**Special Provisions**

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STSP’S Revised December 10, 2015

**SPECIAL PROVISIONS**

1. General.

Perform the work under this construction contract for Project 2788-00-72, West Waukesha Bypass, CTH TT, Summit Avenue to Northview Road, Waukesha County, Wisconsin and Project 2788-02-72, Waukesha Bypass, USH 18, Intersection of Summit Avenue and Meadowbrook Road, 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, 2017 Edition, as published by the department, and these special provisions.

Perform the sanitary sewer and water main work in accordance to the Standard Specifications for Sewer and Water Construction in Wisconsin, latest Edition (SSSW), addendums, and as provided in these Special Provisions. If there is a discrepancy or conflict between the referenced specification and the standard specifications regarding contract administration, part 1 of the standard specifications governs.

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 (20151210)

1. Scope of Work.

The work under this contract shall consist of excavation common, grading, pavement removal, storm water pond, storm sewer, base aggregate dense, concrete pavement, concrete curb and gutter, concrete sidewalk, asphalt pavement, temporary asphalt, pavement marking, storm sewer, traffic signals and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

1. 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.

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

Be advised that there may be multiple mobilizations and/or remobilizations to complete construction operations, for example such items as: grading, concrete pavement repair/replacement, paving, traffic control, signing, temporary and permanent pavement marking, finishing items and other incidental items. No additional payment will be made, by the department, for additional mobilizations.

There will be no adverse weather delay or additional compensation for cold weather construction, unless otherwise provided for in the contract.

After written notice to proceed, and prior to Final Acceptance of the work, assist with maintenance of existing roadways and bridges as specified in standard spec 104.6.1. This assistance may include performance of work covered under pay items or accommodating local repair forces within the work zones. Maintain all newly constructed work as specified in standard spec 104.6.1.

Place topsoil in all graded areas as designated by the engineer immediately after grading has been completed. Fertilize, seed and mulch or fertilize and sod all areas within five calendar days after placement of topsoil.

Traffic shifts shown in a given stage may occur at different times during that stage depending on the controlling elements for a given traffic movement. The department anticipates that the schedule for each stage shall be as follows:

Anticipated schedule:

**Do not move to the next stage until all work in the current stage is completed or as approved by the engineer.** Traffic control switches should be completed during off peak times.

**Project ID # 2788-00-72**

**Stage 1 Construction**

Waukesha Bypass Construction

* Construct Temporary Widening Right Station 284+75 to 286+50
* Construct Temporary Widening Right Station 335+12 to 342+32
* Remove existing Traffic Signals at Northview Road
* Install Temporary Traffic Signals at Northview Road

**Stage 2A Construction**

Waukesha Bypass Construction

* Begin construction of Southbound Waukesha Bypass Left Station 284+75 to 342+32
* Begin construction of West Leg of Coldwater Creek Drive
* Begin construction of West Leg of Northview Road; detour required.
* Construct Structure M-67-01 Left Station 290+00
* Begin construction of storm water pond
* Begin installation of Permanent Traffic Signals at Northview Road
* Close CTH TT between Summit Avenue and Northview Road for up to three nights for the installation of transverse storm sewer pipes; detour required.

**Stage 2B Construction**

Waukesha Bypass Construction

* Continue construction of Southbound Waukesha Bypass Left Station 284+75 to 342+32
* Continue construction of West Leg of Coldwater Creek Drive
* Continue construction of West Leg of Northview Road; detour required.
* Continue construction of storm water pond
* Continue installation of Permanent Traffic Signals at Northview Road

**Stage 3A Construction**

Waukesha Bypass Construction

* Begin construction of Northbound Waukesha Bypass Right Station 284+75 to 342+32
* Begin construction of East Leg of Coldwater Creek Drive
* Begin construction of East Leg of Northview Road; detour required.
* Continue installation of Permanent Traffic Signals at Northview Road

**Stage 3B Construction**

Waukesha Bypass Construction

* Continue construction of Northbound Waukesha Bypass Right Station 284+75 to 342+32
* Continue construction of East Leg of Coldwater Creek Drive
* Continue construction of East Leg of Northview Road; detour required.
* Continue installation of Permanent Traffic Signals at Northview Road
* Begin Pavement Marking
* Begin Permanent Signing

**Stage 4 Construction**

Waukesha Bypass Construction

* Construct median and left turn lanes Waukesha Bypass Station 284+75 to 294+00
* Construct median and left turn lanes Waukesha Bypass Station 300+00 to 310+00
* Construct median and left turn lanes Waukesha Bypass Station 333+50 to 342+32
* Finish installation of Permanent Traffic Signals at Northview Road
* Finish Pavement Marking
* Finish Permanent Signing
* Finish Seeding and Restoration

**Project ID # 2788-02-70**

**Stage 1 Construction**

Waukesha Bypass Construction

* Construct Northbound Waukesha Bypass Station 264+51 to 272+85
* Construct Temporary Widening Right Station 275+25 to 284+75
* Remove existing Traffic Signals at Summit Avenue
* Install Temporary Traffic Signals at Summit Avenue

Summit Avenue Construction

* Construct Temporary Widening Left Station 41+50 to 49+50
* Construct Temporary Widening Right Station 50+25 to 60+50
* Remove Median Station 48+00 to 54+00
* Construct Temporary Pavement Station 48+00 to 54+00

**Stage 2A Construction**

Waukesha Bypass Construction

* Begin Construction of Southbound Waukesha Bypass Left Station 266+59 to 284+75
* Begin Construction of West Leg of Fiddlers Creek Drive
* Begin installation of Permanent Traffic Signals at Summit Avenue

Summit Avenue Construction

* Construct Eastbound Summit Avenue Right Station 40+50 to 50+00
* Construct South Leg of Turnberry Oak Drive
* Close Summit Avenue between Torhorst Road and CTH TT for one weekend for the installation of the 60” Pipe Culverts at Station 44+50; detour required.

**Stage 2B Construction**

Waukesha Bypass Construction

* Continue Construction of Southbound Waukesha Bypass Left Station 266+59 to 284+75
* Continue Construction of West Leg of Fiddlers Creek Drive
* Continue installation of Permanent Traffic Signals at Summit Avenue

Summit Avenue Construction

* Construct Westbound Summit Avenue Left Station 38+50 to 50+00
* Construct North Leg of Torhorst Road

**Stage 3A Construction**

Waukesha Bypass Construction

* Begin Construction of Northbound Waukesha Bypass Right Station 272+85 to 284+75
* Begin Construction of East Leg of Fiddlers Creek Drive
* Continue installation of Permanent Traffic Signals at Summit Avenue

Summit Avenue Construction

* Construct Westbound Summit Avenue Left Station 50+00 to 59+70
* Construct North Leg of Driveway near Station 56+10
* Construct Temporary Widening Left Station 58+25 to 62+50

**Stage 3B Construction**

Waukesha Bypass Construction

* Continue Construction of Northbound Waukesha Bypass Right Station 272+85 to 284+75
* Continue Construction of East Leg of Fiddlers Creek Drive
* Continue installation of Permanent Traffic Signals at Summit Avenue
* Begin Pavement Marking
* Begin Permanent Signing

Summit Avenue Construction

* Construct Eastbound Summit Avenue Right Station 50+00 to 62+35
* Construct South Leg of Driveway near Station 56+10
* Begin Pavement Marking
* Begin Permanent Signing

**Stage 4 Construction**

Waukesha Bypass Construction

* Construct median and left turn lanes Waukesha Bypass Station 273+75 to 284+75
* Finish installation of Permanent Traffic Signals at Summit Avenue
* Finish Pavement Marking
* Finish Permanent Signing
* Finish Seeding and Restoration

Summit Avenue Construction

* Construct median on Summit Avenue Station 44+75 to 49+50
* Construct sidewalk on Summit Avenue Right Station 50+75 to 56+00
* Finish Pavement Marking
* Finish Permanent Signing
* Finish Seeding and Restoration

**Closure Restrictions**

Single lane closures with flagging operations will be allowed during off-peak hours to construct temporary widening or install drainage pipes. Off-peak hours are defined as weekdays from 9:00 AM to 3:00 PM and 6:00 PM and 9:00 PM and all day Saturday and Sunday.

CTH TT may be closed only during the construction of the southbound lanes on CTH TT as shown in the plans in Stage 2 for a maximum of three night time closures of CTH TT in both directions at Northview Road and at Summit Avenue within the weekday timeframe of 10:00 PM at night to 6:00 AM the following morning to facilitate construction of transverse storm sewer. These closures will not be allowed when Summit Avenue is closed.

Summit Avenue may be closed only during the construction of the eastbound lanes of Summit Avenue as shown in the plans in Stage 2 for a onetime only continuous weekend closure of Summit Avenue in both directions at Torhorst Road and at CTH TT within the weekend timeframe of 7:00 PM Friday night to 6:00 AM the following Monday morning to facilitate construction of the 60” Pipe Culverts. This closure will not be allowed when CTH TT is closed.

**General**

Comply with all local ordinances that apply to local street work operations, including those pertaining to working during night time hours. Furnish any ordinance variance issued by the municipality or required permits to the engineer in writing 3 business days prior to performing such work.

Keep sidewalks open unless otherwise shown on the plans, or to facilitate the removal of structures or as approved by the engineer. A sidewalk indicated to be closed short term as shown on the staging plans may only be closed for a maximum of 10 calendar days. Maintain pedestrian access to adjacent properties, businesses, and schools or provide where necessary, as directed by the engineer. Protect pedestrians from falling debris at all times when sidewalks are open using temporary pedestrian steel barricades or temporary pedestrian safety fence. Temporary pedestrian steel barricades shown on the plans will be paid for as temporary pedestrian safety fence as described under Item 644.1616.S, Temporary Pedestrian Safety Fence.

Provide adequate temporary sidewalk and bridging between the curb and right-of-way line over freshly paved concrete or other obstructions in the sidewalk area, as directed by the engineer.

Construct temporary sidewalk surfaces with a minimum of 2 inches of temporary asphaltic surface, any grade of concrete, skid resistant steel plating, or alternative material as approved by the engineer and a minimum of 4-feet wide. Compact the surface of temporary asphaltic surface until smooth and capable of supporting a wheelchair. The separate payment for the construction of temporary sidewalks including materials, labor, removal and restoration, will be made by the department under the bid item Temporary Crosswalk/Sidewalk, unless otherwise shown on the plans.

Inform engineer, property owners and tenants at least 48 hours prior to removing a driveway approach that serves that property. Schedule sidewalk and driveway approach removal and replacement so that the time lapse between removal and replacement is minimal.

Do not close residential approaches or remove from service without giving sufficient notice to the occupants of the premises to remove their vehicles prior to driveway removal or closing of the driveway approach access. If necessary, make other access arrangements, agreed to in writing and signed by the contractor and the property owner serviced by the driveway. Obtain approval from the engineer prior to alternating construction sequencing.

Existing trees, street light poles, hydrants and other utility poles are to remain in place during construction unless otherwise noted in the plan. Conduct an on-site visit prior to bidding to determine any special measures required for proper clearance between the trees, hydrants and poles and the paving equipment. No additional compensation will be made.

**All Work Restrictions**

Excavation material and cleared and grubbed material should be stockpiled on upland areas an adequate distance away from wetlands, storm sewer inlets, floodplains, and the waterways as determined by engineer. Storing of equipment, materials, or stock piles are not allowed on sidewalks at any time without providing temporary pedestrian accommodations.

Provide the Wisconsin State Patrol, Waukesha County Highway Maintenance, Waukesha County Dispatch, the City of Waukesha Police Department, the City of Pewaukee Police Department, the City of Waukesha Fire Department, the City of Waukesha and the City of Pewaukee with a 24‑hour emergency contact number for when maintenance is required.

**Interim and Final Completion of Work**

**Interim Completion of Work CTH TT Closure**

If the contractor fails to complete all work and coordination measures necessary on CTH TT to open CTH TT prior to 6:00AM of the closure date, the department will assess the contractor $10,000 in interim liquidated damages for each hour that the road remains closed after 6:01 AM, on the following day after the closure begins. An entire hour will be charged for any period of time within each hour of the following day that the road remains closed beyond 6:01 AM.

**Interim Completion of Work Summit Avenue Closure**

If the contractor fails to complete all work and coordination measures necessary on Summit Avenue to open Summit Avenue prior to 6:00AM, Monday of the weekend closure date, the department will assess the contractor $5,000 in interim liquidated damages for each hour that the road remains closed after 6:01 AM, on the following Monday after the closure begins. An entire hour will be charged for any period of time within each hour of the following day that the road remains closed beyond 6:01 AM, Monday.

**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.

1. Traffic.

Perform this work in accordance to the requirements of section 643 of the standard specifications, and as shown on the plans or as approved be the engineer, except as hereinafter modified.

