HIGHWAY WORK PROPOSAL

Proposal Number: 2 Ø

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

COUNTY	STATE PROJECT ID	FEDERAL PROJECT ID	PROJECT DESCRIPTION	HIGHWAY
Waukesha	2200-16-71		Moreland Boulevard Manhattan Drive to I-94	USH 18

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

Proposal Guaranty Required, $ 100,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Due Date: January 12, 2016 Time (Local Time): 9:00 AM	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time November 4, 2016	
Assigned Disadvantaged Business Enterprise Goal 0 %	This contract is subject to federal oversight.

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

(Bidder Signature)

(Print or Type Bidder Name)

(Bidder Title)

For Department Use Only

Type of Work Asphaltic milling, grading, aggregate base, concrete base patching, HMA pavement, sidewalk, landscape retaining wall, storm sewer, concrete curb and gutter, signing, pavement marking, traffic signals, 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:
http://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

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

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

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

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

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

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

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

B Submitting Electronic Bids

B.1 On the Internet

(1) Do the following before submitting the bid:

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

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

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

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

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

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

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

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

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

Bidder

Name

BN00

Proposals: 1, 12, 14, & 22

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

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

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

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

C Waiver of Electronic Submittal

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

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

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

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

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

PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

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

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

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

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

(Signature of Authorized Contractor Representative) (Date)

March 2010

LIST OF SUBCONTRACTORS

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

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

Name of Subcontractor	Class of Work	Estimated Value

DECEMBER 2000

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 2200-16-71, Moreland Boulevard, Manhattan Drive to I-94, USH 18, Waukesha County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2016 Edition, as published by the department, and these special provisions.

If all or a portion of the plans and special provisions are developed in the SI metric system and the schedule of prices is developed in the US standard measure system, the department will pay for the work as bid in the US standard system.
100-005 (20150630)

2. Scope of Work.

The work under this contract shall consist of asphaltic milling, asphaltic milling 4-inch special, grading, aggregate base, concrete base patching, HMA pavement, concrete pavement, modular block retaining wall, storm sewer, concrete curb and gutter, signing, pavement marking, traffic signals, lighting 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 work schedule and may require extraordinary forces and equipment.

There may be multiple mobilizations for such items as: traffic control, signing items, temporary pavement marking, topsoil, seeding, sod, mulch, drainage items and other incidental items related to staging. No additional payment will be made by the department for said mobilizations.

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

In order to avoid adverse impacts upon the NLEBs, no vegetation clearing and grubbing within the identified clearing and grubbing limits will be allowed from June 1 to July 31, both dates inclusive.

If the required clearing and removal is not completed by May 31, the department will suspend all clearing and associated work directly impacted by clearing. The department will issue a notice to proceed with clearing and associated work directly impacted by clearing after consulting with the United States Fish and Wildlife Service (USFWS).

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

4. Traffic.

Keep open travel lanes free from mud, sand, and other construction debris at all times.

Maintain a minimum 3:1 slope between the roadway and adjacent excavation if a drop off existing between the travel lane and work zone.

Construction on USH 18 will be performed under traffic in 2 primary stages.

Traffic Control and Staging

USH 18 from Manhattan Drive to IH 94 is being rehabilitated under WisDOT Project 2200-16-71.

Keep USH 18 (Moreland Boulevard) and all abutting side roads open to emergency vehicles at all times during project construction. Conduct operations in a manner that will cause the least interference to traffic movements within the construction area.

Construction will consist of rehabilitating USH 18 from Manhattan Drive to the IH 94 interchange. The proposed work along USH 18 consists of milling and resurfacing the pavement surface, closing several access points, modifying the medians and various levels of intersection improvements. All traffic signal equipment on the project corridor will be upgraded according to the most recent WisDOT standards.

Construction staging is proposed with a pre-stage and two primary stages within two project segments. The project limit segments are as follows:

Segment 1 - USH 18, Manhattan Drive to Main Street

Segment 2 - USH 18, Main Street to I-94

Pre-stage activities consist of the removal of the center median on USH 18 near the intersection of Manhattan Drive; followed by the construction of the outside driving lanes at near the intersection. Manhattan Drive will be converted to a one-way street southbound through the intersection of USH 18.

Construction of proposed left turn lane improvements and the center median areas will occur during Stage 1. Additional median area and center lane construction will occur during the two sub-stages (Stage 1A and 1B) of Stage 1.

Construction of the outside lanes and side roads will occur during Stage 2. Stage 2 has been broken into four sub-stages (Stage 2A – 2D) to maintain access of traffic on the side streets.

The minimum number of travel lanes on USH 18 that must remain open to traffic during project construction is as follows:

Stage 1 – Segment 1:
From Manhattan Drive to Main Street, during the daytime hours of construction (6:00 AM – 7:00 PM), traffic will be maintained under two travel lanes in both the eastbound and westbound directions. During the off-peak nighttime hours of construction (7:00 PM – 6:00 AM), traffic will be maintained under one travel lane in both the eastbound and westbound directions.

Stage 1 – Segment 2:
From Main Street to the IH 94 interchange, during the daytime hours of construction, traffic will be maintained under three travel lanes in both the eastbound and westbound directions. During the off-peak nighttime hours of construction (7:00 PM – 6:00 AM), traffic will be maintained under one travel lane in both the eastbound and westbound directions.

Stage 2 – Segment 1:
From Manhattan Drive to Main Street, during the daytime hours of construction (6:00 AM – 7:00 PM), traffic will be maintained under two travel lanes in both the eastbound and westbound directions. During the off-peak nighttime hours of construction (7:00 PM – 6:00 AM), traffic will be maintained under one travel lane in both the eastbound and westbound directions.

Stage 2 – Segment 2:
From Main Street to the IH 94 interchange, during the daytime hours of construction, traffic will be maintained under three travel lanes in both the eastbound and westbound

directions. During the off-peak nighttime hours of construction (7:00 PM – 6:00 AM), traffic will be maintained under one travel lane in both the eastbound and westbound directions.

Maintaining traffic on side roads within the project limits shall be as identified in the plans.

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

The width of all traffic lanes shall be kept at a minimum of 11 feet wide for all stages with the exception of lanes adjacent to curb and gutter. Lanes adjacent to curb and gutter flange may be reduced to a minimum width of 10 feet.

Non signalized median openings are to remain open as shown on the plans. These median openings may only be closed when work is actively taking place in these areas.

Maintain pedestrian access to adjacent properties, at intersections, and bus stops as directed by the engineer. Provide temporary ramps, sidewalk, and closures according to WisDOT Standard Detailed Drawings, MUTCD, and as directed by the engineer.

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

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

5. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying USH 18 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 27, 2016 to 6:00 AM Tuesday, May 31, 2016 for Memorial Day;
- From noon Friday, July 1, 2016 to 6:00 AM Tuesday, July 5, 2016 for Independence Day;
- From noon Friday, September 2, 2016 to 6:00 AM Tuesday, September 6, 2016 for Labor Day.

107-005 (20050502)

6. Utilities.

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

There are underground and overhead utility facilities located within the project limits and there are known utility adjustments required for this construction project. Coordinate construction activities with a call to Digger's Hotline or a direct call to the utilities which have facilities in the area as required per statutes. Use caution to insure the integrity of underground facilities and maintain code clearance from overhead facilities at all times.

Utility companies will be performing utility work and adjustments within the limits and during the life of this project. Cooperate and coordinate construction activities with these organizations.

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 may begin work at the site. Notice shall be given 14 days prior to the contractor's anticipated completion date and when the site will be available to the utility. Follow up with a confirmation notice to the engineer and the utility no less than 3 business days before the site will be ready for the utility.

Bidders are advised to contact each utility company listed in the plans prior to preparing their bids, to obtain current information on the status of existing and any new utility relocation work.

If a conflict with discontinued utility facilities is encountered, contact the appropriate utility owner/representative for instructions on proper removal and disposal of said facility.

AT&T Legacy has the underground facilities in the project area on the south side of USH 18. No conflicts have by identified with AT&T Legacy facilities.

The field construction contact for AT&T Legacy is William Koenig at (608) 628-0575 (mobile number).

Teleport Communications America (TCA), formerly known as ATT Local Network & AT&T/TCG, has facilities in the project are that are in conflict with the project improvements. Utility work planned in the project corridor includes:

- Along Swenson Drive from Station 42+25, RT to Station 49+00, 25'-50' RT. The hand hole at Station 43+39, 25' RT will be raised to final grade by TCA during construction.

- The TCA Handhole on Swenson Drive at Station 46+83 25'RT will be removed. The conduit and cable will be protected with split duct and filled with Slurry Backfill prior to construction by TCA forces.

- The existing underground line at Station 53+52, 33' RT is in conflict with proposed storm sewer and will be lowered by TCA forces during construction.

- The existing hand hole at Station 59+26, 31' RT will be raised to final grade by TCA during construction.

Notify TCA (Debbie Saddler) at least three working days prior to grading work in Swenson Drive and Kossow Road as well as storm sewer work in Kossow Road in order to coordinate construction activity in the area. TCA's relocation activities are anticipated to take five working days during construction.

The construction field contact for TCA is Debbie Saddler at office (414) 459-3572 and mobile (414) 651-0036.

AT&T Wisconsin has facilities in the project area that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor. All work is anticipated to be completed prior to construction unless otherwise noted. The contractor is advised to contact AT&T to verify the status of the relocation work.

E. Moreland Blvd

- 151+30 RT 100' (South/West corner of Gateway Dr) AT&T has a downguy and anchor that will be moved west 2', clearing the proposed redirected sidewalk at that location.

- 168+40 LT 100' (North/East corner of Ramona Rd.) AT&T is attached to a We Energies pole in conflict with the new sidewalk. The pole is being replaced by We Energies and AT&T aerial/buried plant will be transferred to the new pole installed east (at STA 168+50 LT 98') of the present location.

- Manhole located at 184+10, 83' LT will be rebuilt prior to start of DOT project. However, conduits connecting into this MH would need to be adjusted during the road construction in order to avoid prior lane closures. Final rim adjustments to be made during construction.

Springdale Road

- 50+85 to 53+50 (Northwest corner - between the present sidewalk & curb) One existing buried cable is in conflict with roadway proposed grading and new curb line in this area. This cable will be replaced by installing a new underground cable in an existing duct system located east of the west curb line along the same route.

- The manhole at Station 184+21, 83’ LT will be rebuilt prior to construction.

Kossow Road

- 55+45 to 59+25 (East side of roadway between the present curb and east property line) Two AT&T buried cables located in the grass area and below the sidewalk end up in the new paved roadway. These cables are replaced with two cables to be installed below the proposed sidewalk 3' west of the new east property line.

Swenson Drive

- 43+00 to 46+25 (South side of the roadway). Existing AT&T buried cables route E/W north of present property line and are in conflict with grading for the new expanded roadway. The cables will be replaced 1' from the proposed south E/W right of way line to reach connecting cables routing south out of the roadway right of way.

Manhole Rim Adjustments to be performed during construction:

- Contractor will provide AT&T at least five days notice for manhole rim adjustments. The following manholes will be adjusted during construction by AT&T forces in coordination with grading and paving operations:

    - Station 183+55, 69’ RT
    - Station 184+21, 83’ LT
    - Station 193+53, 68’ RT
    - Station 198+78, 63’ RT
    - Station 201+98, 60’ RT

- Station 202+04, 69’ RT
- Station 206+22, 55’ RT
- Station 206+32, 55’ RT
- Station 211+98, 55’ RT
- Station 212+05, 67’ RT
- Station 219+68, 57’ RT

AT&T will perform the following conduit relocations:

- The existing 8-4” CPD ducts from Station 183+26 to 184+21, 110’ LT will be lowered to ±946 and shifted 4’ west during construction.

- The existing 4-4” CPD ducts at Station 50+83, 45’ LT will be lowered during construction.

- The existing 2-4” CPD ducts will be replaced prior to construction from Station 43+00 to 44+50, 32’ LT.

- The existing 4-4” CPD ducts will be lowered during construction at Station 184+45, 89’ LT.

- Proposed 4-4” CPD ducts will be installed prior to construction across E. Moreland Blvd. between Station 183+55, 69’ RT and STA 184+21, 83’ LT, and 2-4” CPD ducts will continue north along the west side of Springdale Rd to an existing manhole at Station 55+78.

The construction field contact for AT&T Wisconsin is Alper Kolcu at (262) 970-8494 or mobile (262) 352-3791.

It is imperative that the highway contractor contact AT&T before removing any facilities or underground cables, to verify that they have been discontinued and carry no service. The contractor must not assume that unmarked facilities have been discontinued. At no time is it acceptable to push, pull, cut or drill an unmarked facility without explicit consent from AT&T. Contractor must call the AT&T representative three days prior to start of any work around AT&T cables.

The anticipated start date for the AT&T relocations is June 1, 2015. The estimated construction time required for adjustments and relocations is approximately 60 days prior to construction and 21 days during construction.

Town of Brookfield Sanitary District No. 4 has storm sewer, sanitary sewer and water facilities in the project area that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor:

- Sanitary sewer and storm sewer manholes will be adjusted by the WisDOT contractor during construction. This work is to be done as shown in the bid items "Adjusting Sanitary Manhole, Town of Brookfield" and "Adjusting Storm Manhole, Town of Brookfield".
- Sanitary manholes will be reconstructed by the WisDOT contractor during construction as shown in the bid item "Reconstruct Sanitary Manhole, Town of Brookfield".
- Sanitary sewer internal seals will be installed by the WisDOT contractor during construction as shown in the bid item "Sanitary Manhole Seal Internal, Town of Brookfield".
- Water valves will be adjusted by the WisDOT contractor during construction as shown in the bid item "Adjusting Water Valve Box, Town of Brookfield".
- Water services will be discontinued by the WisDOT contractor during construction as shown in the bid item "Abandoning Water Service, Town of Brookfield".
- New water service replacement will be performed by the WisDOT contractor during construction as shown in bid items "Water Service Replacement, Copper, 1-Inch" and "New Curb Box".
- New fire hydrants will be installed by the WisDOT contractor during construction as shown in the bid items "New Fire Hydrant, Town of Brookfield" and "Water Main (PVC), 6-Inch, Town of Brookfield".

The contractor will, at a minimum, notify the Town of Brookfield Sanitary District No. 4, 72 hours prior to starting any work on Town facilities. A representative from the Town of Brookfield Sanitary District No. 4 must be present while any work on Town facilities is being performed.

Proposed fire hydrant lead lengths shall be field verified to accommodate proposed hydrant location.

All utility work for the Town of Brookfield Sanitary District No. 4 will be done in accordance with the Town of Brookfield Sanitary District No. 4 Specifications, Latest Edition.

The contact for the Town of Brookfield Sanitary District 4 is Tony Skof at office (262) 798-8629 or mobile (262) 613-1709.

City of Waukesha - Waukesha Water Utility owns facilities that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor:

- The Waukesha Water Utility will require that the contractor complete the underground work on the project during construction. This work includes replacing four 10" valves with 12" valves, converting three manholes to valve boxes, relocating two water hydrants, and installing one new water hydrant. See roadway plans for bid items and locations associated with this work.

- During construction, Waukesha Water Utility will adjust valve and curb boxes located behind the curb and gutter. Contact Jon Kuzba at (262) 352-5135 three days before work in these areas to coordinate construction activity. Each adjustment is anticipated to take one-half hour to complete.

The estimated construction time for the contractor portion of the work is 4-5 days. The contact for Waukesha Water Utility is Tom Krause at (262) 521-5272 Ext. 534 or mobile at (262) 352-3022.

City of Waukesha – Sanitary and Storm Sewer owns facilities that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor:

- All sanitary sewer manholes owned and maintained by the City of Waukesha will be adjusted to finished grade as part of the proposed roadway work by the roadway contractor. All chimneys and frames and covers shall be replaced per the City of Waukesha standards. The city will supply the frames and covers. Contact the City of Waukesha at least five working days prior to manhole adjustments to coordinate delivery of frames and covers.

- The manhole at 155+30 40’R will be removed and the existing sanitary lines running east and west will be reconnected. The manhole at 155+80 70’L will be discontinued. The 8" sewer between these manholes as well as the 8" sewer and 8" force main going to the north shall be discontinued in place. This work will be completed by the city prior to construction by the end of 2015.

- The gravity sanitary sewer from the manhole at 134+85 15'L to 172+35 95'R shall be rehabilitated with a CIPP liner. This work will include any necessary spot repairs and manhole work (excluding the chimneys). This work will be completed by the city prior to construction by the end of 2015.

The contact for the City of Waukesha – Sanitary and Storm Sewer is Christopher Langemak at (262) 524-3598 or mobile at (262) 349-6512.

Midwest Fiber Networks owns facilities that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor:

- The fiber optic vault at Station 44+00, 20’ LT will be removed and the slack will be pulled to a hand hole further east on Swenson Drive, outside of the project limits. A split duct will be placed over the exposed fiber line and tracer wire. Midwest Fiber Networks will perform this work prior to construction.

The construction field contact for Midwest Fiber Networks is Adam McNab at (414) 459-3566 or mobile at (414) 349-3654.

TDS Metrocom owns facilities that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor:

- The manhole at Station 209+83, 99' LT will be adjusted by TDS forces during construction. The finished elevation of the frame and grate will be adjusted by TDS forces during construction.

- The manhole frame and cover at Station 185+47, 125' LT will be adjusted to proposed finished grade during construction by TDS forces.

Notify TDS 5 days in advance of when the manhole covers elevation adjustments are needed. TDS manhole adjustments are anticipated to take one day to lower the manhole at Station 209+83 and a half day to adjust the manhole at Station 185+47.

The construction field contact for TDS Metrocom is Erik Borgen at (608) 664-4438 or mobile at (608) 556-7110.

Time Warner Cable owns facilities that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor:

- Overhead facilities attached to We Energies-owned poles at Manhattan Drive, Ramona Road, and Springdale Road. Time Warner Cable will transfer existing cables to the relocated poles prior to construction in association with We Energies utility work.

- Underground cable crossing Swenson Drive at approximate Station 45+45. Cable will be exposed behind back of existing curb north of Swenson Drive and lowered to a minimum depth of 54" by Time Warner forces prior to construction.

- Underground cable along the south side of Swenson Drive from Station 43+35, to Station 43+95. Cable will be exposed behind back of existing curb east and west of Crossroads Circle and lowered to a minimum depth of 54" by Time Warner forces prior to construction.

- The existing fiber optic vault on Swenson Drive at Station 43+32, 24' LT will be relocated to Station 43+33, 43' LT by Time Warner Cable forces prior to construction.

- Underground cable along Swenson Drive from Station 43+33, 43' LT east to Station 42+80, 23' RT to be relocated approximately 6 feet south to the new vault at Station 43+33, 43' LT by Time Warner forces prior to construction.

The work identified above is anticipated to take place prior to construction in November of 2015. Joint work with We-Energies Electric is expected to take 5 days to transfer utilities to new poles. Non-joint work for cable and vault relocations is expected to take 20 days.

The highway contractor must contact Time Warner Cable before removing or adjusting any coax or fiber optic facility to verify that the facility has been discontinued. The contractor must not assume that an unmarked facility has been discontinued.

The construction field contact for Time Warner Cable is Steve Cramer at office (414) 277-4045 or mobile at (414) 688-2385

Time Warner Telecom owns underground facilities in the project area. No conflicts have by identified with Time Warner Telecom facilities.

The highway contractor must contact Time Warner Telecom before removing or adjusting any fiber optic facility to verify that the facility has been discontinued. The contractor must not assume that an unmarked facility has been discontinued.

The construction field contact for Time Warner Telecom is Brahim Gaddour at (414) 908-1026.

We Energies Electric has facilities in the project area. The following work will be performed by We Energies forces prior to construction, unless otherwise noted:

Manhattan Drive

- The existing poles at Station 124+61, 55.8' LT and 125+45, 91' LT will be removed and replaced with new poles at Station 124+57, 55.8' LT and 125+45, 91' LT. Guy wire anchors will be place to support the new poles. The existing overhead line at this location will be moved to the new poles.

- The existing poles at Station 125+42, 114' RT will be removed and replaced with a new pole at 125+42, 138'RT. The overhead line attached to the existing pole will be moved to the new pole.

Ramona Road

- The existing pole at Station 168+37, 103' LT will be removed and a new pole will be installed at Station 168+40, 103' LT. Two guy wire anchors will be installed to support the new pole and the existing overhead line will be transferred to the new pole.

Springdale Road

- An overhead facilities crosses USH 18 at Station 184+40 and runs northerly along the west side of Springdale Road. New poles will be installed in the northwest quadrant of the intersection at Station 51+58.5, 52.5' LT and Station 52+50, 52' LT. The existing overhead line in this location will be transferred to the new poles. The existing pole at Station 52+05, 42' LT will be removed.

- There is an existing underground facility that runs along the north side of USH 18 from approximately Station 176+75 to Station 184+30, 80'-100' LT, then continues north along the west side of Springdale Road from Station 51+00 to Station 52+00, 45' LT. Facility to be relocated in the northwest quadrant of USH 18 and Springdale Road beginning near Station 183+65, 95' LT, running along Springdale Road at 62' LT of the alignment, then matching in at a proposed pole at Station 52+50, 52' LT.

- The pole at Station 51+14, 41' LT serves the WisDOT control box for the traffic signals and will remain in place until WisDOT requests disconnection of the service through the We Energies Contact Center at (800) 242-9137. When the service has been disconnected the pole can be removed. This pole removal will take place during construction. Contact Steve King at (262) 968-5768, 14 days in advance to coordinate pole removal. Removal of the pole is expected to take one day.

Parklawn Drive

- The street light at the southeast corner of Parklawn Drive and USH 18 intersection is in conflict and will not be removed as part of the facility relocation plan. The intersection needs to be lighted until the construction starts. The light will need to be removed during road construction. Contact Steve King at (262) 968-5768, 14 days in advance to coordinate street light removal. The street light removal is expected to take one working day.

Kossow Road

- Underground facilities along Swenson Drive and Kossow Road from Station 43+00 to Station 59+00, 30'-80' LT with a crossing on USH 18 at Station 208+55. Facility to be relocated from Station 208+44, 95' RT, crossing under USH 18 at Station 207+89, then continuing north along Kossow Road to Station 55+85, west of the existing and proposed sidewalk. The existing facility will be discontinued in place.

It is imperative that the highway contractor contact We Energies before removing any gas facilities or electrical underground cables, to verify that they have been discontinued and carry no natural gas or electrical current. The contractor must not assume that unmarked facilities have been discontinued. At no time is it acceptable to push, pull, cut or drill an unmarked facility without explicit consent from We Energies. Contractor must call the We Energies 24 hour Dispatch lines to arrange for this verification. We Energies Electric Dispatch (800) 662-4797, We Energies Gas Dispatch (800) 261-5325.

The contact for We Energies Electric is Steven J. King at (262) 968-5768 or mobile at (414) 940-0570.

We Energies Gas Operations has facilities in the project area. The following work will be performed by We Energies forces prior to construction, unless otherwise noted:

We Energies will be replacing the main at the following locations:

- 4" PE main Station 125+29-127+81, LT.
- 16" Steel main Station 124+00, 80' RT to 126+00, 87' RT (eliminating casing by installing new pipe same location).
- 4" PE main 124+26 - 124+75 RT (eliminates valve in curb and road crossing).
- Replace existing 16" main in casing 134+45 - 135+15, 85' RT, spool in new piece of 16" HP main same location.
- Proposed regulation pits/easement 135+41-136+31 in proposed easement 108' LT.
- 16" Steel road crossing 136+31, 86' RT - 88' LT.
- Install new valve cluster 136+31, 86' RT and 136+31, 88' LT.
- Install new 8" PE along Jennifer Drive 3' west of east lot line from 10' north of the north right-of-way of Moreland Blvd to 235' north.
- Install new 8" PE road crossing of Jennifer Drive approximately 245' north of the north right-of-way of Moreland Blvd.
- Retire regulation pits along west side of Jennifer Drive and spool in new piece to main same location as pits.
- Discontinue valve pit at 136+31, 90' LT; spool in new main and valves at same location.
- Discontinue valve pit at 145+11, 91' LT (remove cover, top 2-rows of block, jackhammer holes in the floor, slurry backfill, and spool in new piece of main).
- 16" Steel road crossing 282+38, 63' RT - 110' LT.
- 16" Steel 282+38, 110' LT - 285+20, 108' LT.
- Discontinue 16" Steel road crossing 285+17, 80' RT - 285+20, 110' LT (discontinue main in place).
- Discontinue 12" Steel road crossing main 282+38, 63'RT - 145+11, 91' LT (discontinue main in place).
- Discontinue valve pit at 144+44, 160’ RT (remove cover, top 2-rows of block, jackhammer holes in the floor, and slurry backfill).
- Install new 4" PE main151+92, 97' RT - 156+92, 94' RT.
- Discontinue valve pit at 160+52, 142' LT.
- Install 4" PE main 160+40, 75'RT - 160+55, 76' RT.
- Replace existing 4" Steel road crossing (160+50) with new PE main at 160+45, 75' RT - 145' LT.
- Replace portion of 12" Steel main 172+10, 81' LT - 172+20, 81' LT.
- Discontinue 12" Steel road crossing 176+46, 78' LT - 176+88, 148' RT and main 175+67 - 176+46, 78' LT.

- Install new 12" main road crossing at 175+67 and new main 175+80, 172' RT - 176+88, 148' RT and replace valve pit at 175+61, 109' LT with new valving at approximately the same location.
- Discontinue 4" Steel 175+65 - 184+50 (offset varies); also remove existing regulation pits 183+96 and 184+10, 104' LT
- Existing regulation pits 183+90 - 184+10 and associated piping to be relocated to Springdale Rd and Watertown Plank.
- Replace 10" Steel main along Springdale Rd with new 12" main 51+10, 91' LT to 53+39, 47' LT.
- Discontinue existing 6" steel main along Springdale Rd from 51+10, 43' LT to 53+06, 43' LT (discontinue in place).
- Replace 4" main 42+31, 22'-41' LT to 46+00, 41'-32' LT then to 47+47, 31' LT (along Swenson Drive).
- Replace 2" main along Kossow Rd from 85+90, 19'-26' LT to 98+87, 41' LT.
- Replace 6" main along Kossow Rd from 50+95, 64' LT to 55+01, 43' LT to 55+21, 23' LT.

