton should be taken in the next truck (51-75 ton).

This procedure is to be used for any number of samples per project.

If the production is less than the final randomly generated sample tonnage, then the random sample is to be collected from the remaining portion of that sublot of production. If the randomly generated sample is calculated to be within the first 0-50 tons of the subsequent day of production, it should be taken in the next truck. Add a random sample for any fraction of 750 tons at the end of the project. Lot size will consist of 3750 tons with sublots of 750 tons. Partial lots with less than three sublot tests will be included into the previous lot, by the engineer.

It's intended that the plant operator not be advised ahead of time when samples are to be taken. If the plant operator is involved in recording a Pb (%AC) to match up with the mix sample tonnage, then notification need not be earlier than 60 minutes before the mix sample being taken.

If belt samples are used during troubleshooting, the blended aggregate will be obtained when the mixture production tonnage reaches approximately the sample tonnage. For plants with storage silos, this could be up to 60 minutes in advance of the mixture sample that's taken when the required tonnage is shipped from the plant.

QC, QV and retained samples shall be collected for all test strip and production mixture testing using a three-part splitting procedure according to CMM 8-36.5.2.

Calculation of PWL Mainline Tonnage Example

A mill and overlay project in being constructed with a 12-foot travel lane and an integrally paved 3-foot shoulder. The layer thickness is 2 inches for the full width of paving. Calculate the tonnage in each sublot eligible for density incentive or disincentive.

Solution:

$$\frac{1500\ ft \times 12\ ft}{9\ sf/sy} \times \frac{2\ in \times 112\ lb/sy/in}{2000\ lb/ton} = 224\ tons$$

Appendix A-Test Methods & Sampling for HMA PWL QMP Projects (20181030)

65. Street Sweeping, Item SPV.0075.01.

A Description

Remove small 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 of the material collected.

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 street sweeper; sweeping roadway; and disposing of the material collected.

(NER15-0430)

66. Fence Chain Link Polymer Coated 4-Ft. (R-15-11), Item SPV.0090.01; Fence Chain Link Polymer Coated 4-Ft. (R-15-12), Item SPV.0090.02.

A Description

This special provision describes furnishing and installing a new polymer-coated fence system on structures according to the pertinent plan details, as directed by the engineer and as hereinafter provided. The color of all components in this fence system shall be the same and shall be as specified on the plans.

B Materials

All materials for this fence system shall be new stock, free from defects impairing strength, durability, and appearance. Fabric shall be produced by methods recognized as good commercial practice. Wire used in the manufacture of the fabric shall be capable of being woven into fabric without the polymer-coating cracking or peeling. Pipes used in framework shall be straight, true to section and free of defects. All burrs at the ends of pipes shall be removed before galvanizing. The polymer-coating shall be a dense impervious covering, applied without voids, tears or cuts that reveal the substrate. Excessive roughness, bubbles, blisters and flaking in the polymer-coating will be a basis for rejection.

B.1 Fabric

Provide steel chain link fence fabric that conforms to the requirements of ASTM F668, Class 2b, a polymer-coating fused and adhered to wire that is zinc-coated. Provide fabric woven from 9-gage wire using plan specified mesh size, diamond pattern, with both the top and bottom selvages knuckled. The minimum breaking strength of the wire shall be 1290 lbs. The color of polymer-coating shall conform to the requirements of ASTM F934.

B.2 Framework

Provide steel rails, posts and post sleeves conforming to the requirements of ASTM F1083, Standard Weight Pipe (Schedule 40) of the size (O.D.) and weight as shown on the plans. The minimum yield strength shall be 30,000 psi and the minimum tensile strength shall be 48,000 psi. These components shall be zinc-coated inside and outside by the hot-dip process as stated in ASTM F1083. Provide polymer-coating over zinc-coating that conforms to ASTM F1043. The color of polymer-coating shall conform to the requirements of ASTM F934, and match the color of the other fence components. Weld base plate to posts or post sleeves and complete any additional welding of components before galvanizing.

B.3 Fittings

Provide end post caps, line post caps, top rail sleeves, rail ends, line rail clamps, brace bands, tension bands, tension bars, and tie wires that are steel and conform to the requirements of ASTM F626. Tie wires shall be round and 9-gage wire. These components (excluding tie wires) shall be zinc-coated by the hot-dip process as stated in ASTM F626. Provide polymer-coating over zinc-coating on components (excluding tie wires) that conforms to the requirements of ASTM F626. For tie wires, provide polymer-coating on wire that is zinc-coated using the same procedure as used for the wires in the fence fabric. End post caps and line post caps shall fit tightly over posts to prevent moisture intrusion. Supply dome style caps for end posts and loop type caps for line posts. The color of polymer-coating shall conform to the requirements of ASTM F934, and match the color of the other fence components.

B.4 Bolts

All bolts are to be supplied with lock washers and nuts. Use galvanized steel bolts, nuts and washers per plan details.

B.5 Tests

B.5.1 Fabric and Tie Wire

Breaking Strength: ASTM A370

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM F668

Adhesion: ASTM F668

Accelerated Aging Test: ASTM F668, D1499

Mandrel Bend Test: ASTM F668

B.5.2 Framework

Tensile and Yield Strength: ASTM E8

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM E376

Adhesion: ASTM F1043

Accelerated Aging Test: ASTM F1043, D1499

B.5.3 Fittings

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM F626

Adhesion: ASTM F1043 (same test as for framework)

Accelerated Aging Test: ASTM F1043, D1499 (same test as for framework)

B.6 Submittals

In addition to the engineer, send submittals listed in this section to the name below for informational purposes:

David Nelson
WisDOT (Bureau of Structures)
4802 Sheboygan Ave. (Room 601)
PO Box 7916
Madison, WI 53707

B.6.1 Shop Drawings

Submit shop drawings showing the details of fence construction. Show the fence height, post spacing, rail location, and all dimensions necessary for the construction of the chain link fence. Label the end posts, line posts, rails, post sleeves, top rail sleeves, bolts and fittings. State the polymer-coating type used on the fabric, framework and fittings and the Class of coating used on the fabric. State the color of polymer-coating to be used on the fence components. For the fabric, state the wire gage, mesh size, and type of selvages used. For the framework, state the size (O.D.) and unit weight for the posts and rails. For the fittings, state the size for top rail sleeves, brace bands, tension bands, tension bars, line rail clamps, size and type of bolts, and the tie wire gage. State the material type used for fabric, framework, and fittings. Also give the breaking strength for the fabric wire and the tensile and yield strength properties for the framework.

B.6.2 Specification Compliance

Submit certification of compliance with material specifications. Provide material certification and test documentation for fabric, framework, fittings and hardware that shows that all materials meet or exceed the specifications of this contract and the tests in B.5. This document shall provide the name, address and phone number of the manufacturer, and the name of a contact person.

C Construction

C.1 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 condition of materials is in conformance with these specifications. If polymer-coating is damaged, contractor shall repair or replace components as necessary to the approval of the engineer at no additional cost to the owner. Carefully store material off the ground to ensure proper ventilation and drainage and to provide protection against damage caused by ground moisture. Handle all polymer-coated material with care.

C.2 Touch-up and Repair

For minor damage caused by shipping, handling or installation to polymer-coated surfaces, touch-up the finish in conformance with the manufacturer's recommendations. Provide touch-up coating such that repairs are not visible from a distance of 6-feet. If damage is beyond repair, the fencing component 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.

C.3 General

Install the chain link fence according to ASTM F567 and the manufacturer's instructions. The contractor shall provide staff that is thoroughly familiar with the type of construction involved and materials and techniques specified. Chain link fabric shall be installed on the side of the posts indicated on the plans. Fabric shall be attached to the end posts with tension bars and tension bands. It shall be attached to rails, and posts without tension bands, with tie wires. The fabric shall be installed and pulled taut to provide a smooth and uniform appearance free from sag, without permanently distorting the fabric diamond or reducing the fabric height. Install top rail to pass through line post caps and form a continuous brace between end posts. Minimum length of top rail between splices shall be 20-feet. Splice top rail at joints with sleeves for a rigid connection. Locate splices near ¼ point of post spacing. Heads of bolts shall be on the side of the fence adjacent to pedestrian traffic.

D Measurement

The department will measure Fence Chain Link Polymer-Coated 4-Ft. by the linear foot, satisfactorily furnished and installed.

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	Fence Chain Link Polymer Coated 4-Ft. (R-15-11)	LF
SPV.0090.02	Fence Chain Link Polymer Coated 4-Ft. (R-15-12)	LF

Payment is full compensation for fabricating, galvanizing and polymer-coating all fence components, and transporting to jobsite; for erecting components to create a polymer-coated fence system, including any touch-up and repairs.

67. Concrete Cold Weather Covering Curb and Gutter, Plastic 1 Layer, Item SPV.0090.03; Concrete Cold Weather Covering Curb and Gutter, Plastic 2 Layers, Item SPV.0090.04; Concrete Cold Weather Covering Curb and Gutter, Plastic/Hay/Plastic, Item SPV.0090.05; Concrete Cold Weather Covering Sidewalk, Plastic 1 Layer, Item SPV.0165.05; Concrete Cold Weather Covering Sidewalk, Plastic 2 Layers, Item SPV.0165.06; Concrete Cold Weather Covering Sidewalk, Plastic/Hay/Plastic, Item SPV.0165.07.

A Description

Place protective covering according to standard spec 415.3.13, the plans, standard detail drawings, and as hereinafter provided.

B Materials

Furnish materials that meet the requirements specified in standard spec 415.3.13.2.

C (Vacant)

D Measurement

The department will measure Concrete Cold Weather Covering, Curb and Gutter in length by the linear foot, acceptably completed.