Submit to the engineer for approval a detailed traffic control plan for any changes to the proposed traffic control detail as shown on the plans. Submit this plan ten (10) days prior to the preconstruction conference. Submit messages to be used on portable changeable message boards to the engineer prior to implementing for approval.

Provide 24 hours-a-day availability of equipment and forces to expeditiously restore lights, signs, or other traffic control devices that are damaged or disturbed in accordance to section 643.3.1 of the standard specifications. The cost to maintain and restore the above items shall be considered incidental to the item Traffic Control as bid and no additional payment will be made.

Supply the name and telephone number of a local contact person for traffic control repair prior to or at the preconstruction conference.

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

Provide access for emergency response including fire, police, and rescue vehicles and equipment to all properties including residential, business, and airport entrances at all times during the project.

Maintain access for local, business, and emergency traffic at all times. Egress shall be maintained for the City of Waukesha fire station driveway located on the east leg of Summit Avenue.

All construction vehicles and equipment entering or leaving the traffic lanes shall yield to through traffic.

Construction will be performed under traffic and consist of 4 major stages with sub-stages in Stage 2 and Stage 3.

**Stage 1**

Temporary pavement will be placed in spot locations along Merrill Hills Road to accommodate 2-lane, 2 way traffic for Stage 2. The median along US 18 will be replaced with temporary pavement and temporary pavement will be added in spot locations along US 18. Traffic will be maintained on existing CTH TT/Merrill Hills Road/Meadowbrook Road and sideroads. Shoulder closures and flagging operations will be used to construct temporary pavement.

**Stage 2A**

The following construction activities will be completed in this stage:

- Construct the southbound through and right turn lanes for the West Waukesha Bypass (CTH TT).

- Construct the eastbound lanes of US 18 west of the US 18/CTH TT intersection.

- Install the double large pipe culverts under US 18 at Pebble Creek during a weekend with a detour.

- Construct the west leg of Fiddlers Creek Drive.

- Construct the west leg of Coldwater Creek Drive.

- Construct the west leg of Northview Road (closed with a detour route).

CTH TT/Merrill Hills Road/Meadowbrook Road traffic will be on the existing lanes and temporary widened shoulders. US 18 traffic will be on existing westbound lanes west of CTH TT. All side roads will remain open to traffic except for west leg of Northview Road and the west leg of US 18 during the times of the detours. Up to three overnight closures of the Waukesha Bypass (CTH TT) between USH 18 (Summit Ave.) and Northview Road will be allowed to construct the transverse storm sewer pipes through existing pavement.

**Stage 2B**

The following construction activities will be completed in this stage:

Construct westbound US 18 lanes of the west leg of the US 18/CTH TT intersection.

Construct a connection along CTH TT between the existing roadway and the proposed southbound lanes at the south project limits to be used in Stage 3.

US 18 traffic will be on the proposed eastbound lanes.

**Stage 3A**

The following construction activities will be completed in this stage:

Construct the proposed northbound through and right turn lanes of the Waukesha Bypass.

Construct the westbound Summit Avenue lanes of the east leg of the Summit Avenue/CTH TT intersection.

Construct the east leg of Fiddlers Creek Drive.

Construct the east leg of Coldwater Creek Drive.

Construct the east leg of Northview Road (closed with a detour route).

Construct a connection along CTH TT between the existing roadway and the proposed northbound lanes at the south project limits to be used in Stage 4.

CTH TT/Merrill Hills Road/Meadowbrook Road traffic will be shifted onto the proposed southbound Waukesha Bypass lanes for 2-lane 2-way traffic. Traffic on US 18/Summit Avenue will be on the existing eastbound lanes. All side roads shall remain open except for the east leg of Northview Road.

**Stage 3B**

The following construction activities will be completed in this stage:

Construct the eastbound lanes of Summit Avenue east of the Summit Avenue/CTH TT intersection.

Construction of the mainline and side roads started in Stage 3A continues.

Traffic on CTH TT/Merrill Hills Road/Meadowbrook Road will remain the same as in Stage 3A. Traffic on US 18/Summit Avenue will be on the proposed westbound lanes.

**Stage 4**

The following construction activities will be completed in this stage:

Construct the proposed Bypass median and left-turn lanes in the southbound and northbound lanes.

Construct finishing items.

Traffic on the Waukesha Bypass will be on the proposed outside Waukesha Bypass lanes in the northbound and southbound lanes. Two lanes of traffic will be maintained until the inside median work is complete.

**Wisconsin Lane Closure System Advance Notification**

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

**TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION**

|  |  |
| --- | --- |
| Closure type with height, weight, or width restrictions (available width, all lanes in one direction < 16’) | MINIMUM NOTIFICATION |
| Lane and shoulder closures | 7 calendar days |
| Full roadway closures | 7 calendar days |
| Ramp closures | 7 calendar days |
| Full ramp closures | 7 calendar days |
| Detours | 7 calendar days |
|  |
| Closure type without height, weight, or width restrictions (available width, all lanes in one direction >16’) | MINIMUM NOTIFICATION |
| Lane and shoulder closures | 3 business days |
| 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 (20160607)

1. 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(Summit Ave.) and CTH TT 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 26, 2017 to 6:00 AM Tuesday, May 30, 2017 for Memorial Day;

From noon Monday, July 3, 2017 to 6:00 AM Wednesday, July 5, 2017 for Independence Day;

From noon Friday, September 1, 2017 to 6:00 AM Tuesday, September 5, 2017 for Labor Day;

From noon Wednesday, November 22, 2017 to 6:00 AM Monday, November 27, 2017 for Thanksgiving.

107-005 (20050502)

1. 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. There are known utility adjustments required for this construction project. Coordinate construction activities with a call to Diggers Hotline or a direct call to the utilities which have facilities in the area as required per state statutes. Use caution to ensure the integrity of underground facilities during all construction operations; protect utility facilities; and maintain code clearances from overhead facilities at all times.

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.

Utilities will be performing utility work and adjustments within the limits and during the life of this project. Cooperate and coordinate activities with each respective utility.

Some utility work described below is dependent on prior work being performed by the contractor at a specific site. In such situations, provide the engineer and the affected utility a good faith notice of when the utility is to start work at the site. Provide this notice 14 to 16 calendar days in advance of when the prior work will be completed and the site will be available to the utility. Follow-up with a confirmation notice to the engineer and the utility not less than 3 working days before the site will be ready for the utility to begin its work or as otherwise noted in this special provision.

Storm sewer work on the project will require coordination with utilities which may be in conflict with the storm sewer trench. In such situation, provide the engineer and the utilities in the area a good faith notice of when work will start in these areas. Provide this notice at least 5 working days in advance of when storm sewer work will begin in the area. Follow up with a confirmation notice to the engineer and the utility not less than three working days before the storm sewer contractor intends to begin the work.

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.

Unless otherwise specified by the contract or authorized by the engineer, the existing utilities are to remain in service.

If a conflict with a discontinued utility is encountered, contact the appropriate utility owner/representative prior to disturbing any such discontinued facilities. Verify that utilities have been properly discontinued in place and do not necessitate any special requirements by the utility. The contractor shall 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 the utility.

**We Energies Gas** has the following underground facilities that will require relocation. This work will be performed by We Energies prior to the start of road construction with utility construction anticipated to begin during November 2016 and take 48 working days to complete.

The following proposed work is scheduled to be performed:

|  |  |  |
| --- | --- | --- |
| **Station (approx.)** | **Work Proposed** | **Offset** |
| **CTH TT** |  |  |  |
| 271+55 | 73’ of 6” PE  | Open cut | East-west direction LT of R/L |
| 271+55 to 274+30  | 274’ of 6” PE | Open cut | Installed 10’ east of west lot line |
| 274+30 to 275+75 | 145’ of 6” PE | Direct Bore | Installed 10’ east of west lot line |
| 275+75 to 279+20  | 343’ of 6” PE | Open cut | Installed east of west lot line |
| 279+20 to 280+90 | 173’ of 6” PE | Direct Bore | Installed 27’ east of west lot line |
| 280+90 | 181’ of 6” PE  | Direct Bore | East-west direction across road |
| 280+90 to 281+55  | 69’ of 6” PE | Open cut | Northeast direction to connect to existing line on south side of Summit Ave., east of CTH TT |
| 280+90 to 281+65  | 75’ of 6” PE | Open cut | Installed 10’ east of west lot line |
| 281+65 to 282+00  | 40’ of 6” PE | Open cut | Northwest direction to connect to existing line on south side of Summit Ave., west of CTH TT |
| 303+50 | 79’ of 6” PE | Open Cut | East-west direction connect to existing line near R/L and install toward west |
| 303+50 to 304+75 | 128’ of 6” PE | Open Cut | Installed just east of west lot line, connect to existing line along Coldwater Creek Dr. |
| 304+60 | Valve with box and other work |  | Southeast quadrant at Coldwater Creek Dr. near STA 51+10 |
| 341+15 to 343+20 | 202’ of 6” PE | Open Cut | Installed inside of lot line, cap |
| 341+05 | 123’ of 6” PE | Direct Bore | East-west direction across road |
| 340+75 to 341+05 | 92’ of 6” PE | Open Cut | Northwest direction to connect from existing line on north side of Northview Rd., east of CTH TT, to new east-west crossing of CTH TT |
| **SUMMIT AVE** |  |  |  |
| 42+20 | 99’ of 2” PE | Open Cut | From point north of proposed sidewalk on north side of Summit Ave, northwest direction to connect to existing line on Torhorst Rd. STA 11+00 LT |
| 42+20 | 108’ of 2” PE  | Direct Bore | North-south direction across road |
| 42+20 to 46+25 | 407’ of 6” PE  | Direct Bore | Installed just north of south lot line, connect to existing line |
| 56+70 | 124’ of 2” PE | Direct Bore | North-south direction across road, east of driveways, connect to existing lines |
| **NORTHVIEW RD** |  |  |  |
| West side of Jills Dr | 160’ of 2” PE | Open Cut | Installed inside of lot line, connect to existing line |
| West of Jills Dr | 92’ of 2”PE | Direct Bore | North-south direction across road, connect to existing line |
| W. of Jills Dr to 49+00  | 753’ 6” PE | Open Cut | Installed south of north lot line |
|  |  |  |  |
| Note: PE = Polyethylene pipe |

We Energies will discontinue the following gas mains in place:

**CTH TT**

* Sta. 271+55 LT to 274+30 – 4-Inch PE
* Sta. 274+30 LT to 281+55 LT – 4-Inch PE
* Sta. 282+00 LT to 281+60 RT – 6-Inch PE
* Sta. 303+45 LT to 304+95 LT – 4-Inch PE
* Sta. 341+10 LT to 343+30 LT – 6-Inch PE

**Summit Ave**

* Sta. 42+75 LT to 42+75 RT – 2-Inch PE
* Sta. 42+25 RT to 46+20 RT – 6-Inch PE

**Northview Road**

* Sta. 41+55 LT to 50+80 LT – 4-Inch PE

Relocations and adjustments of We Energies Gas facilities are anticipated to commence prior to the start of this roadway project.

Contractor shall contact We Energies gas dispatch at 1-800-261-5325 or We Energies electric dispatch at 1-800-662-4797 at least 24 hours prior to removing any discontinued gas facilities or electrical cable 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. There may be locations where existing or discontinued utilities are not shown on the plans.

Any facilities not explicitly identified as being relocated or removed have been deemed to be not in conflict and will remain in place as is. Perform construction operations safely around any facilities left within the work zone.

Locations of new facilities may change based on negotiated agreements between landowners and we energies.

The construction field contact for We Energies Gas is:

Danielle Fink

500 S. 116th Street

West Alllis, WI 53214

Office: (414) 944-5627

Danielle.Fink@we-energies.com

**We Energies Electric** has underground and overhead facilities in the project corridor that will need relocation or adjustment. Relocations and adjustments of We Energies electric and distribution facilities are anticipated to commence prior to the start of this roadway project.

We Energies requires extensive forestry work prior to utility construction from Sta. 264+00 to 282+00 RT. In an effort to expedite utility construction, We Energies will drop the trees required for their construction within the slope intercept and leave them for the roadway project contractor. The roadway contractor will be paid under the respective bid items for clearing and grubbing included in the contract documents.

Locations of new facilities may change based on negotiated agreements between landowners and We Energies.

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 safely work around any facility left within the work zone. If plans change such that facilities become in conflict, it is expected that the contractor will work with We Energies to resolve any conflicts.