Any facilities not explicitly identified as being relocated have been deemed to be not in conflict and will remain in place as is. It is expected that contractors will work safely around any facilities left within the work zone.

The contractor is not allowed to place material or park over We Energies gas valves, pits or test stands and will need a watchdog when digging near We Energies high pressure facilities. We Energies locating company will contact the contractor about arranging for a watchdog. The contractor should be contacted about a watchdog prior to utility locates being cleared and a start date given by diggers hotline. If this does not happen, the contractor should call Mark Sobon at (262) 470-5994 to arrange for a watchdog.

If We Energies Gas facilities need adjustment the contractor shall notify We Energies at least three days prior to needing adjustment, by calling (800) 261-5325.

It is imperative that the highway contractor contact We Energies before removing any gas facilities, to verify that they have been discontinued and carry no natural gas. The contractor must not assume that unmarked facilities have been discontinued. At no time is it acceptable to push, pull, cut or drill an unmarked facility without explicit consent from We Energies. Contractor must call the We Energies 24 hour Dispatch lines to arrange for this verification. We Energies Electric Dispatch (800) 662-4797, We Energies Gas Dispatch (800) 261-5325.

Relocations of facilities are intended to be completed prior to construction. The anticipated start date for relocations is July 15, 2015. The estimated construction time required is 120 working days. The contact for We Energies Gas is Joe Dable at (414) 944-5543 or mobile at (414) 303-0310.

Wisconsin Department of Transportation – STOC owns facilities in the project corridor. The following utility work is planned with this project:

- New interconnect facilities are included in the project plans along USH 18 from STH 164 to I-94. The interconnect facilities will be constructed by the contractor as part of the contract work for the project.

The contact for the Wisconsin Department of Transportation – STOC is Jeff Madson at (414) 255-3723.

Wisconsin Department of Transportation – Street Lighting owns facilities in the project limits. The following utility work is planned in the project corridor:

- Street lighting improvements are proposed at the intersection USH 18 and Kossow Road, along Abbot Drive, and sporadically along USH 18 throughout the project limits. The street lighting improvements will be constructed by the contractor as part of the contract work for the project.

The contact for the Wisconsin Department of Transportation related to street lighting work is Eric Perea at (262) 574-5422.

Wisconsin Department of Transportation – Traffic Signals owns facilities that are in conflict with the proposed project improvements. The following utility work is planned in the project corridor:

- The existing traffic signals at the intersections of USH 18 with Manhattan Drive, STH 164, E. Main Street, Springdale Road and Kossow Road will be replaced as part of the proposed roadway work by the contractor.

- A new traffic signal at the intersection of USH 18 and Parklawn Drive is included in the project plans to be constructed by the contractor.

- New traffic signal interconnect facilities are included in the project plans along USH 18 from STH 164 to I-94. These interconnect facilities are included as part of the contract work for the project.

The contacts for the Wisconsin Department of Transportation related to traffic signal work are: Elizabeth Lloyd-Weiss, WisDOT Signal Operations at (414) 750-2605 and WisDOT Electrical Field Unit at (414) 266-1170.

Wisconsin Independent Network LLC has facilities in the project area:

- Connection to an existing AT&T Legacy manhole at approximately Station 214+00, 100’ RT. No conflicts are anticipated and the facility is to remain in place.

The construction field contact for Wisconsin Independent Network LLC is Jim Birkenheier at mobile (715) 838-4007.

OTHER FACILITIES LOCATED NEAR THE PROJECT LIMITS WHICH NO IMPACTS ARE ANTICIPATED:

AT&T Mobility has no facilities on this project.

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

The department, City of Waukesha Water Utility and the Town of Brookfield Sanitary District personnel will inspect construction of sanitary sewer and water main under this contract. However, construction staking, testing, and acceptance of the sanitary sewer and water main construction will be by the Waukesha Water Utility and Town of Brookfield Sanitary District respectively for their facilities.
105-001 (20140630)

8. Referenced Construction Specifications.

Construct the sanitary sewer and water main work conforming to the Town of Brookfield Sanitary District No. 4 Technical Specifications, Specifications for Water Main and service Lateral Materials and the Installation of Water Main and Appurtenances for Waukesha Water Utility of the City of Waukesha dated February 28, 2011, Standard Specifications for Sewer & Water Construction in Wisconsin – Sixth Edition, and AWWA Specifications. If there is a discrepancy or conflict between the referenced specifications and the standard specifications regarding contract administration, part 1 of the standard specifications governs.

9. Waukesha Water Utility General Provisions

All construction and installation of Waukesha Water facilities shall be according to the following: Specifications for Water Main and service Lateral Materials and the Installation of Water Main and Appurtenances for Waukesha Water Utility of the City of Waukesha dated February 28, 2011, the regulations of the Wisconsin Department of Natural Resources (WDNR), the Standard Specifications for Sewer & Water Construction in Wisconsin – Sixth Edition, AWWA Specifications, manufacturers' recommendations and these Special Provisions.

The contractor shall replace four 10-Inch Gate Valves with 12-Inch Gate Valves; one at Manhattan Drive, two at Jenifer Lane and one at Gateway Drive. The contractor shall also replace three Manholes with Valve Boxes; two are located at Manhattan Drive and one is located at Kossow Road. The contractor shall also abandon the hydrant at Ramona Drive and using the same connection, install a new hydrant to the south. The contractor shall also abandon the hydrant at Kossow Road and install a 6-Inch Plug into the existing 5-Inch Gate Valve and abandon the valve box. The contractor shall also install two new hydrants; one at USH 18 and Kossow Road and one at Kossow Road and Abbott Drive. The

proposed water main valve and hydrant adjustments and abandonments will be extended through the right-of-way, as shown on the plans, in strict compliance with these specifications and plans. These items are further described and will be measured and paid for under individual special provisions.

The contractor will need to coordinate with the Waukesha Water Utility all work associated with the above items. The Waukesha Water Utility will assist in turning the existing valves to isolate these areas for the installation of the valves, hydrants and caps. If shutting off of the water effects customers, the water mains will not be allowed to be shut down before 8:00 AM and there will be no extra costs or change orders allowed for down time associated with the Waukesha Water Utility crews turning the water off for the above work. The contractor is responsible for notifying all customers that will have their water shut off for the above work or in an emergency situation.

The contractor shall view the site prior to bidding to become familiar with the existing conditions. It will be the responsibility of the contractor to work with the utilities located in the right-of-way to resolve conflicts during the construction process. The location of structures and obstacles shall not be taken as conclusive. Verification to the satisfaction of the contractor shall be assumed as a condition of his/her bid; and therefore, the contractor shall be solely responsible for all damages resulting from his/her activities.

All contractors shall submit a Certificate of Insurance, as required by the Waukesha Water Utility, indicating that the insurance meets the Waukesha Water Utility's requirements and limits; and is in effect for the project.

Prior to construction, the contractor must set up and attend a pre-construction meeting with the Waukesha Water Utility. The contractor will not receive payment for, or approval of, any work undertaken without a pre-construction meeting or approval of the Waukesha Water Utility.

Staking shall be provided by the Waukesha Water Utility on a one-time basis at no cost to the contractor. After stakes are set, it shall be the contractor's responsibility to protect all survey marks, stakes, nails, etc. Re-staking any portion of the work shall be done at the contractor's expense. The contractor shall provide 72 hours (3 work days) notice of his/her need for staking.

A Waukesha Water Utility representative shall provide inspection for all water main installation and abandonment. The contractor shall provide 72 hours (3 work days) notice of the anticipated need for inspection services. No work shall be undertaken without an inspector being on site or without the permission of the Waukesha Water Utility. Payments may be denied, or removal of work may be ordered, for work accomplished without an inspector present or without the approval of the Waukesha Water Utility.

The contractor is responsible for damage to adjoining buildings and grounds caused in the construction.

The location of structures and obstacles shall not be taken as conclusive. Verification to the satisfaction of the contractor shall be assumed as a condition of his/her bid; and therefore, the contractor shall be solely responsible for all damages resulting from his/her activities.

Claims for extra cost or time must be submitted in writing to the Waukesha Water Utility prior to proceeding with work.

The contractor shall notify all utilities having facilities in the project area and the police and fire departments when construction will commence. Said notice shall be given 72 hours prior to the construction start.

The contractor shall be solely responsible for providing trench support according to all applicable State and Federal regulations. The Waukesha Water Utility and Inspector shall be held harmless in all matters regarding shoring and bracing.

Side sloping of trenches will not be allowed where damage to sidewalk, curb, structures and underground utilities would be caused by such side sloping.

Existing valves and hydrants shall be operated only by Waukesha Water Utility personnel or in the presence of the inspector, as authorized by the Waukesha Water Utility.

Permits:
The contractor shall obtain all permits required to work in the right-of-way and pay all the applicable charges and fees associated with these permits. It shall be the responsibility of the contractor to identify and obtain any permit needed for the work. The permits should include, but are not limited to, the City of Waukesha Street Opening Permit and the Traffic Control Plans for construction outside of the WisDOT road construction paving limits.

All permit costs shall be considered incidental to the various mobilization bid items for the Contract.

The contractor shall meet the conditions of all permits and must keep a copy of each individual permit on site, at all times, throughout construction.

Materials:
The contractor shall submit to the inspector and owner, for approval, a list of all materials he/she intends to use prior to ordering and delivery to the job site, including the names of all material suppliers.

Storage of materials for construction will be permitted on the job site with prior city engineering and owner approval. Care shall be taken to avoid blocking driveways or interfering with traffic. Materials stored within the street right-of-way shall be barricaded and lighted with emergency flashers.

The Waukesha Water Utility will provide the tapping sleeves, tapping valves, the valve boxes for the tapping valves and will tap the existing water mains, for connecting the water mains. The contractor shall provide the trench, trench shield and a means for lowering the tapping machine.

The contractor shall provide all materials (pipe, fittings, valves, hydrants, accessories and sterilizing chemicals), equipment and labor to install the 16", 12" and 8" water mains.

Bedding material is required 4-inches under and 12-inches over the pipe as a minimum. Sand is required around all copper water laterals and brass fittings.

The cost for bedding, cover and mechanically compacted granular backfill shall be included in the linear foot of pipe being constructed.

Slurry backfill, if required by the engineer at some locations, will be paid for under the Unit Bid Item "Cu. Yds. of Slurry Backfill."

The contractor is responsible for all surplus excavated material.

Mechanical Compaction:
Excavated material or granular backfill shall be mechanically compacted with an initial lift of 2-feet and subsequent lifts of 1-foot, according to Section 2.6.14 (b) of the Standard Specifications for Sewer & Water Construction in Wisconsin – Sixth Edition. Any deficiency in quantity of backfill material (caused by shrinkage or settlement) shall be supplied at no additional cost to the Owner. The cost of mechanically compacted backfill shall be included in the cost of linear foot of pipe being installed.

The Waukesha Water Utility has contracted with a soil testing firm to perform compaction testing on the trenches for all projects. The contractor for this project will be required to meet a minimum compaction of 90% Standard Proctor Density in the bottom 3 feet and a minimum compaction of 95% Standard Proctor Density in the top 3 feet of the excavated material or granular backfill. Testing will be done at no cost to the contractor.

Testing:
All water mains shall be tested in full accordance with the requirements of Chapter 4.15.0 and Section 5.5.18 of the Standard Specifications for Sewer and Water Construction in Wisconsin.

This work consists of removing the existing copper water service, abandoning the existing corporation stop at the existing main, furnishing and installing a new water service lateral complete with corporation stop and stop box from the existing water main, and connection to the existing lateral as shown on the drawings according to Town of Brookfield Sanitary District No. 4 Technical Specifications, and as hereinafter provided.

10. Other Contracts.

The following City of Waukesha projects will be under construction concurrently with the work under this contract. The contractor shall coordinate their work and traffic control operations with these projects.

City of Waukesha Storm Sewer

The City of Waukesha will be constructing storm sewer improvements along USH 18 (E. Moreland Blvd.) from approximately 300 feet west of Manhattan Drive to STH 164. The City of Waukesha storm sewer improvement project includes:

- Installation of new storm sewer system (66-inch trunk line and several laterals);
- Connections to existing storm sewer;
- Placing temporary bulkheads in new storm sewer structures;
- Relocating (lowering) segments of the existing water main;
- Replacement of curb and gutter, walks, and median;
- Relocating (lowering) existing sanitary sewer
- Protection of existing utilities;
- Protecting and supporting existing conduit and pull boxes;
- Replacement of loop detectors and pull boxes;
- Salvaging , storing and reinstalling light poles;
- Removing and replacing bases;
- Installing conduit and wire for street lights;
- Restoration of existing pavement with 5-Inches of Hot Mix Asphalt (HMA) pavement or12-Inches of concrete pavement.
- Placing topsoil and seeding unpaved disturbed areas;
- Televising of sewers prior to paving. The construction of a 66-inch trunk line and several laterals within the specified limits. The trunk line will be installed generally beneath the inside eastbound lane of USH 18; with portions being constructed in the center median.

For additional information regarding the City Storm Sewer project, contact:
Jonathon Schapekahm, City of Waukesha; phone: (262) 524-3584; e-mail: jschapek@ci.waukesha.wi.us

City of Waukesha Sanitary Sewer Re-lining

The City of Waukesha will be re-lining their existing sanitary sewer facility located along USH 18 between Jennifer Lane and E. Main Street. Spot improvements to the sanitary sewer line within these limits will also be performed.

For additional information regarding the City Sanitary Sewer project, contact:
Chris Langemak, City of Waukesha; phone: (262) 524-3598, e-mail: clangema@ci.waukesha.wi.us

E. Moreland Blvd Reconstruction

The City of Waukesha will be reconstructing E. Moreland Blvd from the Fox River to approximately 300' west of Manhattan Drive. This City reconstruction project will match into the westerly end of WisDOT Project 2200-16-71.

E. Moreland Blvd will be closed to through traffic. Access to local traffic will be maintained throughout construction. The roadway will be completly reconstructed and include the installation of a 66" storm sewer trunk line, storm sewer lateral improvements, water main, sanitary sewer, and street lighting improvements throughout the City project limits.

For additional information regarding the City's East Moreland Blvd roadway reconstruction project contact: Alex Damien, City of Waukesha; phone: (262) 524-3907; e-mail: adamien@ci.waukesha.wi.us; or Margaret Liedtke, City of Waukesha; phone: (262) 524-3589; email: mliedtke@ci.waukesha.wi.us.

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 Mark Wilfert at (262) 548-5936.
107-054 (20080901)

12. Notice to Contractor – Contamination Beyond Construction Limits.

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

1. Station 202+50 to 205+00 from 10 feet RT of centerline to 200 feet RT of centerline.

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

The Hazardous Materials Report is available by contacting: Mark Wilfert, 141 NW Barstow, Waukesha, WI 53187, (262) 548-5936.
107-100 (20050901)

13. Public Convenience and Safety.

Revise standard spec 107.8(6) as follows:

Check for and comply with local ordinances governing the hours of operation of construction equipment. Do not operate motorized construction equipment from 9:00 PM until the following 6:00 AM, unless prior written approval is obtained from the engineer.
107-001 (20060512)

14. Coordination with Businesses.

The contractor shall arrange and conduct a meeting between the contractor, the department, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. The contractor will be responsible for preparing and sending invitations, selecting and reserving a meeting room and preparing any exhibits or handouts. Hold the first meeting prior to the start of work under this contract and hold two meetings per month thereafter. Give attendees a minimum of 7 days notice of the meetings. Ensure facilities can accommodate all attendees. All costs incurred associated with the meetings shall be incidental to the contract.
108-060

15. Abandoning Sewer, Item 204.0291.S.

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

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

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

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
204.0291.S	Abandoning Sewer	CY

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

204-050 (20080902)

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

A Description

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

B Materials

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

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

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

C Construction

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

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

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

D Measurement

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

E Payment

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

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

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

209-010 (20090901)

17. QMP Base Aggregate.

A Description

A.1 General

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

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

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

(4) Provide and maintain a quality control program, defined as all activities related to and documentation of the following:
1. Production and placement control and inspection.
2. Material sampling and testing.

(5) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

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

A.2 Contractor Testing for Small Quantities

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

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

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

[1] If using production tests for acceptance, submit test results to the engineer for review prior to incorporating the material into the work. Production test results are valid for a period of 3 years.

[2] For 3-inch material, obtain samples at load-out.

[3] If the actual quantity overruns 9000 tons, create overrun sublots to test at a rate of one additional placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

3. No control charts are required. Submit aggregate load-out and placement test results to the engineer within one business day of obtaining the sample. Assure that all properties are within the limits specified for each test.
4. Department verification testing is optional for quantities of 6000 tons or less.

(3) Material represented by a sublot with any property outside the specification limits is nonconforming. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B Materials

B.1 Quality Control Plan

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

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

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

B.2 Personnel

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

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

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

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

B.3 Laboratory

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

Materials Management Section
3502 Kinsman Blvd.
Madison, WI 53704
Telephone: (608) 246-5388
http://www.dot.state.wi.us/business/engrserv/lab-qualification.htm

B.4 Quality Control Documentation

B.4.1 General

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

B.4.2 Records

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

B.4.3 Control Charts

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

(2) Provide control charts to the engineer within 6 hours after obtaining a sample. For 3-inch base, extend this 6-hour limit to 24 hours. Post or distribute charts using a method mutually agreeable to the engineer and contractor. Update control charts daily to include the following:

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

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

B.5 Contractor Testing

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

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

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

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

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

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

B.6 Test Methods

B.6.1 Gradation

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

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

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

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

1. Control limits are at the upper and lower specification limits.
2. There are no upper warning limits for sieves allowing 100 percent passing and no lower control limits for sieves allowing 0 percent passing.

3. Dense graded warning limits, except for the No. 200 sieve, are 2 percent within the upper and lower control limits. Warning limits for the No. 200 sieve are set 0.5 percent within the upper and lower control limits.
4. Open graded warning limits for the 1-inch, 3/8-inch, and No. 4 sieves are 2 percent within the upper and lower control limits. Upper warning limits for the No. 10, No. 40, and No. 200 sieves are 1 percent inside the upper control limit.

B.6.2 Fracture

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

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

B.6.3 Liquid Limit and Plasticity

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

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

B.7 Corrective Action

B.7.1 General

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

B.7.2 Placement Corrective Action

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

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

(3) If corrective action improves the property in question such that the running average after 4 additional tests is within the warning limits, the contractor may return to the testing frequency specified in B.5.3. If corrective action does not improve the property in question such that the running average after 4 additional individual tests is still in the warning band, repeat the steps outlined above starting with engineer notification.

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

(5) For individual test results significantly outside the control limits, notify the engineer, stop placing base, and suspend other activities that may affect the area in question. The engineer and contractor will jointly review data, data reduction, and data analysis; evaluate sampling and testing procedures; and perform additional testing as required to determine the extent of potentially unacceptable material. The engineer may direct the contractor to remove and replace that material. Individual test results are significantly outside the control limits if meeting one or more of the following criteria:
   1. A gradation control limit for the No. 200 sieve is exceeded by more than 3.0 percent.
   2. A gradation control limit for any sieve, except the No. 200, is exceeded by more than 5.0 percent.
   3. The fracture control limit is exceeded by more than 10.0 percent.

B.8 Department Testing

B.8.1 General

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

B.8.2 Verification Testing

B.8.2.1 General

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

(2) The department will conduct QV tests of each base aggregate size, source or classification, and type during placement conforming to the following:
   1. One non-random test on the first day of placement.
   2. At least one random test per 30,000 tons, or fraction of 30,000 tons, placed.

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

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

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

B.8.3 Independent Assurance

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

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

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

B.9 Dispute Resolution

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

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

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

or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C (Vacant)

D (Vacant)

E Payment

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

(2) For material represented by a running average exceeding a control limit, the department will reduce pay by 10 percent of the contract price for the affected Base Aggregate bid items listed in subsection A. The department will administer pay reduction under the Nonconforming QMP Base Aggregate Gradation or Nonconforming QMP Base Aggregate Fracture Administrative items. The department will determine the quantity of nonconforming material as specified in B.7.2.

301-010 (20100709)

18. QMP HMA Pavement Nuclear Density.

A Description

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

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

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

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

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

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

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

http://www.atwoodsystems.com/mrs

B Materials

B.1 Personnel

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

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

B.2 Testing

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

B.3 Equipment

B.3.1 General

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

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

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

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

B.3.2 Correlation of Nuclear Gauges

B.3.2.1 Correlation of QC and QV Nuclear Gauges

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

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

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

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

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

B.3.2.2 Correlation Monitoring

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

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

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

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

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

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

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

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

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

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

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

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

Table 1

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

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

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

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

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

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

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

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

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

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

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

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

B.4.2.2.2 Width of 5 Feet or Less

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

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

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

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

B.4.2.4 Documentation

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

B.4.3 Corrective Action

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

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

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

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

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

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

B.5 Department Testing

B.5.1 Verification Testing

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

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

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

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

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

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

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

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

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

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

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

B.7 Acceptance

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

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

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

E.2 Disincentive for HMA Pavement Density

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

E.3 Incentive for HMA Pavement Density

(1) Delete standard spec 460.5.2.3.

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

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

(3) The department will adjust pay under the Incentive Density HMA Pavement bid item. Adjustment under this item is not limited, either up or down, to the bid amount shown on the schedule of items.

(4) If a traffic lane meets the requirements for disincentive, the department will not pay incentive on the integrally paved shoulder.

(5) Submit density results to the department electronically using the MRS software. The department will validate all contractor data before determining pay adjustments.

460-020 (20100709)

19. Fence Safety, Item 616.0700.S.

A Description

This special provision describes furnishing and installing a plastic fence at locations shown on the plans and as hereinafter provided.

B Materials

Furnish notched conventional metal “T” or “U” shaped fence posts.

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3 inch max
Resin/Construction:	High density polyethylene mesh
Service Temperature:	-60° F to 200° (ASTM D648)
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction

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

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

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

D Measurement
The department will measure Fence Safety by the linear foot along the base of the fence, center-to-center of posts, 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.
616-030 (20070510)

20. Signs Type I and II.

Furnish and install new mounting brackets per approved product list for type II signs on overhead sign supports incidental to sign. For type II signs on sign bridges use aluminum vertical support beams noted above incidental to sign. New mounting brackets are incidental to the sign being installed.

Add the following to standard spec 637.2.4:

Use stainless steel bolts, washers and nuts for type I and type II signs mounted on sign bridges or type I signs mounted on overhead sign supports. Use clips on every joint for Sign Plate A 4-6 when mounted on a sign bridge or overhead sign support. Inspect installation of clips and assure bolts and nuts are tightened to manufacturers recommended torque values.

Use aluminum vertical sign support beams that have a 5-inch wide flange and weigh 3.7 pounds per foot, if the L-brackets are 4 inches wide then use 4 inch wide flange beams weighing 3.06 pounds per foot. Contractor shall measure the width of the L-brackets on existing structures of determine the width needed for sign support beams

Use beams a minimum of 6 feet in length or equal to the height of the sign to be supported, whichever is greater. Use U-bolts that are made of stainless steel, 1/2 inch diameter and of the proper size to fit the truss cords of each sign bridge. Install vertical sign support beams on each sign and use new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss.

For type II signs on overhead sign supports follow the approved product list for mounting brackets.

Replace standard spec 637.2.4.1(2)2 with the following:

Clips may be either stainless steel or ASTM B 108, aluminum alloy, 356.0-T6.

Add the following to standard spec 637.3.2.1(3):
Provide the engineer with 3 copies of drawings of the signs proposed to be furnished under this contract for approval.

Add the following to standard spec 637.3.3.2(2):

Install Type I Signs at the offset stated in the plan, which shall be the clear distance between the edge of mainline pavement right edgeline and the near edge of the sign.

Add the following standard spec 637.3.3.3(3):

Furnish and install new aluminum vertical sign support beams on each sign and new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss for Type I or Type II Signs and Type I signs on overhead sign supports incidental to sign. New I-beams are incidental to the sign being installed.
637-SER1

21. Pavement Marking.

Append standard spec 646.5 with the following:

(6) Temporary traffic control for installation of mini-skip marking through intersections for dual left turn lanes is considered incidental to the pavement marking item. No additional compensation will be made for traffic control. Contractor shall install the grooved in tape during nighttime operation and provide necessary traffic control.

22. Pavement Marking Grooved Wet Reflective Tape 4-Inch, Item 646.0881.S; 8-Inch, Item 646.0883.S.

A Description
This special provision describes furnishing, grooving and installing preformed wet reflective pavement marking tape for grooved applications as shown on the plans, according to standard spec 646, and as hereinafter provided.

B Materials
Furnish grooved wet reflective pavement marking tape and adhesive material per manufacturer's recommendations, if required, from the department's approved products list.

Furnish a copy of the manufacturer's recommendations to the engineer before preparing the pavement marking grooves.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of pavement marking tape.

Plane the grooved lines according to details in the plan and per manufacturer's recommendations. Use grooving equipment with a free-floating, independent cutting head. Plane a minimum number of passes to create a grooved surface per manufacturer's recommendations.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ± 10 mils from the pavement surface or, if tined, from the high point of the tined surface. To measure the depth, the contractor may use a depth plate placed in the groove and a straightedge placed across the plate and groove, or the contractor may use a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Longitudinal Markings

Cut the groove one-inch wider than the width of the tape.

C.4 Groove Position

Position the groove edge according to plan details. Groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the tape segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with high-pressure water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the adhesive, and pavement marking tape. Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt

Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove.

C.5.3 Existing Asphalt

Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove.

C.6 Tape Application

Apply the wet reflective pavement marking tape when both the air and surface temperature are 40 degrees F and rising.

Apply tape in the groove as per manufacturer's recommendations. If manufacturer's recommendations require surface preparation adhesive

1) For the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee:

    - Apply SPA-60 during May 1 to September 30, both dates inclusive due to Volatile Organic Compound Limitations.

    - Apply P-50 during October 1 to April 30, both dates inclusive.

2) For the remainder counties:

    - Apply either adhesive.

Refer to the manufacturer's instructions for determining when the surface preparation adhesive is set.