The department will measure Concrete Cold Weather Covering, Sidewalk in area 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.0090.03	Concrete Cold Weather Covering, Curb and Gutter, Plastic 1 Layer	LF
SPV.0090.04	Concrete Cold Weather Covering, Curb and Gutter, Plastic 2 Layers	LF
SPV.0090.05	Concrete Cold Weather Covering, Curb and Gutter, Plastic/Hay/Plastic	LF
SPV.0165.05	Concrete Cold Weather Covering, Sidewalk, Plastic 1 Layer	SF
SPV.0165.06	Concrete Cold Weather Covering, Sidewalk, Plastic 2 Layers	SF
SPV.0165.07	Concrete Cold Weather Covering, Sidewalk, Plastic/Hay/Plastic	SF

Payment is full compensation for supplying the plastic, hay, and material sufficient to weight down the insulating materials to withstand wind; and for furnishing all labor, tools, equipment, and incidentals required to place, remove, replace, and dispose of all covering materials as required during normal concreting operations. Heating of water or aggregates, or both, if deemed necessary by the contractor to maintain placement temperature, is incidental to this item.

(NER11-0214)

68. Joint Ties, Item SPV.0090.06.

A Description

This special provision describes providing joint ties for reinforced concrete storm sewer pipe at locations designated in the plans or as directed by the engineer.

B Materials

Furnish joint ties that are hot-dip galvanized per ASTM A153.

C Construction

Joint ties shall be installed as shown in the plans and the detail drawings for reinforced concrete pipe only. Joint ties are not required for storm sewer pipe material other than reinforced concrete pipe.

D Measurement

The department will measure Joint Ties by the linear foot of pipe, acceptably completed.

The item of Joint Ties will not be measured and paid for if the contractor chooses to use an alternative storm sewer material other than reinforced concrete 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.0090.06	Joint Ties	LF

Payment is full compensation for installing joint ties for reinforced concrete storm sewer pipe.

69. Retaining Wall Planting Area, SPV.0105.01.

A Description

This special provision describes furnishing and installing a planting area consisting of vines, topsoil, and mulch at the bottom of retaining walls according to the pertinent plan details, as directed by the engineer and as hereinafter provided.

B Materials

B.1 Topsoil

Fertile, friable natural sandy loam, without admixture of subsoil material, free from heavy alkaline soil, coarse sand, stones larger than 1.5 inches in diameter, lumps, sticks, and other foreign matter. Obtain

topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep. Do not obtain from agricultural lands, bogs, or marshes.

B.2 Compost

Well composted, stable, and weed-free organic matter, pH range of 5.5 to 8, moisture content of 35 to 55 percent by weight, 100 percent passing through 1- inch sieve.

B.3 Vines

Vines shall be Parthenocissus quinquefolia / Virginia Creeper. Provide healthy vines from a commercial nursery, in removable containers. Fast growing, complying with ANSI Z60.1, 2-year plants with heavy, well-branched tops, with not less than 3 runners 18 inches or more in length. Vigorous, well-developed root system. Grown in pots and acclimated to outside conditions.

B.4 Fertilizer

Fertilizer shall be standard spec 629 Fertilizer Type B.

B.5 Mulch

Shredded hardwood mulch or Ground or Shredded Bark mulch shall be free from deleterious materials and suitable as a top dressing of vines.

B.6 Submittals

Submit certification of compliance with material specification for topsoil, compost, and vines.

C Construction

C.1 Soil Preparation

Excavate 12 inches of soil, 24-inches wide at location shown in the plans at the base of the wall. Loosen subgrade in a 24 inch wide swath to a minimum depth of 18 inches. Take care to leave retaining wall compacted gravel base and retaining wall block intact. Remove stones measuring over 1-1/2 inches, sticks, rubbish and other extraneous matter from excavated material. Thoroughly blend planting soil mix for planting bed areas (1 part existing soil, 1 part topsoil, 1 part compost, and 2.9 pounds per cubic yard fertilizer). Place soil mix to fill approximately ½ of height needed to fill excavation to finish grade. Work into top of loosened subgrade to create a transition layer, then place remainder of the soil mix to elevation required to meet finish grades after natural settlement. Soil transition layer shall be tilled to a minimum depth of 6” below finished grade. Do not place if planting soil or subgrade is frozen, muddy, or wet. Finish grading: grade soil to a smooth, uniform surface plane with a loose, uniformly fine texture. Fill excavations with water and allow water to infiltrate prior to planting.

C.2 Planting

Layout vines at 5’ on center within trench. Set container grown stock plumb and in center of trench with top of root ball 1 inch above finish grades. Cut cans on 2 sides and carefully remove after partial backfilling so as not to damage root balls.

C.3 Backfilling

When vines are set, place additional backfill around base and sides of ball. Work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

C.4 Mulch

Mulch trenches to a depth of 3 inches. Work into top of backfill and finish level with adjacent finish grades. Do not place mulch within 3 inches of stems.

C.5 Cleanup and Protection

During landscape work, keep pavements clean and work area in an orderly condition. Dispose of waste of foreign materials, including weeds, stones, excavated materials, grass, vegetation, and sod and dispose according to applicable regulations.

D Measurement

The department will measure Retaining Wall Planting Area as a single lump sum unit of work, satisfactorily furnished and installed.

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	Retaining Wall Planting Area	LS

Payment is full compensation for all excavation, shaping, grading and compacting: and for furnishing and installing vines, topsoil, compost, mulch and for installing components to create retaining wall planting area.

70. Splitter Island Planting Area, SPV.0105.02.

A Description

This special provision describes furnishing and installing splitter island planting areas consisting of evergreen shrubs, perennials, topsoil, and mulch within the splitter islands according to the pertinent plan details, as directed by the engineer and as hereinafter provided.

B Materials

B.1 Topsoil

Fertile, friable natural sandy loam, without admixture of subsoil material, free from heavy alkaline soil, coarse sand, stones larger than 1 1/2 inches in diameter, lumps, sticks, and other foreign matter. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep. Do not obtain from agricultural lands, bogs, or marshes.

B.2 Compost

Well composted, stable, and weed-free organic matter, pH range of 5.5 to 8, moisture content of 35 to 55 percent by weight, 100 percent passing through 1- inch sieve.

B.3 Evergreen Shrubs

Provide evergreen shrubs of type and size as indicated on the plans. Plants shall be well balanced, of type, height, spread, and shape required, and complying with ANSI Z60.1.

B.4 Perennials

Provide healthy, field-grown plants of the type and size as indicated on the plans from a commercial nursery, in removable containers. Not less than minimum number and length of runners required by ANSI Z60.1 for the pot size shown.

B.5 Fertilizer

Fertilizer shall be standard spec 629 Fertilizer Type B.

B.6 Mulch

Shredded hardwood mulch or Ground or Shredded Bark mulch shall be free from deleterious materials and suitable as a top dressing of evergreen shrubs and perennials.

B.7 Submittals

Submit certification of compliance with material specification for topsoil, compost, and evergreen shrubs and perennials.

C Construction

C.1 Soil Preparation

Excavate the planting area behind the curb of the splitter islands to a depth of 15 inches. Loosen subgrade to a minimum depth of 18 inches or to top of gravel behind curb and gutter. Take care to leave compacted gravel base and curb and gutter intact. Remove stones measuring over 1-1/2 inches, sticks, rubbish and other extraneous matter from excavated material. Thoroughly blend planting soil mix for planting bed areas (1 part existing soil, 1 part topsoil, 1 part compost, and 2.9 pounds per cubic yard fertilizer). Place soil mix to fill approximately ½ of height needed to fill excavation to finish grade. Work into top of loosened subgrade to create a transition layer, then place remainder of the soil mix to elevation required to meet finish grades after natural settlement. Soil transition layer shall be tilled to a minimum depth of 6” below finished grade. Do not place if planting soil or subgrade is frozen, muddy, or wet. Finish grading: grade soil to a smooth, uniform surface plane with a loose, uniformly fine texture. Fill excavations with water and allow water to infiltrate prior to planting.

C.2 Planting of Evergreen Shrubs

Layout evergreen shrubs at 5’ on center, in pattern as indicated on the plans. Excavate at least 1.5 times the width of the container and equal to the ball depth, plus 3 inches. Place 3–inch thick setting layer of planting soil mixture for setting of ball. Set container grown stock plumb and in center of pit with top of root ball 1 inch above adjacent finish grades. Cut cans on 2 sides and carefully remove after partial backfilling so as not to damage root balls.

C.3 Planting of Perennials

Space plants as indicated on the plans. Excavate to allow for spreading of roots and backfill with planting soil. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Water thoroughly after planting, taking care not to cover crowns of plants with wet soils.

C.4 Backfilling

When shrubs and perennials are set, place additional backfill around base and sides of root balls. Work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

C.5 Mulch

Mulch planted area to a depth of 3 inches. Work into top of backfill and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems. Finish level with adjacent finish grades.

C.6 Cleanup and Protection

During landscape work, keep pavements clean and work area in an orderly condition. Dispose of waste of foreign materials, including weeds, stones, excavated materials, grass, vegetation, and sod and dispose according to applicable regulations.

D Measurement

The department will measure Splitter Island Planting Area as a single lump sum unit of work, satisfactorily furnished and installed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.02	Splitter Island Planting Area	LS

Payment is full compensation for all excavation, shaping, grading and compacting: and for furnishing and installing shrubs, perennials, topsoil, compost, mulch and for installing components to create retaining wall planting area.

71. Wall Modular Block Mechanically Stabilized Earth (R-15-11), Item SPV.0165.01; Wall Modular Block Mechanically Stabilized Earth (R-15-12), Item SPV.0165.02.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

This special provision describes the quality management program (QMP) for Mechanically Stabilized Earth (MSE) walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

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

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Modular Block Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing checks is provided by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and wall facing-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed according to AASHTO LRFD 11.10.2.3.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 6.0 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. All soil reinforcement layers shall be connected to facings. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be two times the block depth (front face to back face) or 32 inches, whichever is less. The first (bottom) layer of reinforcement shall be placed no further than 12 inches above the top of the leveling pad or the height of the block, but at least one block height above the leveling pad. The last (top) layer of soil reinforcement shall be no further than 21 inches below the top of the uppermost block.

All soil reinforcement required for the reinforced soil zone shall be connected to the wall facing.

Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3" shall be maintained between any obstruction and reinforcement, and splicing reinforcement is not allowed.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a concrete leveling pad. The bottom row of blocks shall be horizontal and 100% of the block surface shall bear on the leveling pad.