We Energies electric utility work is expected to begin during October 2016 and take 150 working days to compete the installation work. Pole removals will follow and are dependent on the removal of communication companies’ facilities from We Energies existing poles. We Energies electric plans to perform the following work prior to construction:

**Underground:**

**CTH TT**

* Bore one 4-Inch diameter crossing at Sta. 271+28
* Bore one 2-Inch diameter crossing at Sta. 276+02
* Bore one 4-Inch diameter crossing at Sta. 276+66
* Bore one 2-Inch diameter crossing at Sta. 277+95
* Bore electrical cable from Sta. 266+51 to Sta. 281+79, 102’ LT
* Bore one 4-Inch diameter crossing from Sta. 303+49 LT to 303+21 RT

**Summit Ave**

* Trench electrical cable from Sta. 58+75, 74’ LT to 59+00, 63’ LT
* Bore electrical cable from Sta. 59+00, 63’ LT to 59+00, 70’ RT
* Bore one 6-Inch diameter crossing from Sta. 48+05, 65’ RT to 48+05, 59’ LT

**Overhead:**

**CTH TT**

* Relocate aerial power lines from Sta. 264+32 RT to 280+88 RT
* Place aerial power line across CTH TT at Sta. 266+55

**Summit Ave**

* Relocate aerial power lines from Sta. 40+31 LT to 53+70 LT
* Relocate pole from Sta. 49+32, 84’ RT to 48+60, 56’ RT

**Northview Road**

* Relocate aerial power lines from Sta. 45+42 LT to 52+37 LT

The street light pole at Sta. 51+47, 40’ LT on Coldwater Creek Drive is in conflict and will need to be relocated during road construction. After the new curb is set, the area is at final grade, and prior to restoration, the light will be re-installed at Sta. 51+47, 43’ LT. Contact Steve King at (262) 968-5768 fourteen (14) days in advance to coordinate street light removal and installation. Call with a three (3) day reminder notice when the site is ready for the light installation.

The relocation work includes underground and overhead facilities. There will be grading obstructions at pole locations as detailed below:

|  |
| --- |
| **CTH TT** |
| **Station No.** | **Sequence No.** | **Work Proposed** |
| 48+05 L59 | 100 | Pole set |
| - | 100 - 102 | Bore Cable |
| 48+05 R65.5 | 102 | Splice |
| - | 102 - 104 | Bore Cable |
| 281+98 L117 | 104 | Splice |
| - | 104 - 106 | Bore Cable |
| 281+79 L102 | 106 | Splice |
| - | 106 - 110 | Bore Cable |
| 278+40 L102 | 110 | Splice |
| - | 110 - 120 | Bore Cable |
| 275+00 L102 | 120 | Splice |
| - | 120 - 130 | Bore Cable |
| 274+25 L102 | 130 | Splice |
| - | 130 -140 | Bore Cable |
| 271+85 L102 | 140 | Splice |
| - | 140 - 150 | Bore Cable |
| 265+54 L102 | 150 | Splice |
| - | 150 - 200 | Discontinue Cable |
| 47+74 L59 | 200 | Remove Pole |
| 275+00 R21 | 205 | Remove Pedestal |
| 284+28 R98 | 300 | Pole to Remain |
| - | 300 - 310 | Discontinue Cable |
| 275+00 R26 | 305 | Remove Pedestal |
| 266+54 L109 | 310 | Install Pole |
| 280+88 R90 | 110 | Install Pole, 2.5’ fill - grade around |
| 281+76 R97 | 115 | Remove Pole, 4’ fill - grade around |
| 279+45 R90 | 120 | Install Pole |
| 279+68 R33 | 125 | Remove Pole |
| 279+70 L27 | 127 | Remove Pole |
| 277+95 R90 | 130 | Install Pole, 3’ fill - grade around |
| 277+84 | 130-132 | Bore Cable |
| 277+84 L106 | 132 | Splice |
| 277+94 R25 | 135 | Remove Pole |
| 277+93 L79 | 137 | Remove Pole |
| 276+66 R90 | 140 | Install Pole, 1’ fill - grade around |
| 276+65 | 140-142 | Bore Cable |
| 276+65 L86 | 142 | Splice |
| 277+00 R25 | 145 | Remove Pole |
| 276+02 R90 | 150 | Install Pole, 0.5’ fill - grade around |
| 276+00 | 150-152 | Bore Cable |
| 276+92 L82 | 152 | Splice |
| 276+02 R25 | 155 | Remove Pole |
| 276+00 L77 | 157 | Remove Pole |
| 274+29 L45 | 159 | Relocate Street Light pole |
| 273+76 R90 | 160 | Install Pole, set 1’ Deeper for 2788-00-71 project |
| 273+84 R28 | 165 | Remove Pole |
| 272+11 R24 | 167 | Remove Pole |
| 271+28 R90 | 170 | Install Pole, 1’ Fill on 2788-00-71 project |
| 271+23 | 170-172 | Bore Cable |
| 271+23 L95 | 172 | Splice |
| 271+27 R24 | 175 | Remove Pole |
| 270+59 R90 | 180 | Install Pole, 1’ Fill on 2788-00-71 project |
| - | 180-182 | Trench cable |
| 270+54 R90 | 182 | Splice |
| 270+18 R23 | 185 | Remove Pole |
| 268+21 R90 | 190 | Install Pole, 3’ Fill on 2788-00-71 project |
| - | 190-192 | Trench cable |
| 267+54 R90 | 192 | Splice |
| 268+00 R21 | 195 | Remove Pole |
| 266+56 R90 | 200 | Install Pole, , 1’ Fill on 2788-00-71 project |
| 266+56 R125 | - | Install Anchor |
| 266+21 R90 | - | Install Anchor |
| 266+54 L109 | 202 | Install Pole |
| 265+82 L35 | 203 | Remove Pole |
| 266+54 L139 | 204 | Install Pole |
| 265+82 R19 | 205 | Remove Pole |
| 264+32 R90 | 210 | Install Pole, set 1.5’ Deeper for 2788-00-71 project |
| 264+32 R125 | - | Install Anchor |
| 263+97 R90 | - | Install Anchor |
| 264+31 R45 | 212 | Pole to Remain |
| 264+66 R50 | - | Install Anchor |

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| **USH 18** |
| **Station No.** | **Sequence No.** | **Work Proposed** |
| 38+12 L50 | 100 | Pole to Remain |
| 39+95 L51 | 115 | Remove Pole |
| 40+31 L52 | 110 | Install Pole, 1’ fill - grade around |
| 41+64 L54 | 125 | Remove Pole |
| 41+62 L54 | 120 | Install Pole, 4’ fill - grade around |
| 40+96 R39 | - | Pothole Cable adjust if necessary at 30”SS crossing |
| 43+40 L57 | 135 | Remove Pole |
| 43+87 L59 | 130 | Install Pole, 7.5’ fill - grade around |
| - | 130 to 132 | Trench Cable |
| 43+34 L173 | 132 | Splice |
| 45+37 L59 | 140 | Install Pole, 7.5’ fill - grade around |
| 45+12 L59 | 145 | Remove Pole |
| 46+85 L59 | 150 | Install Pole, 3.5’ fill - grade around |
| 46+86 L59 | 155 | Remove Pole |
| 47+48 L59 | 160 | Install Pole, 3’ fill - grade around |
| 47+47 L59 | 165 | Remove Pole |
| 48+05 L59 | 170 | Install Pole, 3’ fill - grade around |
| 47+74 L59 | 175 | Remove Pole |
| 48+55 L58 | 180 | Install Pole - grade around |
| 48+61 L56 | 185 | Remove Pole |
| 49+32 R84 | 187 | Remove Pole |
| 49+41 R101 | - | Remove Anchor |
| 50+87 L70 | 190 | Install Pole - grade around |
| 50+88 L63 | 195 | Remove Pole |
| 52+10 L70 | - | Pole to Remain |
| 53+70 L72 | 200 | Pole to Remain |
| 53+70 L62 | - | Install Anchor |
| 53+70 L56 | - | Remove Anchor |
| 55+34 L82 | - | Pole to Remain |
| 56+95 L84 | - | Pole to Remain |
| 56+92 R61 | 210 | Install Pole |
| 56+93 R59 | 215 | Remove Pole |
| 58+75 L74 | 220 | Pole to Remain |
| - | 220-222 | Trench Cable |
| 59+00 L63 | 222 | Splice |
| - | 222-224 | Bore Cable |
| 59+00 R70 | 224 | Splice |

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| **Coldwater Creek Dr** |
| **Station No.** | **Sequence No.** | **Work Proposed** |
| 303+49 L113 | 100 | Splice |
| - | 100-102 | Bore Cable |
| 303+21 R101 | 102 | Splice |
| 303+41 | 100-102 | Discontinue Cable |
| 51+47 L40 | 105 | Remove Street Light/Re-Install During Construction at 51+47 L43 |

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| **Northview Rd** |
| **Station No.** | **Sequence No.** | **Work Proposed** |
| 43+92 L25 | 100 | Pole to remain |
| 43+92 R28 | - | Pole to remain |
| 45+42 L36 | 110 | Install Pole |
| 45+42 L46 | - | Install Anchor |
| 45+46 R36 | 112 | Install Pole |
| 45+46 R27 | 113 | Remove Pole |
| 45+84 L24 | 115 | Remove Pole |
| 46+92 L37 | 120 | Install Pole |
| 46+93 L27 | - | Install Sidewalk guy |
| 46+93 L26 | 125 | Remove Pole & Anchor |
| 48+47 L41 | 130 | Install Pole – Private Property |
| 48+46 R47 | 132 | Install Pole |
| 48+28 R28 | 133 | Remove Pole |
| 48+87 L39 | 135 | Remove Pole |
| 49+31 L67 | 137 | Remove pole and Street Light |
| 50+50 L50 | 140 | Install Pole , 4.5’ fill - grade around |
| 341+63 R69 | 142 | Install Pole , 3’ fill - grade around |
| 341+46 R71 | - | Install Anchor |
| 341+63 R65 | 143 | Remove Pole |
| 50+95 L53 | 145 | Remove Pole |
| 52+37 L74 | 150 | Install Pole – Private Property |
| 53+37 L89 | - | Install Anchor |
| - | 150 to 152 | Trench Cable |
| 52+15 L60 | 152 | Splice |
| 52+15 L60 | 155 | Remove Pole |
| 54+15 L59 | 160 | Pole to remain |

The construction field contact for We Energies Gas is:

Steve King

S13 W33800 Hwy 18

Delafield, WI 53018

Office: (262) 968-5768

Mobile: (414) 940-0570

Steve.King@we-energies.com

**Time Warner Cable** has underground and overhead facilities within the project limits. Relocations and adjustments of Time Warner’s facilities are anticipated to begin prior to the start of this roadway project and continue through the project.

Tim Warner Cable work is expected to begin January 15, 2017 or as We Energies completes isolated areas and will take 60 working days to compete the installation work.

Removal and transfer of Time Warner Cable aerial facilities is dependent on We Energies setting new poles and completing their work prior to Time Warner Cable transferring or rebuilding. Time Warner Cable will not be able to vacate existing poles slated for removal until all Time Warner Cable facilities have been rebuilt and activated. Coordination between We Energies and Time Warner Cable will occur during utility relocation construction.

Contact Steve Cramer by phone at (414) 277-4045, or by mobile at (414) 688-2385, a minimum of ten (10) working days prior to working in the vicinity of Time Warner Cable facilities.

An on-site inspector must be present any time construction work is conducted within 10 feet of the facility. If excavation is within 2 feet of the outer edge of the facility in any direction, only hand excavation, air cutting and vacuum excavation are permitted.

Where proper vertical clearance of 24 inches cannot be maintained, install temporary sand bags, or other suitable material to maintain proper clearance to the facility.

The maximum unsupported exposed length of a Time Warner Cable facility is 5 feet. Support the facility with sand bags or padded skids when required. At no time should the facility be used as a brace to support equipment or sheeting/shoring materials.

Perform backfill and compaction in the presence of a Time Warner Cable on-site inspector and to the satisfaction of the on-site inspector. Provide a minimum of 6-inches of fine loose earth or sand with no sharp gravel, rock, hard clods or other debris on all sides of the facility. Place the remaining backfill over the facility in a manner that does not disturb the previously placed padding material around the facility or causes damage to the facility. Compact the backfill by hand until 18-inches of cover over the facility is achieved. Compact the surrounding disturbed areas around the facility to the same degree of compaction as over the facility. Restore the site to its original condition except for items that are part of the Time Warner Cable approved change.

**CTH TT (Meadowview Road)**

* Remove existing overhead and attach to new We Energies poles from Sta. 264+32 to 283+00.
* Install underground crossings at Sta. 271+35, 276+00 and 277+95.
* Relocate existing underground crossing from Sta. 302+10 to Sta. 303+35.
* Place proposed storm sewer crossing under existing catv crossing at Sta. 321+00, 94’ RT.