Tamp the wet reflective pavement marking tape with a tamper cart roller, with a minimum of a 200-lb load, cut to fit the groove. Tamp a minimum of three complete cycles (6 passes) with grooved modified tamper roller cart.

D Measurement

The department will measure Pavement Marking Grooved Wet Reflective Tape (Width) for grooved applications in length by the linear foot of tape placed according to the contract and accepted.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0881.S	Pavement Marking Grooved Wet Reflective Tape 4-Inch	LF
646.0883.S	Pavement Marking Grooved Wet Reflective Tape 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for removing temporary pavement marking, if necessary.
646-018 (20120615)

23. Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch, Item 646.0841.S; 8-Inch, Item 646.0843.S.

A Description

This special provision describes furnishing, grooving and installing preformed wet reflective pavement marking contrast tape for grooved applications as shown on the plans, according to standard spec 646, and as hereinafter provided.

B Materials

Furnish wet reflective pavement marking contrast tape and adhesive material, per manufacturer's recommendation if required, from the department's approved products list.

Furnish a copy of the manufacturer's recommendations to the engineer before preparing the pavement marking grooves.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of pavement marking contrast tape.

Plane the grooved lines according to details in the plan and per manufacturer's recommendations. Use grooving equipment with a free-floating, independent cutting head. Plane a minimum number of passes to create a grooved surface per manufacturer's recommendations.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ± 10 mils from the pavement surface or, if tined, from the high point of the tined surface. To measure the depth, the contractor may use a depth plate placed in the groove and a straightedge placed across the plate and groove, or the contractor may use a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Longitudinal Markings

Cut the groove one-inch wider than the width of the tape.

C.4 Groove Position

Position the groove edge according to plan details. Groove a minimum of 4 inches, but not greater than, 12 inches from both ends of the tape segment. Achieve straight alignment with the grooving equipment.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with high-pressure water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the adhesive, and the pavement marking tape. Use a high-pressure air blower with at least 185 ft^3/min air flow and 120 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt

Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt

Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.6 Tape Application

Apply the tape when both the air and surface temperature are 40 degrees F and rising.

Apply tape in the groove as per manufacturer's recommendations. If manufacturer's recommendations require surface preparation adhesive

1) For the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee:

    - Apply SPA-60 during May 1 to September 30, both dates inclusive due to Volatile Organic Compound Limitations..

    - Apply P-50 during October 1 to April 30, both dates inclusive. –

2) For the remainder counties:

    - Apply either adhesive.

Refer to the manufacturer's instructions for determining when the surface preparation adhesive is set.

Tamp the wet reflective pavement marking contrast tape with a tamper cart roller, with a minimum of a 200-lb load, cut to fit the groove. Tamp a minimum of three complete cycles (6 passes) with grooved modified tamper roller cart.

D Measurement
The department will measure Pavement Marking Grooved Wet Reflective Contrast Tape (Width) for grooved applications in length by the linear foot of tape placed according to the contract and accepted.

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF
646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the material; and for removing temporary pavement marking, if necessary.
646-022 (20120615)

24. Install Conduit Into Existing Item, Item 652.0700.S.

A Description
This special provision describes installing proposed conduit into an existing manhole, pull box, junction box, communication vault, or other structure.

B Materials
Use HDPE Interconnect conduit, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the requirements of pertinent provisions of the standard specifications.

C Construction
Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for the entering conduit(s) at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

D Measurement

The department will measure Install Conduit Into Existing System by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
652.0700.S	Install Conduit Into Existing Item	Each

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.
652-070 (20100709)

25. Electrical Service Meter Breaker Pedestal, USH 18 and Manhattan Drive, Item 656.0200.01; USH 18 and STH 164, Item 656.0200.02; USH 18 and Main Street, Item 656.0200.03; USH 18 and Springdale Road, Item 656.0200.04; USH 18 and Parklawn Drive, Item 656.0200.05; USH 18 and Kossow Road, Item 656.0200.06; CCA, 656.0200.07.

Add the following to standard spec 656.2.3:

The department will be responsible for the electric service installation request for any department maintained facility. Notify the maintaining authority if the signal is not state maintained that it is their responsibility to arrange for the electrical service installation.

Electric utility company service installation and energy cost will be billed to and paid for by the maintaining authority.

Install the cabinet base and meter breaker pedestal first, so the electric utility company can install the service lateral. Finish grade the service trench, replace topsoil that is lost or contaminated with other materials, fertilize, seed, and mulch all areas that are disturbed by the electric utility company.

Add the following standard spec 656.5(3):

Payment for grading the service trench, replacing topsoil, fertilizer, seed, and mulch will be incidental to this work unless the bid items are in the contract and then they will be paid for at the contract price.

26. Traffic Signal Face, 3-12 Inch Vertical, Item 658.0110; 4-12 Inch Vertical, Item 658.0115.

Add the following standard spec 658.3.2(3):

Connect all ungrounded conductors with wire nuts in the appropriate sections of the signal heads, when directed by WisDOT personnel. Connect the neutral conductors to the terminal strip. Be certain to twist wires prior to installing the wire nuts. All wire nuts must be installed facing up to prevent the entrance of water.

27. Pedestrian Signal Face 16-Inch, Item 658.0416.

Add the following standard spec 658.2.3.1(1):

The contractor shall furnish 16 inch LED ready pedestrian signal housing, drilled for top/bottom pipe mount with the ability to rotate 270 degrees on poly mounting bracket. Black polycarbonate door with integral "Z" style protectors, lens and gasket mounted to door with four 1-1/2 inch stainless steel tabs.

Add the following standard spec 658.2.3.1(2):

The contractor shall anchor a 5-position, 20a terminal block in the pedestrian signal face to the housing with threaded screws.

28. LED Modules Pedestrian Countdown Timer 16-Inch, Item 658.0635.

Add the following standard spec 658.2.3.2(1):

The contractor shall furnish 16-inch, incandescent look, full symbol, and dual pedestrian, countdown signal module with Portland Orange hand, Lunar White man and Portland Orange countdown symbols, made of an approved polycarbonate resin.

29. Pedestrian Push Buttons, Item 658.0500.

Replace standard spec 658.2.5 with the following:

Furnish freeze proof ADA compliant pedestrian push buttons made by a Department approved manufacturer. The contractor shall furnish vandal resistant, pressure activated, pedestrian push buttons, with die cast body type, in unfinished aluminum or yellow. Button constructed shall be constructed of stainless steel, with a Piezo driven solid state switch, momentary LED display and beeper that sounds simultaneously with button push.

The contractor shall furnish low profile, unfinished cast aluminum, vandal resistant, and flush mounting pole mount.

The contractor shall place a Size 1, Type H reflective (R10-3EL, R, D) sign sticker (per state sign plate), message series – B, directly above each push button. Include a directional arrow or arrows on the sign as the plans show.

30. Temporary Traffic Signals for Intersections, USH 18 and Manhattan Drive, Item 661.0200.01; USH 18 and STH 164, Item 661.0200.02; USH 18 and Main Street, Item 661.0200.03; USH 18 and Springdale Road, Item 661.0200.04; USH 18 and Kossow Road, Item 661.0200.06.

Replace standard spec 661.2.1 (3) with the following:

Contractor shall use existing underground electric service and meter breaker pedestal for the operation of the Temporary Traffic Signal. The department will pay for all Energy Costs for the operation of the Temporary Traffic Signal.

Furnish and install a generator to operate the Temporary Traffic Signal for the time required to switch the existing Permanent Traffic Signal over to the Temporary Traffic Signal as well as the time required to switch the Temporary Traffic Signal over to the new Permanent Traffic Signal.

Contractor shall contact the local electrical utility at least four days prior to making the switch from the existing Permanent Traffic Signal to the Temporary Traffic Signal. The contractor shall contact the local electrical utility at least four days prior to making the switch from the Temporary Traffic Signal to the new Permanent Traffic Signal.

31. Sanitary Manhole Seal Internal, Town of Brookfield, Item SPV.0060.01.

A Description

The work under this item describes removing the existing internal chimney seal and providing and installing a new internal chimney seal with adequate length to accommodate any change to the manhole chimney, including needed overlap to properly seal to casting and manhole section according to Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version and as hereinafter provided.

B Materials

The seal shall be made of a rubber type product, with a minimum thickness of 3/16 inches, a minimum unstretched width of 8 inches and be extruded or molded from a high grade rubber compound conforming to the applicable requirements of ASTM C923. The bands used for compressing the sleeve against the manhole shall be fabricated from stainless steel conforming to ASTM A240, Type 304, for sheet and ASTM A479, Type 304, for rods. Any screws, bolts, or nuts used on these bands shall be stainless steel conforming to ASTM F593 and F594, Type 304. The internal seal or its appurtenances shall not extend far enough into the manhole opening to restrict entry into or exit from the manhole

Sanitary manhole seal–internal shall meet the material requirements of Section 1.8 of Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version. A copy of these specifications can be obtained from the Sanitary District No. 4.

Terry Heidmann
150 South Barker Road
Brookfield, WI 53008
(262) 613-1707

C Construction
Remove existing internal chimney seal and install new internal chimney seal after any adjustments required to the manhole casting have been completed.

D Measurement
The department will measure Sanitary Manhole Seal Internal, Town of Brookfield as each individual manhole, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.01	Sanitary Manhole Seal Internal, Town of Brookfield	Each

Payment is full compensation for furnishing all materials, labor, tools, equipment, and incidentals necessary for the installation of each internal seal.

32. Adjusting Sanitary Manholes, Town of Brookfield, Item SPV.0060.02.

A Description
The work under this item describes adjusting a sanitary manhole casting to an elevation as determined by the Engineer and conforms with the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version, and as hereinafter provided. Precast concrete rings shall be provided or removed as needed. This item applies to those structures that must be lowered less than 6 inches or raised less than 10 inches. Contractor shall field verify existing chimney depth.

B Materials
Precast concrete adjusting rings for standard manholes shall have an inside diameter of 26 inches, be not less than 2 inches nor more than 6 inches high, and shall have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring.

All material for Town of Brookfield sewer facilities must meet Sanitary District No. 4 specifications. A copy of these specifications can be obtained from the Sanitary District No. 4.

Terry Heidmann
150 South Barker Road
Brookfield, WI 53008
(262) 613-1707

C Construction
Adjust all manholes to proposed elevations at locations shown on the plans.

D Measurement
The department will measure Adjusting Sanitary Manholes, Town of Brookfield as each individual manhole, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.02	Adjusting Sanitary Manholes, Town of Brookfield	Each

Payment is full compensation for furnishing all materials (including adjusting rings and masonry), excavation, dewatering, backfill, compaction, disposal of surplus materials, cleaning out and restoring the structure, labor, tools, equipment, and incidentals necessary for the adjustment of each structure.

33. Reconstruct Sanitary Manholes, Town of Brookfield, Item SPV.0060.03.

A Description
The work under this item describes reconstructing a sanitary manhole to an elevation as determined by the Engineer and conforms with the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version, and as hereinafter provided. The chimney shall be reconstructed and precast concrete barrel sections shall be provided or cut as needed. Additional steps shall also be provided as needed. This item applies to those structures that must be lowered more than 6 inches or raised more than 10 inches or as identified on the plan.

B Materials
Bedding, cover, and backfill materials shall be in conformance with Sections 4 and 5 of the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version.

All material for Town of Brookfield sewer facilities must meet Sanitary District No. 4 specifications. A copy of these specifications can be obtained from the Sanitary District No. 4.

Terry Heidmann
150 South Barker Road
Brookfield, WI 53008
(262) 613-1707

B.1 Manhole
Manhole barrel sections shall be constructed of precast reinforced concrete sections. Precast manholes and tops shall conform to ASTM Specifications, C478, latest revision.

B.2 Joints
Joints for precast manholes shall meet the requirements of ASTM C-443, latest revision, except that sealant shall be butyl rubber gasket or butyl rubber rope. Flexible butyl rubber gaskets or rope shall comply with the physical requirements for Type "B" gaskets in AASHTO Designation M-198, or Federal Specification SSS-00210-A, sealing compound, preformed plastic for expansion joints and pipe joints.

B.3 Steps
All manholes shall be provided with steps equally spaced vertically at 16 inches on center installed by the manufacturer. Steps shall be embedded into the riser or conical top section of the wall a minimum of 3 inches. Manhole steps shall be Neenah R 1980-C or approved equal made of gray cast iron conforming to the requirements of ASTM Designation A-48 Class No. 30B and shall have a minimum cross sectional dimension of one inch in any direction. Each section of the manhole shall be aligned so the steps create a continuous ladder.

B.3 Adjusting Rings
Concrete adjusting rings shall be furnished to set the manhole casting to established grade and shall be precast reinforced concrete. Precast concrete adjusting rings for standard manholes shall have an inside diameter of 26 inches, be not less than 2 inches nor more than 6 inches high, and shall have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. A minimum of 2 rings shall be provided up to a maximum of 5 rings. A precast barrel section shall be installed if more than 5 rings are needed to adjust the casting to the desired elevation. Contractor shall field verify existing chimney depth.

C Construction
All manholes are to be reconstructed to conform to the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version and in the locations shown on the Plan Sheets.

All compacted material shall be placed in uniform layers not exceeding 8 inches in loose thickness prior to compaction. Each layer shall be uniformly compacted to a dry density at least 95% of the maximum dry density as determined by a laboratory compaction test at the optimum moisture content (ASTM Test Designation D1557). Compaction shall be obtained by compaction equipment appropriate for the conditions.

All sanitary manhole reconstructs shall be coordinated with the Town of Brookfield Sanitary District No. 4. Notify the Town of Brookfield Sanitary District No. 4 or their agents of this work a minimum of 3 days prior to the work so they may be present when the work is completed.

D Measurement
The department will measure Reconstruct Sanitary Manholes, Town of Brookfield as each individual manhole, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.03	Reconstruct Sanitary Manholes, Town of Brookfield	Each

Payment is full compensation for furnishing all materials (including adjusting rings, precast concrete barrel sections, masonry, and steps), excavation, dewatering, backfill, compaction, disposal of surplus materials, cleaning out and restoring the structure, compaction, labor, tools, equipment, and incidentals necessary for the installation of each structure.

34. Adjusting Storm Manholes, Town of Brookfield, Item SPV.0060.04.

A Description
The work under this item describes adjusting a storm manhole casting to an elevation as determined by the Engineer and conforms with the the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version, and as hereinafter provided. Precast concrete rings shall be provided or removed as needed. This item applies to those structures that must be lowered less than 6 inches or raised less than 10 inches.

B Materials
Precast concrete adjusting rings for standard manholes shall have an inside diameter of 26 inches, be not less than 2 inches nor more than 6 inches high, and shall have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring.

All material for Town of Brookfield sewer facilities must meet Sanitary District No. 4 specifications. A copy of these specifications can be obtained from the Sanitary District No. 4.

Terry Heidmann
150 South Barker Road
Brookfield, WI 53008
(262) 613-1707

C Construction
Adjust all manholes to proposed elevations at locations shown on the plans.

D Measurement
The department will measure Adjusting Storm Manholes, Town of Brookfield as each individual manhole, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.04	Adjusting Storm Manholes, Town of Brookfield	Each

Payment is full compensation for furnishing all materials (including adjusting rings and masonry), excavation, dewatering, backfill, compaction, disposal of surplus materials, cleaning out and restoring the structure, labor, tools, equipment, and incidentals necessary for the adjustment of each structure.

35. Adjusting Water Valve Box, Town of Brookfield, Item SPV.0060.05.

A Description

This special provision describes adjusting, protecting, and maintaining accessibility, for the duration of the project, to water valve boxes located within the project limits.

B (Vacant)

C Construction

Adjust all water valve boxes to proposed elevations at locations shown on the plans. Valve boxes shall be adjusted by turning the box. The box shall be seated on the adjusting threads to prevent future settlement. The box shall be adjusted to conform to the finished grade and shall be plumb to allow valve operation. The Town of Brookfield Sanitary District No. 4 shall be contacted by the contractor to check operation of the valve after box adjustment and prior to paving.

Throughout the duration of the project, the contractor must ensure that the water valve boxes are adequately located and identified by blue paint, and that at all times, all water appurtenances remain accessible for operation by town forces. Exercise caution working adjacent to water facilities to avoid damage and ensure accessibility.

D Measurement

The department will measure Adjusting Water Valve Box, Town of Brookfield as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.05	Adjusting Water Valve Box, Town of Brookfield	Each

Payment is full compensation for all excavation, backfilling, disposal of surplus materials, water box clean-out, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Upon completion of the contract, the Sanitary District No. 4 will inspect all water facilities to ensure the water boxes are clean, properly aligned, and accessible. The contractor shall be responsible to make identified repairs and adjustments, and if any repairs or adjustments are made by the Sanitary District No. 4, the cost will be charged to the contractor.

36. New Fire Hydrant, Town of Brookfield, Item SPV.0060.06.

A Description

This work consists of removing the existing hydrant, furnishing and installing a new hydrant and connection to the hydrant lead according to Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version and as hereinafter provided.

All water hydrant relocates shall be coordinated with the Town of Brookfield Sanitary District No. 4. Notify the the Town of Brookfield Sanitary District No. 4 or their agents of this work a minimum of 3 days prior to the work so they may be present when the work is completed.

B Materials

Provide Waterous "Pacer," Model WB-67, open left hydrants with Pentagon operating nut, red in color, AWWA C-502 breakaway type with two 2 1/2-inch outlets and one 4 1/2-inch outlet with 16-inch break off section standpipe, and have a minimum 7-foot bury depth meeting requirements of the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version. All hydrants shall be marked with a 5-foot tall HYDRAFINDER marker flag. The marker flag shall be springload, fiberglass colored red and white.

All material for Town of Brookfield water facilities must meet Sanitary District No. 4 specifications. A copy of these specifications can be obtained from the Sanitary District No. 4.

Terry Heidmann
150 South Barker Road
Brookfield, WI 53008
(262) 613-1707

C Construction

Remove existing hydrant and install new hydrant at the location indicated on the plan.

The removed hydrant shall be salvaged and delivered to the Sanitary District No. 4 office at the address shown above.

Installation, drainage and anchor system shall conform to the requirements of the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest revision.

D Measurement

The department will measure New Fire Hydrant, Town of Brookfield as a single unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.06	New Fire Hydrant, Town of Brookfield	Each

Payment is full compensation for removing and installing a new hydrant; excavation; dewatering; bedding; cover; backfill; compaction; buttresses; insulation; labor; tools; equipment; salvaging existing hydrant components; disposal of unusable components; and incidentals necessary to complete the work.

37. Abandoning Water Service, Town of Brookfield, Item SPV.0060.07.

A Description
This work consists of abandoning the existing copper water service at the corporation stop and removing the stop box according to Town of Brookfield Sanitary District No. 4 Technical Specifications, and as hereinafter provided.

B (Vacant)

C Construction
Excavate to and turn off existing corporation stop, cut copper service, and hammer ends to close. Remove and dispose of the existing stop box.

Backfill and compact as specified in the Town of Brookfield Sanitary District No. 4 Technical Specifications.

D Measurement
The department will measure Abandoning Water Service, Town of Brookfield as each unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.07	Abandoning Water Service, Town of Brookfield	Each

Payment is full compensation for furnishing all materials; excavating and backfilling where necessary; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

38. Replace 10-Inch Gate Valves with 12-Inch Gate Valves, Item SPV.0060.08.

A Description

At Manhattan Drive (1 Valve), Jennifer (2 Valves) and Gateway Drive (1 Valve), the Contractor shall remove two 12"x10" reducers and the 10-Inch gate valve and shall furnish and install a 12-Inch solid sleeve, 12" D.I. pipe (Class 52) and a 12-Inch gate valve and valve boxes; including polyethylene wrap, bedding, cover and compacted granular backfill. Any valve nut that needs to be placed deeper than 7 feet below finished grade, the Contractor shall install a valve extension on the nut. The top of the valve nut extension shall be between 4' and 6' from the finished grade. The Contractor is responsible for the necessary materials, excavation, backfill, compaction and maintenance of ditches for this work.

B Materials

Furnish materials in accordance to Chapter 4 of the *Waukesha Water Utility standard specifications*.

C Construction

Install gate valves and valve boxes in accordance to Chapter 6 of the *Waukesha Water Utility standard specifications*.

D Measurement

The department will measure Replace 10-Inch Gate Valves with 12-Inch Gate Valves, by the unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.08	Replace 10-Inch Gate Valve with 12-Inch Gate Valve	Each

Payment is full compensation for removing reducers and valves, furnishing and installing gate valves and valve boxes; including polyethylene wrap, bedding, cover and compacted granular backfill and all necessary materials, excavation, backfill, and incidentals necessary to complete the contract work.

39. Convert Manhole to Valve Box, Item SPV.0060.09.

A Description

At Manhattan Drive (2 Valves) and Kossow Road (1 Valve), the contractor shall remove the cone top section and structure walls to a minimum depth of 4 feet. The contractor shall then install the entire valve box, including a valve box adapter to hold the valve box centered over the valve. The contractor shall then backfill the opening with slurry backfill. Prior to the conversion, the contractor will need to coordinate the inspection of the valve

with the Waukesha Water Utility. The Waukesha Water Utility will inspect the valve nuts and bolts and operation of the valve.

B Materials
Furnish materials in accordance to Chapter 4 of the Waukesha Water Utility standard specifications.

C Construction
Install valve boxes in accordance to Chapter 6 of the Waukesha Water Utility standard specifications.

D Measurement
The department will measure each Manhole Conversion to Valve Box by the 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.0060.09	Convert Manhole to Valve Box	Each

Payment is full compensation for removing the cone top section and structure walls, furnishing and installing the entire valve box, including a valve box adapter, for slurry backfill, and all necessary materials, excavation, and incidentals necessary to complete the contract work.

40. Abandon Hydrant and Install New Hydrant, Item SPV.0060.10.

A Description
At Ramona Road, the contractor shall abandon the existing hydrant and remove the existing 90^0 bend from the hydrant lead. The contractor shall furnish and install a new hydrant, which will include a 6-Inch – 22.5^0 bend and approximately 11.0 feet of 6-Inch ductile iron pipe (Class 52) for the hydrant lead including polyethylene wrap, bedding, cover and compacted granular backfill. The hydrant shall be installed to the proper bury depth; the contractor is responsible for providing all hydrant extension, if required. The front nozzle must be a minimum of 18 inches behind the back of curb. The contractor shall also provide the chlorination, flushing and pressure testing per the listed specifications. The contractor is responsible for the necessary materials, excavation, backfill, compaction and maintenance of ditches for this work.

B Materials
Furnish materials in accordance to Chapter 4 of the *Waukesha Water Utility standard specifications*.

C Construction
Installation of the hydrant shall be in accordance to Chapter 6 and standard detail drawing Figure 2 of the *Waukesha Water Utility standard specifications,* unless otherwise shown or specified.

D Measurement
The department will measure Abandon Hydrant and Install New Hydrant by the 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.0060.10	Abandon Hydrant and Install New Hydrant	Each

Payment is full compensation for abandoning and removing the existing hydrant and 90^0 bend from the hydrant lead; furnishing and installing the new hydrant including polyethylene wrap, bedding, cover and compacted granular backfill; for providing hydrant extensions, if required; for providing chlorination, flushing and pressure testing; and for all other necessary materials, excavation, and incidentals necessary to complete the contract work.

41. Hydrant Assembly, Item SPV.0060.11.

A Description
At USH 18 and Kossow Road intersection and at the new Abbott Drive and Kossow Road intersection, the contractor shall furnish and install all hydrant assemblies, which will include approximately 5.5 feet and 40.0 feet respectively of 6-Inch ductile iron pipe (Class 52) for the hydrant lead including polyethylene wrap, bedding, cover and compacted granular backfill. The Waukesha Water Utility shall furnish the tapping sleeve, tapping valve and valve box and tap the water main, the contractor shall dig the trench, install a trench shield and provide the means for lowering the tapping machine. All hydrants shall be installed to the proper bury depth; the contractor is responsible for providing all hydrant extension, if required. The front nozzle must be a minimum of 18 inches behind the back of curb. The contractor is responsible for the necessary materials, excavation, backfill, compaction and maintenance of ditches for this work.

B Materials
Furnish materials in accordance to Chapter 4 of the *Waukesha Water Utility standard specifications*.

C Construction
Install all hydrants in accordance to Chapter 6 and standard detail drawing Figure 2 of the *Waukesha Water Utility standard specifications,* unless otherwise shown or specified.

D Measurement
The department will measure Hydrant Assembly by the 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.0060.11	Hydrant Assembly	Each

Payment is full compensation for furnishing and installing all hydrant assemblies, including all necessary ductile iron pipe for the hydrant lead, including hydrant extensions, polyethylene wrap, bedding, cover and compacted granular backfill; and for furnishing all other materials and incidentals to complete the contract work.

42. Abandon Hydrant, Item SPV.0060.12.

A Description
The Contractor shall abandon the existing fire hydrant at the USH 18 and Kossow Road intersection.

B (Vacant)

C Construction
The contractor shall close the hydrant gate valve and then excavate to expose the entire hydrant, disconnect it from the hydrant lead and salvage it for pick up by the Waukesha Water Utility. The contractor shall also expose the hydrant gate valve and install a plug into the valve. Following the removal of the hydrant and plugging of the valve, the contractor shall remove the entire valve box and plug both ends of the hydrant lead with concrete and backfill the excavation.

D Measurement
The department will measure Abandon Hydrant by each individual unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.12	Abandon Hydrant	Each

Payment is full compensation for disconnecting and removing the hydrant for pick up, for furnishing and installing a plug in the gate valve, for removing the entire valve box, for plugging both ends of the hydrant lead with concrete, and for all excavation, backfill, compaction, and materials necessary to complete the contract work.

43. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2, Item SPV.0060.13; Arrows Type 3, Item SPV.0060.14; Words, Item SPV.0060.15; Crosswalk 6-Inch, Item SPV.0090.03; Stop Line 18-Inch, Item SPV.0090.04.

A Description

This special provision describes grooving the pavement surface, and furnishing and installing preformed thermoplastic pavement marking as shown on the plans, according to standard spec 647, and as hereinafter provided.

B Materials

Furnish preformed thermoplastic pavement marking and sealant material, if required, from the department's approved products list.