Concrete leveling pads shall be as wide as the proposed blocks plus 6 inches, with 6 inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6 inches.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. Furnish concrete produced by a dry-cast or wet-cast process. Concrete for all blocks shall not contain less than 565 pounds of cementitious materials per cubic yard. The contractor may use cement conforming to standard spec 501.2.1 or may substitute for portland cement at the time of batching conforming to standard spec 501.2.6 for fly, standard spec 501.2.7 for slag, or standard spec 501.2.8 for other pozzolans. In either case the maximum total supplementary cementitious content is limited to 30% of the total cementitious content by weight.

Dry-cast concrete blocks shall be manufactured according to ASTM C1372 and this specification.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02” and longer than 25% of the nominal height of the unit, chips larger than 1”, have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. A single block type and style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan.

The top course of facing units shall be as noted on the plans, either;

- Solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material.
- A formed cast-in-place concrete cap. A cap of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the cap shall not be less than 3 1/2 inches. Expansion joints shall be placed in the cap at a maximum spacing of 20 feet unless noted otherwise on the plan. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Block dimensions may vary no more than ±1/8 inch from the standard values published by the manufacturer. Blocks must have a minimum depth (front face to back face) of 8 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is 1¾ inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

For concrete leveling pad, use Grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

B.3.2 Material Testing

Provide independent quality verification testing of project materials according to the following requirements:

Test	Method	Requirement	
		Dry-cast	Wet-cast
Compressive Strength (psi)	ASTM C140	5000 min.	4000 min.
Air Content (%)	AASHTO T152	N/A	6.0 +/-1.5
Water Absorption (%)	ASTM C140	6 max.[3]	N/A
Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples	ASTM C1262[1]	1.0 max.[2][3] 1.5 max.[2][3]	N/A

[1] Test shall be run using a 3% saline solution and blocks greater than 45 days old.

[2] Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable.

[3] The independent testing laboratory shall control and conduct all sampling and testing. Prior to sampling, the manufacturer's representative shall identify materials by lot. Five blocks per lot shall be randomly selected for testing. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. At no expense to the department, the contractor shall remove all rejected blocks from the project. If a random sample of five blocks of any lot tested by the department fails to meet any of the above testing requirements, the entire lot will be considered non-conforming.

The contractor and fabricator shall coordinate with the independent testing agency to ensure that strength and air content samples can be taken appropriately during manufacturing. At the time of delivery of materials, furnish the engineer a certified report of test from an AASHTO-registered or ASTM-accredited independent testing laboratory for each lot.

The certified test report shall include the following:

- Project ID
- Production process used (dry-cast or wet-cast)
- Name and location of testing facility
- Name of sampling technician
- Lot number and lot size

Testing of project materials shall be completed not more than 18 months prior to delivery. Independent testing frequency shall not exceed 5000 blocks for dry-cast blocks and the lesser of 150 CY or 1 day's production for wet-cast blocks. The certified test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting certified test reports will be rejected and shall be removed from the project at no expense to the department.

Nonconforming materials will be subject to evaluation according to standard spec 106.5.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate No. 1 as given in standard spec 501.2.5.4.4. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

Wall Backfill, Type B, shall be placed in a zone extending horizontally from 1 foot behind the back face of the wall to 1 foot beyond the end of the reinforcement and extending vertically from the top of the leveling pad to a minimum of 3 inches above the final reinforcement layer.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material conforming to the following gradation requirements as per AASHTO T27.

Sieve Size	% by Weight Passing
1 inch	100
No. 40	0 - 60
No. 200	0 - 15

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material Type A and Type B shall meet the following requirements.

Test	Method	Value
pH	AASHTO T-289	4.5-9.0
Sulfate content [1]	AASHTO T-290	200 ppm max.
Chloride content [1]	AASHTO T-291	100 ppm max.
Electrical Resistivity	AASHTO T-288	3000 ohm-cm min.
Organic Content [1]	AASHTO T-267	1.0% max.
Angle of Internal Friction	AASHTO T-236[2]	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2)

[1] Requirement does not apply to walls with non-metallic reinforcement.

[2] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM D5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1” material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. For the additional required testing for every 2000 cubic yards of backfill placement, if the characteristic of the backfill and/or the source has not changed then Angle of Internal Friction tests are not included in the additional required testing. All certified reports of test results shall be less than 6 months old and performed by a certified independent laboratory.

B.3.4 Soil Reinforcement

B.3.4.1 Geogrids

Geogrid supplied as reinforcing members shall be manufactured from long chain polymers limited to polypropylene, high-density polyethylene, polyaramid, and polyester. Geogrids shall form a uniform rectangular grid of bonded, formed, or fused polymer tensile strands crossing with a nominal right angle orientation. The minimum grid aperture shall be 0.5 inch. The geogrid shall maintain dimension stability during handling, placing, and installation. The geogrid shall be insect, rodent, mildew, and rot resistant. The geogrid shall be furnished in a protective wrapping that shall prevent exposure to ultraviolet radiation and damage from shipping or handling. The geogrid shall be kept dry until installed. Each roll shall be clearly marked to identify the material contained.

The wall supplier shall provide the nominal long-term design strength (T_{al}) and nominal long-term connection strength, Talc as discussed below.

Nominal Long-Term Design Strength (T_{al})

The wall supplier shall supply the nominal long-term design strength (T_{al}) used in the design for each reinforcement layer and shall be determined by dividing the Ultimate Tensile Strength (T_{ult}) by the factors RF_{ID}, RF_{CR}, RF_{D}.

Hence,

$$T_{al} = \frac{T_{ult}}{RF_{ID} x RF_{CR} x RF_{D}}$$

where:

T_{ult} = Ultimate tensile strength of the reinforcement determined from wide width tensile tests (ASTM D6637) for geogrids based on the minimum average roll value (MARV) for the product.

RF_{ID} = Strength reduction factor to account for installation damage to the reinforcement. In no case shall RF_{ID} be less than 1.1.

RF_{CR} = Strength reduction factor to prevent long-term creep rupture of the reinforcement. In no case shall RF_{CR} be less than 1.2.

RF_{D} = Strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation. In no case shall RF_{D} be less than 1.1.

Values for RF_{ID}, RF_{CR}, and RF_D shall be determined from product specific test results. Guidelines for determining RF_{ID}, RF_{CR}, and RF_D from product specific data are provided in FHWA Publication No. FHWA-NHI-10-024 and FHWA–NHI-10-025 “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes”.

Nominal Long-term Connection Strength T_{ac}

The nominal long term connection strength, T_{ac}, shall be based on laboratory geogrid connection tests between wall facing and geogrids. T_{ac} shall be as given below

$$T_{ac} = \frac{T_{ult} * CR_{cr}}{RF_D}$$

where:

T_{ac} = Nominal long-term reinforcement facing connection strength per unit reinforcement width at a specified confining pressure.

T_{ult} = Ultimate tensile strength of the reinforcement for geogrids defined as the minimum average roll value (MARV) for the product.

CR_{cr} = Long term connection strength reduction factor to account for reduced ultimate strength resulting from connection.

RF_D = Strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation.

T_{ac} shall be developed from the tests conducted by an independent laboratory on the same facing blocks and geogrids as proposed for the wall and shall cover a range of overburden pressures comparable to those anticipated in the proposed wall. The connection strength reduction factor CR_{cr} shall be determined according to long-term connection test as described in Appendix B of FHWA Publication No. FHWA-NHI 10-025 “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes”. CR_{cr} may also be obtained from the short term connection test meeting the requirements of NCMA test method SRWU-1 in Simac et al 1993 or ASTM D4884.

The contractor shall provide a manufacturer’s certificate that the Tult (MARV) of the supplied geogrid has been determined according to ASTM D4595 or ASTM D6637 as appropriate. Contractor shall also provide block to block and block to reinforcement connection test reports prepared and certified by an independent laboratory. Also provide calculations according to AASHTO LRFD, and using the results of laboratory tests, that the block-geogrid connections shall be capable of resisting 100% of the maximum tension load in the soil reinforcements at any level within the wall, for the design life of the wall system.

B.3.4.2 Galvanized Metal Reinforcement

In lieu of polymeric geogrid earth reinforcement, galvanized metal reinforcement may be used. Design and materials shall be according to AASHTO LRFD 11.10.6.4.2. The design life of steel soil reinforcements shall also comply with AASHTO LRFD. Steel soil reinforcement shall be prefabricated into single or multiple elements before galvanizing.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall and the leveling pad shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off

soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place and compact material beyond the reinforced soil zone to allow for proper compaction of material within the reinforced zone. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Compact all backfill Type B as specified in standard spec 207.3.6. Compact the backfill Type B to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks. Do not use sheepsfoot or padfoot rollers within the reinforced soil zone.

A minimum of 6 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

C.3 Wall Components

C.3.1 General

Erect wall facing units and other associated elements according to the wall manufacturer’s construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers according to the manufacturer’s directions.

The MSE reinforcement shall lay horizontally on the top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstructions in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

C.3.2 Soil Reinforcement

C.3.2.1 Geogrid Layers

Place soil reinforcement at the positions and to the lengths as indicated on the accepted shop drawings. Take care that backfill placement over the positioned soil reinforcement elements does not cause damage or misalignment of these elements. Correct any such damage or misalignment as directed by the engineer. Do not operate wheeled or tracked equipment directly on the soil reinforcement. A minimum cover of 6 inches is required before such operation is allowed.

Place and anchor geogrid material between wall unit layers in the same manner as used to determine the Geogrid Block-to-Connection Strength. Place the grid material so that the machine direction of the grid is perpendicular to the wall face. Each grid layer shall be continuous throughout the lengths indicated on the plans. Join grid strips with straps, rings, hooks or other mechanical devices to prevent movement during backfilling operations. Prior to placing backfill on the grid, pull the grid taunt and hold in position with pins, stakes or other methods approved by the engineer.

C.3.2.2 Steel Layers

Place the steel reinforcement full width in one piece as shown on the plans. No splicing will be allowed. Maintain elements in position during backfilling.