**Summit Avenue**

* Replace existing coaxial cable and relocate existing fiber optic cable to new We Energies poles from Sta. 41+00 to 51+00 LT along Summit Avenue.
* Maintain existing crossing at Sta. 41+60 along Summit Avenue.
* Relocate underground along east side of Torhorst Road approximately 50-feet easterly to move out of proposed roadway.

**Northview Road**

* Replace existing overhead coaxial cable and relocate existing fiber optic cable to new We Energies poles from Sta. 43+95 to 54+15 along Northview road.

The construction field contact for Time Warner Cable is:

Steve Cramer

1320 N Martin Luther King Jr Drive

Milwaukee, WI 53212

Office: (414) 277-4045

Mobile: (414) 688-2385

**AT&T Wisconsin** has underground and joint aerial facilities in the project corridor that will need relocation or adjustment. Relocations and adjustments of AT&T facilities are expected to begin November 1, 2016 and take 180 days working days to complete the installation work. AT&T will relocate some facilities onto new We Energies poles once We Energies has completed relocation of their facilities.

 **CTH TT (Meadbrook Road)**

AT&T has an aerial 50 pair copper cable, service terminals, and associated supportive hardware between Sta. 264+32 to 278+00 RT. AT&T will eliminate this cable.

The proposed 19”x30” SSPRCHE pipe at Sta. 273+75 RT is in conflict with a buried 900 pair cable. AT&T will place a new aerial 600 pair on WE Energies pole line from station 264+32 RT to station 276+02 RT to eliminate this conflict.

The proposed 15” SSPRC pipe at Sta. 275+25 RT is in conflict with a buried 900 pair cable. AT&T will place a new aerial 600 pair on WE Energies pole line from station 264+32 RT to station 276+02 RT to eliminate this conflict.

At Sta. 278+00 RT the existing roadway is being widened. AT&T has multiple buried closures and buried cables at this location that are in conflict with this widening. AT&T will eliminate the buried closures. AT&T has requested WE to place an IPP-4”-SDR-OR from their new pole at station 276+02 RT 90 to an existing AT&T pedestal at station 275+98 LT 77 to eliminate these conflicts. AT&T will then place a 900 pair cable in the IPP-4”-SDR-OR which will eliminate all conflicts at this station.

AT&T has a buried 50 pair copper cable from Sta. 278+00 to 282+00 LT that is in conflict with the road widening. AT&T will eliminate this cable.

From Sta. 278+00 to 278+71 RT the existing road is being widened. AT&T has multiple buried closures and buried cables at this location that are in conflict with this widening. AT&T will place a new 1500 pair cable on We Energies pole line from Sta. 276+02 RT 90 to station 280+88 RT 90 to eliminate these conflcits. At station 280+88 RT 90 AT&T will rise down WE energies pole with a 1500 pair and bury 2’ off of the Right-Of-Way to Sta. 281+45. AT&T will cross Summit Ave with the 1500 pair at station 51+35 at a depth of 60 inches.

At Sta. 283+00 RT in the NE corner of CTH TT/Meadowbrook Rd & Summit Avenue the existing road is being widened. AT&T has a buried hand hole and buried fiber cables at this location that are in conflict with this widening. AT&T will eliminate the hand hole. AT&T will place a new 48 fiber on WE Energies pole lead starting at Sta. 62+50 to 32+54 in order to eliminate these conflicts. AT&T will place another fiber rising down WE Energies new pole at Sta. 50+87 and bury cable across Summit Ave at Sta. 51+33 at a depth of 60 inches and then rise up We Energies new pole at Sta. 280+88 RT 90. AT&T will also bury a 1500 pair copper with this fiber to eliminate these conflicts.

The proposed 15” SSPRC pipe from Sta. 283+10 to 289+26 RT is in conflict with a 300 pair copper cable. AT&T will bury a new 300 pair 2 feet off of Right-Of-Way from Sta. 283+10 to 291+47 to eliminate this conflict.

The existing roadway is being widened at Sta. 303+31 LT. AT&T has buried closures and buried cables (fiber and copper) at these locations that are in conflict with this widening. AT&T has requested We Energies to place an IPP-2”-SDR-OR from Sta. 303+21 RT 101 to 303+ 49 LT 113 to eliminate these conflicts. AT&T will then place a new 300 pair inside the new IPP-2”-SDR-OR. AT&T will move its hand hole at Sta. 303+27 LT 66 to 303+27 to LT 88.

The existing roadway is being widened from Sta. 339+53 to 343+75 RT. AT&T has a buried hand hole and fiber at these locations that are in conflict with this widening. AT&T will eliminate the hand hole. AT&T will place new fiber on We Energies pole lead from Sta. 63+00 LT to 56+27 LT then rise down the pole at Sta. 56+27 and bury 2 feet off of the Right-Of-Way from Sta. 56+27 LT to 51+00 LT then turn north and bury in the easement along Meadowbrook Rd from Sta. 340+88 RT to 343+75 RT in order to eliminate these conflicts. AT&T will rise down We Energies pole at Sta. 56+27 LT with another fiber and bury across Northview Rd at Sta. 56+27 then bury 2 feet off of the Right-Of-Way from Sta. 56+27 RT to 51+50 RT turning south onto Meadowbrook Rd into an AT&T easement. AT&T will place a new hand hole at Sta. 338+80 RT 115 and capture an existing fiber cable within the easement.

The existing roadway is being widened at Sta. 343+05 RT. AT&T has buried closures at this location that are in conflict with this widening. AT&T will eliminate the buried closure.

The existing roadway is being widened at Sta. 340+88 RT. AT&T is relocating a buried 1800 pair rising up a We Energies pole that is that is in conflict with the widening. AT&T will bury a new 900 pair along the AT&T easement from Sta. 343+75 to 340+88 then turn east onto Northview RD and bury 2 feet off of the Right-Of-Way from Sta. 51+00 to 56+27 then rise up existing pole at station 56+27 in order to eliminate these conflicts.

The existing roadway is being widened from Sta. 341+00 to 343+67 LT. AT&T has buried closures and buried copper cables at these location that are in conflict with this widening. To eliminate these conflicts, AT&T will bury a new 1200 pair in the easement from Sta. 343+75 to 342+00 RT, crossing Meadowbrook Road at Sta. 342+00 at a depth of 60 inches, then bury 2 feet off of the Right-Of-Way from Sta. 342+00 to 341+15 LT, then turn west onto Northview Road and bury 2 feet off the Right-Of-Way from Sta. 48+48 to 48+66 LT at a depth of 30 inches. From Sta. 48+66 to 47+50 LT AT&T will continue to bury a new 1200 pair 6 feet off of the Right-Of-Way at a depth of 36 inches. From Sta. 47+50 to station 45+40 LT AT&T will continue to bury a new 1200 pair 2 feet off of the Right-Of-Way. AT&T will cross Northview Road with a new 1200 pair at Sta. 45+40 at a depth of 36 inches. AT&T will continue to bury a new 1200 pair 2 feet off of the Right-Of-Way from Sta. 45+40 to station 42+25 RT.

**Summit Avenue**

The proposed 18” SSPRC pipe at Sta. 60+75 RT along Summit Avenue is in conflict with a 50 pair copper cable. To eliminate these conflicts, AT&T has requested We Energies to place an IPP-2”-SDR-OR across Summit Ave at Sta. 59+00. AT&T will then place a 100 & 50 pair cable from Sta. 62+50 RT to 59+00, then cross Summit Avenue by pulling cable into IPP-2”-SDR-OR placed by We Energies. AT&T will then place the 100 pair from Sta. 59+00 LT to 56+67 LT, then bury into the easement at station 56+67 LT to capture existing cable. AT&T will also bury a 50 pair from Sta. 59+00 to 60+75 LT, then bury into easement at station 60+75 LT to capture existing cable.

The existing roadway is being widened from Sta. 59+00 to 57+25 RT along Summit Avenue. AT&T has a buried 1800 pair cable in conflict with the proposed ditches. AT&T will relocated the existing 1800 pair cable from Sta. 59+00 to 57+25 RT approximately 6 feet off of the Right-Of-Way to eliminate this conflict.

The proposed 2G-MS inlet at Sta. 57+06 RT (Structure Number 930.1) along Summit Avenue is in conflict with an existing 900 pair copper cable. AT&T will relocate the existing 900 pair copper cable from Sta. 57+06 to 56+67 RT approximately 6 feet off of the Right-Of-Way to eliminate this conflicts.

The proposed excavation below subgrade from Sta. 53+00 to 51+35 RT along Summit Avenue is in conflict with an existing 900 pair cable. AT&T will relocate the existing 900 pair cable approximately 4 feet off of the Right-Of-Way from station 53+00 RT to station 51+35 RT to eliminate this conflict.

The proposed grade change is in conflict with two AT&T buried closures at Sta. 51+00 RT along Summit Avenue. AT&T will raise the both buried closures 12 inches to eliminate this conflict.

The existing roadway is being widened at Sta. 50+95 RT along Summit Avenue in the NE corner of the Meadowbrook Road and Summit Avenue intersection. We energies has an existing pole in conflict with two AT&T risers attached to the pole. AT&T will transfer both attachments to the new WE energies pole once it has been set in order to eliminate this conflict.

The existing roadway is being widened at Sta. 50+91 RT along Summit Avenue in the NE corner of the Meadowbrook Road and Summit Avenue intersection. AT&T has a buried hand hole and fiber cables at this location that are in conflict with this widening. AT&T will eliminate the hand hole. AT&T will place a new 48 fiber cable on We Energies pole lead starting at Sta. 62+50 to 32+54. AT&T will place another fiber rising down We Energies new pole at Sta. 50+87 then bury across Summit Avenue at Sta. 51+33 at a depth of 60 inches and then rising up We Energies new pole at Sta. 280+88 RT 90. AT&T will also bury a 1500 pair copper cable with this fiber to eliminate these conflicts.

The existing roadway is being widened at Sta. 43+40 RT along Summit Avenue in the NE corner of the Summit Avenue and Torhorst intersection. At this location the present road is being widened. AT&T has buried closures and buried cables (fiber & copper) at this location that are in conflict with this widening. AT&T will eliminate the buried closures. AT&T has requested We Energies to place one IPP-2”-SDR-OR from new pole at Sta. 43+87 to Torhorst Road at Sta. 11+75 to assist in the relocation of facilities and eliminate these conflicts.

The proposed 15” SSPRC pipe at Sta. 53+50 LT along Summit Avenue in between inlet 920 and 920.8 is in conflict with a 100 pair copper cable. To eliminate these conflicts, AT&T has request We Energies to place an IPP-2”-SDR-OR across Summit Ave at Sta. 59+00. AT&T will place a 100 & 50 pair cable from Sta. 62+50 RT to 59+00 and then cross Summit Avenue by pulling cable into IPP-2”-SDR-OR placed by We Energies. AT&T will place the 100 pair cable from Sta. 59+00 LT to 56+67 LT, then bury into the easement at Sta. 56+67 LT to capture existing cable.

**Northview Road**

The existing roadway is being widened from Sta. 45+41 to 49+36 LT along Northview Road. AT&T has buried closures and a buried copper cable at these locations that are in conflict with this widening. To eliminate these conflicts, AT&T will bury a new 1200 pair in the easement from Sta. 343+75 to 342+00 RT, then cross Meadowbrook Road at Sta. 342+00 at a depth of 60 inches, then bury 2 feet off of the Right-Of-Way from Sta. 342+00 to 341+15 LT, then turn west on Northview Road and bury 2 feet off of the Right-Of-Way from Sta. 48+48 to 48+66 LT at a depth of 30 inches. From Sta. 48+66 to 47+50 LT, AT&T will continue to bury a new 1200 pair 6 feet off of the Right-Of-Way at a depth of 36 inches. From Sta. 47+50 to 45+40 LT, AT&T will continue to bury a new 1200 pair 2 feet off of the Right-Of-Way. AT&T will cross Northview Road with a new 1200 pair at Sta. 45+40 at a depth of 36 inches. AT&T will continue to bury a new 1200 pair 2 feet off of the Right-Of-Way from Sta. 45+40 to 42+25 RT.

The existing roadway is being widened from Sta. 50+55 to 55+23 LT along Northview Road. AT&T has a buried hand hole and a buried fiber cable at this location that are in conflict with this widening. AT&T will eliminate the hand hole. To eliminate these conflicts, AT&T will place a new fiber on We Energies pole lead from Sta. 63+00 to 56+27 LT and then rise down pole at Sta. 56+27 and then bury 2 feet off of the Right-Of-Way from Sta. 56+27 to 51+00 LT, then turn north and bury in the easement along Meadowbrook Road from Sta. 340+88 to 343+75 RT. AT&T will rise down We Energies pole at Sta. 56+27 LT with another fiber and bury it across Northview Road at Sta. 56+27 and then bury 2 feet off of the Right-Of- Way from Sta. 56+27 to 51+50 RT, then turning south on Meadowbrook Road into an AT&T easement. AT&T will place a new hand hole at Sta. 338+80 RT 115 and capture an existing fiber cable within the easement.