C Construction

C.1 General

For quality assurance, provide the engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of preformed thermoplastic pavement marking.

Plane the grooved lines according to the plan details. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

C.2 Groove Depth

Cut the groove to a depth of 120 mils ±10 mils deeper than the thermoplastic thickness, from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

C.3 Groove Width – Linear Markings

Cut the groove 1-inch wider than the width of the thermoplastic.

C.4 Groove Position

Position the groove edge according to the plan details.

C.4.1 Linear Marking

Groove at a minimum of 4-inches, but not greater than, 12-inches from both ends of the line segment. Achieve straight alignment with the grooving equipment.

C.4.2 Special Marking

Groove a box around the special marking up to 4 inches from the perimeter of the special marking.

C.5 Groove Cleaning

C.5.1 Concrete

Cooling the cutting head with water may be necessary for some applications and equipment. If cooling water is necessary, flush the groove immediately with water after cutting to remove any build-up of cement dust and water slurry. If this is not done, the slurry may harden in the groove.

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and prior to pavement marking application. Clean and dry the groove for proper application of the sealant, and placement of the pavement marking. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

C.5.2 New Asphalt

Groove pavement 10 or more days after paving. Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.5.3 Existing Asphalt

Check for structural integrity in supporting grooving operations. If the structural integrity of the asphalt pavement is inadequate to support grooving operations, immediately notify the engineer.

C.5.2 Asphalt

Use a high-pressure air blower with at least 185 ft^3/min air flow and 90 psi air pressure to clean the groove.

C.6 Preformed Thermoplastic Application

Preheat the surface if necessary based on manufacturer's recommendation.

Application of the preformed thermoplastic in the groove without sealant will be as follows:

- May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.
- June 1 to August 31 – the Southwest Region, and the Northeast, North Central, and Northwest Regions except for the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.

Application of the preformed thermoplastic in the groove with sealant materials will be as follows:

- October 1 to April 30, both dates inclusive – the Southeast Region and the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.

- September 1 to May 31, both dates inclusive – the Southwest Region and the Northeast, North Central, and Northwest Regions, except for the ozone non-attainment or maintenance Northeast Region counties of Sheboygan, Manitowoc, Kewaunee, and Door.

The sealant must be wet.

D Measurement
The department will measure Pavement Marking Grooved Preformed Thermoplastic (Type) by each unit, acceptably completed.

The department will measure Pavement Marking Grooved Preformed Thermoplastic (Type) in length by the linear foot of tape placed, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.13	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2	Each
SPV.0060.14	Pavement Marking Grooved Preformed Thermoplastic Arrows Type 3	Each
SPV.0060.15	Pavement Marking Grooved Preformed Thermoplastic Words	Each
SPV.0090.03	Pavement Marking Grooved Preformed Thermoplastic Crosswalk 6-Inch	LF
SPV.0090.04	Pavement Marking Grooved Preformed Thermoplastic Stop Line 18-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface, and for furnishing and installing the material.

44. Reconstructing Sanitary Manholes, Item SPV.0060.16; Adjusting Sanitary Manhole Covers, Item SPV.0060.17.

Perform work conforming to standard spec 611.3.5 and standard spec 611.3.7 including the following modifications:

A Description
This special provision amendment describes replacement of the existing chimney, frame, and cover. The entire chimney shall be replaced with adjustment rings manufactured from ARPRO Expanded Polypropylene (EPP). Remove all existing rings and do not mix concrete and plastic rings.

B Materials

The rings shall be manufactured using a high compression molding process to produce a finished density of 120 g/l (7.5 pcf). Material shall be Pro-Ring as supplied by Cretex Specialty Products.

Any non-shrink mortar grout shall be Ipatop-Penngrout manufactured by IPA Systems, Inc. (www.ipasystems.com) or engineer approved equal. The material shall contain a balanced blend of washed and graded silica sand, finely ground Portland cement, and applicable special additive(s). Contractor must supply the engineer with verification of the product used.

Any adhesive or sealant used for watertight installation of the Pro-Ring manhole grade adjustment rings shall be M-1 Structural Adhesive/Sealant or equal meeting the following specifications:

- ASTM C-920, Type S, Grade NS, Class 25, Uses NT, T, M, G, A and O.
- Federal Specification TT-S-00230-C Type II, Class A.
- Corps of Engineers CRD-C-541, Type II, Class A.
- Canadian Standards Board CAN 19, 13-M82.
- AAMA 802.3-08 Type II, AAMA 803.3-08 Type I and AAMA 805.2-08 Group C.

No other material shall be used in the construction of the chimney section beyond those materials indicated above. This includes wood shims, bricks, stones, etc.

City to supply Neenah Type R-1661 Manhole Frames and R1660-5262 Covers (CITY OF WAUKESHA, SANITARY SEWER, D.P.W.)

C Construction

The chimney shall be installed as follows:

- Installation and surface preparation shall be in accordance to the manufacturer's instructions.
- Repair any surface defects or irregularities of the top of the manhole using a uniform bed of non-shrink grout meeting the requirements noted below.
- The joint between the first grade ring and manhole cone shall be sealed using an adhesive/sealant meeting the requirements noted below.
- The joints between all manhole adjustment rings shall be sealed using an adhesive/sealant noted below.
- The joint between the top manhole adjustment ring and the frame shall not be sealed with adhesive/sealant. This joint will be sealed with an internal frame-chimney seal.
- All castings shall be centered over the opening of the corbel and adjusting rings. The top adjusting ring upon which the casting is set shall be level from side to side unless a pitch is required to match the existing surface in paved areas.

D Measurement
The department will measure Reconstructing Sanitary Manholes and Adjusting Sanitary Manhole Covers 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.0060.16	Reconstructing Sanitary Manholes	Each
SPV.0060.17	Adjusting Sanitary Manhole Covers	Each

Payment for Reconstructing Sanitary Manholes and Adjusting Sanitary Manhole Covers is full compensation for providing and installing all required materials.

45. Internal Manhole Sealing System, SPV.0060.18.

A Description
This special provision describes furnishing and installing internal sanitary manhole seals as shown on the plans and hereinafter provided.

B Materials
Frame seals shall consist of a flexible internal rubber sleeve and stainless steel expansion bands as manufactured by Cretex Specialty Products and conforming to the following requirements:

- Rubber Sleeve - The flexible rubber sleeve shall be extruded or molded from a high grade rubber compound conforming to the applicable material requirements of ASTM C-923, with a minimum 1500 psi tensile strength, maximum18% compression set and a hardness (durometer) of 48±5.

  The rubber sleeve shall be double, triple or quadruple pleated with a minimum unexpanded vertical height of 8 inches and a minimum thickness of 3/16 inches. The top and bottom section of the sleeve that compresses against the manhole frame casting and the chimney/cone shall have an integrally formed expansion band recess and a series of sealing fins to facilitate a watertight seal. These sealing fins shall have teardrop holes or air pockets to allow the sealing area to conform to minor surface irregularities that may be encountered.

  Any splice used to fabricate the sleeve shall be hot vulcanized and have a strength such that the sleeve shall withstand a 180 degree bend with no visible separation.

- Expansion Bands - The expansion bands used to compress the sleeve against the manhole shall be integrally formed from 16 gauge stainless steel conforming to the applicable material requirements of ASTM A-240 Type 304, with no welded attachments and shall have a minimum width of 1-3/4 inches.

The bands shall have a minimum adjustment range of 2-1/2 diameter inches and the mechanism used to expand the band shall have the capacity to develop the pressures necessary to make a watertight seal. The band shall be permanently held in place with a positive locking mechanism which secures the band in its expanded position after tightening.

C Construction

The internal frame seals shall be installed according to the manufacturer's instructions in order to seal the joint between the frame and the Expanded Polypropylene (EPP) rings.

D Measurement

The department will measure Internal Manhole Sealing System 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.0060.18	Internal Manhole Sealing System	Each

Payment is full compensation for furnishing all labor, equipment, material and sealant system accessories and supervision, and performing all work necessary to seal the manhole.

46. New Curb Box, Town of Brookfield, Item SPV.0060.19.

A Description

This work consists of removing the curb box and curb stop, furnishing and installing a new curb box and curb stop and connection to the existing lateral according to Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version and as hereinafter provided.

All curb box relocates shall be coordinated with the Town of Brookfield Sanitary District No. 4. Notify the the Town of Brookfield Sanitary District No. 4 or their agents of this work a minimum of three days prior to the work so they may be present when the work is completed.

B Materials

Curb boxes shall be Minneapolis Patterb made with cast iron conforming to ASTM A48, Class 20. The casting shall be free from blowholes, porosity, hard spots, shrinkage defects and cracks, or other injurious defects and shall have a normal smooth casting finish. The pentagon head bolt shall be brass.

The castings shall be thoroughly coated with a 1-mil thickness bituminous coating.

A 2 1/2-inch-diameter box shall be provided for 3/4-inch and 1-inch service stops.

A 3-inch-diameter box with enlarged base shall be provided for 1-1/4, 1-1/2, and 2-inch service stops.

All boxes shall have a maximum length of 7 feet when extended without the use of an extension section. Extensions shall be provided for deeper mains.

Curb stops for copper services shall be Mueller H15154, Ford B22-M, A.Y. McDonald 6104 or an approved equal. All curb shall have curb boxes.

Curb boxes shall be Minnespolis Pattern, Mueller H-10300, Ford EM 2-65-56, A.Y. McDonald 5614, or an approved equal.

Tapping saddles for service lines shall be Romax 202N, or Smith Blair 317

All material for Town of Brookfield water facilities must meet Sanitary District No. 4 specifications. A copy of these specifications can be obtained from the Sanitary District No. 4.

Tony Skof
150 South Barker Road
Brookfield, WI 53008
(262) 613-1709

C Construction
Remove existing curb stop and curb box and install new curb stop and curb box at the location indicated on the plan.

Installation and anchor system shall conform to the requirements of the Town of Brookfield Sanitary Distrcit No. 4 Technical Specifications, latest revision.

D Measurement
The department will measure New Curb Box, Town of Brookfield as each unit, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.19	New Curb Box, Town of Brookfield	Each

Payment is full compensation for excavating, backfilling, making connections, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

47. Removing Existing Roadway Luminaire, Item SPV.0060.31.

A Description
The work under this item consists of removing luminaires, including lamp, as shown in the plan.

Components shall be transported per the specifications.

B (Vacant)

C Construction
Luminaires to be salvaged:
Transport luminaires where indicated on the plans and associated hardware to the City of Waukesha Garage at 300 Sentry Drive. Coordinate drop off with Dale Evans, telephone (262) 524-3600.

Dispose of damaged or refused items off the site.

D Measurement
The department will measure Removing Existing Roadway Luminaire as each individual removed luminaire, 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.0060.31	Removing Existing Roadway Luminaire	Each

Payment is full compensation for removing and transportation, the materials and appurtenances.

48. Removing Existing Roadway Lighting Unit, Item SPV.0060.32.

A Description
The work under this item consists of removing and disposing of lighting unit consisting of transformer base, pole, arm(s), pole wiring and luminaire(s), including lamp, as shown in the plan, removing associated underground conductors and removal of concrete base.

Components shall be transported per the specifications.

B (Vacant)

C Construction
Lighting units to be salvaged:
Transport lighting units where indicated on the plans and associated hardware to the City of Waukesha Garage at 300 Sentry Drive. Coordinate drop off with Dale Evans, (262) 524-3600.

Dispose of damaged or refused items off the site.

D Measurement
The department will measure Removing Existing Roadway Lighting Unit as each individual removed 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.0060.32	Removing Existing Roadway Lighting Unit	Each

Payment is full compensation for removing and transportation, the materials and appurtenances.

49. Relocate Existing Single Arm Lighting Assembly, Item SPV.0060.33.

A Description
The work under this item consists of removing lighting assembly consisting of transformer base, pole, arm, pole wiring and luminaire as shown in the plan; removing associated underground conductors and removal of concrete base, storing the lighting assembly until site is ready for reinstallation, repairing any marks on pole and reinstalling the existing lighting assembly according to the pertinent provision of the standard specifications and as hereinafter provided.

Components shall be transported or disposed of per the plans and specifications.

B Materials
Use the transformer base, pole, arm, pole wiring mounting hardware and other existing lighting hardware salvaged from the site. Provide all other needed materials in conformance with standard spec 652.2, standard spec 655.2, standard spec 657.2, and standard spec 659.2.

C Construction
The department assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working equipment to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department.

Remove the lighting unit per plan from its concrete base. Ensure that all access hand hole doors and all associated hardware and wiring remains intact. Store the lighting unit until the new concrete base is constructed and the site is ready for the lighting unit to be relocated.

Lighting unit components to be relocated:
Transformer base, pole, arm, pole wiring, and lighting hardware.

Lighting unit components to be salvaged:
Luminaires where indicated on the removal plans and associated hardware to the City of Waukesha Garage at 300 Sentry Drive. Coordinate drop off with Dale Evans, (262) 524-3600.

Remove associated underground conductors feeding lighting units being removed where indicated on the removal plans. Dispose of components off-site appropriately; recycle materials where possible.

Perform work according to standard spec 652.3, standard spec 655.3, standard spec 657.3, and standard spec 659.3.

D Measurement
The department will measure Relocate Existing Single Arm Lighting Assembly as each individual relocated 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.0060.33	Relocate Existing Single Arm Lighting Assembly	Each

Payment is full compensation for relocating, transportation, disposing of the materials and appurtenances; and for removing related underground cable, splicing through the underground circuit.

50. Relocate Existing Double Arm Lighting Assembly, Item SPV.0060.34.

A Description
The work under this item consists of removing lighting assembly consisting of transformer base, pole, arms, pole wiring and luminaires as shown in the plan; removing associated underground conductors and removal of concrete base, storing the lighting assembly until site is ready for reinstallation, and reinstalling the existing lighting assembly according to the pertinent provision of the standard specifications and as hereinafter provided.

Components shall be transported or disposed of per the plans and specifications.

B Materials
Use the transformer base, pole, arms, pole wiring mounting hardware and other existing lighting hardware salvaged from the site. Provide all other needed materials in conformance with standard spec 652.2, standard spec 655.2, standard spec 657.2, and standard spec 659.2.

C Construction

The department assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working equipment to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department.

Remove the lighting unit per plan from its concrete base. Ensure that all access hand hole doors and all associated hardware and wiring remains intact. Store the lighting unit until the new concrete base is constructed and the site is ready for the lighting unit to be relocated.

Lighting unit components to be relocated:
Transformer base, pole, arms, pole wiring, and lighting hardware.

Lighting unit components to be salvaged:
Luminaires where indicated on the removal plans and associated hardware to the City of Waukesha Garage at 300 Sentry Drive. Coordinate drop off with Dale Evans, (262) 524-3600.

Remove associated underground conductors feeding lighting units being removed where indicated on the removal plans. Dispose of components off-site appropriately; recycle materials where possible.

Perform work according to standard spec 652.3, standard spec 655.3, standard spec 657.3, and standard spec 659.3.

D Measurement

The department will measure Relocate Existing Double Arm Lighting Assembly as each individual relocated 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.0060.34	Relocate Existing Double Arm Lighting Assembly	Each

Payment is full compensation for relocating, transportation, disposing of the materials and appurtenances; and for removing related underground cable, splicing through the underground circuit.

51. Removing Existing Lighting Control Cabinet, Item SPV.0060.35.

A Description
The work under this item consists of removing lighting control cabinet and all of its contents and concrete pad as shown in the plan.

B (Vacant)

C Construction
Coordinate with the utility for disconnection of primary service. The department will pay any fees charged by the utility. Dispose of all materials off the site.

D Measurement
The department will measure Removing Existing Lighting Control Cabinet as each individual removed lighting control cabinet, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.35	Removing Existing Lighting Control Cabinet	Each

Payment is full compensation for removing, transporting and disposing of all materials and appurtenances.

52. City of Waukesha Concrete Control Cabinet Bases, Type 9 Special, Item SPV.0060.51.

A Description
This item shall utilize the standard specifications for standard Item 654.0217 (Concrete Control Cabinet Bases, Type 9 Special) with the following addition:

Extend the concrete control cabinet pad for a battery back-up unit that is mounted on the side of the cabinet by 1' x 3' x 7" for the unit and 2' x 3' x 4" for a maintenance platform.

B Materials
Follow standard spec 654.

C Construction
Follow standard spec 654.

D Measurement
The department will measure City of Waukesha Concrete Control Cabinet Bases, Type 9 Special as each individual base, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.51	City of Waukesha Concrete Control Cabinet Bases, Type 9 Special	Each

Payment is full compensation for providing concrete bases; for embedded conduit and electrical components; for anchor rods, nuts, and washers; for bar steel reinforcement, if required; and for excavating, backfilling, and disposing of surplus equipment.

53. Pedestrian Push Buttons Special, Item SPV.0060.52.

A Description

This item shall consist of vandal resistant Audible Pedestrian Signal and push button assembly that provides a vibro-tactile ADA compliant 2" push button with a raised directional arrow and custom message sounds during the walk cycle. During the "ped clearance" and "don't walk" intervals locating sounds are emitted from inside the unit via a weatherproof speaker. The unit shall use existing 2-pair push button wires and interface with a single control unit located in the traffic control cabinet.

B Materials

Furnish pedestrian push buttons conforming to all of the following requirements:

Audible Pedestrian Signal Push Button

1. Sunlight visible "Red LED" lights when the button is pushed and remains on until the walk phase goes into effect.

2. Audible "Tick" sound is heard each time the button is pushed, as well as tactile feedback given.

3. Extended push button can turn on boost volumes, and/or mute all sounds except those on actuated crosswalk.

4. All audible sounds automatically adjust in volume in relation to ambient noise level.

5. Audio Amplifier Power Output: 15 W, 8 ohm, weatherproof.

6. Provide separate volume controls for locator tone, walk message, Clearance and extended button volumes.

7. Volume Control Automatic Adjustment Range: 35 dB max.

8. Microphone For Ambient Noise approximate frequency range: 170 Hz to 2.3 kHz.

9. Jumper Selectable Options: Chirp, Cuckoo, Walk Message, Rest In Walk, Location Message, Extended Push of Activation and Locating Tone.

10. Audible Locating Tone: 880 Hz plus harmonic, 0.1-second duration, 1-second interval. Operates during ped clearance and don't walk interval. All tones shall meet MUTCD requirements.

11. Option standard locating tone, custom sound or verbal count down during PED Clearance and multiple voice message languages. Provide custom walk message, direction of travel and/or emergency vehicle warning message.

12. All sounds are synchronized. Sound alternate in front of the pedestrian and behind the pedestrian during the walking and/or ped clearance phase ("Ping Pong" feature).

13. Temperature Range: -40 degrees F to 165 degrees F.

14. Wind sensor to prevent runaway volume during windy conditions.

15. System can self-test and fault report to a remote site for real-time monitoring and system maintenance. Conflict Detect: WALK indication is ignored in the event of a WALK/DON'T WALK conflict.

16. Pedestrian Push Button Interface accepts 12 to 48 AC/DC. Capable of global configuration changes and/or single unit changes.

17. Dimensions: Length: 14.09", Width: 5.4", Depth: 2.2".

18. Frame: cast aluminum, yellow.

19. Face Plate: aluminum, powder coated, painted yellow background.

20. Arrow Push Button: aluminum, powder coated. Direction of arrow can adjust to one of four directions.

21. Push Button: ADA compliant, cast aluminum, nickel plated, powder coated. Vibrator Power shall be 15 VDC pulsed. Operates during walk interval only. Speaker: 8 ohm, 15 W MAX, weather proof.

22. Comparable to Polara "Navigator 2-Wire Pedestrian Push Button Unit" or approved equal.

Central Control Unit

The control unit is the power supply and signaling interface between the existing intersection traffic controller and the pedestrian push button unit. The pedestrian control unit shall control up to 12 push button units and 4 pedestrian phases. The pedestrian control unit shall be housed inside the traffic controller cabinet and powered by the AC supply mains (115 VAC). The interface cable shall be included and considered incidental to the contract.

1. Pedestrian Walk/Don't Walk Inputs; Optically Isolated 80 – 150 Volts AC/DC 5mA Maximum.

2. General Purpose Outputs and Pedestrian Outputs; Optically Isolated 36 Volts AC/DC Peak, .3A Solid State Fused Contact Closure.

3. Fault Output; Normally Open and Closed Relay Contacts 125 Volts AC/DC 1A Maximum.

4. 4 Phase Pedestrian Push Button Power Output; Nominal 22 Volts DC, Short Circuit Protected – Auto Recovering.

5. General Purpose Inputs; 10 – 36 Volts AC/DC Peak 10mA Maxium, Optically Isolated.

6. Comparable to Polara "Navigator 2-Wire Central Control Unit" or approved equal.

C Construction
Furnish and install pedestrian push buttons for traffic signals.

D Measurement
The department will measure Pedestrian Push Buttons Special 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.0060.52	Pedestrian Push Buttons Special	Each

Payment is full compensation for furnishing and installing all materials plus all labor, tools, equipment and incidentals necessary to complete the work according to the plans and contract.

54. Battery Backup System (Intersection of USH 18 and Manhattan Drive), Item SPV.0060.53.

A Description
This special provision describes furnishing and installing a Field Hardened Battery Backup System to be mounted to the side of the traffic controller cabinet.

B Materials
Furnish, assemble, fabricate, or install new corrosion resistant materials according to specifications. Supply a "rack mounted" UPS unit, including a front panel with indicators and control switches, as shown on the plans.

Functional Requirements

This specification is for establishing the minimum requirements for a complete emergency battery backup system for use with Light Emitting Diode Traffic Signal Modules at intersections with NEMA 170 or 2070 cabinets. The Battery Backup System (BBS) shall include, but not be limited to the following: Inverter/Charger, Batteries, a separate automatic and manually operated Bypass Switch and all necessary hardware and interconnect wiring. The BBS shall be capable of providing power for full run-time operation for an "LED –only" intersection (all colors: red, yellow, green and pedestrian heads) or flashing mode operation and intersection Red LED's. The BBS shall be designed for outdoor applications.

Enclosure Construction

Enclosure-The BBS Enclosure shall be capable of being a Side Mount and Ground Mount. The enclosure will house the batteries, UPS and bypass switches. The cabinet must meet the requirements for NEMA 3R enclosures. The housing must have the dimensions so that it may easily be attached the side of a M, P or 332 Type cabinet. Dimensions of the enclosure shall not exceed 50"H x 17" W x 17" D. The UPS enclosure must not interfere with the opening of the traffic cabinet door.

The complete enclosure and door must be made from .125" thick aluminum. All external seams must be continuously welded. The door opening must have a double flange for weather sealing purposes.

a. **Door:** The cabinet must have a door to provide access to the complete cabinet interior. The door must include a continuous piano hinge made of 14-gauge stainless steel and a .120" diameter stainless steel hinge pin. The hinge must be attached to the enclosure and the door with close end pop rivets. The door must have a three point locking mechanism with rollers at the ends for the latch rods. The key lock must be a Corbin cylinder lock with a #2 key. When the door is opened it must have stops at 90, and 130 degrees. A continuous neoprene gasket must be used to weatherproof the enclosure when the door is closed.

b. **Ventilation Fan:** A fan must be mounted in the air baffle at the top of the cabinet with an air outlet built into the overhang. The fan must be thermostatically controlled. The bottom of the door must be louvered to allow airflow. A removable dust filter must be located behind the vent.

c. **Finish:** The entire enclosure must be a natural aluminum.

d. **Features:** The enclosure will include an "On Battery", high impact red light that operates off of the DC voltage of the UPS to notify that the UPS is on batteries without opening of the door. The light will be wired to and controlled by the UPS power module. The enclosure shall accommodate the ability to rack mount the UPS and Fail Safe ATS bypass switch. When the UPS is mounted into the enclosure it must be mounted to accommodate straight-on horizontal viewing of the LCD screen on the UPS.

e. **Generator Connection:** The enclosure shall include a flush mount generator compartment with neoprene gaskets for weatherproofing. The generator compartment shall include a Locking 30 amp plug, L5-30P, for connecting of a portable AC generator. A manual transfer switch shall be mounted within the generator compartment to allow for transferring from utility power to generator power. The generator door will provide a cable slot to allow for closing of the door when the generator is plugged in and to lock the cable inside of the compartment. The door will include a Corbin Type 2 lock.

f. **Mounting:** The cabinet will be mounted to the traffic control cabinet with six hex head bolts, ¼" x 20". All holes will be field drilled by the contractor to accommodate the specific situation. A grommet must be supplied to protect the cable in a field drilled 1.5" to 2" hole for cable connection to the existing traffic controller. The contractor will supply all the mounting hardware, bolts, washers, nuts, gaskets, bushings, grommets, caulking, etc., necessary to install the cabinet in a safe and weatherproof manner.

Battery System:

a. Individual batteries shall be:

1) Voltage rating: 12V type
2) Amp-hour rating: 100 amp-hour minimum
3) Group size: 31 minimum
4) Batteries shall be easily replaced and commercially available off the shelf.

b. Batteries used for BBS shall consist of 4 to 8 batteries. All batteries must meet their specifications out of the box immediately after the initial 24-hour top off charge. Batteries that require cycling to meet the AH rating specifications are not acceptable.

c. Batteries shall be deep discharge, sealed prismatic lead-calcium based GEL/VRLA Gelled Electrolyte/ Valve Regulated Lead Acid). Batteries designed for Cycle applications, such as Solar, are not acceptable. The battery must be designed for Standby Applications.

d. Batteries shall be certified by the manufacturer to operate over a temperature range of – 25 °C to +71 °C.

e. Batteries shall have a Manufacturer's Warranty of 4 Years Full Replacement plus 1 additional year when a battery balancer is used. The warranty shall cover any battery that does not meet 80% of its original reserve capability during the warranty period.

f. The batteries shall be provided with appropriate interconnect wiring and corrosion-resistant mounting trays, shelf's and/or brackets appropriate for the cabinet into which they will be installed.

g. Batteries shall indicate maximum recharge data and recharging cycles.

h. Battery Harness

1) Battery interconnect wiring shall be via two-part modular harness.

2) Part I shall be equipped with red (+) and black (-) 30.48 cm (12") cabling that can be permanently connected to the positive and negative posts of each battery. Each red and black pair shall be terminated into an Anderson style Power Pole connector or equivalent.