C.4 Quality Management Program

C.4.1 Quality Control Plan

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

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

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at the each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

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

C.4.3 Equipment

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

Furnish nuclear gauges from the department's approved product list at http://www.atwoodsystems.com/. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D6938 and CMM 8-15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

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

C.4.4 Documentation

(1) Document all observations, inspection records, and process adjustments daily. Submit test results to the department's project materials coordinator on the same day they become available.

(2) Use forms provided in CMM Chapter 8. Note other information in a permanent field record and as a part of process control documentation enumerated in the contractor's quality control plan. Enter QC data and backfill material certified report results into the applicable materials reporting system (MRS) software within 5 business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

C.4.5 Quality Control (QC) Testing

Perform compaction testing on the backfill. Conform to CMM 8-15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof in each lift. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

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

C.4.6.2 Quality Verification (QV) Testing

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

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

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

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

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

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E178 to evaluate potential statistically outlying data.

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

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

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will measure Wall Modular Block Mechanically Stabilized Earth by the square foot acceptably completed, measured at the front face of wall as defined by the pay limits the contract plans show. Unless the Engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.01	Wall Modular Block Mechanically Stabilized Earth (R-15-11)	SF
SPV.0165.02	Wall Modular Block Mechanically Stabilized Earth (R-15-12)	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including cap, copings and leveling pad; constructing the retaining system including drainage system; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, and performing compaction testing.

Payment limit for all walls is the line of minimum embedment per section B.2. No payment will be made for additional embedment detailed for construction purposes. Parapets, railings, and other items above the wall cap or coping will be paid for separately. Vehicle barrier and its support will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

SPV.0165.01&02 (20170629)

72. Crosswalk Apron Pavers, SPV 0165.03.

A Description

This special provision describes furnishing and installing crosswalk apron pavers according to the pertinent plan details, as directed by the engineer and as hereinafter provided.

B Materials

All materials for this concrete paver system shall be new stock, free from defects impairing strength, durability, and appearance.

B.1 Concrete Pavers

Concrete Paver: 4-inch x 8 inch – 6CM, smooth finish: Unilock Hollandstone, color – Sandstone, Mutual Materials Holland Paver, color – Summit Blend, or approved equal.

B.2 Joint Sand

Provide washed, clean, non-plastic material, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock. Do not use limestone screenings, stone dust, or sand that does not conform to the grading requirements of ASTM C 33.

B.3 Setting Bed Sand

Provide washed, clean, non-plastic material, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock. Do not use limestone screenings, stone dust, or sand material that does not conform to the grading requirements of ASTM C33. Do not use mason sand or sand conforming to ASTM C 144.

B.4 Sub-Base Aggregate

Provide Base Aggregate materials conforming to ASTM D 2940 and gradation requirements as presented in table below.

ASTM D 2940	
Sieve Size	**Percent Passing**
2 in (50mm)	100
1-1/2in (37.5mm)	95 to 100
¾ in (19mm)	70 to 92
3/8in (9.5 mm)	50 to 70
No. 4 (4.75mm)	35 to 55
No. 30 (600 um)	12 to 25
No. 200 (75 um)	0 to 8

B.5 Edge Restraints

Plastic and metal edge restraints: Permaloc “StructurEdge” – 3/16” x 2-1/4” heavy duty paver restraint, Pave Tech “Pave Edge Rigid”, or SEK-Surebond “Snap Edge Paver Restraint”.

C Construction

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 condition of materials is in conformance with these specifications. Stockpile Setting Bed Sand, Joint Sand, and Base such that they are free from standing water, uniformly graded, free of any organic material or sediment, debris, and ready for placement. Excavate soil to a depth of 9 ½ inches. Keep area where pavers are to be constructed free from sediment during entire job. Should materials become contaminated with sediment, remove and replace with clean materials.

Compact soil subgrade uniformly to at least 95 percent of Standard Proctor Density per ASTM 698. Provide 6 inches Subbase, compact to 95 percent Standard Proctor Density as per ASTM D 698 to prevent infiltration of the bedding sand into the base both during construction.

Provide concrete edge restraints between pavers and landscape areas, on a minimum of 6” of Base Aggregate. Follow manufacturer’s recommendation for installation.

Provide and spread Setting Sand Bed evenly over the Base Aggregate course and screed to a nominal thickness of 1 inch.

Provide Concrete Pavers using running bond pattern, laid parallel with road centerline. Cut Concrete Pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges where less than a full paver is required. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable. Vibrate Concrete Pavers into leveling course with a low-amplitude plate vibrator. Conduct at least three passes. Remove any cracked or structurally damaged Concrete Pavers and replace with new units prior to installing Joint Sand material.

Provide, spread, and sweep dry Joint Sand into joints immediately after vibrating pavers into Setting Bed Sand Course until full. Vibrate pavers and add Joint Sand material until joints are filled to surface of paver, then remove excess material. This will require at least 4 passes with a plate compactor. Remove excess Joint Sand broom clean from surface when installation is complete.

Verify that final elevations match curb line and adjacent concrete pavement elevations.

D Measurement

The department will measure Crosswalk Apron Pavers by the square foot, satisfactorily furnished and installed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.03	Crosswalk Apron Pavers	SF

Payment is full compensation for all excavation, grading, shaping and compacting: and for furnishing and installing concrete pavers, base, setting sand bed, and joint sand necessary to create a crosswalk apron paver system, including any touch-up and repairs.

73. Concrete Weir Inside Manhole, Item SPV.0165.04.

A Description

This special provision describes constructing a concrete weir inside a storm sewer manhole as shown in the plans and as hereinafter described.

B Materials

Provide grade A, A-2, 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 class II ancillary concrete as specified in standard spec 716.

Furnish reinforcement that is according to the pertinent requirements of standard spec 505.

Cure the concrete by one of the methods specified in standard spec 502.3.8 for curing concrete in substructure units.

C Construction

C.1 Reinforcement Bars Installation

Drill holes for the reinforcement bars into the base of the manhole at the depth and spacing as shown on the plan details. Anchor the reinforcement bars in the manhole base using an epoxy adhesive. Attach the horizontal reinforcement bars at the spacing shown on the plan details.

C.2 Forms

Furnish and use wood or metal forms straight and of sufficient strength to resist springing, tipping, or other displacement during depositing and consolidating the concrete. If using wood forms, provide surfaced plans, at least 2-inch nominal thickness stock. If using metal forms, ensure they are the engineer-approved section with a flat surface on top. Use forms as deep as the depth from the top of the base of the manhole to the top of weir elevation as shown on the plan details. Securely brace the forms

and make the forms tight to prevent mortar leakage. Clean and oil all before placing concrete against them.

C.3 Placing and Finishing Concrete

The engineer will check and approve the forms and reinforcement before placing the concrete. Deposit the concrete to the required depth and consolidate sufficiently to bring the mortar to the surface, then strike-off and finish to a true and even surface.

C.4 Curing

Cure the concrete as specified in standard spec 415.3.12.

C.5 Removing Forms

Remove forms after the concrete is cured.

D Measurement

The department will measure Concrete Weir Inside Manhole bid items by the square foot, acceptably completed. The measured area equals the vertical depth of the weir multiplied by the horizontal length of the weir.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.04	Concrete Weir Inside Manhole	SF

Payment is full compensation for all materials, including concrete and reinforcement; for providing and removing the forms; for disposing of surplus material; for placing, finishing, and curing.

ADDITIONAL SPECIAL PROVISION 4

Payment to First-Tier Subcontractors

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

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

Payment to Lower-Tier Subcontractors

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

Release of Routine Retainage

After granting substantial completion the department may reduce the routine retainage withheld from the prime contractor to 75 percent of the original total amount retained.

When the Department sends the semi-final estimate the department may reduce the routine retainage withheld from the prime contractor to 10 percent of the original total amount retained.

Within 30 calendar days of receiving the semi-final estimate from the department, submit written certification that subcontractors at all tiers are paid in full for acceptably completed work and that no routine retainage is being withheld. The department will pay the prime contractor in full and reduce the routine retainage withheld from the prime contractor to zero when the department approves the final estimate.

This special provision does not limit the right of the department, prime contractor, or subcontractors at any tier to withhold payment for work not acceptably completed or work subject to an unresolved contract dispute.

ADDITIONAL SPECIAL PROVISION 6
ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

107.17.1 General

Replace paragraph seven with the following effective with the December 2018 letting:

(7) Have a professional engineer registered in the state of Wisconsin sign and seal the shop drawings. At least 30 calendar days before starting falsework, form, or shoring construction; submit a PDF file of shop drawings to the railroad's chief engineering officer and to the engineer. The engineer and the railroad may review the shop drawings. If the engineer or the railroad finds the shop drawings unsatisfactory, the contractor shall make the required changes. A satisfactory shop drawing review does not relieve the contractor of responsibility and liability for the structural integrity and proper functioning of the falsework, forms, or shoring.

305.2.1 General

Replace paragraph two with the following effective with the December 2018 letting:

(2) Where the contract specifies or allows 1 1/4-inch base, do not place reclaimed asphalt, reprocessed material, or blended materials below virgin aggregate materials unless the contract specifies or the engineer allows in writing. The department will allow virgin aggregate above reclaimed asphalt, reprocessed material, or blended materials in shoulder areas adjacent to concrete pavement.

420.3.2.1 General

Replace paragraph one with the following effective with the December 2018 letting:

(1) Use self-propelled grinding machines with depth, grade, and slope controls designed for grinding and texturing concrete. Equip grinding machines with diamond blades and a vacuuming system capable of removing liquid and solid residue from the ground surface. Shroud the machine to prevent discharging loosened material into adjacent work areas or live traffic lanes. Provide the specified effective wheelbase, defined as the center of the front to center of the rear main support wheels.

420.3.2.2 Continuous Grinding

Replace paragraph one with the following effective with the December 2018 letting:

(1) Under the Continuous Diamond Grinding Concrete Pavement bid item, ensure that the grinding machine, including the grinding head, weighs 35,000 pounds or more, will grind a strip at least 4 feet wide, and has an effective wheel base of 25 feet or more. For pavements with a design speed less than 40 miles per hour and areas difficult to access, the contractor may use equipment with an effective wheel base of 12 feet or more.