The existing roadway is being widened from Sta. 51+00 to 54+00 LT along Northview Road. AT&T has aerial copper cables at these locations that are in conflict with this widening. AT&T will bury a new 900 pair copper cable 2 feet off of the Right-Of-Way from Sta. 51+00 to 56+40 LT, then rise up We Energies pole at Sta. 56+40 LT to capture existing aerial cables in order to eliminate this conflict.

The existing roadway is being widened from Sta. 43+94 to 47+20 RT along Northview Road. AT&T has buried closures and buried copper cables at these locations that are in conflict with this widening. To eliminate these conflicts, AT&T will bury a new 1200 pair in the easement from Sta. 343+75 to 342+00 RT, then cross Meadowbrook Road at Sta. 342+00 LT at a depth of 60 inches, then bury 2 feet off of the Right-Of-Way from Sta. 342+00 to 341+15 LT, then turn west onto Northview Road and bury 2 feet off of the Right-Of-Way from Sta. 48+48 to 48+66 LT at a depth of 30 inches. From Sta. 48+66 to 47+50 LT, AT&T will continue to bury a new 1200 pair 6 feet off of the Right-Of-Way at a depth of 36 inches. From Sta. 47+50 to station 45+40 LT, AT&T will continue to bury a new 1200 pair 2 feet off of the Right-Of-Way. AT&T will cross Northview Road with a new 1200 pair at Sta. 45+40 LT at a depth of 36 inches. AT&T will continue to bury a new 1200 pair 2 feet off of the Right-Of-Way from Sta. 45+40 to 42+25 RT.

The existing roadway is being widened from Sta. 50+55 to 51+20 RT along Northview Road. AT&T has a buried fiber cable at this location that is in conflict with this widening. To eliminate these conflicts, AT&T will rise down We Energies pole at Sta. 56+27 LT with another fiber and bury across Northview Road at Sta. 56+27 LT and then bury 2 feet off of the Right-Of-Way from Sta. 56+27 to 51+50 RT, then turning south on Meadowbrook Road into an AT&T easement. AT&T will place a new hand hole at Sta. 338+80 RT 115 and capture an existing fiber cable within easement.

The construction field contact for AT&T is:

Christopher Duncan

2005 Pewaukee Road

Waukesha, WI

Office: (262) 896-7678

Mobile: (414) 491-4810

CD8946@ATT.com

**Windstream Communications** has facilities in the project corridor that will be relocated as part of this project.

Windstream Communications relocation will follow We Energies new pole line construction schedule as they relocate their facility prior to roadway construction. Windstream will coordinate with We Energies for the aerial transfer of existing fiber to new location of poles. This aerial transfer includes STA 263+00 to STA 283+00 RT on CTH TT and STA 40+00 to STA 51+00 LT along USH 18/Summit Ave.

The construction field contact for Windstream is:

Nathan Becker

Office: (262) 792-7938

Mobile: (414) 313-9032

Nathan.becker@windstream.com

**Midwest Fiber Networks** has underground and joint aerial facilities in the project corridor that will need relocation or adjustment. Relocations and adjustments of Midwest Fiber Networks facilities are expected to begin after January 15, 2017 once We Energies, Time Warner Cable and AT&T have completed work and it will take approximately 90 working days to complete the installation work. Midwest Fiber Networks will relocate some facilities onto new We Energies poles once We Energies has completed relocation of their facilities.

Midwest Fiber Networks has buried facilities in the northbound (east) road Right-Of-Way along CTH TT (Meadowbrook Rd) beginning at We Energies power pole located at Sta. 291+48, 124’ RT to 340+83 105’ RT. Existing manholes (handholes) are located at Sta. 302+20 117’ RT, 312+07, 121’ RT, 321+79 94’ RT and 339+44 74’ RT and they are connected by buried fiber optic cable which is not shown on the plans.

Midwest Fiber Networks will lower existing buried fiber optic cable at the following locations:

* Sta. 304+50, 116’ RT to 306+00, 114’ RT
* Sta. 329+00, 103’ RT to 334+00, 94’ RT
* Sta. 339+46, 74’ RT - Relocate existing hand hole southeast to 339+00 +/- 90RT

Midwest Fiber Networks will coordinate with We Energies to transfer aerial facilities and is located on We Energies poles at the following locations:

**CTH TT**

Sta. 264+29, 46, RT to riser pole at Sta. 291+48, 124’ RT (18 poles).

Sta. 341+67, 65’ RT

Sta. 342+81, 63’ RT

**Northview Road**

Sta. 42+43, 25’ RT to 51+00 43’ LT (6 poles)

The construction field contact for Midwest Fiber Networks is:

Paul Halbe

6070 N Flint Road

Glendale, WI 53209

Office: (414) 459-3556

Mobile: (414) 349-3672

phalbe@cablecomllc.com

**City of Pewaukee Department of Public** **Works** has sanitary sewer facilities located along the project and work is included as part of the proposed project improvements.

Reconstruct the following three sanitary manholes and place internal manhole sealing system as called for in the plans:

* Sta. 324+00, 80’LT along Meadowbrook Road
* Sta. 47+15, 13’ RT along Northview Road
* STA 44+70, 11’RT along Northview Road

The City of Pewaukee has sanitary sewer that crosses CTH TT at approximately Sta. 324+00, 80’ LT to 324+15, 120’ RT. No conflicts are anticipated.

The City of Pewaukee has sanitary sewer that runs along the south side of Northview Road. No conflicts are anticipated.

The construction field contact for the City of Pewaukee is:

Jane Mueller

W240 N3065 Pewaukee Road

Pewaukee, WI 53072

Glendale, WI 53209

Office: (262) 691-0804

**City of Waukesha Water Utility** has water main facilities located within the project and work is included as part of the proposed project improvements.

Contractor shall coordinate work with the Waukesha Water Utility.

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

All work associated with connecting the offset water main relocations to the old water main shall be coordinated with the Waukesha Water Utility as set forth in the plans and special provisions. The Waukesha Water Utility will assist in turning the existing valves to isolate these areas for the installation of the water main offsets.

Water mains will not be allowed to be shut down before 8:00 am. Contractor is responsible to notify all customers when their water will be shut off and in case of an emergency. The notification should be done at least 24 hours prior to shut down whenever possible. No extra costs or change orders will be allowed for down time associated with the Waukesha Water Utility crews turning the water off or on.

A schedule showing tentative dates for water main construction shall be provided to the Water Utility at least 2 weeks prior to construction. 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 without the permission of the Owner. Payments may be denied, or removal of work may be ordered, for work accomplished without an inspector present or without the approval of the Owner.

Following construction but before the surface course, the Water Utility must be contacted to inspect their facilities on the project. Any damage found to be caused by the Contractor shall be repaired by the Contractor in a timely manner. All Water Utility facilities (and other street structures) must be exposed before the pavement is placed.

Contractor shall identify proposed grade changes that affect valve boxes or curb stops and notify Waukesha Water Utility providing at least 24 hour notice. Provide 72 hour notice if adjustment by the Waukesha Water Utility is necessary.

The existing water main will be relocated (lowered) at fifteen (15) locations to allow for the construction of the new storm sewer. Fourteen of these locations are included as part of this contract work. The location along the north side of USH 18 adjacent to the proposed 60-Inch culvert pipes will be completed by the Waukesha Water Utility or one of its designees prior to this contract.

Confirm that a conflict with the water main is not avoidable prior to proceeding with relocation work. Water main material shall be replaced in kind. The following water mains may be relocated:

 Size               Location                                               Material            Age

 16”                CTH TT at Fiddlers Creek      Ductile Iron              2001

 8”                 Fiddlers Creek WB PVC      1999

 12”                CTH TT & STH 18 NE corner               Ductile Iron        2001

 12”                CTH TT & Coldwater Creek – West (4)   PVC              2007

 12”                CTH TT & Coldwater Creek – East (2)   HDPE              2007

 12”                CTH TT & Coldwater Creek – West    PVC              2006

 16”                CTH TT & Northview PVC              2006

 8 ”                USH 18 & Torhorst Road    PVC              2004

 12” USH 18, East of Torhorst Rd, North side Ductile Iron 2001

 12” USH 18, 600’ East of CTH TT Ductile Iron 1999 12” Northview Road, 350’ East of CTH TT PVC 2006

One hydrant will be relocated at the intersection of CTH TT and Northview Road by the Waukesha Water Utility. Provide 72 hours (3 working days) notice prior to relocation.

Valve and curb boxes are located within the project limits and will be adjusted to proposed grades by the Waukesha Water Utility. Provide 72 hours (3 working days) notice prior to any required adjustments. Please call John Kuzba at (262) 352-5135 to coordinate both hydrant relocation and valve adjustments.

The construction field contact for the Waukesha Water Utility is:

Nick Ellifson

115 Delafield Street

Waukesha, WI 53187

Office: (262) 409-4461

Mobile: (262) 364-9409

nellifson@waukesha-water.com

**City of Waukesha Public Works** has underground facilities within the project limits including storm and sanitary sewer. Sanitary manholes will require adjustment or reconstruction as part of this project.

**Sanitary Sewer**

The City of Waukesha will be responsible for inspection and approval of all City of Waukesha sewer work. Contact Jonathan Schapekahm with the City of Waukesha at (262) 524-3584, jschapek@ci.waukesha.wi.us five business days prior to performing the work to arrange for an inspector to be present at the time the work is completed.

Adjust or reconstruction the following sanitary manholes and place internal manhole sealing system as called for in the plans:

**Gas Station Driveway (Meadowbrook Road)**

* Sta. 48+94, 2’ LT

**Summit Avenue**

* Sta. 43+10, 75’ LT
* Sta. 44+50, 60’ LT
* Sta. 46+45, 50’ LT

**Street Lighting**

The City of Waukesha will be responsible for inspection and approval of all City of Waukesha street lighting work. Contact Jeff Hernke with the City of Waukesha at (262) 524-3592, jhernke@ci.waukesha.wi.us five business days prior to performing the work to arrange for an inspector to be present at the time the work is completed.

The City of Waukesha will install proposed street lighting as part of these proposed improvements.

**Waukesha County DPW Traffic Signals** has facilities located at the CTH TT (Meadowbrook Rd) & Northview Road intersection.

The traffic signal located at CTH TT (Meadowbrook Rd) & Northview Road will be removed and reconstructed as part of this project. The proposed signal will be owned and operated by WisDOT.

The construction field contact for the Waukesha County Traffic Lighting is:

Bruce Barnes

515 W. Moreland Blvd., Rm 220

Waukesha, WI 53188

Office: (262) 548-7748

bbarnes@waukeshacounty.gov

**WisDOT Traffic Lighting** work is included as part of the proposed project improvements and have been identified as part of Project ID’s 2788-00-72 and 2788-70-02.

WisDOT owned lighting is fed from the WisDOT owned and operated signal control cabinet at USH 18 & CTH TT (Meadowbrook Rd). All lighting at this intersection will be removed and reconstructed as part of the project.

The construction field contact for the WisDOT Traffic Lighting is:

WisDOT Signal Operations

141 NW Barstow Street

Waukesha, WI 53187

 (414) 750-2605

WisDOT Electrical Field Unit

935 South 60th Street

West Allis, WI 53214

(414) 266-1170

**WisDOT Traffic** **Signal** work is included as part of the proposed project improvements and have been identified as part of Project ID’s 2788-00-72 and 2788-70-02.

The traffic signals located at USH 18 & CTH TT (Meadowbrook Rd) and CTH TT (Meadowbrook Rd) & Northview Road will be removed and reconstructed as part of the project. A temporary signal will be installed at both of these intersections during the reconstruction.

The construction field contact for the WisDOT Traffic Signals is:

WisDOT Signal Operations

141 NW Barstow Street

Waukesha, WI 53187

 (414) 750-2605

WisDOT Electrical Field Unit

935 South 60th Street

West Allis, WI 53214

(414) 266-1170

1. Other Contracts.

The following projects will be under construction concurrently with the work under this contract. Coordinate all construction activities including work zone traffic control, roadway and lane closures, and other work items as required with other contracts.

**West Waukesha Bypass North**

The City of Waukesha, Waukesha County, Wisconsin has a project adjacent to this contract. Work under this contract (anticipated LET of early 2017) abuts the north end of this contract and will be completed concurrently with this contract. Traffic switches must be made at the same time. Coordinate activities with the City of Waukesha project contractor.