3) Part II shall be equipped with the mating Power Pole style connector for the batteries and a single, insulated Power Pole style connection to the inverter/charger unit. Harness shall be fully insulated and constructed to allow batteries to be quickly and easily connected in any order to ensure proper polarity and circuit configuration.

4) Power Pole connectors may be either one-piece or two-piece. If a two-piece connector is used, a locking pin shall be used to prevent the connectors from separating.

5) All battery interconnect harness wiring shall be UL Style 1015 CSA TEW or Welding Style Cable or equivalent, all of proper gauge with respect to design current and with sufficient strand count for flexibility and ease of handling.

6) Battery terminals shall be covered and insulated with molded boots so as to prevent accidental shorting.

i. Battery Balancer: The battery balancer shall be provided that automatically balances the battery charge voltage on all batteries in the string to within ±60mV between any two batteries. The Balancer shall allow for any single 12V battery within the battery string to be replaced at any time throughout the warranty period and not require the purchase of new batteries, to install the battery covered under the warranty.

BBS Operation:

a. The BBS shall provide a minimum two (2) hours of full run-time operation with an additional 2 to 4 hours of Red Flash operation for an "LED-only" intersection, with a maximum 800W active output load capacity. The inverter, when on batteries, shall operate with a minimum efficiency of 84% with a load ranging from 25% to 90% of the BBS total output rating. The BBS shall operate at 97% or higher when operating under normal condition (utility power is available).

b. The BBS, for safety and efficiency shall operate with a nominal 48 VDC buss. A DC level higher than 56 VDC shall be considered unsafe and not acceptable.

c. The maximum transfer time allowed, from disruption of normal utility line voltage to stabilized inverter line voltage from batteries, shall be 5 milliseconds. 5 milliseconds maximum allowable transfer time shall also apply when switching from inverter line voltage to utility line voltage.

d. The BBS shall include a rack mounted Fail Safe Automatic/Manual Bypass Switch for bypassing the UPS for maintenance. The FS-ATS bypass switch will be a 3-stage configuration, UPS Normal mode, bypass UPS on and bypass UPS off. The FS-ATS Bypass Switch shall mount in a 19" rack inside of the BBS side mount enclosure.

e. The BBS shall provide the user with 6-sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) individually programmable dry relay contact closures, available on a front panel-mounted terminal block, rated at a minimum 120V/1A, and labeled so as to identify each contact.

    1) One set of NO and NC contact closures shall be energized whenever the unit switches to battery power. Contact shall be labeled or marked "On Batt."

    2) A second and third set of NO and NC contact closures shall be energized whenever the battery approaches approximately 40% of remaining useful capacity. Contact shall be labeled or marked "Low Batt." This setting must be adjustable from 10% to 90% via the RS232 connection.

    3) A fourth set of NO and NC contact closures shall be energized two hours after the unit switches to battery power. Contact shall be labeled or marked "Timer." This setting must be adjustable from 1 Min. to 8 Hours via the RS232 connection.

    4) A fifth set of NO and NC contact closures shall be energized in the event that an Alarm condition occurs. Contact shall be labeled "Alarm".

    5) A 48 VDC output shall be provided for operating an external fan. This output can also be factory configured as a dry contact.

    Relay contact activation shall be annunciated on the front panel via a visual indication. This can be either discreet LED, or part of LCD screen, etc.

f. The BBS shall have two independently programmable timers 0 to 8 hours with two times-of-day restrictions on each timer, providing dry contacts to provide Red Flash operation at user definable times of day.

g. The BBS shall provide 3 user inputs to support Intrusion Alarm, Emergency Power Off (EPO) and external Self Test (Battery Test).

h. Operating temperature for both the inverter/charger, and manual bypass switch shall be –37 °C to +74 °C with a load of 850 watts.

i. The Fail Safe ATS Bypass Switch shall be rated at 240VAC/30 amps, minimum.

j. The BBS shall use a temperature-compensated battery charging system. The charging system shall compensate over a range of 2.5 – 6.0 mV/ °C per cell. The temperature sensor shall be external to the inverter/charger unit. The temperature sensor shall come with 3 meters (9'10") of wire.

k. Batteries shall not be recharged when battery temperature exceeds 50 °C ± 3 °C.

l. BBS shall bypass the utility line power whenever the utility line voltage is outside of the following voltage range: 85VAC to 175VAC (± 2VAC). During a utility input from 85 VAC to 175 VAC the UPS shall utilize its internal double buck, double boost regulation to maintain a 108 to 131 VAC output to the controller cabinet, without the use of the batteries. The BBS shall go into Boost Mode 1 when the AC Line voltage reaches below 110 VAC, +/- 2volts. When the AC line drops below 96 VAC, +/- 2 volts the BBS shall go into Boost Mode 2. When the AC line voltage reaches 131 volts, +/- 2volts the BBS shall go into Buck Mode 1. When the AC Line voltage reaches 150 volts the BBS shall go into Boost Mode 2.

m. When utilizing battery power, the BBS output voltage shall be between 110 VAC and 128 VAC, pure sine wave output, ≤ 3% THD, 60Hz ± 3Hz.

n. BBS shall be compatible with NEMA, 170 or 2170 Controllers, and cabinet components for full time operation. All loads to the maximum rating of the BBS shall be powered through the BBS system to utilize the UPS internal Buck/Boost regulation.

o. In cases of low (below 85VAC) or absent utility line power, when the utility line power has been restored to normal for more than 3 seconds, the BBS shall transfer from the Boost Regulation Mode or the battery backed inverter mode back to utility line mode.

p. In cases of high utility line power (above 175VAC), when the utility line power has been restored to normal for more than 3 seconds, the BBS shall transfer from the Buck Regulation Mode or battery backed inverter mode back to utility line mode

q. BBS shall be equipped to prevent a malfunction feedback to the cabinet or from feeding back to the utility service. For conformation the UPS module must be UL/CSA approved and labeled. "Tested to" or "Built to" UL/CSA is not acceptable.

r. In the event of inverter/charger failure, battery failure or complete battery discharge, the Fail Safe Transfer Switch shall revert to the NC (and de-energized) state, where utility line power or generator power, if available, is connected to the cabinet.

s. Recharge time for the battery, from “protective low-cutoff” to 90% or more of full battery charge capacity, shall not exceed eight hours, unless limited by the Temperature Regulated charger due to excessive battery heat that could damage the integrity of the battery string.

t. Batteries shall be Deep Discharge Gel Type Valve Regulated Lead Acid Battery and compatible with the Battery charger.

Maintenance, Displays, Controls and Diagnostics:

a. The BBS shall include a display and /or meter to indicate current battery charge status and conditions.

    1) The BBS shall provide voltmeter standard probe input-jacks (+) and (-) to read the exact battery voltage drop at the inverter input.

b. The BBS shall have lightning surge protection compliant with IEEE/ANSI C.62.41.

c. The BBS shall be equipped with an integral system to prevent battery from destructive discharge and overcharge.

d. The BBS and batteries shall be easily replaced with all needed hardware and shall not require any special tools for installation.

e. The BBS shall display via an LCD panel to indicate the number of times the BBS was activated and the total number of hours the unit has operated on battery power. The LCD display shall show the UPS mode, Alarm status, Input and output voltages, Output current, Battery voltage, battery charger current and last event. It shall allow for programming of the battery charger from 3, 6 and 10 amp charger setting.

f. The BBS shall include two separate communication ports on the front panel of the UPS, a factory installed internal Ethernet port for SNMP/WEB communications along with an RS 232 port for local communications.

g. The BBS shall include a Microsoft Windows® Graphical User Interface for programming and monitoring the BBS. This must be provided in addition to the use of Hyper Terminal and provided at not cost.

h. Manufacturer shall include a set of operation manuals and wiring diagrams of the BBS with each BBS. Two sets of Maintenance Manuals, Equipment List and the battery data sheets shall be provided upon request for evaluation purposes.

Acceptance

Each BBS shall be manufactured according to a manufacturer Quality Assurance (QA) program. The QA program shall include two Quality Assurance procedures: (1) Design QA and (2) Production QA. The Production QA shall include statistically controlled routine tests to ensure minimum performance levels of BBS units built to meet this

specification and a documented process of how problems are to be resolved. The manufacturer, or an independent testing lab hired by the manufacturer, shall perform Design Qualification Testing on new BBS system(s) offered, and when any major design change has been implemented on an existing design. A major design change is defined as any modification, either material, electrical, physical or theoretical, that changes any performance characteristics of the system, or results in a different circuit configuration.

Production Quality Control tests shall be performed on each new system prior to shipment. Failure to meet this requirements shall be cause for rejection. Each system shall be visually inspected for any exterior physical damage or assembly anomalies. Any defects shall be cause for rejection.

Materials Manufacturer's Warranty
Manufacturers shall provide a two year factory-repair warranty for parts and labor on the BBS from date of acceptance but not more than six months from ship date. Batteries shall be warranted for full replacement for five years from date of purchase with an additional one year added when a battery balancer is installed at time of initial installation. A battery shall be considered bad should it not deliver 80% of its original capability within the stated warranty period.

The warranty shall be included in the total bid price of the BBS.

C Construction
Furnish and install Battery Backup System for Traffic Intersections.

D Measurement
The department will measure Battery Backup System 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.0060.53	Battery Backup System (Intersection of USH 18 and Manhattan Drive)	Each

Payment is full compensation for furnishing and installing the battery backup system with cabinet, fittings as are necessary to assure that the battery backup system will perform the said functions.

55. Install IP Wireless Radio, Item SPV.0060.54.

A Description
Work under this item shall consist of installing department furnished an IP Wireless Radio 5.8 GHZ (Point-to-Point), as shown on the plans and as hereinafter provided. The IP Wireless Radio shall be used for transmitting data between field cabinets through a wireless medium.

B Materials
IP Wireless Radio shall be provided by the department.

C Construction
Install IP Wireless Radio in the traffic signal cabinets. Ethernet cables shall be provided by the contractor.

C.1 Installation
Make the necessary electric and communication network connections to the IP Wireless Radio Continuous Cable.

Install the power supply and lightning arrestor accessories.

Contractor to supply all banding and traffic control to install radio at location designated on the plans.

Contractor is responsible for all other incidentals required to complete the installation of the IP Wireless Radio.

C.2 Configuration
Configure operational parameters of the Wireless Radio as directed by the department.

Test the configured Wireless Radio prior to installation.

Verify that wireless and wired interfaces are operational prior to deployment.

Perform any configuration changes needed for field installation.

Test the installed Wireless Radio.

Measure the received signal strength and verify that it is sufficient for proper system operation.

Measure the signal-to-noise ratio and verify that it is sufficient for proper system operation.

Test data throughput rate and verify that it is sufficient for proper system operation.

Verify that the Wireless Bridge operates as expected in the intended application, if other system components are available for testing.

Prepare a summary report of all configuration, test and installation issues and submit it to the department.

D Measurement
The department will measure IP Wireless Radio 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.0060.54	Install IP Wireless Radio	Each

Payment is full compensation for installing the IP Wireless Radio; for furnished and installing all Ethernet cables; for making all connections; for furnishing and installing all connectors.

56. Water Main (PVC), 6-Inch, Town of Brookfield, Item SPV.0090.01.

A Description
The work under this item describes installation of 6-inch C-900, DR-18 PVC water main, tracer wire and tracer wire access box according to the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version and as hereinafter provided.

All water main installation shall be coordinated with the Town of Brookfield Sanitary District No. 4. Notify the Town of Brookfield Sanitary District No. 4 or their agents of this work a minimum of 3 days prior to the work so they may be present when the work is completed.

B Materials
B.1 General
All materials and work required to install the water main will conform to the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version. All pipe and fittings shall be marked by the manufacturer showing the weight, class, manufacturer's name and year the pipe and fittings were manufactured.

Bedding, cover, and backfill materials shall be in conformance with Section 4.3 of the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version.

All material for Town of Brookfield water facilities must meet Sanitary District No. 4 specifications. A copy of these specifications can be obtained from the Sanitary District No. 4.

Terry Heidmann
150 South Barker Road
Brookfield, WI 53008
(262) 613-1707

B.2 PVC Pipe
Water main pipe shall be Polyvinyl Chloride Pipe (PVC), as shown on the Contract Drawings, and shall conform to the requirements of AWWA C-900, DR-18.

B.3 Tracer Wire

Tracer wire shall be NEC type THWN, 600 volts, No. 10 AWG solid copper wire plastic coated and designed for underground use. Tracer wire shall be carefully placed along the top of the pipe and security taped to the pipe in three locations along the pipe.

B.4 Tracer Wire Access Box (TWAB)

Tracer wire shall be brought to grade inside a PVC pipe extension placed inside a tracer wire access box. Tracer wire access boxes shall be Valvco or equal and marked "water" or "sewer." Tracer wire access boxes shall be located on each water service, each sanitary lateral, and within 6 inches of all fire hydrants. Tracer wire access boxes shall be no more than 1200 feet apart using the above locations. Should more than 1,200 feet of space occur, additional boxes shall be installed, centered on the utility main.

If tracer wires need to be spliced together, they shall be done with an 8 AWG brass split bolt connector. Wire connectors shall be sealed with 3M Scotch Vinyl Mastic Pad and two layers of polyethylene wrap.

B.5 Fittings

Water main fittings shall be ductile iron and conform to the requirements of AWWA C-151/ANSI A 21.51.

All bolts and fitting hardware shall be type 304 stainless steel.

C Construction

C.1 General

The 6-inch water main installation will be coordinated by the contractor in conjunction with the installation and relocation of other utilities. Construction methods, disinfection, and hydrostatic pressure testing shall conform to the Town of Brookfield Sanitary District No. 4 Technical Specifications, latest version.

All compacted material shall be placed in uniform layers not exceeding 8 inches in loose thickness prior to compaction. Each layer shall be uniformly compacted to a dry density at least 95% of the maximum dry density as determined by a laboratory compaction test at the optimum moisture content (ASTM Test Designation D1557). Compaction shall be obtained by compaction equipment appropriate for the conditions.

C.2 Polyethylene Encasement

All ductile iron fittings shall be polyethylene encased per AWWA C-105/ANSI A 21.5. Polyethylene encasement shall be a minimum eight mil thickness.

D Measurement

The department will measure Water Main (PVC), 6-inch, Town of Brookfield by the linear foot, acceptably completed. Quantity to be paid for includes construction through valves and other fittings. Tees, reducers, sleeves, and bends shall be measured and paid as water main.

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	Water Main (PVC), 6-Inch, Town of Brookfield	LF

Payment is full compensation for furnishing all materials including fittings and polyethylene encasement, furnishing all materials including tracer wire and access box, excavation, dewatering, backfill, compaction, disposal of surplus materials, cleaning out, compaction, labor, tools, equipment, and incidentals necessary for the placement of water main.

57. Water Service Replacement, Copper, 1 Inch, Town of Brookfield, Item SPV.0090.02.

A Description

This work consists of removing the existing copper water service, abandoning the existing corporation stop at the existing main, furnishing and installing a new water service lateral complete with corporation stop and stop box from the existing water main, and connection to the existing lateral as shown on the drawings according to Town of Brookfield Sanitary District No. 4 Technical Specifications, and as hereinafter provided.

B Materials

Water laterals shall be 1 inch-diameter Type K copper and all fittings shall meet the requirements of Town of Brookfield Sanitary District No. 4 Technical Specifications.

Corporation stops shall be Mueller B-25000, Ford F600, A.Y. McDonald 4701, or equal.

Curb stops shall be Mueller H15154, Ford B22-M, A.Y. McDonald 6104. Curb stops and fittings shall have a positive metal to metal connection.

Curb boxes shall be of the Arch or Minneapolis Pattern, Ford, Mueller, or equal made with cast iron conforming to ASTM A48, Class 20. The castings shall be free from blowholes, porosity, hard spots, shrinkage defects or cracks, or other injurious defects and shall have a normal smooth casting finish. The pentagon head bolt shall be brass.

The castings shall be thoroughly coated with a 1-mil thickness bituminous coating.

A 2 1/2-inch-diameter box shall be provided for 3/4-inch and 1-inch service stops.

A 3-inch-diameter box with the enlarged base shall be provided for 1-1/4, 1-1/2, and 2-inch service stops.

All curb boxes shall have a maximum length of 7 feet when extended without the use of extension section. Extensions shall be provided for deeper mains.

C Construction
Install water service laterals with minimum amount of service interruption.

Install the new water service and curb box. Turnoff existing corporation, remove existing water service and connect new water service to existing corporation and existing water service.

Replacement curb stops and boxes for each water service reconnected will be included under this bid item. Install all curb boxes as shown in the drawings.

Backfill and compact as specified in the Town of Brookfield Sanitary District No. 4 Technical Specifications.

D Measurement
The department will measure Water Service Replacement, Copper, 1-Inch by the linear foot acceptably completed, measured along centerline of tubing from the centerline of the main to the connection to the existing lateral.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.02	Water Service Replacement, Copper, 1-Inch, Town of Brookfield	LF

Payment is full compensation for furnishing all work herein specified and for furnishing the pipe, corporation stop, curb stop, extension rod, and box, excavation, dewatering, bedding, cover, laying, jointing, backfilling, and maintenance of surface and all other labor and material necessary for complete compliance with these specifications. The cost of all special connections to existing mains and appurtenances is included in the prices bid.

Upon completion of the contract, the Sanitary District No. 4 will inspect all water facilities to ensure the water boxes are clean, properly aligned, and accessible. The contractor shall be responsible to make identified repairs and adjustments, and if any repairs or adjustments are made by the Sanitary District No. 4, the cost will be charged to the contractor.

58. Longitudinal Joint Repair, Item SPV.0090.05.

A Description
This special provision describes removing any loose or spalled concrete and asphaltic patching, cleaning the joints, and filling with asphaltic material as shown on the plans and as hereinafter provided.

B (Vacant)

C Construction
Use a concrete cutting wheel that is capable of removing any loose or spalled concrete and asphaltic patching in one or two passes of the machine.

D Measurement
The department will measure Longitudinal Joint Repair by the linear foot of longitudinal joints, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.05	Longitudinal Joint Repair	LF

Payment is full compensation for removing and disposing of all loose or spalled concrete and asphaltic patching; cleaning all joints; and for filling the joints.

Asphaltic material used to fill the joint will be paid at the contract unit price under the appropriate asphaltic bid item.

59. Type UF Cable, 2 Conductor, No. 14, Item SPV.0090.50.

A Description
This work shall consist of furnishing and installing cable for confirmation lights and making all connections as shown on the plans and as hereinafter provided.

B Materials
Revise standard spec 655 with the following:

Supplement standard spec 655.3.4 with the following:

When lighting is installed in conjunction with traffic signals, conductors from the traffic signal control cabinet to the confirmation light(s) shall be Type UF, two conductor without ground, solid copper conductor cable, size No. 14.

C Construction
Furnish and install Type UF Cable, 2 Conductor, No. 14 for traffic signals.

D Measurement
The department will measure Type UF Cable, 2 Conductor, No. 14, by the linear foot of cable, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.50	Type UF Cable, 2 Conductor, No. 14	LF

Payment is full compensation for furnishing and installing cable; for making all connections; for furnishing and installing all connectors, including wire nuts, splice kits, tape, insulating varnish or sealant and ground lug fasteners.

60. Reconstruct Concrete Headwall, SPV.0105.01.

A Description

This work consists of extending the top of the existing culvert concrete headwall and wingwalls at Station 205+50, 85' RT.

B Materials

Furnish materials according to standard spec 502 for Masonry Anchors Type L No. 4 Bars, standard spec 504 for Concrete Masonry Culverts, and standard spec 505 for Bar Steel Reinforcement Culverts. Furnish concrete having a minimum compressive strength = 3,500 psi.

C Construction

Reconstruct Concrete Headwall according to standard spec 502, 504, and 505 and according to the plan details.

D Measurement

The department will measure Reconstruct Concrete Headwall 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 items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.01	Reconstruct Concrete Headwall	LS

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

61. Lighting Integrator, State Systems, Item SPV.0105.31; Lighting Integrator, City Systems, Item SPV.0105.32.

A Description

These special provisions describe coordinating lighting with various parties; record keeping, and documentation. Where the department is responsible for freeway lighting operation, maintenance, or utility locates on existing systems or systems overlapping project boundaries, the contractor's freeway lighting integrator will serve as the contractor's liaison to the department's electrical operations unit.

B Personnel Qualifications

Assign personnel experienced in underground utility construction and department lighting specifications and practices.

C Construction

At any one time during the project, the contractor shall assign one individual person as the freeway lighting integrator.

The freeway lighting integrator shall:

1. Familiarize himself with the location and nature of existing lighting circuits. This familiarity shall include the extent of any lighting system that overlaps project limits.
2. Maintain a file of applicable permits or licenses issued to the contractor, and convey copies to the Engineer.
3. Keep with him at all times a contact list of affected lighting personnel.
4. Maintain a record of tagouts and the clearance of tagouts.
5. Interface with department electrical personnel to determine how contract limits might affect maintenance or operation of existing systems.
6. Maintain ongoing contact with the department's Diggers' Hotline Coordinator to ensure that each of the two persons knows that all requested utility locates are marked in the field by the appropriate party. The intent here is to assure coordination. This special provision does not transfer additional utility locating responsibilities to the contractor, beyond those responsibilities already assigned to him by other provisions of the contract.
7. Inform the department of any lighting outages, including outside the project limits where a lighting system crosses the project boundary.
8. Maintain in any format real-time records of existing, removed and new lighting facilities. Include utility service extensions. Additional required records will include temporary connections and their ultimate removal.
9. Maintain records of tests, including: "meg" tests, amperage draw per circuit leg, voltage reading at the disconnect, and voltage reading at the furthest pole per circuit leg. Convey these records at time of acceptance or partial acceptance.
10. At the time of acceptance or partial acceptance, convey as-built drawings in both the following formats: plan redlines and .dgn electronic. Include utility service extensions.
11. Secure copies of operators manuals, tear sheets, etc. as may be provided by manufacturers of some lighting materials, and convey a minimum of three sets to the department.
12. Work with the engineer to notify department electrical personnel of acceptance or partial acceptance.
13. Perform related duties as may be needed to ensure continuity of freeway lighting during construction, and orderly transfer upon completion.

D Measurement

The department will measure Lighting Integrator (Various) as one complete lump sum unit of work, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.31	Lighting Integrator, State Systems	LS
SPV.0105.32	Lighting Integrator, City Systems	LS

Payment will be full compensation for personnel costs; and for all required coordination, record-keeping, and documentation..

62. Install Fiber Optic Communications in Cabinet, USH 18 and STH 164, Item SPV.0105.41; USH 18 and Main Street, Item SPV.0105.42; USH 18 and Springdale Road, Item SPV.0105.43; USH 18 and Parklawn Drive, Item SPV.0105.44; USH 18 and Kossow Road, Item SPV.0105.45.

A Description

This special provision describes installing fiber optic communications equipment in traffic signal cabinets.

B Materials

The department will furnish pre-terminated fiber optic patch panels and Ethernet switches. The materials will be provided with the traffic signal cabinet. The patch panels will have pre-terminated fiber optic cable pigtails. If required provide two each 1-meter lengths of ST-ST single mode fiber jumper (2 fibers per jumper) from the patch panel to the Ethernet switch. Provide a 1-meter length of CAT-5e cable from the Ethernet switch to the controller. Provide all patch panel and Ethernet switch attachment hardware.

C Construction

Install the patch panel and Ethernet switch on the side of the traffic signal cabinet opposite the electrical service at a location as approved by the engineer. With approval by the engineer, the Ethernet switch may be placed on a shelf near the patch panel.

Install the pre-terminated fiber optic cable in conduit from the patch panel to the communication vault as specified in standard spec 678.3.1. Leave the remainder of the fiber optic cable coiled in the nearest communication pull box or vault.

Install the fiber jumpers and CAT-5e cable and provide a continuous connection from the communication vault to the controller.

D Measurement

The department will measure Install Fiber Optic Communications in Cabinet (Location) 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
SPV.0105.41	Install Fiber Optic Communications in Cabinet, USH 18 and STH 164	LS
SPV.0105.42	Install Fiber Optic Communications in Cabinet, USH 18 and Main Street	LS
SPV.0105.43	Install Fiber Optic Communications in Cabinet, USH 18 and Springdale Road	LS
SPV.0105.44	Install Fiber Optic Communications in Cabinet, USH 18 and Parklawn Drive	LS
SPV.0105.45	Install Fiber Optic Communications in Cabinet, USH 18 and Kossow Road	LS

Payment is full compensation for installing pre-terminated patch panels, Ethernet switches, and fiber optic cable in conduit; furnishing and installing attachment hardware, fiber jumpers, and CAT-5e cable.

63. Remove Traffic Signals USH 18 and Manhattan Drive, Item SPV.0105.50; USH 18 and STH 164, Item SPV.0105.51; USH 18/STH 164 and Main Street, Item SPV.0105.52; USH 18/STH 164 and Springdale Road, Item SPV.0105.53; USH 18 and Kossow Road, Item SPV.0105.54.

A Description

This special provision describes removing existing traffic signals at the intersections of USH 18 with Manhattan Drive, STH 164, Main Street, Springdale Road and Kossow Road according to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans.

B (Vacant)

C Construction

Arrange for the de-energizing of the traffic signals with the local electrical utility after receiving approval from the engineer that the existing traffic signals can be removed.

Notify the department's Electrical Field Unit at (414) 266-1170 at least three working days prior to the removal of the traffic signals. Complete the removal work as soon as possible following shut down of this equipment.

The department assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working traffic signal equipment to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department.

Remove all standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the transformer bases from each pole. Remove the signal heads, mast arms, luminaires, wiring/cabling, and traffic signal mounting devices from each signal standard, arm or pole. Ensure that all access hand hole doors and all associated hardware remain intact. Dispose of the underground signal cable, internal wires and street lighting cable off the state right-of-way. Deliver the remaining materials to the West Allis Electrical Service Facility at 935 South 60th Street, West Allis, Milwaukee County. Contact the department's Electrical Field Unit at (414) 266-1170 at least three working days prior to delivery to make arrangements.

DOT forces shall remove the signal cabinet from the footing. The signal cabinet and associated signal cabinet equipment will be removed from the site by DOT forces and will remain the property of the department.