450.3.2.8 Jointing

Replace paragraphs three through five with the following effective with the December 2018 letting:

(3) Construct notched wedge longitudinal joints for mainline paving if the pavement thickness conforms to the minimums specified in 460.3.2, unless the engineer directs or allows an alternate joint. Construct the wedge using a slope no steeper than 3:1. Extend the wedge 12 inches beyond the normal lane width, or as the engineer directs. Ensure that the wedge for all layers directly overlaps and slopes in the same direction.

(4) Locate the joint at the pavement centerline for 2-lane roadways, or at lane lines if the roadway has more than 2 lanes. Construct a vertical notch 1/2-inch to 3/4-inch high on the centerline or lane line at the top of each wedge. Place a 1/2-inch to 3/4-inch notch at the outside bottom edge of the wedge after compacting each layer. Align the finished longitudinal joint line of the upper layer with the centerline or lane line.

(5) Construct the wedge for each layer using an engineer-approved strike-off device that will provide a uniform slope and will not restrict the main screed. Shape and compact the wedge with a weighted

steel side roller wheel the same width as the wedge. Apply a tack coat to the wedge surface and both notches before placing the adjacent lane.

455.2.4.3 Emulsified Asphalts

Replace paragraph two with the following effective with the December 2018 letting:

(2) The bill of lading for emulsified asphalts shall indicate the asphalt content of the original emulsion and dilution rate of the additional water added to the original emulsion. If undiluted samples are not available, test the diluted material and modify AASHTO M140, M208, or M316 to reflect properties resulting from dilution of the asphalt.

460.2.8.3.1.4 Department Verification Testing Requirements

Replace paragraph three with the following effective with the December 2018 letting:

(3) The department will perform testing conforming to the following standards:

Bulk specific gravity (G_{mb}) of the compacted mixture according to AASHTO T166.

Maximum specific gravity (G_{mm}) according to AASHTO T209.

Air voids (V_a) by calculation according to AASHTO T269.

VMA by calculation according to AASHTO R35.

Asphalt content by ignition oven according to AASHTO T308 as modified in CMM 8-36.6.3.6, chemical extraction according to AASHTO T-164, or Asphalt Analyzer™ according to manufacturer recommendations.

460.2.8.3.1.6 Acceptable Verification Parameters

Replace paragraph one with the following effective with the December 2018 letting:

(1) The engineer will provide test results to the contractor within 2 mixture-production days after obtaining the sample. The quality of the product is acceptably verified if it meets the following limits:

- Va is within a range of 2.0 to 4.3 percent. For SMA, Va is within a range of 2.7 to 5.3 percent.
- VMA is within minus 0.5 of the minimum requirement for the mix design nominal maximum aggregate size.
- Asphalt content is within minus 0.3 percent of the JMF.

460.2.8.3.1.7 Dispute Resolution

Replace paragraph one with the following effective with the December 2018 letting:

(1) When QV test results do not meet the specified limits for 100 percent pay, the bureau's AASHTO accredited laboratory and certified personnel will referee test the retained portion of the QV sample and the retained portion of the required forward and backward QC retained samples according to CMM 8-36.

460.5.2.1 General

Replace paragraphs five and six with the following effective with the December 2018 letting:

(5) The department will reduce pay for nonconforming QMP HMA mixtures as specified in 460.2.8.2.1.7, starting from the stop point to the point when the running average of 4 is back inside the warning limits. The engineer will determine the quantity of material subject to pay reduction based on the testing data and an inspection of the completed pavement. The department will reduce pay as follows:

PAYMENT FOR MIXTURE[1] [2] [3]

ITEM	PRODUCED WITHIN WARNING BANDS	PRODUCED OUTSIDE JMF LIMITS
Gradation	90%	75%
Asphalt Content[4]	___	___
Air Voids	70%	50%
VMA	90%	75%

[1] For projects or plants where the total production of each mixture design requires less than 4 tests refer to CMM 8-36.

[2] Payment is in percent of the contract unit price for the HMA Pavement bid item. The department will reduce pay based on the nonconforming property with lowest percent pay. If the quantity of material subject to pay adjustment based on the running average of 4 is also subject to pay adjustment resulting from dispute resolution in accordance with 460.2.8.3.1.7, the department will apply the single pay adjustment resulting in the lowest percent pay.

[3] In addition to any pay adjustment listed in the table above, the department will adjust pay for nonconforming binder under the Nonconforming QMP Asphaltic Material administrative item. The department will deduct 25 percent of the contract unit price of the HMA Pavement bid item per ton of pavement placed with nonconforming PG binder the engineer allows to remain in place.

[4] The department will not adjust pay based on a running average of 4 asphalt content tests; however, corrective action will be applied to nonconforming material according to 460.2.8.2.1.7.

(6) If during a QV dispute resolution investigation the department discovers unacceptable mixture defined by one or more of the following:

- Va greater than 5.0 or less than 1.5.
- VMA more than 1.0 below the minimum allowed in table 460-1.
- AC more than 0.5 % below the JMF target.

Remove and replace the material, or if the engineer allows the mixture to remain in place, the department will pay for the quantity of affected material at 50 percent of the contract price.

506.3.2 Shop Drawings

Replace paragraph four with the following effective with the December 2018 letting:

(4) Ensure that the fabricator submits a PDF file of shop drawings for railroad structures to the railroad company's chief engineering officer upon contract completion.

650.3.1 General

Replace the entire text with the following effective with the December 2018 letting:

(1) Department and contractor responsibilities for construction staking are specified in 105.6. Conform to 105.6 and the additional requirements specified here in 650.3 for the individual contractor-staking bid items the contract includes.

(2) Protect and preserve known property and survey marks and land monuments as specified in 107.11.3. The contract may require related work under the 621 bid items.

(3) Obtain or calculate benchmark data, grades, and alignment from plan information. The engineer will furnish data for the horizontal and vertical control points, control point ties, horizontal alignments, profiles, and elevations. Reestablish, set additional, and maintain the horizontal and vertical control points and control point ties, as needed for bid items.

(4) Check horizontal and vertical information including but not limited to alignments, locations, elevations, and dimensions, that either the plans show or the engineer provides, for compatibility with existing field conditions. Conduct similar compatibility checks and accuracy checks of horizontal and vertical positions either the department or the contractor establishes in the field.

(5) Perform survey work using conventional methods, or AMG methods capable of achieving the lines and grades the plans show for the work in question. Establish additional benchmarks and control points as necessary to support the method of operation.

650.3.1.1 Staking

(1) Furnish, set, reference, and maintain stakes and markings necessary to establish the alignment, location, benchmarks, elevations, and continuous profile-grades for road and structure work as needed for bid items. Supervise and coordinate construction staking.

(2) Maintain neat, orderly, and complete survey notes, drawings, and computations used in establishing the lines and grades. Make the survey notes and computations available to the engineer within 24 hours, upon request, as the work progresses.

(3) Furnish surveying equipment, stakes, flags, pins, lath, whiskers, and other materials necessary to perform this work, subject to the engineer's approval.

650.3.1.2 Automated Machine Guidance

650.3.1.2.1 General

(1) The contractor may substitute AMG for conventional staking on all or part of the work under the individual staking bid items. Coordinate with the engineer throughout the course of construction to ensure that work performed using AMG conforms to the contract tolerances and that the methods employed conform to the contractor's AMG work plan and accepted industry standards. Revert to conventional staking methods for all or part of the work at any point during construction if AMG is producing unacceptable results.

650.3.1.2.2 AMG Work Plan

(1) Submit a comprehensive written AMG work plan for department review at least 5 business days before the preconstruction conference. In that plan discuss how AMG technology will be integrated into other technologies employed on the project. List the staking bid items that will have work performed using AMG and, for each bid item listed, include the following:

1. Designate which portions of the contract will be done using AMG and which portions will be done using conventional staking.
2. Designate a single staff person as the primary contact for AMG technology issues.
3. List and map the primary and secondary control points required under 105.6.2 enveloping the site.
4. Describe the contractor's quality control procedures. Include the frequency and type of checks performed to ensure that the work conforms to the contract plans.

(2) The engineer will review the plan to determine if it conforms to the contract. Do not perform AMG work until the engineer approves the governing portion of the AMG workplan. Perform the work as the contractor's AMG work plan provides. Update the plan as necessary.

650.3.1.2.3 Geometric and Surface Information

650.3.1.2.3.1 Department Responsibilities

(1) At any time after the contract is awarded the contractor may request the contractor data packet. The department will provide the packet within 5 business days of receiving the contractor's request.

650.3.1.2.3.2 Contractor Responsibilities

(1) Develop and maintain a contractor construction model for areas of the project employing AMG. Confirm that the resulting model agrees with the contract plans.

(2) If the engineer requests, provide the construction model to the department in LandXML or other engineer-approved format.

650.3.1.2.4 Managing and Updating Information

(1) Notify the department of any errors or discrepancies in department-provided information. The department will determine what revisions may be required. The department will revise the contract plans, if necessary, to address errors or discrepancies that the contractor identifies. The department will provide the best available information related to those contract plan revisions.

(2) Revise the construction model as required to support construction operations and to reflect any contract plan revisions the department makes. Perform checks to confirm that the revised construction model agrees with the contract plan revisions. If the engineer requests, provide construction model updates to the engineer. The department will pay for costs incurred to incorporate contract plan revisions as extra work.

650.3.1.2.5 Construction Checks

(1) Check the work against the plan elevation at randomly selected points on cross-sections located at stations evenly divisible by 100 at the frequency the engineer approved as a part of the AMG work plan. Submit the results of these random checks to the engineer daily. Notify the engineer immediately if a check exceeds the tolerances specified in 650.3.1.2.6 below.

(2) Check the work at additional points as the engineer directs. The department may conduct periodic independent checks.

650.3.1.2.6 Construction Tolerances

(1) Ensure that the finished work vertically matches existing or other completed features. Ensure that the work conforms to revised plan elevations as follows:

- Subgrade : +/- 0.10 feet.
- Base : within the tolerance specified in 301.3.4.1(2).