**West Waukesha Bypass South**

Project 2788-00-71, Waukesha County, Wisconsin under a department contract. Work under this contract (anticipated LET date of November 2017) abuts the south end of this contract and may start before completion of this contract. Coordinate activities with Doug Cain, 262-548-5603, douglas.cain@dot.wi.gov the Project 2788-00-71 WisDOT Project Manager.

1. 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 Douglas Cain of WisDOT at 262-548-5603.

107-054 (20080901)

1. Environmental Protection, Aquatic Exotic Species Control.

Exotic invasive organisms such as VHS, zebra mussels, purple loosestrife, and Eurasian water milfoil are becoming more prolific in Wisconsin and pose adverse effects to waters of the state. Wisconsin State Statutes 30.07, “Transportation of Aquatic Plants and Animals; Placement of Objects in Navigable Waters”, details the state law that requires the removal of aquatic plants and zebra mussels each time equipment is put into state waters.

At construction sites that involve navigable water or wetlands, use the follow cleaning procedures to minimize the chance of exotic invasive species infestation. Use these procedures for all equipment that comes in contact with waters of the state and/or infested water or potentially infested water in other states.

Ensure that all equipment that has been in contact with waters of the state, or with infested or potentially infested waters, has been decontaminated for aquatic plant materials and zebra mussels prior to being used in other waters of the state. Before using equipment on this project, thoroughly disinfect all equipment that has come into contact with potentially infested waters. Use the following inspection and removal procedures (guidelines from the Wisconsin Department of Natural Resources <http://dnr.wi.gov/topic/fishing/documents/vhs/disinfection_protocols.pdf> for disinfection:

1. Prior to leaving the contaminated site, wash machinery and ensure that the machinery is free of all soil and other substances that could possibly contain exotic invasive species;
2. Drain all water from boats, trailers, bilges, live wells, coolers, bait buckets, engine compartments, and any other area where water may be trapped;
3. Inspect boat hulls, propellers, trailers and other surfaces. Scrape off any attached mussels, remove any aquatic plant materials (fragments, stems, leaves, seeds, or roots), and dispose of removed mussels and plant materials in a garbage can prior to leaving the area or invested waters; and
4. Disinfect your boat, equipment and gear by either:
	1. Washing with ~212º F water (steam clean), or
	2. Drying thoroughly for five days after cleaning with soap and water and/or high pressure water, or
	3. Disinfecting with either 200 ppm (0.5 oz per gallon or 1 Tablespoon per gallon) Chlorine for 10-minute contact time or 1:100 solution (38 grams per gallon) of Virkon Aquatic for 20- to 30-minute contact time. Note: Virkon is not registered to kill zebra mussel veligers nor invertebrates like spiny water flea. Therefore this disinfect should be used in conjunction with a hot water (>104º F) application.

Complete the inspection and removal procedure before equipment is brought to the project site and before the equipment leaves the project site.

107-055 (20130615)

1. Environmental Protection, By-Pass Pumping

*Supplement subsection 107.18 of the standard specifications as follows:*

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

(NER 11-0711)

1. Environmental Protection, Dewatering

*Supplement subsection 107.18 of the standard specifications as follows:*

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

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

(NER12-1010)

1. Construction Over or Adjacent to Navigable Waters.

*Add the following to standard spec 107.19:*

The Pebble Creek is classified as a navigable waterway.

107-060 (20150630)

1. Erosion Control

The contractor shall prepare and submit an erosion control implementation plan (ECIP) for the project including borrow sites, material disposal sites, dust control, and dewatering according to Chapter TRANS 401 requirements. The erosion control implementation plan shall supplement information shown on the plans and shall not reproduce it. The erosion control implementation plan will identify how the contractor intends to implement the project’s erosion control plan.

Provide the ECIP fourteen (14) calendar days prior to the pre-construction conference. Provide one copy of the ECIP to WisDOT and one copy of the ECIP to the WDNR Liaison, Craig Webster, at craig.webster@wisconsin.gov, 141 NW Barstow St, Room 180, Waukesha, WI 53188, (262) 574-2141. Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-topsoiling to minimize the period of exposure to possible erosion. Do not implement the ECIP until it has been approved by the Department.

Re-topsoil of graded areas, as designated by the engineer, immediately after grading is completed within those areas. Seed, fertilize, and mulch/erosion mat top-soiled areas, as designated by the engineer, within five (5) calendar days after placement of topsoil. If graded areas are left exposed for more than 14 calendar days, seed those areas with temporary seed and mulch. Disturbed areas near Pebble Creek and associated wetlands shall receive temporary seed and mulch if left exposed for more than five (5) calendar days.

All disturbed areas within 200 feet of Pebble Creek shall be temporary and permanently seeded within one (1) calendar day of the ground disturbing activity. Temporary seed shall be placed on all surfaces outside of the pavement prepared roadway base aggregate.

Permanent restoration with topsoil, erosion mat, seed and fertilizer shall begin, as designated by the engineer, within five (5) calendar days after completion of the grading in areas directly adjacent to Pebble Creek. Permanent restoration shall be completed prior to advancing to the next construction stage.

When performing roadway cleaning operations, the contractor shall use equipment having vacuum or water spray mechanism to eliminate the dispersion of dust. If vacuum equipment is employed, it shall have suitable self-contained particulate collectors to prevent discharge from the collection bin into the atmosphere.

When performing saw cutting operations, water slurry shall be squeegeed off to the shoulder or median to prevent vehicles from making the particles airborne.

Stockpile excess material or spoils on upland areas away from wetlands, floodplains, and waterways. Stockpiled soil shall be protected against erosion. If stockpiled material is left for more than fourteen (14) calendar days, seed the stockpile with temporary seed and mulch.

Do not pump water from the construction site to a stormwater conveyance without the water first passing through a sediment trap or filter bag. Areas near Pebble Creek shall use enhanced erosion control measures for dewatering consisting of a filter bag inside a sediment trap.

Erosion control BMP’s are at suggested locations. The actual locations will be determined by the contractors ECIP and by the engineer. Erosion Control BMP’s shall be maintained until permanent vegetation is established or until the engineer determines that the BMP is no longer required.

1. 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 8:00 PM until the following 7:00 AM, unless prior written approval is obtained from the engineer.

107-001 (20060512)

1. Notice to Contractor – Traffic Signal Equipment Lead Time.

Lead time for traffic signal equipment specified for this project has been ranging from 12‑weeks to 18-weeks. Order equipment as soon as possible to assure the equipment is procured in a timely fashion and, therefore, installed, inspected, and ready for turn-on at the required date.

1. Dust Control Implementation Plan.

**A Description**

Develop, update, and implement a detailed Dust Control Implementation Plan (DCIP) for all land-disturbing construction activities and associated impacts both within the project site boundaries and outside the project site boundaries. Incorporate contract bid items that this article specifies into the DCIP.

**B (Vacant)**

**C Construction**

**C.1 General**

Take responsibility for dust control on the project as specified in standard spec 107.18. Minimize dust emissions resulting from land disturbing activities. Do not generate excessive air borne particulate matter (PM) or nuisance dust conditions. Take direct responsibility for controlling dust at all times throughout the duration of the contract, 24 hours per day, 7 days per week, including non-working hours, weekends, and holidays.

Submit a DCIP to the engineer for review at least 14 calendar days before the preconstruction conference. Coordinate with the department, if requested, to resolve DCIP related issues before the preconstruction conference. The department will either approve the DCIP or request revisions. Do not initiate any land-disturbing activities without the department's approval of the DCIP.

**C.2 Dust Control Implementation Plan Contents**

Develop a DCIP tailored to the specific needs of the project. Consider potential impacts to businesses and residences adjacent to the job site. Describe in detail all land disturbing, dust generating activities. Identify strategies to prevent, mitigate, and collect excess dust. Establish clear lines of communication with the engineer to ensure that all dust control issues can be dealt with promptly.

The DCIP shall include, but not be limited to, all of the following:

1. A single contact person with overall responsibility for the DCIP development as well as surveillance and remediation of job related dust. Include the following:

- Name, firm, address, and working-hours phone number.

- Non-working-hours phone number.

- Email address.

2. Individual contact persons and their respective areas of responsibility. Include the following:

- Name, firm, address, and working-hours phone number.

- Non-working-hours phone number.

- Email address.

3. A site map locating project features, the job site boundaries, all ingress and egress points, air intakes and other dust-sensitive areas, and all public and private paved surfaces within and immediately adjacent to the job site. Show where specific land disturbing, dust generating activities will occur and, to the extent possible, where employing various dust control or prevention strategies.

4. A matrix showing, for each anticipated land disturbing, dust generating activity, the following:

- Preventive measures that shall be employed.

- The applicable contact person.

- The contractor’s timetable and surveillance measures used to determine when remediation is required.

- The specific dust control and remediation measures that shall be employed. List the specific contract bid items that shall be used for payment. Also indicate costs that are incidental to the contract.

- Both maintenance and cleanup schedules and procedures.

- How excess and waste materials shall be disposed of.

5. A description of how off-site impacts shall be monitored and dealt with.

**C.3 Updating the Dust Control Implementation Plan**

Update the DCIP throughout the term of the contract as the engineer directs. Obtain the engineer's approval for all DCIP alterations. Also obtain the engineer's approval for DCIP routine adjustments for weather, job conditions, or emergencies that will have an impact on payment under the bid items listed in the approved DCIP.

**C.4 Dust Control Deficiencies**

Correct engineer identified dust control deficiencies within the time the engineer specifies. The engineer will allow from 30 minutes to 24 hours from the time the engineer notifies the contractor in writing of the deficiency. Deficiencies include, but are not limited to, actions or lack of actions resulting in excessive dust, failing to comply with the contractor’s dust control implementation plan or associated special provisions, and failing to properly maintain equipment.

**D Measurement**

The department will measure the various bid items associated with dust control as specified in the applicable measurement subsections of either the standard specifications or other contract special provisions. The department will not measure work performed under a DCIP alteration unless the engineer specifically approves that alteration.

Measurement under the DCIP shall include, but is not limited to, the contract bid items listed below:

623.0200 Dust Control Surface Treatment

624.0100 Water

628.7560 Tracking Pads

SPV.0075.02 Pavement Cleanup 2788-00-72

SPV.0075.03 Pavement Cleanup 2788-02-70

The department will measure work completed under other existing contract bid items if approved as a part of the DCIP. The department will consider new bid items to the contract if proposed under the DCIP. The department will not measure work required under the DCIP that is not included in contract bid items.

**E Payment**

All costs associated with the development and updating of the DCIP are incidental to the contract. The department will pay separately for the work required to implement the actions approved in the DCIP under the contract bid items approved as a part of the DCIP. All other costs associated with work approved under the DCIP are incidental to the contract.

SEF Rev. 14\_1211

1. Clearing and Grubbing, Emerald Ash Borer.

This applies to projects in the emerald ash borer (EAB) quarantined zones to include Fond du Lac, Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties.

*Supplement standard spec 201.3 with the following:*

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

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

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

The quarantine of ash trees includes all horticultural cultivars of the species listed above.

Note that blue ash twigs are 4-sided. All other Wisconsin ash trees have round stems. Also, Mountain ash (*Sorbus americana and S. decora*) is not a true ash and is not susceptible to EAB infestation.

The contractor shall be responsible for hiring a certified arborist to identify all ash trees that will be cleared and grubbed for the project. In addition, prior to scheduled clearing and grubbing activities, the arborist shall mark all ash trees with florescent lime flagging tied around the trunk perimeter.

Follow and obey the following Wisconsin Department of Agriculture, Trade, and Consumer Protection order:

**ATCP 21.17 Emerald ash borer; import controls and quarantine.**

**Importing or Moving Regulated Items from Infested Areas; Prohibition**.

Except as provided in subparagraph (3), no person may do any of the following:

(a) Import a regulated item under sub. (2) into this state if that item originates from an emerald ash borer regulated area identified in 7CFR 301.53-3.

(b) Move any regulated item under sub. (2) out of an emerald ash borer regulated area that is identified in 7CFR 301.53-3 and located in this state.

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

**Regulated Items**. The following are regulated items for purposes of subparagraph (1):

The emerald ash borer, Agrilus planipennis Fairmaire in any living stage.

Ash trees.

Ash limbs, branches, and roots.

Ash logs, slabs or untreated lumber with bark attached.

Cut firewood of all non-coniferous species.

Ash chips and ash bark fragments (both composted and uncomposted) larger than one inch in diameter.

Any other item or substance that may be designated as a regulated item if a DATCP pest control official determines that it presents a risk of spreading emerald ash borer and notifies the person in possession of the item or substance that it is subject to the restrictions of the regulations.

**Regulatory Considerations**

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

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

**Chipped Ash Trees**

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

May be buried on site within the right-of-way in accordance to standard spec 201.3 (14).