D Measurement

The department will measure Remove Traffic Signals (Location) as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.50	Remove Traffic Signals USH 18 and Manhattan Drive	LS
SPV.0105.51	Remove Traffic Signals USH 18 and STH 164	LS
SPV.0105.52	Remove Traffic Signals USH 18/STH 164 and Main Street	LS
SPV.0105.53	Remove Traffic Signals USH 18/STH 164 and Springdale Road	LS
SPV.0105.54	Remove Traffic Signals USH 18 and Kossow Road	LS

Payment is full compensation for removing, disassembling traffic signals, scrapping of some materials, disposing of scrap material, for delivering the requested materials to the department, and incidentals necessary to complete the contract work.

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64. Transporting Signal and Lighting Materials at USH 18 and Manhattan Drive, Item SPV.0105.55; USH 18 and STH 164, Item SPV.0105.56; USH 18 and Main Street, Item SPV.0105.57; USH 18 and Springdale Road, Item SPV.0105.58; USH 18 and Parklawn Drive, Item SPV.0105.59; USH 18 and Kossow Road, Item SPV.0105.60.

A Description

This special provision describes the transporting of department furnished materials for traffic signals and intersection lighting.

B Materials
Transport materials furnished by the department including: monotube arms and luminaire arms (to be installed on monotube assemblies).

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C (Vacant)

D Measurement
The department will measure Transporting Signal and Lighting Materials at (Intersection) 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
SPV.0105.55	Transporting Signal and Lighting Materials at USH 18 and Manhattan Drive	LS
SPV.0105.56	Transporting Signal and Lighting Materials at USH 18 and STH 164	LS
SPV.0105.57	Transporting Signal and Lighting Materials at USH 18 and Main Street	LS
SPV.0105.58	Transporting Signal and Lighting Materials at USH 18 and Springdale Road	LS
SPV.0105.59	Transporting Signal and Lighting Materials at USH 18 and Parklawn Drive	LS
SPV.0105.60	Transporting Signal and Lighting Materials at USH 18 and Kossow Road	LS

Payment is full compensation for transporting the monotube poles, monotube arms and luminaire arms (to be installed on monotubes). Installation of these materials is included under a separate pay item.

65. Install State-Furnished Traffic Signal Cabinet, USH 18 and Manhattan Drive, Item SPV.0105.61; USH 18 and STH 164, Item SPV.0105.62; USH 18 and Main Street, Item SPV.0105.63; USH 18 and Springdale Rd, Item SPV.0105.64; USH 18 and Parklawn Dr, Item SPV.0105.65; USH 18 and Kossow Road, Item SPV.0105.66.

A Description
This special provision describes the transporting and installing of the state-furnished traffic signal cabinet, signal controller, and other cabinet equipment for traffic signals, and for making the cabinet fully operational as shown in the plans.

B Materials

Pick up the state-furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266- 1170 and make arrangements for picking up the materials five working days prior to picking the materials up. The department will provide notification at the preconstmction meeting of the traffic signal cabinet vendor and provide the vendor's contact information.

The region signal engineer will provide the project plans and specifications to the department's traffic signal cabinet vendor prior to scheduled field installation. It shall be the contractor's responsibility to deliver the traffic signal cabinet from the department's Electrical Shop to the site location .

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

C Construction

Perform work according to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

Install the state-furnished traffic signal cabinet on the concrete control cabinet base the same day it is delivered to the site location.

Coordinate directly with the department's traffic signal cabinet vendor to schedule the cabinet acceptance testing. Notify the department' s Electrical Field Unit at (414) 266-1170 at least five working days prior to cabinet acceptance testing and participate in the acceptance testing. The department has the final determination of the cabinet acceptance

D Measurement

The department will measure Install State-Furnished Traffic Signal Cabinet 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
SPV.0105.61	Install State-Furnished Traffic Signal Cabinet, USH 18 and Manhattan Drive	LS
SPV.0105.62	Install State-Furnished Traffic Signal Cabinet, USH 18 and STH 164	LS
SPV.0105.63	Install State-Furnished Traffic Signal Cabinet, USH 18 and Main Street	LS
SPV.0105.64	Install State-Furnished Traffic Signal Cabinet, USH 18 and Springdale Rd	LS

SPV.0105.65	Install State-Furnished Traffic Signal Cabinet, USH 18 and Parklawn Dr	LS
SPV.0105.66	Install State-Furnished Traffic Signal Cabinet, USH 18 and Kossow Road	LS

Payment is full compensation for installing and testing the Traffic Signal Cabinet and cabinet equipment; ·for furnishing and installing all other items necessary (such as, wire nuts, splice kits and/or connectors, tape, insulating varnish, ground lug fasteners, etc.) to make the proposed system complete from the source of supply to the most remote unit; and for clean-up and waste disposal.

66. Install Video Detection System, USH 18 and Manhattan Drive, Item SPV.0105.67; USH 18 and STH 164, Item SPV.0105.68; USH 18 and Main Street, Item SPV.0105.69; USH 18 and Springdale Road, Item SPV.0105.70; USH 18 and Parklawn Drive, Item SPV.0105.71; USH 18 and Kossow Road, Item SPV.0105.72.

A Description

This special provision describes the transporting and installing of department furnished Traffic Signal Video Detection System on Monotubes and Luminaire arms.

B Materials

The contractor shall pick up all the department furnished Video Detection System for all state maintained traffic signals for the project at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical field unit at (414) 266-1170 to make arrangements for picking up the department furnished materials at least five working days prior to material pick-up.

C Construction

Install the Traffic Signal Terra Power Cable 18/3, the camera manufacturer's connector cable whip, pole/arm mounting bracket, extension arm (if required) and camera as shown on the plans (the final determination of location will be made by the department's electrical personnel to ensure best line of sight). The department's Electrical Field Unit (EFU) shall install State-furnished video detection equipment in the traffic signal control cabinet.

Install the Traffic Signal Terra Power Cable 18/3 to run continuously (without splices) from the traffic signal cabinet plus an additional 10 feet to the handhole or base. Leave 10 feet of cable in each pull box. Install the camera manufacturer's connector cable whip from the camera to the handhole or base.

Mark each end of the lead appropriately to indicate the equipment label (i.e. VID1, VID2, etc.). Splice, solder and shrink wrap the Terra power cable to the camera manufacturer's cable whip. Allow 3 feet of slack on each cable.

Notify department's Electrical Shop at (414) 266-1170, upon completion of the Monotube and Luminaire arm installation of the Traffic Signal Terra Power Cable 18/3, cable whip and camera at each intersection. Camera programming will be performed by the Vendor with assistance from the department and the contractor when operation of the permanent signal begins.

D Measurement

The department will measure Install Video Detection System (Location) as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.67	Install State-Furnished Video Detection System, USH 18 and Manhattan Drive	LS
SPV.0105.68	Install State-Furnished Video Detection System, USH 18 and STH 164	LS
SPV.0105.69	Install State-Furnished Video Detection System, USH 18 and Main Street	LS
SPV.0105.70	Install State-Furnished Video Detection System, USH 18 and Springdale Road	LS
SPV.0105.71	Install State-Furnished Video Detection System, USH 18 and Parklawn Drive	LS
SPV.0105.72	Install State-Furnished Video Detection System, USH 18 and Kossow Road	LS

Payment is full compensation for transporting and installing the Intersection Video Detection System, Traffic Signal Terra Power Cable 18/3, cable whips, mounting hardware, cameras and programming.

67. EVP Detector Head Installation, USH 18 and Manhattan Drive, Item SPV.0105.73; USH 18 and STH 164, Item SPV.0105.74; USH 18 and Main Street, Item SPV.0105.75; USH 18 and Springdale Road, Item SPV.0105.76; USH 18 and Parklawn Drive, Item SPV.0105.77; USH 18 and Kossow Road, Item SPV.0105.78.

A Description

This special provision describes the transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads, EVP Confirmation Lights and EVP Detector Head Mounting Brackets at the intersections of USH 18 with Manhattan Drive, STH 164, Main Street, Springdale Road, Parklawn Drive and Kossow Road.

B Materials

Use materials furnished by the department including: Emergency Vehicle Preemption (EVP) Detector Heads, EVP Confirmation Lights and EVP Detector Head Mounting Brackets.

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials three working days prior to picking the materials up.

C Construction

Install the EVP detector heads, EVP Confirmation Lights and EVP detector head mounting brackets as shown on the plans. The department will determine the exact location to ensure that the installation does not create a sight obstruction. The department will terminate the EVP cable ends and install the discriminators and card rack in the cabinet.

Notify the department's Electrical shop at (414) 266-1170 upon completion of the installation of the Emergency Vehicle Preemption (EVP) Detector Heads, EVP Confirmation Lights and EVP Detector Head Mounting Brackets.

D Measurement

The department will measure EVP Detector Head Installation (Location) 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
SPV.0105.73	EVP Detector Head Installation, USH 18 and Manhattan Drive	LS
SPV.0105.74	EVP Detector Head Installation, USH 18 and STH 164	LS
SPV.0105.75	EVP Detector Head Installation, USH 18 and Main Street	LS
SPV.0105.76	EVP Detector Head Installation, USH 18 and Springdale Road	LS
SPV.0105.77	EVP Detector Head Installation, USH 18 and Parklawn Drive	LS
SPV.0105.78	EVP Detector Head Installation, USH 18 and Kossow Road	LS

Payment is full compensation for transporting and installing of department furnished emergency vehicle preemption (EVP) detector heads, EVP confirmation lights and EVP detector head mounting brackets.

68. Temporary Infrared EVP System USH 18 and Manhattan Drive, Item SPV.0105.79; USH 18 and STH 164, Item SPV.0105.80; USH 18 and Main Street, Item SPV.0105.81; USH 18 and Springdale Road, Item SPV.0105.82; USH 18 and Kossow Road, Item SPV.0105.83.

A Description

This special provision describes furnishing, installing, and maintaining temporary infrared EVP systems at the temporary signalized intersection as shown in the plans.

B Materials

Furnish an infrared emergency vehicle preemption system compatible with the City of Waukesha system and users. Contact the City of Waukesha Engineering Department, Paul Day, (262) 524-3585, pday@ci.waukesha.wi.us, for information regarding the equipment needs and operational requirements of the emergency vehicle preemption system.

C Construction

The temporary infrared EVP system, as shown in the temporary traffic signal plans or as directed by the engineer, shall be complete in place, tested, and in full operation during each stage of construction.

Install the temporary infrared EVP system as shown in the plans and according to the manufacturer's recommendations. Detectors may be mounted on the temporary traffic signal span wire or wood poles. It shall be the contractor's responsibility to relocate the temporary infrared EVP detectors to a suitable location if there is impedance on the sensor operation. Arrange for testing of equipment prior to acceptance of the installation for each construction stage.

All cables associated with the temporary infrared EVP system shall be routed to the cabinet. Each lead shall be appropriately marked as to which EVP channel it is associated.

Periodic adjustment and/or moving of the temporary infrared EVP detectors may be required due to changes in traffic control, staging, or other construction operations.

Ensure that the temporary infrared EVP system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

The temporary EVP system may not be used for the permanent installation.

D Measurement

The department will measure Temporary Infrared EVP System (Location) as a single complete lump sum unit of work per intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.79	Temporary Infrared EVP System USH 18 and Manhattan Drive	LS
SPV.0105.80	Temporary Infrared EVP System USH 18 and STH 164	LS
SPV.0105.81	Temporary Infrared EVP System USH 18 and Main Street	LS
SPV.0105.82	Temporary Infrared EVP System USH 18 and Springdale Road	LS
SPV.0105.83	Temporary Infrared EVP System USH 18 and Kossow Road	LS

Payment is full compensation for furnishing and installing all required equipment, materials, and supplies; for maintaining and changing the EVP detectors to match the plans, traffic control, and construction staging; for relocating the temporary EVP detectors due to construction activities, if required; for testing the EVP system for each stage and sub-stage of construction; for periodically cleaning all temporary EVP detectors; and for cleaning up and properly disposing of waste.

69. Temporary Vehicle Detection System, USH 18 and Manhattan Drive, Item SPV.0105.84; USH 18 and STH 164, Item SPV.0105.85; USH 18 and Main Street, Item SPV.0105.86; USH 18 and Springdale Road, Item SPV.0105.87; USH 18 and Kossow Road, Item SPV.0105.88.

A Description

This work shall consist of furnishing, installing, maintaining and placing into operation a temporary non-intrusive vehicle detection system (NIVDS) as shown on the plans, and as directed by the engineer in the field.

B Materials

This specification sets forth the minimum requirements for a system that detects vehicles on a roadway and provides detection outputs to a traffic signal controller. The materials shall also include all brackets, mounting hardware, cable, terminations, interface panels, and all other incidentals for the installation of the non-intrusive vehicle detection equipment. This equipment shall meet the NEMA environmental, power and surge ratings as set forth in NEMA TS2 specifications.

All detection equipment, components, and terminations supplied under this item shall be fully compatible with the temporary traffic signal controller supplied for the project. The system architecture shall fully support Ethernet networking of system components. All required interface equipment needed for transmitting and receiving data shall be provided with the NIVDS.

The NIVDS shall provide flexible detection zone placement anywhere and at any orientation. Preferred detector configurations shall be detection zones placed across lanes of traffic for optimal count accuracy, detection zones placed parallel to lanes of traffic for

optimal presence detection accuracy of moving or stopped vehicles. Detection zones shall be able to be overlapped for optimal road coverage.

C Construction

The temporary NIVDS shall be installed by supplier factory-certified installers and as recommended by the supplier and documented in installation materials provided by the supplier.

In the event, at installation or turn on date, a noticeable obstruction is present in line with the detection zone(s), the contractor shall be obligated to advise the engineer before setting the zone.

The non-intrusive vehicle detection system, as shown in the traffic signal construction plans, shall be complete, in place, tested, and in full operation during each stage of construction.

Maintain all temporary vehicle detection zones as the plans show or as the engineer directs. The temporary vehicle detection zones shall be set near the vicinity and with approximate distance from the stop bar as shown on the plans. Check temporary vehicle detection zones every other week and at the opening of each stage of temporary traffic signal operation to ensure that they are working properly and aimed properly. Periodic adjustment of the detection zones and/or moving of the temporary vehicle detection sensors may be required due to changes in traffic control, staging, or other construction operations.

Ensure the non-intrusive vehicle detection system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

D Measurement

The department will measure Temporary Vehicle Detection System for Intersect (Location) 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
SPV.0105.84	Temporary Vehicle Detection System, USH 18 and Manhattan Drive	LS
SPV.0105.85	Temporary Vehicle Detection System, USH 18 and STH 164	LS
SPV.0105.86	Temporary Vehicle Detection System, USH 18 and Main Street	LS
SPV.0105.87	Temporary Vehicle Detection System, USH 18 and Springdale Road	LS
SPV.0105.88	Temporary Vehicle Detection System, USH 18 and Kossow Road	LS

Payment is full compensation for furnishing and installing the temporary non-intrusive vehicle detection system, including cabling, mounting brackets, mounting hardware, terminations, interface panels, testing and set up; for periodic checking and resetting of detection zones; for periodic cleaning for dirt and dust build-up; and for removing all equipment at the completion of the project.

70. Remove Loop Detector Wire and Lead-in Cable, USH 18 and Manhattan Drive, Item SPV.0105.89; USH 18 and STH 164, Item SPV.0105.90; USH 18 and Main Street, Item SPV.0105.91; USH 18 and Springdale Road, Item SPV.0105.92; USH 18 and Kossow Road, Item SPV.0105.93.

A Description

This special provision describes removing loop detector wire and lead-in cable at the intersections of USH 18 with Manhattan Drive, STH 164, Main Street, Springdale Road and Kossow Road. Removal will be according to standard spec 204, as shown in the plans, and as hereinafter provided.

B (Vacant)

C Construction

Notify the department's Electrical Field Unit at (414) 266-1170 at least three working days prior to the removal of the loop detector wire and lead-in cable.

Remove and dispose of detector lead-in cable including loop wire for abandoned loops off the right-of-way.

D Measurement

The department will measure Remove Loop Detector Wire and Lead-in Cable as a single lump sum unit of work for each intersection, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.89	Remove Loop Detector Wire and Lead in Cable, USH 18 and Manhattan Drive	LS
SPV.0105.90	Remove Loop Detector Wire and Lead in Cable, USH 18 and STH 164	LS
SPV.0105.91	Remove Loop Detector Wire and Lead in Cable, USH 18 and Main Street	LS
SPV.0105.92	Remove Loop Detector Wire and Lead in Cable, USH 18 and Springdale Road	LS
SPV.0105.93	Remove Loop Detector Wire and Lead in Cable, USH 18 and Kossow Road	LS

Payment is full compensation for removing, scrapping, and disposing of material and incidentals necessary to complete the contract work.

71. Wall Modular Block Gravity LRFD, Item SPV.0165.01.

A Description

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

B Materials

B.1 Proprietary Modular Block Gravity Wall Systems

The supplied wall system must be from the department's approved list of modular block gravity wall systems.

Proprietary wall systems may be used for this work, but must conform to the requirements of this specification and be pre-approved by the departments' Bureau of Structures, Structures Design Section. The department maintains a list of pre-approved systems of retaining walls. To be eligible for use on this project, a system must have been pre-approved and added to that list prior to the bid opening date. The name of the companies supplying pre-approved material shall be furnished within 25 days after the award of contract.

Applications for pre-approval may be submitted at any time. Applications must 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 Structures Design Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to supply a design and supporting documentation as required by this special provision for review by the department to show that the proposed wall design is in compliance with the design specifications. The following shall be submitted to the engineer for review and acceptance no later than 21 days before wall construction will begin.

The design/shop plans shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the project identification number and structure number. Design calculations and notes shall be on 8½ 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 and calculations shall be signed, sealed, and dated by a professional engineer licensed in the State of Wisconsin.

The wall shall be designed for the heights shown on the plans. The design shall be in compliance with the *AASHTO LRFD Design Specifications* 5th *Edition* 2010 (AASHTO LRFD) with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current *Standard Specifications for Highway and Structure Construction (*Standard Specifications), Chapter 14 of the WisDOT LRFD Bridge Manual and standard design procedures as determined by the department. Loads, load combinations and load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.6-1 in AASHTO LRFD.

The design must include analyses at critical sections that clearly show the Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing check. Internal stability shall also be considered at each block level. The design shall include an overburden surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as shown on the plans. The width of the modular block from front face to back face of the wall shall be included in the design computations and shown on the wall shop drawings. The minimum embedment to the bottom of the modular block shall be 1 foot 6 inches, or as specified in the plan.

Submit the following to the engineer for review: complete design calculations, explanatory notes, supporting materials, specifications, and detailed plans and shop drawings for the proposed wall system. Sample analyses and hand output shall be submitted to verify the output by the software. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal stabilities as defined in AASHTO LRFD.

The wall submittal package shall be submitted electronically to the engineer and Structures Design Section. Submit all required information no later than 30 days prior to beginning construction of the wall. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls.

B.3 Wall System Components

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

B.3.1 Backfill

Wall Backfill, Type A, shall comply with the requirements for coarse aggregate No. 1 as given in standard spec 501.2.5.4. All backfill placed within a zone from the base of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

A layer of Geotextile Fabric Type "DF" (Schedule B) shall be placed vertically between the retained soil and the Type A backfill. The geotextile fabric shall extend from the top of the leveling pad to 6 inches below the surface of the retained soil. The geotextile shall then wrap across the top of the Type A backfill to the back of the block wall facing.

B.3.2 Wall Facing

Provide wall facing units that consist of precast modular concrete blocks. All units shall incorporate a mechanism or devices that will develop a mechanical connection between vertical block layers. Units that are cracked, chipped or have other imperfections according to ASTM C1372 or excessive efflorescence 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, or chosen by the engineer.

The top course of facing units shall be a solid precast concrete unit designed to be compatible with the remainder of the wall unless a cast-in-place concrete cap is shown on the plans. 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 may also be used to finish the wall. A cap of this type shall be designed to have color and an appearance that complements the remainder of the wall. Concrete for all cast-in-place caps shall be Grade A and shall conform to the requirements of Section 501 of the Standard Specifications. Reinforcement steel shall have a yield of stress of 60 ksi. The vertical dimension of the cap shall not be less than 3½ inches. Expansion joints shall be placed in the cap to correspond with each 24-inch change in vertical wall height and at maximum spacing of 10 feet.

Block dimensions may vary no more than ±1/8 inch from the standard values published by the manufacturer, according to ASTM C1372. 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 portion of the block is 1.75 inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

Cementitious materials and aggregates for modular blocks shall conform to the requirements of ASTM C1372 section 4.1 and 4.2. Modular blocks shall meet the following requirements:

Test	Method	Requirement
Compressive Strength (psi)	ASTM C140	5000 min.
Water Absorption (%)	ASTM C140	6 max.
Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples	ASTM C1262(1)	 1.0 max.(2) 1.5 max.(2)

(1) Test shall be run using a 3% saline solution.

(2) Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable

All blocks shall be certified as to strength, absorption, and freeze-thaw requirements unless, due to contract changes after letting, certified blocks are not available when required. At the time of delivery of the certified blocks, furnish the engineer a certified test report from a department-approved independent testing laboratory for each lot of modular blocks. The certified test report shall clearly identify the firm conducting the sampling and testing, the type of block, the date sampled, name of the person conducting the sampling, the represented lot, the number of blocks in the lot, and the specific test results for each of the stated requirements of this specification. A lot shall not exceed 5000 blocks or fraction thereof produced in day. 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 the contractor's expense.

A department-approved independent testing laboratory shall control and conduct all modular block sampling and testing for certification. Prior to sampling, the manufacturer's representative shall identify all pallets of modular blocks contained in each lot. All pallets of blocks within the lot shall be numbered and marked to facilitate random sample selection. The representative of the independent testing laboratory shall identify five pallets of blocks by random numbers and shall then select one block from each of these pallets. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. The contractor shall remove all rejected blocks from the project at no expense to the department.

The department may conduct testing of certified or non-certified modular blocks lots delivered to the project. The department will not conduct freeze-thaw testing on blocks less than 45 days old. If a random sample of five blocks of any lot tested by the department fails to meet any of the requirements of this specification (nonconforming), the contractor shall remove from the project site all blocks from the failed lot that have not been installed in the finished work at no cost to the department, unless the engineer allows otherwise. Nonconforming blocks installed in the finished work will be considered approved by the department as stated in standard spec 106.5(2) and any adjustment to the contract price will not exceed the price of the blocks charged by the supplier.

B.3.3 Leveling Pad

The leveling pad shall step to follow the general slope of the ground line. The leveling pad steps shall keep the bottom of the wall below the minimum embedment. Additional embedment that is greater than the minimum embedment will not be measured for payment. The bottom row of blocks shall be horizontal and 100% of the block surface shall bear on the leveling pad.

Provide a wall leveling pad that consists of poured concrete masonry, Grade A, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard specification.

The concrete leveling pad shall be 6 inches deep. The leveling pad shall be as wide as the proposed blocks plus six inches, with six inches of the leveling pad extending beyond the front face of the blocks. A concrete leveling pad shall be provided in following scenarios:

a. When the wall height measured from the top of the leveling pad to the top of the wall exceeds 5 feet at any point along the entire wall length.
b. a structure number has been assigned (such as R-XX-XXX), regardless of wall height.

Additionally, for walls that are less than or equal to 5 feet in height and do not have a wall number assigned to them, a compacted 1 foot(minimum) deep leveling pad made from base aggregate dense 1¼-inch in conformance with standard spec 305, may be used. The aggregate leveling pad shall be as wide as the blocks plus 12 inches, and the modular blocks shall be centered on the leveling pad.

C Construction

C.1 General

Construct the modular block gravity wall according to the manufacturer's instructions, at the locations and to the dimensions shown on the plan and as directed by the engineer. 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 face of the wall.

Place 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. Backfilling shall closely follow erection of each course of wall facing units.

Compact each layer of wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units. At no expense to the department, correct any such damage or misalignment as directed by the engineer.

Do not operate tracked or wheeled equipment within 3 feet of the back face of the blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

After construction of the wall, restore the surrounding area located above and below all precast block retaining wall sites to its original condition and to the finished details on the plans.

C.2 Geotechnical Information
Geotechnical data to be used in the design of the wall is given on the wall plan. After completion of excavation, notify the department and allow two days for the Regional Soils Engineer to review the foundation.

D Measurement
The department will measure Wall Modular Block Gravity LRFD in area by the square foot acceptably completed, measured as the vertical area within the pay limits the contract plans show. No other measurement of quantities shall be made in the field unless the Engineer directs in writing a change to the limits indicated on the contract plans.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.01	Wall Modular Block Gravity LRFD	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of surplus materials; supplying all necessary wall components to produce a functional system including cap and copings; constructing the retaining system and wall drainage system; providing backfill, backfilling, and compacting the backfill; and furnishing and installing geotextile fabric. Parapets, railings, and other items above the wall cap or coping will be paid for separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively.

72. Removing Concrete Gutter Surface Partial Depth, Item SPV.0165.02.

A Description
This special provision describes removing a portion of the concrete surfaces of the existing curb and gutter flange as shown on the plans according to standard spec 204, and as hereinafter provided.

B (Vacant)

C Construction
C.1 Equipment
Use a machine that provides a surface finish acceptable to the engineer. Shroud the machine to prevent discharge of any loosened material into adjacent work areas or live traffic lanes.

Use a machine that is equipped with electronic devices that provide accurate depth, grade and slope control, and acceptable dust control system.

C.2 Methods
Remove existing concrete gutter to the depths as shown on the plan by grinding, planing, chipping, sawing, milling, or by using other methods approved by the engineer.

Perform the removal operation in such a manner as to preclude damage to the remaining gutter and results in a reasonable uniform plane surface free of excessive large scarification marks and having a uniform transverse slope.

Windrowing or storing of the removed material on the roadway will only be permitted in conjunction with a continuous removal and pick-up operation. During non-working hours, clear the roadway of all materials and equipment. The removed pavement shall become the property of the contractor. Properly dispose of it according to standard spec 204.3.1.3.