650.3.3 Subgrade

Retitle and replace the entire text with the following effective with the December 2018 letting:

650.3.3 Subgrade Staking

(1) Set construction stakes or marks at intervals of 100 feet, or more frequently, for rural sections and at intervals of 50 feet, or more frequently, for urban sections. Include additional stakes at each cross-section as necessary to match the plan cross-section, achieve the required accuracy, and to support construction operations. Also set and maintain stakes as necessary to establish the horizontal and vertical positions of intersecting road radii, auxiliary lanes, horizontal and vertical curves, and curve transitions. Locate stakes to within 0.25 feet horizontally and establish the grade elevation to within 0.03 feet vertically.

Errata

520.3.3 Laying Pipe

Correct errata by replacing "sections" with "joints" to clarify the intent that the last 3 joints need ties.

(5) Provide joint ties on the upstream and downstream ends of circular and horizontal elliptical concrete culvert and concrete cattle pass installations. Tie the next 3 pipe joints or, if using apron endwalls, the endwall joint and the last 2 pipe joints. Ties are not required on culverts with masonry endwalls unless the plans show otherwise.

608.3.3 Laying Pipe

Correct errata by replacing "sections" with "joints" to clarify the intent that the last 3 joints need ties.

(5) Provide joint ties on concrete storm sewer system infall and outfall pipes. Tie the last 3 pipe joints or, if using apron endwalls, the endwall joint and the next 2 pipe joints. Ties are not required on installations with masonry endwalls unless the plans show otherwise.

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.

NOTE: CRCS Prime Contractor payment is currently not automated and will need to be manually loaded into the Civil Rights Compliance System. Copies of prime contractor payments received (check or ACH) will have to be forwarded to paul.ndon@dot.wi.gov within 5 days of payment receipt to be logged manually.

***Additionally, for information on Subcontractor Sublet assignments, Subcontractor Payments and Payment Tracking, please refer to the CRCS Payment and Sublets manual at:

https://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payments-sublets-manual.pdf

ADDITIONAL SPECIAL PROVISION 9-S
Electronic Labor Data Submittal for
State Funded Only Projects

(1) Use the Workforce Utilization Report Microsoft Excel spread sheet, or other compatible spread sheet (i.e., Google Spread Sheet), to report required labor data. Details and the Excel spreadsheet are available online through the department's highway construction contract information (HCCI) site on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/default.aspx

(2) Ensure that all tiers of subcontractors, including all trucking firms, submit their labor data electronically via the Excel spread sheet to the prime contractor within 14 calendar days of the end of each quarter (quarters are defined as January-March, April-June, July-September, and October-December). The prime contractor shall coordinate collection of their subcontractors' spread sheets and forward them to the Regional Labor Compliance Specialist within 21 calendar days of the end of each quarter. Every company or contractor providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected companies or contractors aware of the requirements under this special provision and arrange for them to receive an Excel spreadsheet as part of their subcontract documents.

(4) The department will reject all paper submittals of information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

Non-discrimination Provisions

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

a. Withholding payments to the contractor under the contract until the contractor complies; and/or
b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

Effective August 2015 letting

BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or $2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this “Buy America” provision.

https://wisconsindot.gov/rdwy/cmm/cm-02-28.pdf

Upon completion of the project certify to the engineer, in writing using department form WS4567, that all steel, iron, and coating processes for steel or iron incorporated into the contract work conform to these "Buy America" provisions. Attach a list of exemptions and their associated costs to the certification form. Department form WS4567 is available at:

https://wisconsindot.gov/hcciDocs/contracting-info/ws4567.doc

Proposal ID: 20181211019 **Project(s):** 4140-19-71

Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0002	201.0105 Clearing	24.000 STA	_____.____	_____.____
0004	201.0205 Grubbing	24.000 STA	_____.____	_____.____
0006	203.0100 Removing Small Pipe Culverts	3.000 EACH	_____.____	_____.____
0008	204.0100 Removing Pavement	68.000 SY	_____.____	_____.____
0010	204.0110 Removing Asphaltic Surface	22.000 SY	_____.____	_____.____
0012	204.0115 Removing Asphaltic Surface Butt Joints	5,835.000 SY	_____.____	_____.____
0014	204.0120 Removing Asphaltic Surface Milling	159,410.000 SY	_____.____	_____.____
0016	204.0130 Removing Curb	128.000 LF	_____.____	_____.____
0018	204.0150 Removing Curb & Gutter	2,010.000 LF	_____.____	_____.____
0020	204.0155 Removing Concrete Sidewalk	837.000 SY	_____.____	_____.____
0022	204.0165 Removing Guardrail	1,740.000 LF	_____.____	_____.____
0024	204.0170 Removing Fence	591.000 LF	_____.____	_____.____
0026	204.0195 Removing Concrete Bases	37.000 EACH	_____.____	_____.____
0028	204.0210 Removing Manholes	14.000 EACH	_____.____	_____.____
0030	204.0215 Removing Catch Basins	1.000 EACH	_____.____	_____.____
0032	204.0220 Removing Inlets	14.000 EACH	_____.____	_____.____

Proposal ID: 20181211019 **Project(s):** 4140-19-71

Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0034	204.0245 Removing Storm Sewer (size) 01. 12-Inch	1,109.000 LF	_____.____	_____.____
0036	204.0245 Removing Storm Sewer (size) 02. 15-Inch	954.000 LF	_____.____	_____.____
0038	204.0245 Removing Storm Sewer (size) 03. 18-Inch	120.000 LF	_____.____	_____.____
0040	204.0245 Removing Storm Sewer (size) 04. 24-Inch	558.000 LF	_____.____	_____.____
0042	204.0245 Removing Storm Sewer (size) 05. 30-Inch	246.000 LF	_____.____	_____.____
0044	204.0245 Removing Storm Sewer (size) 06. 36-Inch	67.000 LF	_____.____	_____.____
0046	204.0280 Sealing Pipes	3.000 EACH	_____.____	_____.____
0048	204.0291.S Abandoning Sewer	3.000 CY	_____.____	_____.____
0050	204.9001.S Removing Advance Flasher Assemblies Type 1	2.000 EACH	_____.____	_____.____
0052	204.9002.S Removing Advance Flasher Assemblies Type 2	2.000 EACH	_____.____	_____.____
0054	204.9090.S Removing (item description) 01. Cables or Conduit	5,628.000 LF	_____.____	_____.____
0056	205.0100 Excavation Common	7,135.000 CY	_____.____	_____.____
0058	205.0200 Excavation Rock	192.000 CY	_____.____	_____.____
0060	205.1300 Presplitting Rock	199.000 LF	_____.____	_____.____

Proposal ID: 20181211019 **Project(s):** 4140-19-71

Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0062	208.0100 Borrow	81.000 CY	_____.____	_____.____
0064	211.0100 Prepare Foundation for Asphaltic Paving (project) 01. 4140-19-71	LS	LUMP SUM	_____.____
0066	211.0400 Prepare Foundation for Asphaltic Shoulders	50.000 STA	_____.____	_____.____
0068	213.0100 Finishing Roadway (project) 02. 4140-19-71	1.000 EACH	_____.____	_____.____
0070	305.0110 Base Aggregate Dense 3/4-Inch	4,392.000 TON	_____.____	_____.____
0072	305.0120 Base Aggregate Dense 1 1/4-Inch	13,270.000 TON	_____.____	_____.____
0074	305.0500 Shaping Shoulders	3.000 STA	_____.____	_____.____
0076	312.0110 Select Crushed Material	24.000 TON	_____.____	_____.____
0078	315.0100 Asphaltic Base	2,520.000 TON	_____.____	_____.____
0080	405.0200 Coloring Concrete Custom	8.000 CY	_____.____	_____.____
0082	416.0160 Concrete Driveway 6-Inch	450.000 SY	_____.____	_____.____
0084	450.4000 HMA Cold Weather Paving	960.000 TON	_____.____	_____.____
0086	455.0605 Tack Coat	18,350.000 GAL	_____.____	_____.____
0088	460.2005 Incentive Density PWL HMA Pavement	22,089.000 DOL	1.00000	22,089.00
0090	460.2007 Incentive Density HMA Pavement Longitudinal Joints	16,391.000 DOL	1.00000	16,391.00
0092	460.2010 Incentive Air Voids HMA Pavement	33,810.000 DOL	1.00000	33,810.00

Proposal ID: 20181211019 **Project(s):** 4140-19-71

Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0094	460.5223 HMA Pavement 3 LT 58-28 S	15,090.000 TON	_____.____	_____.____
0096	460.5224 HMA Pavement 4 LT 58-28 S	18,720.000 TON	_____.____	_____.____
0098	465.0105 Asphaltic Surface	1.000 TON	_____.____	_____.____
0100	465.0120 Asphaltic Surface Driveways and Field Entrances	535.000 TON	_____.____	_____.____
0102	465.0310 Asphaltic Curb	5.000 LF	_____.____	_____.____
0104	465.0315 Asphaltic Flumes	41.000 SY	_____.____	_____.____
0106	465.0475 Asphalt Centerline Rumble Strips 2-Lane Rural	5,181.000 LF	_____.____	_____.____
0108	511.1200 Temporary Shoring (structure) 01. R-15-11	450.000 SF	_____.____	_____.____
0110	520.1015 Apron Endwalls for Culvert Pipe 15-Inch	2.000 EACH	_____.____	_____.____
0112	520.4115 Culvert Pipe Class IV 15-Inch	64.000 LF	_____.____	_____.____
0114	520.8000 Concrete Collars for Pipe	20.000 EACH	_____.____	_____.____
0116	521.1030 Apron Endwalls for Culvert Pipe Steel 30-Inch	2.000 EACH	_____.____	_____.____
0118	521.1217 Apron Endwalls for Pipe Arch Steel 17x13-Inch	4.000 EACH	_____.____	_____.____
0120	521.3130 Culvert Pipe Corrugated Steel 30-Inch	4.000 LF	_____.____	_____.____
0122	521.3717 Pipe Arch Corrugated Steel 17x13-Inch	30.000 LF	_____.____	_____.____