May be buried on adjacent properties to projects within the quarantined zone with prior approval of the engineer in accordance to standard spec 201.3 (15).

May be trucked to a licensed landfill within the quarantined zone with the engineer’s approval in accordance to standard spec 201.3 (15).

Burning chips is optional if in compliance with standard spec 201.3.

Chips must be disposed of immediately if not used for project mulching and may not be stockpiled and left on site for potential transport by others. Chips may be stockpiled temporarily if they will be used for project mulching and are not readily accessible to the public.

Chipper equipment must be cleaned following post-chipping activities to ensure no spread of wood chip debris into non-quarantined counties.

**Ash logs, Branches, and Roots**

May be buried without chipping within the existing right-of-way or on adjacent properties in accordance to standard spec 201.3 (14)(15).

May be trucked to a licensed landfill within the quarantined zone with the engineer’s approval in accordance to standard spec 201.3 (15).

Burning is optional if in compliance with standard spec 201.3.

Ash logs, branches, and roots must be disposed of immediately and may not be stockpiled.

All additional costs will be incidental to clearing and grubbing items.

Do not bury or use mulch in an area that will be disturbed again during later phases of the project.

Anyone moving firewood or ash products from the state or these counties is subject to state and federal fines up to $1,000.00. All fines are the responsibility of the contractor. Obtain updated quarantine information at the DNR Firewood Information Line at (800) 303-WOOD.

**Furnishing and Planting Plant Materials**

*Supplement standard spec 632.2.2 with the following:*

Ash trees may be obtained from inside or outside the quarantine area and planted within the quarantined area. Ash trees from within the quarantine area may not be transported and planted into the non-quarantined area.

**Updates for Compliance**

Each year, as a service, the Wisconsin department of agriculture, trade and consumer protection distributes an updated federal CFR listing to nursery license holders and other affected persons in this state. More frequent updates, if any, are available on the Department of Agriculture, Trade, and Consumer Protection (DATCP) website at [**www.datcp.state.wi.us**](http://www.datcp.state.wi.us) . Subsection (1) applies to new regulated areas as those areas are identified in the CFR, regardless of whether affected persons receive update notices from the DATCP. Persons may request update notices by calling (608) 224−4573, by visiting the DATCP website, or by writing to the following address:

Wisconsin Department of Agriculture, Trade and Consumer Protection

Division of Agricultural Resource Management

P.O. Box 8911

Madison WI 53708−8911

**Regulated Items**

More frequent updates, if any, are available on the DATCP website at [**www.datcp.state.wi.us**](http://www.datcp.state.wi.us)*.* Subsection (1) applies to new regulated areas as those areas are identified in the CFR, regardless of whether affected persons receive update notices from DATCP. Persons may request update notices by calling (608) 224−4573, by visiting the DATCP website, or by writing to the above address.

201-SER1 (20100401)

1. Pavement Breaking Equipment

Use only hydraulic pavement breaking equipment for breaking pavement within 300 feet of any structure. Do not use guillotine, drop hammer, falling weight, gravity impact breakers or equivalent equipment. A multi-head hydraulic drop hammer is allowed unless a structure is within 50 feet of the roadway.

SEF Rev. 14\_0415

1. Removing Apron Endwall, Item 204.9060.S.

**A Description**

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

**B (Vacant)**

**C (Vacant)**

**D Measurement**

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

**E Payment**

*Add the following to standard spec 204.5:*

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 204.9060.S | Removing Apron Endwall | Each |

204-025 (20150630)

1. Removing Culvert, Item 204.9090.S.

**A Description**

This special provision describes removing reinforced concrete culvert pipe in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**

The department will measure Removing Culvert in Linear Feet, acceptably completed.

**E Payment**

*Add the following to standard spec 204.5:*

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 204.9090.S | 01. Removing 18-Inch Culvert02. Removing 48-Inch Culvert03. Removing 72-Inch Culvert | LF |

204-025 (20150630)

1. QMP Subgrade.

**A Description**

This special provision describes requirements for subgrade materials within the roadway foundation as defined in standard spec 101.3. Conform to standard spec 207 as modified in this special provision for all work within the roadway foundation at the following locations:

Waukesha Bypass(CTH TT/Meadowbrook Road/Merrill Hills Road), USH 18, Temporary Widening, Crossroad Mainline, Local roads, and Temporary roads

Provide and maintain a quality control program. A quality control program is defined as all activities, including process control inspection, sampling and testing, documentation, and necessary adjustments in the process that are related to the construction of subgrade which meets all the requirements of this provision.

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

<http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/cmm.aspx>

**B Materials**

**B.1 Quality Control Plan**

Submit a comprehensive written quality control plan to the engineer at or before the pre‑construction meeting. Do not perform grading work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

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

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
4. Location of the QC laboratory, retained sample storage, and control charts and other documentation.
5. A summary of the locations and calculated quantities to be tested under this provision.
6. An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

**B.2 Personnel**

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present at the site during all subgrade preparation, fill placement, compaction, and nuclear testing activities. Have a nuclear density technician certified under HTCP at level I perform field density and field moisture content testing.

**B.3 Laboratory**

Perform quality control testing in a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:

 Materials Laboratory

 3502 Kinsman Boulevard

 Madison, Wisconsin 53704-2583

 Telephone: (608) 246-7938

 <http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-lab-req.aspx>

**B.4 Equipment**

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department’s approved product list at <http://www.atwoodsystems.com/materials>. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge. Nuclear density gauge calibration verification is required daily when earthwork construction operations require testing under this special provision article. This calibration verification shall be performed using the departments “Validator” apparatus which is located at the Zoo Interchange Construction Field Office: 2424 S. 102nd St., West Allis, Wisconsin 53227. Establish a standard gauge reading for the “Validator” using the ten test average method. The source emitter depth for calibration verification, in the direct transmission mode, will be determined by the engineer. This procedure will establish the “Validator” apparatus, as the contractor’s project reference site.

Conform to ASTM D 2950 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

**B.5 Soil Source Study**

Conduct and submit a soil source study before beginning of grading operations. Ensure that this study identifies each distinct soil type on the project within the top 15 feet of cut areas and all borrow material. Provide the in-bank natural moisture content for each soil. Develop moisture-density curves for each identified soil type by utilizing AASHTO T 99, with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65. If a different specific gravity is used perform a specific gravity test. Determine the maximum density and corresponding optimum moisture level for each soil type. Develop a site-specific family of Proctor curves for this contract from the completed soil source study and submit to the engineer for review and acceptance.

Perform characterization tests on each of the soil types selected for the soil source study. The tests for roadway include AASHTO T 89, AASHTO T 90, AASHTO T 27, and AASHTO T 11. Classify each soil type selected according to the AASHTO soil classification system based on the characterization tests. Do not begin grading operations until the engineer accepts the soil source study.

Use the soil types identified in the soil source study with corresponding maximum densities and optimum moisture values to determine the compaction compliance on the project. Continue the soil source study in those areas of cuts greater than 15 feet that were not accessible during the initial study. Include data on additional soil types if project conditions change. Ensure that tests of additional soil types are complete and the engineer accepts the results before incorporating the material into the roadway foundation.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department’s split samples to the department at:

 Regional Materials Laboratory

 Attn: Paul Emmons

935 S. 60th Street

 West Allis, Wisconsin 53214

 Telephone: (414) 266-1158

Retain and identify two representative samples of each Proctor. Submit one sample to the engineer. Retain one sample on site for use when performing textural identification.

**B.6 Quality Control Documentation**

**B.6.1 Control Charts**

Maintain separate control charts for the field density and field moisture content of each grading area. Designate grading areas within the project as follows:

1. Embankment portions of the project, except within 200 feet of bridge abutments.
2. Embankment within 200 feet of bridge abutments.
3. Subgrade cut portions of the project.
4. Embankment in pipe removal, pipe culvert, sewer and waterline trenches.
5. Structure and granular backfill placed at bridge abutments.
6. Embankments of the project where embankments are 20 feet or higher regardless of location to be known as special compaction area.

Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random and engineer-requested testing but only include the contractor’s randomly selected QC test results in the 4-point running average. The contractor may plot other contractor-performed process control or informational tests on the control charts, but do not include them in 4‑point running averages.

Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable control limits, the contractor’s individual test results, the running average of the last 4 data points, and the engineer’s quality verification test data points. Use the control charts as part of a process control system for identifying potential problems and assignable causes. Format control charts according to the CMM.

Submit control charts to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

**B.6.2 Records**

Document all observations, inspection records, adjustments to fill placement procedures, soil changes, and test results daily. Note the results of the observations and inspection records as they occur in a permanent field record. Density test locations shall be identified by a specific test number and include horizontal and vertical control for reference as noted in Section B.7.1.

Provide copies of the field density and field moisture running average calculation sheets, the one-point Proctor tests, records of procedure adjustments, and soil changes to the engineer daily.

Submit original testing records to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

**B.7 Contractor Testing**

**B.7.1 General**

Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present during all subgrade preparation, fill placement, compaction, and testing. Have a nuclear density technician certified under HTCP at level I perform the testing for field density and field moisture content. During subgrade construction, use sampling and testing methods identified in the CMM to perform the required tests at randomly selected locations at the indicated minimum frequency for each grading area.

Determine the cubic yards for testing based on a total load count system the engineer and contractor agree to.

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically. Use project stationing to determine horizontal location and grade stakes to determine vertical location. Elevations must be referenced to NAV88 datum.

Test areas of suspect compaction or areas which appear to be nonconforming as determined by the engineer.

**B.7.2 Field Density and Field Moisture**

Perform the field density and field moisture tests using the nuclear density meter method according to AASHTO T 310. Ensure that each field density test material is related to one of the specific soil types identified in the soil source study in determining the percent compaction. Use textural identification as the primary method of establishing this relationship. Utilize the representative samples retained from the soil source study when performing the textural identification. Use a coarse particle correction according to AASHTO T 224.

If field density and field moisture tests cannot be performed by the nuclear density method due to a high percentage of oversized particles as determined according to AASHTO T 99 for highway embankments, observe the placement of the embankment and document the basis of acceptance. Document daily quantities of untested embankment and locations where untested embankment is placed, and keep a cumulative quantity of untested embankment material for the duration of the project. Include the daily documentation and a summary of the cumulative quantity of untested embankment material with the project records.

**B.7.3 One-Point Proctor**

Obtain a representative sample of the fill material and test according to AASHTO T 272. Compare the sample to the curves developed in the soils source study to determine the maximum dry density and optimum moisture. Use the appendix for AASHTO T 272 as a guide in this determination.

**B.7.4 Testing Frequency**

**B.7.4.1 Subgrade Embankment portions of the project, except within 200 Feet of bridge abutments**

Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density and Moisture(AASHTO T 310) | One per 2,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests. |
| One-Point Proctor(AASHTO T 272) | One per 9,000 cubic yards or when a change in fill material occurs. |

**B.7.4.2 Subgrade Embankment Within 200 Feet of Bridge Abutments**

Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density and Moisture(AASHTO T 310) | One per 1,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests. |
| One-Point Proctor(AASHTO T 272) | One per 9,000 cubic yards or when a change in fill material occurs. |

**B.7.4.3 Subgrade Cut**

Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density and Moisture(AASHTO T 310) | One test per 1,000 linear feet of cut or one test per cut area whichever yields the most tests. The testing will be completed at the finished subgrade elevation. |

**B.7.4.4 Subgrade Embankment in Pipe Removals, Pipe Culvert, Sewer and Waterline Trenches**

Perform the required tests at the following minimum frequencies per trench run between

structures. Test trenches individually at the frequency listed below. For example, lateral

lines and trunk lines are to be considered individual trenches:

| Test | Minimum Frequency |
| --- | --- |
| Field Density and Moisture(AASHTO T 310) | One test per 100 CY of backfill placed per lift or one test per day whichever yields the most tests. |
| One-Point Proctor(AASHTO T 272) | One per 3,000 cubic yards or when a change in fill material occurs. |

**B.7.4.5 Structure and Granular Backfill at Bridge Abutments**

Perform the required tests at the following minimum frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density and Moisture(AASHTO T 310) | One test per 2 feet of vertical backfill height per abutment. |
| One-Point Proctor(AASHTO T 272) | One per 3,000 cubic yards or when a change in fill material occurs. |

**B.7.5 Compaction Zones**

**B.7.5.1 Subgrade Embankment portions of the project, except within 200 Feet of Bridge Abutments**

Embankment material placed within 6 feet of the finished subgrade elevation is classified as upper zone material. Material placed more than 6 feet below the finished subgrade elevation is classified as lower zone material.

**B.7.5.2 Subgrade Embankment Within 200 Feet of Bridge Abutments**

All embankment material placed within 200 feet of bridge abutments is subject to the quality controls for upper zone material.