D Measurement
The department will measure Removing Concrete Gutter Surface Partial Depth in area by the square foot of surface area removed, acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.02	Removing Concrete Gutter Surface Partial Depth	SF

Payment is in full compensation for removing the concrete; and for disposing of materials.

73. Stamped Colored Concrete Sidewalk 5-Inch, Item SPV.0165.03.

A Description
This special provision describes constructing stamped colored concrete sidewalk at locations shown on the plan and as hereinafter provided. Perform this work according to the requirements of standard spec 602, except as hereinafter provided.

B Materials
The materials used for the coloring of concrete shall be according to industry and the manufacturer's standards.

Use low chert concrete for the colored concrete.

The concrete color agent shall meet the following requirements:

Color:	Dark Redwood with Charcoal Release
Method of Application:	Integral Color
Stamped Patter:	Running Bold Old Brick

The City of Waukesha representative may, at their discretion, change the requested color and/or stamp pattern.

C Construction

Prepare a representative slab for demonstration purposes and for obtaining approval of the proposed concrete color and stamping pattern. The size of the slab shall be a minimum of 10 square feet. The cost of producing the representative slab shall be paid for by the square foot as defined below. Protect the slab while curing and remove and properly dispose of it upon approval of the concrete color.

Prepare the representative sample 30 days prior to your anticipated date for beginning installation of the colored concrete sidewalk. During this timeframe, the City of Waukesha will have the option of approving the concrete color and stamping pattern, or requesting a change in either the color and/or pattern.

D Measurement

The department will measure Stamped Colored Concrete Sidewalk 5-Inch by area in square feet, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.03	Stamped Colored Concrete Sidewalk 5-Inch	SF

Payment is full compensation for furnishing and installing the concrete coloring agent; constructing the colored and stamped surfaces; preparing a representative sample; properly removing of surplus materials.

74. Removing Asphaltic Surface Milling, 4-Inch Special, Item SPV.0195.01.

A Description

This special provision describes milling and removing the 3-inch asphalt surface overlay and 1-inch of the underlying concrete pavement along USH 18 as shown on the plans and according to standard spec 204, and as hereinafter provided.

B (Vacant)

C Construction

C.1 Equipment

Use a machine that provides a surface finish acceptable to the engineer. Shroud the machine to prevent discharge of any loosened material into adjacent work areas or live traffic lanes.

Use a machine that is equipped with electronic devices that provide accurate depth, grade and slope control, and acceptable dust control system.

C.2 Methods

Remove existing asphalt surface and concrete pavement to a depth of 4 inches as shown on the plan by grinding, planing, chipping, sawing, milling, or by using other methods approved by the engineer.

Perform the removal operation in such a manner as to preclude damage to the remaining pavement and results in a reasonable uniform plane surface free of excessive large scarification marks and having a uniform transverse slope.

Windrowing or storing of the removed material on the roadway will only be permitted in conjunction with a continuous removal and pick-up operation. During non-working hours, clear the roadway of all materials and equipment. The removed pavement shall become the property of the contractor. Properly dispose of it according to standard spec 204.3.1.3.

D Measurement

The department will measure Removing Asphaltic Surface Milling, 4-Inch Special by the ton of material removed, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.01	Removing Asphaltic Surface Milling, 4-Inch Special	Ton

Payment is in full compensation for removing the asphaltic surface and a portion of the underlying concrete pavement; and for disposing of materials.

ADDITIONAL SPECIAL PROVISION 4

Payment to First-Tier Subcontractors

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

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

Payment to Lower-Tier Subcontractors

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

Release of Routine Retainage

After granting substantial completion the department may reduce the routine retainage withheld from the prime contractor to 75 percent of the original total amount retained.

When the Department sends the semi-final estimate the department may reduce the routine retainage withheld from the prime contractor to 10 percent of the original total amount retained.

Within 30 calendar days of receiving the semi-final estimate from the department, submit written certification that subcontractors at all tiers are paid in full for acceptably completed work and that no routine retainage is being withheld. The department will pay the prime contractor in full and reduce the routine retainage withheld from the prime contractor to zero when the department approves the final estimate.

This special provision does not limit the right of the department, prime contractor, or subcontractors at any tier to withhold payment for work not acceptably completed or work subject to an unresolved contract dispute.

ADDITIONAL SPECIAL PROVISION 6
ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

550.5.2 Piling

Add the following as paragraph three effective with the December 2015 letting:

(3) The department will not entertain a change order request for a differing site condition under 104.2.2.2 or for a quantity change under 104.2.2.4.3 for the Piling bid items. Instead the department will adjust pay under the Piling Quantity Variation administrative item if the total driven length of each size is less than 85 percent of, or more than 115 percent of the contract quantity as follows:

Percent of Contract Length Driven	Pay Adjustment
< 85	(85% contract length - driven length) x 20% unit price
> 115	(driven length - 115% contract length) x 5% unit price

643.2.1 General

Replace paragraph two with the following effective with the December 2015 letting:

(2) Use reflective sheeting from the department's approved products list on barricades, drums, and flexible tubular marker posts.

Errata

Make the following corrections to the standard specifications:

641.2.9 Overhead Sign Supports

Correct errata adding back accidentally deleted paragraphs one through three.

(1) Provide commercially fabricated overhead sign supports conforming to AASHTO design and fabrication standards for structural supports for highway signs, luminaires, and traffic signals. Use a design life of 50 years with a wind importance factor of 1.00. Design to withstand a 3 second gust wind speed of 90 mph. Do not use the methods of appendix C of those AASHTO standards.

(2) Design structures, listed as applicable structure types in the AASHTO standards, to the fatigue category criteria as follows:

1. Structures carrying variable message signs:
   - Category I criteria for structures over all roadway types.
2. Structures carrying type II or III signs:
   - Category I criteria for structures used over highways and free flow ramps.
   - Category II criteria for structures with arms greater than 30 feet used over local roads and city streets.
   - Category III criteria for structures with arms 30 feet or less used over local roads and city streets.

(3) Use the posted speed limit of the roadway beneath the structure for truck-induced gusts.

(4) Submit shop drawings identified by structure number, design computations, and material specifications, to the engineer before erecting sign supports. Provide tightening procedures for mast arm or luminaire arm to pole shaft connections on the shop drawings. Have a professional engineer registered in the state of Wisconsin sign, seal, and date the shop drawings and certify that the design conforms to AASHTO standards and the contract.

(5) Provide steel pole shafts and mast arms zinc coated according to ASTM A123. Provide tapered pole and arm shafts with a minimum taper of 0.14 inch per foot for single-member vertical and single-member horizontal structure components. Provide bolts and other hardware conforming to 641.2.2.

ADDITIONAL SPECIAL PROVISION 7

A. Reporting 1st Tier and DBE Payments During Construction

1. Comply with reporting requirements specified in the department's Civil Rights Compliance, Contractor's User Manual, Sublets and Payments.
2. Report payments to all DBE firms within 10 calendar days of receipt of a progress payment by the department or a contractor for work performed, materials furnished, or materials stockpiled by a DBE firm. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.
3. Report payments to all first tier subcontractor relationships within 10 calendar days of receipt of a progress payment by the department for work performed. Report the payment as specified in A(1) for all work satisfactorily performed.
4. All tiers shall report payments as necessary to comply with the DBE payment requirement as specified in A(2).
5. Require all first tier relationships, DBE firms and all other tier relationships necessary to comply with the DBE payment requirement in receipt of a progress payment by contractor to acknowledge receipt of payment as specified in A(1), (2), (3) and (4).
6. All agreements made by a contractor shall include the provisions in A(1), (2), (3), (4) and (5), and shall be binding on all first tier subcontractor relationships and all contractors and subcontractors utilizing DBE firms on the project.

B. Costs for conforming to this special provision are incidental to the contract.

ADDITIONAL SPECIAL PROVISION 9
Electronic Certified Payroll Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to submit certified payrolls electronically. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/default.aspx

(2) Ensure that all tiers of subcontractors, as well as all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Tess Mulrooney at 608-267-4489 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator send several sample electronic files to Tess two months before a payroll needs to be submitted. Not every contractor's payroll system is capable of producing export files. For details, see pages 17-22 of the CRCS System Background Information manual available online on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payroll-manual.pdf

Effective August 2015 letting

BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or $2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this “Buy America” provision.

http://wisconsindot.gov/rdwy/cmm/cm-02-28.pdf

Upon completion of the project certify to the engineer, in writing using department form WS4567, that all steel, iron, and coating processes for steel or iron incorporated into the contract work conform to these "Buy America" provisions. Attach a list of exemptions and their associated costs to the certification form. Department form WS4567 is available at:

http://wisconsindot.gov/rdwy/worksheets/ws4567.doc

Effective with September 2004 Letting

WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS AND TRANSPORTATION FACILITIES

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

I. WAGE RATES, HOURS OF LABOR AND PAYMENT OF WAGES

The schedule of "Minimum Wage Rates" attached hereto and made a part hereof furnishes the prevailing wage rates that have been determined pursuant to Section 103.50 of the Wisconsin Statutes. These wage rates are the minimum required to be paid to the various laborers, workers, mechanics and truck drivers employed by contractors and subcontractors on the construction work embraced by the contract and subject to prevailing hours and wages under Section 103.50, Stats. If necessary to employ laborers, workers, mechanics or truck drivers whose classification is not listed on the schedule, they shall be paid at rates conformable to those listed for similar classifications. Apprentices shall be paid at rates not less than those prescribed in their state indenture contacts.

While the wage rates shown are the minimum rates required by the contract to be paid during its life, this in not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

Pursuant to Section 103.50 of the Wisconsin Statutes, the prevailing hours of labor have been determined to be up to 10 hours per day and 40 hours per calendar week Monday through Friday. If any laborer, worker, mechanic or truck driver is permitted or required to work more than the prevailing number of hours per day or per calendar week on this contract, they shall be paid for all hours in excess of the prevailing hours at a rate of at least one and one-half (1 1/2) times their hourly rate of pay. All work on Saturday, Sunday and the following holidays is to be paid at time and a half: (1) January 1, (2) the last Monday in May, (3) July 4, (4) the first Monday in September, (5) the fourth Thursday in November, (6) December 25, (7) the day before if January 1, July 4 or December 25 falls on a Saturday and (8) the day following if January 1, July 4 or December 25 falls on a Sunday.

All laborers, workers, mechanics and truck drivers shall be paid unconditionally not less often than once a week. Persons who own and operate their own trucks must receive the prevailing truck driver rate for the applicable type of truck (i.e. 2 axle, 3 or more axle, articulated, eculid or dumptor) he or she operates, plus an agreed upon amount for the use of his or her truck. Every owner-operator MUST be paid separately for their driving and for the use of their truck.

For those projects subject to the requirements of the Davis-Bacon Act, the Secretary of Labor will also have determined "Minimum Wage Rates" for work to be performed under the contract. These rates are, for all or most of the labor, worker, mechanic or truck driver classifications, identical to those established under Section 103.50 of the Wisconsin Statutes. In the event the rates are not identical, the higher of the two rates will govern.

II. PAYROLL REQUIREMENTS

All contractors and subcontractors must submit weekly Certified Payrolls and Compliance Statement verifying that all laborers, workers, mechanics and truck drivers working on the project have been paid the prevailing wage rates for all work performed under the contract required by Section 103.50 of the Wisconsin Statutes.

III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the Department, the contractor shall post the following in at least one conspicuous place at the site of work:

a. "NOTICE TO EMPLOYEES," which provides information required to be posted by the provisions of Section 103.50 of the Wisconsin Statutes.

b. A copy of the State of Wisconsin Minimum Wages Rates. (Four pages.)

c. A copy of the contractor's Equal Employment Opportunity Policy.

d. On any project involving federal aid, in addition to the furnished postings, the contractor shall post a copy of the "Davis-Bacon Act, Minimum Wage Rates". (Three pages.)

IV. WAGE RATE REDISTRIBUTION

The amount specified as the hourly basic rate of pay and the amount(s) specified as the fringe benefit contribution(s), for all classes of laborers, workers, mechanics or truck drivers may be redistributed, when necessary, to conform to those specified in any applicable collective bargaining agreement, provided that both parties to such agreement

request and receive the approval for any such redistribution from both the Department of Transportation and the Department of Workforce Development prior to the implementation of such redistribution.

V. ADDITIONAL CLASSIFICATIONS

Any unlisted laborer or mechanic classification that is needed to perform work on this project, and is not included within the scope of any of the classifications listed in the application prevailing wage rate determination, may be added after award only if all of the following criteria have been met:

1. The affected employer(s) must make a written request to WisDOT Central Office to utilize the unlisted classification on this project.

2. The request must indicate the scope of the work to be performed by the unlisted classification and must indicate the proposed wage/fringe benefit package that the unlisted classification is to receive.

3. The work to be performed by the unlisted classification must not be performed by a classification that is included in the applicable prevailing wage rate determination.

4. The unlisted classification must be commonly employed in the area where the project is located.

5. The proposed wage/fringe benefit package must bear a reasonable relationship to those set forth in the applicable prevailing wage rate determination.

6. The request should be made prior to the actual performance of the work by the unlisted classification.

7. DWD must approve the use of the unlisted classification and the proposed wage/fringe benefit package. USDOL also must approve the use of the unlisted classification and the proposed wage/fringe benefit package on federal aid projects.

8. WisDOT and DWD may amend the proposed wage/fringe benefit package, as deemed necessary, and may set forth specific employment ratios and scope of work requirements in the approval document.

The approved wage/fringe benefit package shall be paid to all laborers, workers, mechanics or truck drivers performing work within the scope of that performed by the unlisted classification, from the first day on which such work is performed. In the event that work is performed by the unlisted classification prior to approval, the wage/fringe benefit package to be paid for such work must be in conformance with the wage/fringe

benefit package approved for such work. Under this arrangement a retroactive adjustment in wages and/or fringe benefits may be required to be made to the affected laborers, workers, mechanics or truck drivers by the affected employer(s).

ANNUAL PREVAILING WAGE RATE DETERMINATION
FOR ALL STATE HIGHWAY PROJECTS
WAUKESHA COUNTY

Compiled by the State of Wisconsin - Department of Workforce Development
for the Department of Transportation
Pursuant to s. 103.50, Stats.
Issued on May 1, 2015

CLASSIFICATION: Contractors are required to call the Department of Workforce Development if there are any questions reqarding the proper trade or classification to be used for any worker on a public works project.

OVERTIME: Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

FUTURE INCREASE: If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

PREMIUM PAY: If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

SUBJOURNEY: Wage rates may be available for some of the classifications indicated below. Any employer that desires to use any subjourney classification on a project MUST request the applicable wage rate from the Department of Workforce Development PRIOR to the date such classification is used on such project. Form ERD-10880 is available for this purpose and can be obtained by writing to the Department of Workforce Development, Equal Rights Division, P.O. Box 8928, Madison, WI 53708.

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Bricklayer, Blocklayer or Stonemason	35.37	17.99	53.36
Carpenter	34.13	20.61	54.74
Future Increase(s): Add $1.50/hr on 6/1/2015; Add $1.65/hr on 6/1/2016.			
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Cement Finisher	32.75	19.21	51.96
Future Increase(s): Add $1.87 on 6/1/15; Add $1.75 on 6/1/16.			
Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Electrician	33.93	22.77	56.70
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Fence Erector	23.73	19.09	42.82
Ironworker	30.77	23.97	54.74
Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Line Constructor (Electrical)	39.50	21.04	60.54
Painter	29.22	16.69	45.91
Pavement Marking Operator	30.27	18.79	49.06
Piledriver	30.11	26.51	56.62
Future Increase(s): Add $1.50/hr on 6/1/2015; Add $1.60/hr on 6/1/2016.			
Premium Pay: Add $.65/hr for Piledriver Loftsman; Add $.75/hr for Sheet Piling Loftsman. DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Roofer or Waterproofer	29.40	17.05	46.45
Teledata Technician or Installer	24.89	17.15	42.04
Tuckpointer, Caulker or Cleaner	33.76	17.82	51.58
Underwater Diver (Except on Great Lakes)	35.40	15.90	51.30
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	35.55	15.57	51.12
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	31.60	15.19	46.79
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.65	13.44	41.09
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.68	12.83	38.51
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	11.63	33.38
TRUCK DRIVERS			
Single Axle or Two Axle	25.18	18.31	43.49
Future Increase(s): Add $1.15/hr on 6/1/2015. Premium Pay: DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.			
Three or More Axle	28.75	13.54	42.29
Articulated, Euclid, Dumptor, Off Road Material Hauler	30.27	21.15	51.42
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Pavement Marking Vehicle	23.16	17.13	40.29
Shadow or Pilot Vehicle	24.37	17.77	42.14
Truck Mechanic	28.75	13.54	42.29
LABORERS			
General Laborer	27.06	20.03	47.09
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: Add $.15/hr for air tool operator, joint sawer and filler (pavement), vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add $.35/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add $.50/hr for line and grade specialist; Add $.65/hr for blaster and powderman; Add $2.01/hr for topman; Add $2.46/hr for bottomman; Add $3.23/hr for pipelayer. / DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
Asbestos Abatement Worker	22.05	18.41	40.46
Landscaper	27.06	20.03	47.09
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Flagperson or Traffic Control Person	23.55	20.03	43.58
Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.			
Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.71	16.01	33.72
Railroad Track Laborer	14.50	4.07	18.57
HEAVY EQUIPMENT OPERATORS			
Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Traveling Crane (Bridge Type).	37.72	21.15	58.87
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs., & Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver.	37.22	21.15	58.37
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boatmen (NOT Performing Work on the Great Lakes); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, VIbratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane WIth a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor);	36.72	21.15	57.87

TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
	$	$	$
Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A- Frames.			
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or WIthout Attachments); Telehandler; Tining or Curing Machine.	36.46	21.15	57.61
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	36.17	21.15	57.32
Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Pay: DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http:/ / www.dot.wi.gov/ business/ civilrights/ laborwages/ pwc. htm.			
Fiber Optic Cable Equipment.	28.89	17.95	46.84