Proposal ID: 20181211019 **Project(s):** 4140-19-71

Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0124	522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	1.000 EACH	_____.____	_____.____
0126	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	1.000 EACH	_____.____	_____.____
0128	522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	1.000 EACH	_____.____	_____.____
0130	522.2619 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	1.000 EACH	_____.____	_____.____
0132	522.2624 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	1.000 EACH	_____.____	_____.____
0134	522.2629 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	1.000 EACH	_____.____	_____.____
0136	601.0110 Concrete Curb Type D	10.000 LF	_____.____	_____.____
0138	601.0407 Concrete Curb & Gutter 18-Inch Type D	287.000 LF	_____.____	_____.____
0140	601.0411 Concrete Curb & Gutter 30-Inch Type D	6,391.000 LF	_____.____	_____.____
0142	601.0576 Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type J	54.000 LF	_____.____	_____.____
0144	601.0600 Concrete Curb Pedestrian	485.000 LF	_____.____	_____.____
0146	602.0405 Concrete Sidewalk 4-Inch	32,925.000 SF	_____.____	_____.____
0148	602.0515 Curb Ramp Detectable Warning Field Natural Patina	434.000 SF	_____.____	_____.____

Proposal ID: 20181211019 **Project(s):** 4140-19-71

Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0150	602.0615 Curb Ramp Detectable Warning Field Radial Natural Patina	31.000 SF	_____.____	_____.____
0152	606.0200 Riprap Medium	8.000 CY	_____.____	_____.____
0154	608.0005 Storm Sewer Rock Excavation	358.000 CY	_____.____	_____.____
0156	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	44.000 LF	_____.____	_____.____
0158	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	390.000 LF	_____.____	_____.____
0160	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	320.000 LF	_____.____	_____.____
0162	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	141.000 LF	_____.____	_____.____
0164	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	37.000 LF	_____.____	_____.____
0166	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	420.000 LF	_____.____	_____.____
0168	608.2319 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 19x30-Inch	91.000 LF	_____.____	_____.____
0170	608.2324 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	198.000 LF	_____.____	_____.____
0172	608.2329 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 29x45-Inch	64.000 LF	_____.____	_____.____

Proposal ID: 20181211019 **Project(s):** 4140-19-71

Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0174	608.2419 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	763.000 LF	_____.____	_____.____
0176	608.2424 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 24x38-Inch	154.000 LF	_____.____	_____.____
0178	608.2429 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 29x45-Inch	614.000 LF	_____.____	_____.____
0180	608.3012 Storm Sewer Pipe Class III-A 12-Inch	263.000 LF	_____.____	_____.____
0182	608.3015 Storm Sewer Pipe Class III-A 15-Inch	621.000 LF	_____.____	_____.____
0184	608.3018 Storm Sewer Pipe Class III-A 18-Inch	87.000 LF	_____.____	_____.____
0186	608.3024 Storm Sewer Pipe Class III-A 24-Inch	1,453.000 LF	_____.____	_____.____
0188	608.6008 Storm Sewer Pipe Composite 8-Inch	14.000 LF	_____.____	_____.____
0190	611.0530 Manhole Covers Type J	2.000 EACH	_____.____	_____.____
0192	611.0535 Manhole Covers Type J-Special	31.000 EACH	_____.____	_____.____
0194	611.0612 Inlet Covers Type C	2.000 EACH	_____.____	_____.____
0196	611.0624 Inlet Covers Type H	37.000 EACH	_____.____	_____.____
0198	611.0639 Inlet Covers Type H-S	8.000 EACH	_____.____	_____.____
0200	611.0642 Inlet Covers Type MS	4.000 EACH	_____.____	_____.____
0202	611.0645 Inlet Covers Type MS-A	1.000 EACH	_____.____	_____.____

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Federal ID(s): N/A

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0204	611.0654 Inlet Covers Type V	2.000 EACH	_____.____	_____.____
0206	611.0666 Inlet Covers Type Z	1.000 EACH	_____.____	_____.____
0208	611.1003 Catch Basins 3-FT Diameter	4.000 EACH	_____.____	_____.____
0210	611.1004 Catch Basins 4-FT Diameter	7.000 EACH	_____.____	_____.____
0212	611.1005 Catch Basins 5-FT Diameter	1.000 EACH	_____.____	_____.____
0214	611.1006 Catch Basins 6-FT Diameter	2.000 EACH	_____.____	_____.____
0216	611.1230 Catch Basins 2x3-FT	27.000 EACH	_____.____	_____.____
0218	611.2004 Manholes 4-FT Diameter	6.000 EACH	_____.____	_____.____
0220	611.2005 Manholes 5-FT Diameter	18.000 EACH	_____.____	_____.____
0222	611.2006 Manholes 6-FT Diameter	4.000 EACH	_____.____	_____.____
0224	611.2007 Manholes 7-FT Diameter	5.000 EACH	_____.____	_____.____
0226	611.3004 Inlets 4-FT Diameter	1.000 EACH	_____.____	_____.____
0228	611.3230 Inlets 2x3-FT	7.000 EACH	_____.____	_____.____
0230	611.3901 Inlets Median 1 Grate	4.000 EACH	_____.____	_____.____
0232	611.8110 Adjusting Manhole Covers	33.000 EACH	_____.____	_____.____
0234	611.8115 Adjusting Inlet Covers	2.000 EACH	_____.____	_____.____
0236	611.8120.S Cover Plates Temporary	33.000 EACH	_____.____	_____.____

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SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0238	612.0206 Pipe Underdrain Unperforated 6-Inch	31.000 LF	_____.____	_____.____
0240	612.0406 Pipe Underdrain Wrapped 6-Inch 01. (R-15-11)	194.000 LF	_____.____	_____.____
0242	612.0406 Pipe Underdrain Wrapped 6-Inch 02. (R-15-12)	192.000 LF	_____.____	_____.____
0244	612.0902.S Insulation Board Polystyrene (inch) 01. 2-INCH	36.000 SY	_____.____	_____.____
0246	614.2300 MGS Guardrail 3	1,266.000 LF	_____.____	_____.____
0248	614.2330 MGS Guardrail 3 K	575.000 LF	_____.____	_____.____
0250	614.2610 MGS Guardrail Terminal EAT	4.000 EACH	_____.____	_____.____
0252	616.0205 Fence Chain Link 5-FT	403.000 LF	_____.____	_____.____
0254	616.0700.S Fence Safety	739.000 LF	_____.____	_____.____
0256	618.0100 Maintenance And Repair of Haul Roads (project) 01. 4140-19-71	1.000 EACH	_____.____	_____.____
0258	619.1000 Mobilization	1.000 EACH	_____.____	_____.____
0260	620.0300 Concrete Median Sloped Nose	287.000 SF	_____.____	_____.____
0262	624.0100 Water	131.400 MGAL	_____.____	_____.____
0264	625.0100 Topsoil	139.000 SY	_____.____	_____.____
0266	625.0500 Salvaged Topsoil	4,645.000 SY	_____.____	_____.____
0268	627.0200 Mulching	1,430.000 SY	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0270	628.1504 Silt Fence	8,032.000 LF	_____.____	_____.____
0272	628.1520 Silt Fence Maintenance	8,032.000 LF	_____.____	_____.____
0274	628.1905 Mobilizations Erosion Control	8.000 EACH	_____.____	_____.____
0276	628.1910 Mobilizations Emergency Erosion Control	4.000 EACH	_____.____	_____.____
0278	628.2004 Erosion Mat Class I Type B	3,105.000 SY	_____.____	_____.____
0280	628.6510 Soil Stabilizer Type B	0.800 ACRE	_____.____	_____.____
0282	628.7005 Inlet Protection Type A	2.000 EACH	_____.____	_____.____
0284	628.7010 Inlet Protection Type B	24.000 EACH	_____.____	_____.____
0286	628.7015 Inlet Protection Type C	35.000 EACH	_____.____	_____.____
0288	628.7020 Inlet Protection Type D	42.000 EACH	_____.____	_____.____
0290	628.7504 Temporary Ditch Checks	89.000 LF	_____.____	_____.____
0292	628.7555 Culvert Pipe Checks	41.000 EACH	_____.____	_____.____
0294	628.7570 Rock Bags	420.000 EACH	_____.____	_____.____
0296	629.0210 Fertilizer Type B	8.800 CWT	_____.____	_____.____
0298	630.0110 Seeding Mixture No. 10	45.000 LB	_____.____	_____.____
0300	630.0140 Seeding Mixture No. 40	21.000 LB	_____.____	_____.____
0302	630.0200 Seeding Temporary	260.000 LB	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0304	631.0300 Sod Water	931.000 MGAL	_____.____	_____.____
0306	631.1000 Sod Lawn	8,306.000 SY	_____.____	_____.____
0308	633.5200 Markers Culvert End	13.000 EACH	_____.____	_____.____
0310	634.0614 Posts Wood 4x6-Inch X 14-FT	150.000 EACH	_____.____	_____.____
0312	634.0616 Posts Wood 4x6-Inch X 16-FT	87.000 EACH	_____.____	_____.____
0314	634.0618 Posts Wood 4x6-Inch X 18-FT	7.000 EACH	_____.____	_____.____
0316	637.2210 Signs Type II Reflective H	1,137.460 SF	_____.____	_____.____
0318	637.2220 Signs Type II Reflective SH	2.250 SF	_____.____	_____.____
0320	637.2230 Signs Type II Reflective F	597.250 SF	_____.____	_____.____
0322	638.2102 Moving Signs Type II	2.000 EACH	_____.____	_____.____
0324	638.2602 Removing Signs Type II	231.000 EACH	_____.____	_____.____
0326	638.3000 Removing Small Sign Supports	235.000 EACH	_____.____	_____.____
0328	642.5401 Field Office Type D	1.000 EACH	_____.____	_____.____
0330	643.0300 Traffic Control Drums	12,315.000 DAY	_____.____	_____.____
0332	643.0310.S Temporary Portable Rumble Strips	1.000 LS	_____.____	_____.____
0334	643.0410 Traffic Control Barricades Type II	1,470.000 DAY	_____.____	_____.____
0336	643.0420 Traffic Control Barricades Type III	4,112.000 DAY	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0338	643.0705 Traffic Control Warning Lights Type A	5,188.000 DAY	_____.____	_____.____
0340	643.0900 Traffic Control Signs	18,041.000 DAY	_____.____	_____.____
0342	643.0920 Traffic Control Covering Signs Type II	1.000 EACH	_____.____	_____.____
0344	643.1000 Traffic Control Signs Fixed Message	66.000 SF	_____.____	_____.____
0346	643.1050 Traffic Control Signs PCMS	28.000 DAY	_____.____	_____.____
0348	643.5000 Traffic Control	1.000 EACH	_____.____	_____.____
0350	644.1410.S Temporary Pedestrian Surface Asphalt	665.000 SF	_____.____	_____.____
0352	644.1430.S Temporary Pedestrian Surface Plate	475.000 SF	_____.____	_____.____
0354	644.1601.S Temporary Curb Ramp	9.000 EACH	_____.____	_____.____
0356	644.1616.S Temporary Pedestrian Safety Fence	3,040.000 LF	_____.____	_____.____
0358	645.0120 Geotextile Type HR	51.000 SY	_____.____	_____.____
0360	646.1020 Marking Line Epoxy 4-Inch	38,627.000 LF	_____.____	_____.____
0362	646.1040 Marking Line Grooved Wet Ref Epoxy 4-Inch	43,400.000 LF	_____.____	_____.____
0364	646.3020 Marking Line Epoxy 8-Inch	424.000 LF	_____.____	_____.____
0366	646.4520 Marking Line Same Day Epoxy 4-Inch	52,973.000 LF	_____.____	_____.____
0368	646.5020 Marking Arrow Epoxy	6.000 EACH	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0370	646.5120 Marking Word Epoxy	2.000 EACH	_____.____	_____.____
0372	646.6120 Marking Stop Line Epoxy 18-Inch	182.000 LF	_____.____	_____.____
0374	646.7120 Marking Diagonal Epoxy 12-Inch	377.000 LF	_____.____	_____.____
0376	646.7420 Marking Crosswalk Epoxy Transverse Line 6-Inch	2,230.000 LF	_____.____	_____.____
0378	646.8120 Marking Curb Epoxy	2,475.000 LF	_____.____	_____.____
0380	646.8220 Marking Island Nose Epoxy	6.000 EACH	_____.____	_____.____
0382	646.8320 Marking Parking Stall Epoxy	6,689.000 LF	_____.____	_____.____
0384	648.0100 Locating No-Passing Zones	5.890 MI	_____.____	_____.____
0386	649.0105 Temporary Marking Line Paint 4-Inch	95,503.000 LF	_____.____	_____.____
0388	649.0120 Temporary Marking Line Epoxy 4-Inch	1,236.000 LF	_____.____	_____.____
0390	650.4000 Construction Staking Storm Sewer	94.000 EACH	_____.____	_____.____
0392	650.4500 Construction Staking Subgrade	9,496.000 LF	_____.____	_____.____
0394	650.5000 Construction Staking Base	9,496.000 LF	_____.____	_____.____
0396	650.5500 Construction Staking Curb Gutter and Curb & Gutter	6,716.000 LF	_____.____	_____.____
0398	650.6000 Construction Staking Pipe Culverts	4.000 EACH	_____.____	_____.____
0400	650.8000 Construction Staking Resurfacing Reference	44,109.000 LF	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0402	650.8500 Construction Staking Electrical Installations (project) 01. 4140-19-71	LS	LUMP SUM	_____.____
0404	650.9000 Construction Staking Curb Ramps	40.000 EACH	_____.____	_____.____
0406	650.9910 Construction Staking Supplemental Control (project) 01. 4140-19-71	LS	LUMP SUM	_____.____
0408	650.9920 Construction Staking Slope Stakes	7,796.000 LF	_____.____	_____.____
0410	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	5,779.000 LF	_____.____	_____.____
0412	652.0605 Conduit Special 2-Inch	6,727.000 LF	_____.____	_____.____
0414	653.0164 Pull Boxes Non-Conductive 24x42-Inch	2.000 EACH	_____.____	_____.____
0416	654.0102 Concrete Bases Type 2	1.000 EACH	_____.____	_____.____
0418	654.0220 Concrete Control Cabinet Bases Type 10	1.000 EACH	_____.____	_____.____
0420	655.0230 Cable Traffic Signal 5-14 AWG	60.000 LF	_____.____	_____.____
0422	655.0515 Electrical Wire Traffic Signals 10 AWG	30.000 LF	_____.____	_____.____
0424	655.0610 Electrical Wire Lighting 12 AWG	7,875.000 LF	_____.____	_____.____
0426	655.0625 Electrical Wire Lighting 6 AWG	40,545.000 LF	_____.____	_____.____
0428	655.0630 Electrical Wire Lighting 4 AWG	40,545.000 LF	_____.____	_____.____
0430	656.0200 Electrical Service Meter Breaker Pedestal (location) 01. STH 42 & Main St.	LS	LUMP SUM	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0432	657.0305 Poles Type 2	1.000 EACH	_____.____	_____.____
0434	657.0590 Trombone Arms 20-FT	1.000 EACH	_____.____	_____.____
0436	658.0171 Traffic Signal Face 1S 12-Inch	2.000 EACH	_____.____	_____.____
0438	658.5069 Signal Mounting Hardware (location) 01. STH 42 & Main St.	LS	LUMP SUM	_____.____
0440	690.0150 Sawing Asphalt	15,249.000 LF	_____.____	_____.____
0442	690.0250 Sawing Concrete	759.000 LF	_____.____	_____.____
0444	740.0440 Incentive IRI Ride	16,460.000 DOL	1.00000	16,460.00
0446	SPV.0060 Special 01. Stormwater Treatment Device	1.000 EACH	_____.____	_____.____
0448	SPV.0060 Special 02. Salvage Lighting Unit	7.000 EACH	_____.____	_____.____
0450	SPV.0060 Special 03. Reconnecting Storm Sewer Laterals	7.000 EACH	_____.____	_____.____
0452	SPV.0060 Special 04. Removing Lighting Unit	27.000 EACH	_____.____	_____.____
0454	SPV.0060 Special 05. Install Lighting Unit Type Special	75.000 EACH	_____.____	_____.____
0456	SPV.0060 Special 06. Lighting Control Cabinet Base Type Special	2.000 EACH	_____.____	_____.____
0458	SPV.0060 Special 07. Concrete Bases Type Special	73.000 EACH	_____.____	_____.____
0460	SPV.0060 Special 08. Trimming Trees	2.000 EACH	_____.____	_____.____

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0462	SPV.0060 Special 09. Pipe Inlet Structure	1.000 EACH	_____.____	_____.____
0464	SPV.0060 Special 10. Inlets Median 1 Grate Special	1.000 EACH	_____.____	_____.____
0466	SPV.0060 Special 11. Manhole special 8-FT	1.000 EACH	_____.____	_____.____
0468	SPV.0060 Special 12. Removing Landscape Rocks	10.000 EACH	_____.____	_____.____
0470	SPV.0060 Special 13. Lighting Control Cabinets Type Special	2.000 EACH	_____.____	_____.____
0472	SPV.0060 Special 14. Concrete Base Spread Footing	2.000 EACH	_____.____	_____.____
0474	SPV.0060 Special 15. HMA Percent Within Limits (PWL) Test Strip Volumetrics	2.000 EACH	_____.____	_____.____
0476	SPV.0060 Special 16. HMA Percent Within Limits (PWL) Test Strip Density	2.000 EACH	_____.____	_____.____
0478	SPV.0075 Special 01. Street Sweeping	48.000 HRS	_____.____	_____.____
0480	SPV.0090 Special 01. Fence Chain Link Polymer Coated 4-FT (R-15-11)	193.000 LF	_____.____	_____.____
0482	SPV.0090 Special 02. Fence Chain Link Polymer Coated 4- FT (R-15-12)	191.000 LF	_____.____	_____.____
0484	SPV.0090 Special 03. Concrete Cold Weather Covering Curb and Gutter Plastic 1 Layer	3,000.000 LF	_____.____	_____.____
0486	SPV.0090 Special 04. Concrete Cold Weather Covering Curb and Gutter Plastic 2 Layers	3,000.000 LF	_____.____	_____.____

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Federal ID(s): N/A

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Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0488	SPV.0090 Special 05. Concrete Cold Weather Covering Curb and Gutter Plastic/Hay/Plastic	3,000.000 LF	_____.____	_____.____
0490	SPV.0090 Special 06. Joint Ties	528.000 LF	_____.____	_____.____
0492	SPV.0105 Special 01. Retaining Wall Planting Area	LS	LUMP SUM	_____.____
0494	SPV.0105 Special 02. Splitter Island Planting Area	LS	LUMP SUM	_____.____
0496	SPV.0105 Special 05. Removing Flashing Beacon (STH 42 & Main St.)	LS	LUMP SUM	_____.____
0498	SPV.0165 Special 01. Wall Modular Block Mechanically Stabilized Earth (R-15-11)	1,611.000 SF	_____.____	_____.____
0500	SPV.0165 Special 02. Wall Modular Block Mechanically Stabilized Earth (R-15-12)	1,033.000 SF	_____.____	_____.____
0502	SPV.0165 Special 03. Crosswalk Apron Pavers	160.000 SF	_____.____	_____.____
0504	SPV.0165 Special 04. Concrete Weir Inside Manhole	10.300 SF	_____.____	_____.____
0506	SPV.0165 Special 05. Concrete Cold Weather Covering Sidewalk Plastic 1 Layer	12,000.000 SF	_____.____	_____.____
0508	SPV.0165 Special 06. Concrete Cold Weather Covering Sidewalk Plastic 2 Layers	12,000.000 SF	_____.____	_____.____
0510	SPV.0165 Special 07. Concrete Cold Weather Covering Sidewalk Plastic/Hay/Plastic	12,000.000 SF	_____.____	_____.____
	Section: 0001		**Total:**	_____.____

Total Bid: _____.____

PLEASE ATTACH SCHEDULE OF ITEMS HERE