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 Roadway Items					
0010	201.0120 Clearing	374.000 ID		.		.
0020	201.0220 Grubbing	374.000 ID		.		.
0030	203.0100 Removing Small Pipe Culverts	9.000 EACH		.		.
0040	203.0200 Removing Old Structure (station) 01. 238+94	LUMP	LUMP			.
0050	204.0100 Removing Pavement	15,312.000 SY		.		.
0060	204.0125 Removing Asphaltic Surface Milling	1,865.000 TON		.		.
0070	204.0150 Removing Curb & Gutter	13,967.000 LF		.		.
0080	204.0155 Removing Concrete Sidewalk	3,244.000 SY		.		.
0090	204.0165 Removing Guardrail	495.000 LF		.		.
0100	204.0195 Removing Concrete Bases	40.000 EACH		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0110	204.0210 Removing Manholes	1.000 EACH		.		.
0120	204.0220 Removing Inlets	33.000 EACH		.		.
0130	204.0245 Removing Storm Sewer (size) 01. 12-Inch	495.000 LF		.		.
0140	204.0245 Removing Storm Sewer (size) 02. 15-Inch	129.000 LF		.		.
0150	204.0245 Removing Storm Sewer (size) 03. 24-Inch	84.000 LF		.		.
0160	204.0291.S Abandoning Sewer	3.000 CY		.		.
0170	205.0100 Excavation Common	35,903.000 CY		.		.
0180	209.0200.S Backfill Controlled Low Strength	63.000 CY		.		.
0190	213.0100 Finishing Roadway (project) 01. 2200-16-71	1.000 EACH		.		.
0200	305.0110 Base Aggregate Dense 3/4-Inch	46.000 TON		.		.
0210	305.0120 Base Aggregate Dense 1 1/4-Inch	22,224.000 TON		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0220	311.0110 Breaker Run	5,712.000 TON		.		.
0230	320.0145 Concrete Base 8-Inch	12,849.000 SY		.		.
0240	390.0403 Base Patching Concrete Shes	6,808.000 SY		.		.
0250	415.0090 Concrete Pavement 9-Inch	4,356.000 SY		.		.
0260	416.0270 Concrete Driveway HES 7-Inch	757.000 SY		.		.
0270	416.0610 Drilled Tie Bars	6,636.000 EACH		.		.
0280	416.0620 Drilled Dowel Bars	11,808.000 EACH		.		.
0290	440.4410 Incentive IRI Ride	26,200.000 DOL	1.00000		26200.00	
0300	455.0120 Asphaltic Material PG64-28	1,923.000 TON		.		.
0310	455.0605 Tack Coat	3,685.000 GAL		.		.
0320	460.1110 HMA Pavement Type E-10	34,987.000 TON		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0330	460.2000 Incentive Density HMA Pavement	22,400.000 DOL	1.00000		22400.00	
0340	460.4000 HMA Cold Weather Paving	5,000.000 TON		.		.
0350	465.0120 Asphaltic Surface Driveways and Field Entrances	255.000 TON		.		.
0360	465.0310 Asphaltic Curb	195.000 LF		.		.
0370	465.0315 Asphaltic Flumes	28.000 SY		.		.
0380	520.8000 Concrete Collars for Pipe	19.000 EACH		.		.
0390	521.0112 Culvert Pipe Corrugated Steel 12-Inch	52.000 LF		.		.
0400	521.0115 Culvert Pipe Corrugated Steel 15-Inch	100.000 LF		.		.
0410	521.1012 Apron Endwalls for Culvert Pipe Steel 12-Inch	2.000 EACH		.		.
0420	521.1015 Apron Endwalls for Culvert Pipe Steel 15-Inch	6.000 EACH		.		.
0430	521.1018 Apron Endwalls for Culvert Pipe Steel 18-Inch	1.000 EACH		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0440	522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	2.000 EACH		.		.
0450	522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	1.000 EACH		.		.
0460	601.0110 Concrete Curb Type D	42.000 LF		.		.
0470	601.0405 Concrete Curb & Gutter 18-Inch Type A	2,081.000 LF		.		.
0480	601.0407 Concrete Curb & Gutter 18-Inch Type D	1,073.000 LF		.		.
0490	601.0409 Concrete Curb & Gutter 30-Inch Type A	18,956.000 LF		.		.
0500	601.0411 Concrete Curb & Gutter 30-Inch Type D	6,658.000 LF		.		.
0510	601.0574 Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type G	58.000 LF		.		.
0520	601.0576 Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type J	76.000 LF		.		.
0530	601.0600 Concrete Curb Pedestrian	80.000 LF		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0540	602.0410 Concrete Sidewalk 5-Inch	59,468.000 SF		.		.
0550	602.0505 Curb Ramp Detectable Warning Field Yellow	1,200.000 SF		.		.
0560	606.0200 Riprap Medium	36.000 CY		.		.
0570	608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	1,972.000 LF		.		.
0580	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	59.000 LF		.		.
0590	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	82.000 LF		.		.
0600	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	138.000 LF		.		.
0610	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	568.000 LF		.		.
0620	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	107.000 LF		.		.
0630	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	161.000 LF		.		.
0640	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	14.000 LF		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0650	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	7.000 LF		.		.
0660	611.0420 Reconstructing Manholes	10.000 EACH		.		.
0670	611.0430 Reconstructing Inlets	21.000 EACH		.		.
0680	611.0530 Manhole Covers Type J	23.000 EACH		.		.
0690	611.0624 Inlet Covers Type H	66.000 EACH		.		.
0700	611.0639 Inlet Covers Type H-S	44.000 EACH		.		.
0710	611.0642 Inlet Covers Type MS	5.000 EACH		.		.
0720	611.0645 Inlet Covers Type MS-A	2.000 EACH		.		.
0730	611.1004 Catch Basins 4-FT Diameter	1.000 EACH		.		.
0740	611.1230 Catch Basins 2x3-FT	26.000 EACH		.		.
0750	611.2004 Manholes 4-FT Diameter	3.000 EACH		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0760	611.2006 Manholes 6-FT Diameter	5.000 EACH		.		.
0770	611.3004 Inlets 4-FT Diameter	4.000 EACH		.		.
0780	611.3230 Inlets 2x3-FT	76.000 EACH		.		.
0790	611.3901 Inlets Median 1 Grate	2.000 EACH		.		.
0800	611.3902 Inlets Median 2 Grate	1.000 EACH		.		.
0810	611.3903 Inlets Median 3 Grate	1.000 EACH		.		.
0820	611.8110 Adjusting Manhole Covers	18.000 EACH		.		.
0830	611.8115 Adjusting Inlet Covers	71.000 EACH		.		.
0840	614.0395 Guardrail Mow Strip Concrete	210.000 SY		.		.
0850	614.0805 Crash Cushions Permanent Low Maintenance	1.000 EACH		.		.
0860	614.2300 MGS Guardrail 3	590.000 LF		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0870	614.2310 MGS Guardrail 3 HS	25.000 LF		.		.
0880	614.2320 MGS Guardrail 3 QS	37.500 LF		.		.
0890	614.2500 MGS Thrie Beam Transition	12.500 LF		.		.
0900	614.2610 MGS Guardrail Terminal EAT	2.000 EACH		.		.
0910	614.2620 MGS Guardrail Terminal Type 2	2.000 EACH		.		.
0920	616.0700.S Fence Safety	100.000 LF		.		.
0930	619.1000 Mobilization	1.000 EACH		.		.
0940	620.0100 Concrete Corrugated Median	547.000 SF		.		.
0950	620.0300 Concrete Median Sloped Nose	1,632.000 SF		.		.
0960	621.0100 Landmark Reference Monuments	1.000 EACH		.		.
0970	624.0100 Water	231.000 MGAL		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0980	625.0100 Topsoil	22,778.000 SY		.		.
0990	628.1104 Erosion Bales	738.000 EACH		.		.
1000	628.1504 Silt Fence	1,923.000 LF		.		.
1010	628.1520 Silt Fence Maintenance	1,923.000 LF		.		.
1020	628.1905 Mobilizations Erosion Control	2.000 EACH		.		.
1030	628.1910 Mobilizations Emergency Erosion Control	4.000 EACH		.		.
1040	628.2027 Erosion Mat Class II Type C	3,377.000 SY		.		.
1050	628.7005 Inlet Protection Type A	110.000 EACH		.		.
1060	628.7010 Inlet Protection Type B	33.000 EACH		.		.
1070	628.7015 Inlet Protection Type C	239.000 EACH		.		.
1080	628.7020 Inlet Protection Type D	39.000 EACH		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1090	628.7570 Rock Bags	25.000 EACH		.		.
1100	629.0210 Fertilizer Type B	2.100 CWT		.		.
1110	630.0140 Seeding Mixture No. 40	61.000 LB		.		.
1120	631.0300 Sod Water	436.000 MGAL		.		.
1130	631.1000 Sod Lawn	19,401.000 SY		.		.
1140	634.0614 Posts Wood 4x6-Inch X 14-FT	186.000 EACH		.		.
1150	634.0616 Posts Wood 4x6-Inch X 16-FT	203.000 EACH		.		.
1160	634.0618 Posts Wood 4x6-Inch X 18-FT	26.000 EACH		.		.
1170	636.0100 Sign Supports Concrete Masonry	30.000 CY		.		.
1180	636.1500 Sign Supports Steel Coated Reinforcement HS	2,840.000 LB		.		.
1190	637.1220 Signs Type I Reflective SH	236.500 SF		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1200	637.2210 Signs Type II Reflective H	4,005.800 SF		.		.
1210	637.2215 Signs Type II Reflective H Folding	350.600 SF		.		.
1220	637.2230 Signs Type II Reflective F	359.000 SF		.		.
1230	638.2101 Moving Signs Type I	2.000 EACH		.		.
1240	638.2102 Moving Signs Type II	13.000 EACH		.		.
1250	638.2602 Removing Signs Type II	274.000 EACH		.		.
1260	638.3000 Removing Small Sign Supports	242.000 EACH		.		.
1270	641.6600 Sign Bridge (structure) 01. S-67-319	LUMP	LUMP			.
1280	641.8100 Overhead Sign Support (structure) 01. S-67-950	LUMP	LUMP			.
1290	641.8100 Overhead Sign Support (structure) 02. S-67-951	LUMP	LUMP			.
1300	641.8100 Overhead Sign Support (structure) 03. S-67.970	LUMP	LUMP			.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1310	642.5001 Field Office Type B	1.000 EACH		.		.
1320	643.0200 Traffic Control Surveillance and Maintenance (project) 01. 2200-16-71	180.000 DAY		.		.
1330	643.0300 Traffic Control Drums	126,598.000 DAY		.		.
1340	643.0410 Traffic Control Barricades Type II	729.000 DAY		.		.
1350	643.0420 Traffic Control Barricades Type III	7,394.000 DAY		.		.
1360	643.0500 Traffic Control Flexible Tubular Marker Posts	18.000 EACH		.		.
1370	643.0600 Traffic Control Flexible Tubular Marker Bases	18.000 EACH		.		.
1380	643.0705 Traffic Control Warning Lights Type A	32,558.000 DAY		.		.
1390	643.0715 Traffic Control Warning Lights Type C	16,279.000 DAY		.		.
1400	643.0800 Traffic Control Arrow Boards	440.000 DAY		.		.
1410	643.0900 Traffic Control Signs	25,497.000 DAY		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1420	643.0910 Traffic Control Covering Signs Type I	1.000 EACH		.		.
1430	643.0920 Traffic Control Covering Signs Type II	7.000 EACH		.		.
1440	643.1000 Traffic Control Signs Fixed Message	149.000 SF		.		.
1450	643.3000 Traffic Control Detour Signs	165.000 DAY		.		.
1460	645.0120 Geotextile Fabric Type HR	118.000 SY		.		.
1470	646.0106 Pavement Marking Epoxy 4-Inch	43,783.000 LF		.		.
1480	646.0136 Pavement Marking Epoxy 12-Inch	140.000 LF		.		.
1490	646.0600 Removing Pavement Markings	28,737.000 LF		.		.
1500	646.0841.S Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	144.000 LF		.		.
1510	646.0843.S Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	917.000 LF		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1520	646.0881.S Pavement Marking Grooved Wet Reflective Tape 4-Inch	14,537.000 LF		.		.
1530	646.0883.S Pavement Marking Grooved Wet Reflective Tape 8-Inch	20,140.000 LF		.		.
1540	647.0606 Pavement Marking Island Nose Epoxy	32.000 EACH		.		.
1550	647.0706 Pavement Marking Diagonal Epoxy 6-Inch	583.000 LF		.		.
1560	647.0726 Pavement Marking Diagonal Epoxy 12-Inch	2,097.000 LF		.		.
1570	649.0400 Temporary Pavement Marking Removable Tape 4-Inch	12,548.000 LF		.		.
1580	649.0403 Temporary Pavement Marking Epoxy 4-Inch	12,272.000 LF		.		.
1590	649.0801 Temporary Pavement Marking Removable Tape 8-Inch	758.000 LF		.		.
1600	649.0803 Temporary Pavement Marking Epoxy 8-Inch	6,146.000 LF		.		.
1610	649.0900 Temporary Pavement Marking Stop Line 12-Inch	109.000 LF		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1620	649.1000 Temporary Pavement Marking Stop Line Removable Tape 12-Inch	309.000 LF		.		.
1630	650.4000 Construction Staking Storm Sewer	122.000 EACH		.		.
1640	650.4500 Construction Staking Subgrade	6,504.000 LF		.		.
1650	650.5000 Construction Staking Base	11,863.000 LF		.		.
1660	650.5500 Construction Staking Curb Gutter and Curb & Gutter	28,844.000 LF		.		.
1670	650.7000 Construction Staking Concrete Pavement	471.000 LF		.		.
1680	650.8000 Construction Staking Resurfacing Reference	11,371.000 LF		.		.
1690	650.8500 Construction Staking Electrical Installations (project) 01. 2200-16-71	LUMP	LUMP			.
1700	650.9910 Construction Staking Supplemental Control (project) 01. 2200-16-71	LUMP	LUMP			.
1710	650.9920 Construction Staking Slope Stakes	11,611.000 LF		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1720	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	9,174.000 LF		.		.
1730	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	8,800.000 LF		.		.
1740	652.0605 Conduit Special 2-Inch	461.000 LF		.		.
1750	652.0615 Conduit Special 3-Inch	6,661.000 LF		.		.
1760	652.0700.S Install Conduit into Existing Item	3.000 EACH		.		.
1770	652.0800 Conduit Loop Detector	4,340.000 LF		.		.
1780	653.0135 Pull Boxes Steel 24x36-Inch	28.000 EACH		.		.
1790	653.0140 Pull Boxes Steel 24x42-Inch	138.000 EACH		.		.
1800	653.0905 Removing Pull Boxes	143.000 EACH		.		.
1810	654.0101 Concrete Bases Type 1	42.000 EACH		.		.
1820	654.0102 Concrete Bases Type 2	20.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1830	654.0105 Concrete Bases Type 5	9.000 EACH		.		.
1840	654.0106 Concrete Bases Type 6	36.000 EACH		.		.
1850	654.0110 Concrete Bases Type 10	13.000 EACH		.		.
1860	654.0113 Concrete Bases Type 13	14.000 EACH		.		.
1870	654.0217 Concrete Control Cabinet Bases Type 9 Special	5.000 EACH		.		.
1880	654.0230 Concrete Control Cabinet Bases Type L30	1.000 EACH		.		.
1890	655.0230 Cable Traffic Signal 5-14 AWG	5,138.000 LF		.		.
1900	655.0240 Cable Traffic Signal 7-14 AWG	5,030.000 LF		.		.
1910	655.0260 Cable Traffic Signal 12-14 AWG	14,625.000 LF		.		.
1920	655.0315 Cable Type UF 2-10 AWG	6,970.000 LF		.		.
1930	655.0515 Electrical Wire Traffic Signals 10 AWG	13,007.000 LF		.		.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1940	655.0610 Electrical Wire Lighting 12 AWG	17,178.000 LF		.		.
1950	655.0620 Electrical Wire Lighting 8 AWG	15,125.000 LF		.		.
1960	655.0630 Electrical Wire Lighting 4 AWG	19,764.000 LF		.		.
1970	655.0700 Loop Detector Lead In Cable	17,639.000 LF		.		.
1980	655.0800 Loop Detector Wire	17,815.000 LF		.		.
1990	655.0900 Traffic Signal EVP Detector Cable	7,175.000 LF		.		.
2000	656.0200 Electrical Service Meter Breaker Pedestal (location) 01. USH18 & Manhattan Drive	LUMP	LUMP			.
2010	656.0200 Electrical Service Meter Breaker Pedestal (location) 02. USH 18 & STH164	LUMP	LUMP			.
2020	656.0200 Electrical Service Meter Breaker Pedestal (location) 03. USH 18 & Main Street	LUMP	LUMP			.
2030	656.0200 Electrical Service Meter Breaker Pedestal (location) 04. USH18 & Springdale Road	LUMP	LUMP			.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2040	656.0200 Electrical Service Meter Breaker Pedestal (location) 05. USH 18 & Parklawn Drive	LUMP	LUMP			.
2050	656.0200 Electrical Service Meter Breaker Pedestal (location) 06. USH 18 & Kossow Road	LUMP	LUMP			.
2060	656.0200 Electrical Service Meter Breaker Pedestal (location) 07. CCA	LUMP	LUMP			.
2070	657.0100 Pedestal Bases	36.000 EACH		.		.
2080	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	29.000 EACH		.		.
2090	657.0305 Poles Type 2	5.000 EACH		.		.
2100	657.0310 Poles Type 3	11.000 EACH		.		.
2110	657.0322 Poles Type 5-Aluminum	6.000 EACH		.		.
2120	657.0327 Poles Type 6-Aluminum	7.000 EACH		.		.
2130	657.0420 Traffic Signal Standards Aluminum 13-FT	15.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2140	657.0425 Traffic Signal Standards Aluminum 15-FT	10.000 EACH		.		.
2150	657.0430 Traffic Signal Standards Aluminum 10-FT	11.000 EACH		.		.
2160	657.0609 Luminaire Arms Single Member 4-Inch Clamp 6-FT	19.000 EACH		.		.
2170	657.0610 Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	14.000 EACH		.		.
2180	657.0615 Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT	10.000 EACH		.		.
2190	657.1345 Install Poles Type 9	2.000 EACH		.		.
2200	657.1350 Install Poles Type 10	9.000 EACH		.		.
2210	657.1360 Install Poles Type 13	14.000 EACH		.		.
2220	657.1515 Install Monotube Arms 15-FT	1.000 EACH		.		.
2230	657.1520 Install Monotube Arms 20-FT	1.000 EACH		.		.
2240	657.1530 Install Monotube Arms 30-FT	9.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2250	657.1540 Install Monotube Arms 40-FT	6.000 EACH		.		.
2260	657.1550 Install Monotube Arms 50-FT	2.000 EACH		.		.
2270	657.1555 Install Monotube Arms 55-FT	6.000 EACH		.		.
2280	657.1808 Install Luminaire Arms Steel 8-FT	5.000 EACH		.		.
2290	657.1815 Install Luminaire Arms Steel 15-FT	20.000 EACH		.		.
2300	658.0110 Traffic Signal Face 3-12 Inch Vertical	113.000 EACH		.		.
2310	658.0115 Traffic Signal Face 4-12 Inch Vertical	13.000 EACH		.		.
2320	658.0215 Backplates Signal Face 3 Section 12-Inch	113.000 EACH		.		.
2330	658.0220 Backplates Signal Face 4 Section 12-Inch	13.000 EACH		.		.
2340	658.0416 Pedestrian Signal Face 16-Inch	64.000 EACH		.		.
2350	658.0500 Pedestrian Push Buttons	50.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2360	658.0600 Led Modules 12-Inch Red Ball	86.000 EACH		.		.
2370	658.0605 Led Modules 12-Inch Yellow Ball	82.000 EACH		.		.
2380	658.0610 Led Modules 12-Inch Green Ball	82.000 EACH		.		.
2390	658.0615 Led Modules 12-Inch Red Arrow	40.000 EACH		.		.
2400	658.0620 Led Modules 12-Inch Yellow Arrow	60.000 EACH		.		.
2410	658.0625 Led Modules 12-Inch Green Arrow	41.000 EACH		.		.
2420	658.0635 Led Modules Pedestrian Countdown Timer 16-Inch	64.000 EACH		.		.
2430	658.5069 Signal Mounting Hardware (location) 01. USH18 & Manhattan Drive	LUMP	LUMP			.
2440	658.5069 Signal Mounting Hardware (location) 02. USH 18 & STH164	LUMP	LUMP			.
2450	658.5069 Signal Mounting Hardware (location) 03. USH 18 & Main Street	LUMP	LUMP			.
2460	658.5069 Signal Mounting Hardware (location) 04. USH18 & Springdale Road	LUMP	LUMP			.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2470	658.5069 Signal Mounting Hardware (location) 05. USH 18 & Parklawn Drive	LUMP	LUMP			.
2480	658.5069 Signal Mounting Hardware (location) 06. USH 18 & Kossow Road	LUMP	LUMP			.
2490	659.1125 Luminaires Utility LED C	82.000 EACH		.		.
2500	659.2230 Lighting Control Cabinets 240/480 30-Inch	1.000 EACH		.		.
2510	661.0200 Temporary Traffic Signals for Intersections (location) 01. USH18 & Manhattan Drive	LUMP	LUMP			.
2520	661.0200 Temporary Traffic Signals for Intersections (location) 02. USH 18 & STH164	LUMP	LUMP			.
2530	661.0200 Temporary Traffic Signals for Intersections (location) 03. USH 18 & Main Street	LUMP	LUMP			.
2540	661.0200 Temporary Traffic Signals for Intersections (location) 04. USH18 & Springdale Road	LUMP	LUMP			.
2550	661.0200 Temporary Traffic Signals for Intersections (location) 06. USH 18 & Kossow Road	LUMP	LUMP			.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2560	661.0300 Generators	10.000 DAY		.		.
2570	670.0100 Field System Integrator	LUMP	LUMP			.
2580	670.0200 ITS Documentation	LUMP	LUMP			.
2590	671.0112 Conduit HDPE 1-Duct 2-Inch	1,642.000 LF		.		.
2600	671.0212 Conduit HDPE Directional Bore 1-Duct 2-Inch	400.000 LF		.		.
2610	673.0105 Communication Vault Type 1	4.000 EACH		.		.
2620	678.0006 Install Fiber Optic Cable Outdoor Plant 6-CT	1,520.000 LF		.		.
2630	678.0036 Install Fiber Optic Cable Outdoor Plant 36-CT	1,802.000 LF		.		.
2640	678.0200 Fiber Optic Splice Enclosure	3.000 EACH		.		.
2650	678.0300 Fiber Optic Splice	60.000 EACH		.		.
2660	678.0400 Fiber Optic Termination	18.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2670	678.0500 Communication System Testing	LUMP	LUMP			.
2680	690.0150 Sawing Asphalt	6,614.000 LF		.		.
2690	690.0250 Sawing Concrete	16,590.000 LF		.		.
2700	715.0415 Incentive Strength Concrete Pavement	500.000 DOL	1.00000		500.00	
2710	SPV.0060 Special 01. Sanitary Manhole Seal Internal, Town Of Brookfield	5.000 EACH		.		.
2720	SPV.0060 Special 02. Adjusting Sanitary Sewer Manholes, Town Of Brookfield	4.000 EACH		.		.
2730	SPV.0060 Special 03. Reconstruct Sanitary Manholes, Town Of Brookfield	1.000 EACH		.		.
2740	SPV.0060 Special 04. Adjusting Storm Sewer Manholes, Town Of Brookfield	2.000 EACH		.		.
2750	SPV.0060 Special 05. Adjusting Water Valve Box, Town Of Brookfield	12.000 EACH		.		.
2760	SPV.0060 Special 06. New Fire Hydrant, Town Of Brookfield	2.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2770	SPV.0060 Special 07. Abandoning Water Service, Tow Of Brookfield	1.000 EACH		.		.
2780	SPV.0060 Special 08. Replace 10-Inch Gate Valves With 12-Inch Gate Valves	4.000 EACH		.		.
2790	SPV.0060 Special 09. Convert Manhole To Valve Box	3.000 EACH		.		.
2800	SPV.0060 Special 10. Abandon Hydrant And Install New Hydrant	1.000 EACH		.		.
2810	SPV.0060 Special 11. Hydrant Assembly	2.000 EACH		.		.
2820	SPV.0060 Special 12. Abandon Hydrant	1.000 EACH		.		.
2830	SPV.0060 Special 13. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2	78.000 EACH		.		.
2840	SPV.0060 Special 14. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 3	8.000 EACH		.		.
2850	SPV.0060 Special 15. Pavement Marking Grooved Preformed Thermoplastic Words	59.000 EACH		.		.
2860	SPV.0060 Special 16. Reconstructing Sanitary Manholes	9.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2870	SPV.0060 Special 17. Adjusting Sanitary Manhole Covers	10.000 EACH		.		.
2880	SPV.0060 Special 18. Internal Manhole Sealing System	19.000 EACH		.		.
2890	SPV.0060 Special 19. New Curb Box, Town of Brookfield	1.000 EACH		.		.
2900	SPV.0060 Special 31. Removing Existing Roadway Luminaire	14.000 EACH		.		.
2910	SPV.0060 Special 32. Removing Existing Roadway Lighting Unit	8.000 EACH		.		.
2920	SPV.0060 Special 33. Relocate Existing Single Arm Lighting Assembly	11.000 EACH		.		.
2930	SPV.0060 Special 34. Relocate Existing Double Arm Lighting Assembly	18.000 EACH		.		.
2940	SPV.0060 Special 35. Removing Existing Lighting Control Cabinet	1.000 EACH		.		.
2950	SPV.0060 Special 51. City of Waukesha Concrete Control Cabinet Bases Type 9 Special	1.000 EACH		.		.
2960	SPV.0060 Special 52. Pedestrian Push Buttons Special	10.000 EACH		.		.
2970	SPV.0060 Special 53. Battery Backup System	1.000 EACH		.		.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
2980	SPV.0060 Special 54. Install IP Wireless Radio	4.000 EACH		.		.
2990	SPV.0090 Special 01. Water Main (PVC), 6-Inch, Town Of Brookfield	14.000 LF		.		.
3000	SPV.0090 Special 02. Water Service Replacement, Copper, 1-Inch, Town Of Brookfield	17.000 LF		.		.
3010	SPV.0090 Special 03. Pavement Marking Grooved Preformed Thermoplastic Crosswalk 6-Inch	5,794.000 LF		.		.
3020	SPV.0090 Special 04. Pavement Marking Grooved Preformed Thermoplastic Stop Bar 18-Inch	1,343.000 LF		.		.
3030	SPV.0090 Special 05. Longitudinal Joint Repair	3,664.000 LF		.		.
3040	SPV.0090 Special 50. Type UF Cable 2 Conductor No. 14	7,175.000 LF		.		.
3050	SPV.0105 Special 01. Reconstruct Concrete Headwall	LUMP	LUMP			.
3060	SPV.0105 Special 31. Lighting Integrator, State Systems	LUMP	LUMP			.
3070	SPV.0105 Special 32. Lighting Integrator, City Systems	LUMP	LUMP			.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3080	SPV.0105 Special 41. Install Fiber Optic Communications In Cabinet, USH 18 & STH 164	LUMP	LUMP			.
3090	SPV.0105 Special 42. Install Fiber Optic Communications In Cabinet, USH 18 & Main Street	LUMP	LUMP			.
3100	SPV.0105 Special 43. Install Fiber Optic Communications In Cabinet, USH 18 & Springdale Rd	LUMP	LUMP			.
3110	SPV.0105 Special 44. Install Fiber Optic Communications In Cabinet, USH 18 & Parklawn Dr	LUMP	LUMP			.
3120	SPV.0105 Special 45. Install Fiber Optic Communications In Cabinet, USH 18 & Kossow Road	LUMP	LUMP			.
3130	SPV.0105 Special 50. Remove Traffic Signals USH 18 & Manhattan Drive	LUMP	LUMP			.
3140	SPV.0105 Special 51. Remove Traffic Signals USH 18 & STH 164	LUMP	LUMP			.
3150	SPV.0105 Special 52. Remove Traffic Signals USH 18/STH 164 & Main Street	LUMP	LUMP			.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SPV.0105 Special 53.					
3160	Remove Traffic Signals USH 18/STH 164 & Springdale Road	LUMP	LUMP			.
	SPV.0105 Special 54.					
3170	Remove Traffic Signals USH 18 & Kossow Road	LUMP	LUMP			.
	SPV.0105 Special 55.					
3180	Transporting Signal And Lighting Materials at USH 18 & Manhattan Drive	LUMP	LUMP			.
	SPV.0105 Special 56.					
3190	Transporting Signal And Lighting Materials at USH 18 & STH 164	LUMP	LUMP			.
	SPV.0105 Special 57.					
3200	Transporting Signal And Lighting Materials at USH 18 & Main Street	LUMP	LUMP			.
	SPV.0105 Special 58.					
3210	Transporting Signal And Lighting Materials at USH18 & Springdale Road	LUMP	LUMP			.
	SPV.0105 Special 59.					
3220	Transporting Signal And Lighting Materials at USH 18 & Parklawn Drive	LUMP	LUMP			.
	SPV.0105 Special 60.					
3230	Transporting Signal And Lighting Materials at USH 18 & Kossow Road	LUMP	LUMP			.
	SPV.0105 Special 61.					
3240	Install State Furnished Traffic Signal Cabinet, USH 18 & Manhattan Drive	LUMP	LUMP			.

CONTRACT: 20160112020 PROJECT(S): 2200-16-71 FEDERAL ID(S): N/A

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3250	SPV.0105 Special 62. Install State Furnished Traffic Signal Cabinet, USH 18 & STH 164	LUMP	LUMP			.
3260	SPV.0105 Special 63. Install State Furnished Traffic Signal Cabinet, USH 18 & Main Street	LUMP	LUMP			.
3270	SPV.0105 Special 64. Install State Furnished Traffic Signal Cabinet, USH 18 & Springdale Rd	LUMP	LUMP			.
3280	SPV.0105 Special 65. Install State Furnished Traffic Signal Cabinet, USH 18 & Parklawn Dr	LUMP	LUMP			.
3290	SPV.0105 Special 66. Install State Furnished Traffic Signal Cabinet, USH 18 & Kossow Road	LUMP	LUMP			.
3300	SPV.0105 Special 67. Install Video Detection System, USH 18 & Manhattan Drive	LUMP	LUMP			.
3310	SPV.0105 Special 68. Install Video Detection System, USH 18 & STH 164	LUMP	LUMP			.
3320	SPV.0105 Special 69. Install Video Detection System, USH 18 & Main Street	LUMP	LUMP			.
3330	SPV.0105 Special 70. Install Video Detection System, USH 18 & Springdale Road	LUMP	LUMP			.

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CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3340	SPV.0105 Special 71. Install Video Detection System, USH 18 & Parklawn Drive	LUMP	LUMP			.
3350	SPV.0105 Special 72. Install Video Detection System, USH 18 & Kossow Road	LUMP	LUMP			.
3360	SPV.0105 Special 73. EVP Detector Head Installation, USH 18 & Manhattan Drive	LUMP	LUMP			.
3370	SPV.0105 Special 74. EVP Detector Head Installation, USH 18 & STH 164	LUMP	LUMP			.
3380	SPV.0105 Special 75. EVP Detector Head Installation, USH 18 & Main Street	LUMP	LUMP			.
3390	SPV.0105 Special 76. EVP Detector Head Installation, USH 18 & Springdale Road	LUMP	LUMP			.
3400	SPV.0105 Special 77. EVP Detector Head Installation, USH 18 & Parklawn Drive	LUMP	LUMP			.
3410	SPV.0105 Special 78. EVP Detector Head Installation, USH 18 & Kossow Road	LUMP	LUMP			.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3420	SPV.0105 Special 79. Temporary Infrared EVP System, USH 18 & Manhattan Drive	LUMP	LUMP			.
3430	SPV.0105 Special 80. Temporary Infrared EVP System, USH 18 & STH 164	LUMP	LUMP			.
3440	SPV.0105 Special 81. Temporary Infrared EVP System, USH 18 & Main Street	LUMP	LUMP			.
3450	SPV.0105 Special 82. Temporary Infrared EVP System, USH 18 & Springdale Road	LUMP	LUMP			.
3460	SPV.0105 Special 83. Temporary Infrared EVP System, USH 18 & Kossow Road	LUMP	LUMP			.
3470	SPV.0105 Special 84. Temporary Vehicle Detection System, USH 18 & Manhattan Drive	LUMP	LUMP			.
3480	SPV.0105 Special 85. Temporary Vehicle Detection System, USH 18 & STH 164	LUMP	LUMP			.
3490	SPV.0105 Special 86. Temporary Vehicle Detection System, USH 18 & Main Street	LUMP	LUMP			.
3500	SPV.0105 Special 87. Temporary Vehicle Detection System, USH 18 & Springdale Road	LUMP	LUMP			.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3510	SPV.0105 Special 88. Temporary Vehicle Detection System, USH18 & Kossow Road	LUMP	LUMP			.
3520	SPV.0105 Special 89. Remove Loop Detector Wire and Lead-In Cable, USH 18 & Manhattan Drive	LUMP	LUMP			.
3530	SPV.0105 Special 90. Remove Loop Detector Wire and Lead-In Cable, USH 18 & STH 164	LUMP	LUMP			.
3540	SPV.0105 Special 91. Remove Loop Detector Wire and Lead-In Cable, USH 18 & Main Street	LUMP	LUMP			.
3550	SPV.0105 Special 92. Remove Loop Detector Wire and Lead-In Cable, USH 18 & Springdale Road	LUMP	LUMP			.
3560	SPV.0105 Special 93. Remove Loop Detector Wire and Lead-In Cable, USH 18 & Kossow Road	LUMP	LUMP			.
3570	SPV.0165 Special 01. Wall Modular Block Gravity LRFD **P**	252.000 SF	.			.
3580	SPV.0165 Special 02. Removing Concrete Gutter Surface Partial Depth	28,782.000 SF	.			.
3590	SPV.0165 Special 03. Stamped Colored Concrete Sidewalk 5-Inch	1,898.000 SF	.			.

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
3600	SPV.0195 Special 01. Remove Asphaltic Surface Milling, 4-Inch Special	23,859.000 TON	.			.
	SECTION 0001 TOTAL					.
	TOTAL BID					.

PLEASE ATTACH SCHEDULE OF ITEMS HERE