**B.7.5.3 Subgrade Cut**

Subgrade material in cut areas is subject to the quality controls for upper zone material.

**B.7.5.4 Subgrade Embankment in Pipe Removal and Culvert Pipe Trenches**

Material placed within pipe removal and culvert pipe trenches are subject to the quality controls for the zone that the material is located in.

**B.7.5.5 Structure and Granular Backfill at Bridge Abutments**

All backfill material placed adjacent to bridge abutments is subject to the quality controls for upper zone material.

**B.7.6 Control Limits**

**B.7.6.1 Field Density**

**B.7.6.1.1 General Conditions**

The lower control limit for field density measurements in the upper zone is a minimum of 95.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4‑point running average and a minimum of 92.0% of the maximum dry density for any individual test.

The lower control limit for field density measurements in the lower zone is a minimum of 93.0% of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4‑point running average and a minimum of 90.0% of the maximum dry density for any individual test.

**B.7.6.2 Field Moisture Content**

**B.7.6.2.1 General Conditions**

The upper control limit for the field moisture content in the upper and lower zones is 105.0% of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average.

The lower control limit for the field moisture content in the upper and lower zones is 65.0% of the determined optimum moisture for the 4-point running average. There is no lower control limit for the field moisture of material having less than 5% passing the No. 200 sieve.

**B.7.7 Corrective Action**

Notify the engineer if an individual field density test falls below the individual test control limit. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the density of the subgrade material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable. The field density tests, soil moisture content tests and soil stability must meet the requirements of this special provision for the fill to be considered acceptable.

Notify the engineer if the field density or field moisture running average point falls below the running average control limit for field density or outside the control limits for field moisture. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the quality of the material represented by the running average point. Retest each corrected area at a new random location within its represented quantity and determine a new 4-point running average. If the new running average is not acceptable, perform further corrective actions and retest at new random locations.

If the contractor's control data is proven incorrect resulting in a field density or field moisture point falling below the control limit for field density or outside the control limits for field moisture, the subgrade is unacceptable. Employ the methods described above for unacceptable material.

**B.8 Department Testing**

**B.8.1 General**

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 verification and independent assurance personnel for the project.

The department will provide field density and field moisture test results to the contractor on the day of testing. Test results from Proctor split samples will be provided to the contractor within 7 business days after the sample has been received by the department.

**B.8.2 Verification Testing**

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

The department will test field density and field moisture randomly at locations independent of the contractor’s QC work. The department will use split samples for verification of Proctor testing. In all cases, the department will conduct the verification tests in a separate laboratory and with separate equipment from the contractor's QC tests.

The department will perform verification testing as follows:

1. The department will conduct verification tests on Proctor split samples taken by the contractor. These samples may be from the Soil Source Study or the one‑point Proctor or sample locations chosen by the engineer from anywhere in the process. The minimum verification testing frequency is one per 90,000 cubic yards, with at least one for each soil type identified in the Soil Source Study.

2. The department will test the first split sample obtained by the contractor for the one-point Proctor. The engineer may select any contractor-retained sample for verification testing.

3. The department will conduct at least one verification test for field density and field moisture per 20,000 cubic yards.

Plot verification tests on the contractor’s quality control charts as specified in B.6.1. Do not include verification tests in the 4-point running average.

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, the engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's sampling and testing procedures and equipment. Both parties will document all investigative work.

Correct all deficiencies. If the contractor does not respond to an engineer request to correct a deficiency or resolve a testing discrepancy, the engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

**B.8.3 Independent Assurance Testing**

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, which 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.

Plot the independent assurance tests on the contractor’s quality control charts as specified in B.6.1. Do not include independent assurance tests in the 4-point running average.

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 grading work until action is taken. Resolve disputes as specified in B.9.

**B.9 Dispute Resolution**

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.

If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming 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 tests 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.

**B.10 Acceptance**

The department will accept the material tested under this provision based on the contractor QC tests unless it is shown through verification testing or the dispute resolution process that the contractor’s test results are in error.

**C (Vacant)**

**D (Vacant)**

**E Payment**

Costs for furnishing 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.

1. General Requirements for Blasting Rock.

*Add the following to standard spec 205.3.7:*

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

**Blasting Plan Submittal**

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

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

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

**Safety**

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

Notify the engineer of the Station, location, and “size” of all blasts at least one hour prior to the blast.

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

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

**Condition Surveys**

Conduct and document pre-blast and post-blast surveys of any nearby buildings or structures as required by the scaled-distance equation specified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43. Make right of entry arrangements with the property owners for these condition surveys. Prior to any blasting, make the pre-blast survey records available to the engineer for review. After completion of blasting operations, perform a post-blast survey and make these records available to the engineer for review. The contractor will be responsible for any damage resulting from blasting.

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

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

**Vibration Control and Monitoring**

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

Whenever there is a potential for vibration damage to adjacent buildings, structures, or utilities, monitor each blast with an approved seismograph located, as approved, between the blast area and the closest structure subject to blast damage, and as close as practical to the subject structure. Peak particle velocity shall not be allowed to exceed the safe limits of the nearest structure subject to vibration damage.

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

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

|  |  |
| --- | --- |
| Structure Type | Maximum Peak Particle Velocity (inches/second) |
| Reinforced Concrete, Structures, Unoccupied | 4.0 |
| Steel Structures, Unoccupied | 4.0 |
| Buried Utilities | 2.0 |
| Wells and Aquifers | 2.0 |
| Green Concrete (Less than 7 days) | 1.0 |

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

* Identification of vibration monitoring instrument used.
* Name of qualified observer and interpreter.
* Distance and direction of recording station from blast area.
* Type of ground at recording station and material on which the instrument is sitting.
* Peak particle velocity and principal frequency in each component.
* A dated and signed copy of records of seismograph readings.
* A comparison of measured seismograph readings to maximum allowable readings identified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 or as specified in this special provision.

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

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

1. 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://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/default.aspx>

**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 IPPAggregate Sampling TechnicianAggregate Assistant Certified Technician (ACT-AGG) | Aggregate Sampling[1] |
| Aggregate Technician IPPAggregate Assistant Certified Technician (ACT-AGG) | Aggregate Gradation Testing, Aggregate Fractured Particle Testing, Aggregate Liquid Limit and Plasticity Index Testing |

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

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

**B.3 Laboratory**

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

Materials Management Section

3502 Kinsman Blvd.

Madison, WI 53704

Telephone: (608) 246-5388

<http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-labs.aspx>

**B.4 Quality Control Documentation**

**B.4.1 General**

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

**B.4.2 Records**

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

**B.4.3 Control Charts**

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

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

1. Contractor individual QC tests.

2. Department QV tests.

3. Department IA tests.

4. Four-point running average of the QC tests.

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

**B.5 Contractor Testing**

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

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

(3) Split each contractor QC sample and identify it according to CMM 8.30. Retain the split for 7 calendar days in a dry, protected location. If requested for department comparison testing, deliver the split to the engineer within one business day.

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

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

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

**B.6 Test Methods**

**B.6.1 Gradation**

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

 Gradation AASHTO T 27

 Material finer than the No. 200 sieve AASHTO T 11

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

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

1. Control limits are at the upper and lower specification limits.

2. There are no upper warning limits for sieves allowing 100 percent passing and no lower control limits for sieves allowing 0 percent passing.

3. Dense graded warning limits, except for the No. 200 sieve, are 2 percent within the upper and lower control limits. Warning limits for the No. 200 sieve are set 0.5 percent within the upper and lower control limits.

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

**B.6.2 Fracture**

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

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

**B.6.3 Liquid Limit and Plasticity**

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

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

**B.7 Corrective Action**

**B.7.1 General**

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

**B.7.2 Placement Corrective Action**

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

(2) Notify the engineer whenever the running average exceeds a warning limit. When 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 two business days after the department obtains the sample.

**B.8.2 Verification Testing**

**B.8.2.1 General**

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

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

1. 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 (20151210)

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

**A Description**

(1) This special provision describes profiling pavements with a non-contact profiler, locating areas of localized roughness, and determining the International Roughness Index (IRI) for each wheel path segment.

(2) Profile the final riding surface of all mainline pavements, all system ramps and all collector ramps and service ramps BB, BC, GD, GE, and SB**.** Include auxiliary lanes in Category I and II segments; crossroads with county, state or U.S. highway designations greater than 1500 feet in continuous length; bridges, bridge approaches; and railroad crossings. Exclude roundabouts and pavements within 150 feet of the points of curvature of roundabout intersections.

(3) The engineer may direct straightedging under standard spec 415.3.10 for pavement excluded from localized roughness under C.5.2 (1); for bridges; and for roundabouts and pavements within 150 feet of the points of curvature of roundabout intersections.Other surfaces being tested under this provision are exempt from straightedging requirements.

**B (Vacant)**

**C Construction**

**C.1 Quality Control Plan**

(1) Submit a written quality control plan to the engineer at or before the pre-pave meeting. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of all quality control personnel.

2. The process by which quality control information and corrective action efforts will be disseminated to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.

3. The methods and timing used for monitoring and/or testing ride quality throughout the paving process. Also indicate the approximate timing of acceptance testing in relation to the paving operations.

4. The segment locations of each profile run used for acceptance testing.

5. Traffic Control Plan

**C.2 Personnel**

(1) Have a profiler operator, certified under the department’s highway technician certification program (HTCP), operate the equipment, collect the required data, and analyze the results using the methods taught in the HTCP profiling course. Ensure that an HTCP-certified profiler operator supervises data entry into the material records system (MRS).

**C.3 Equipment**

(1) Furnish a profile-measuring device capable of measuring IRI from the list of department-approved devices published on the department’s web site:

<http://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/tools/qmp/profilers.pdf>

(2) Unless the engineer and contractor mutually agree otherwise, arrange to have a calibrated profiler available when paving the final riding surface.

(3) Perform daily calibration verification of the profiler using test methods according to the manufacturer’s recommendations. Notify the engineer before performing the calibration verification. If the engineer requests, arrange to have the engineer observe the calibration verification and operation. Maintain records of the calibration verification activities, and provide the records to the engineer upon request.

**C.4 Testing**

**C.4.1 Run and Reduction Parameters**

(1) Enter the equipment-specific department-approved filter settings and parameters given in the approved profilers list on the department’s QMP ride web site.

<http://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/tools/qmp/profilers.pdf>

**C.4.2 Contractor Testing**

(1) Operate profilers within the manufacturer’s recommended speed tolerances. Perform all profile runs in the direction of travel. Measure the longitudinal profile of each wheel track of each lane. The wheel tracks are 6.0 feet apart and centered in the traveled way of the lane.

(2) Coordinate with the engineer to schedule profile runs for acceptance. The department may require testing to accommodate staged construction or if corrective action may be required.

(3) Measure the profiles of each standard or partial segment. Define primary segments starting at a project terminus and running contiguously along the mainline to the other project terminus. Field-locate the beginning and ending points for each profile run. When applicable, align segment limits with the sublot limits used for testing under the QMP Concrete Pavement specification. Define segments one wheel path wide and distinguished by length as follows:

1. Standard segments are 500 feet long.

2. Partial segments are less than 500 feet long.

(4) Treat partial segments as independent segments.

The department will categorize each standard or partial segment as follows:

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

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

**C.4.3 Verification Testing**

(1) The department may conduct verification testing (QV) to validate the quality of the product. A HTCP certified profiler operator will perform the QV testing. The department will provide the contractor with a listing of the names and telephone numbers of all verification personnel for the project.

(2) The department will notify the contractor before testing so the contractor can observe the QV testing. Verification testing will be performed independent of the contractor’s QC work using separate equipment from the contractor’s QC tests. The department will provide test results to the contractor within 1 business day after the department completes the testing.

(3) The engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department’s and contractor’s testing procedures and equipment. Both parties will document all investigative work.

(4) If the contractor does not respond to an engineer request to resolve a testing discrepancy, the engineer may suspend production until action is taken. Resolve disputes as specified in C.6.

**C.4.4 Documenting Profile Runs**

(1) Compute the IRI for each segment and analyze areas of localized roughness using the ProVAL software. Also, the contractor shall prepare the ProVAL Ride Quality Module Reports, showing the IRI for each segment and the areas of localized roughness exceeding an IRI of 200 in/mile. Use ride quality module report as follows:

 Fixed Interval Continuous (Localized Roughness)

 Base-length 500’ 25’

 Threshold 140”/Mile 200”/Mile

The ProVAL software is available for download at:

<http://www.roadprofile.com>.

(2) As part of the profiler software outputs and ProVAL reports, document the areas of localized roughness. Field-locate the areas of localized roughness prior to the engineer’s assessment for corrective actions. Document the reasons for areas excluded and submit to the engineer.

(3) Within 5 business days after completing profiling of the pavement covered under this special provision, unless the engineer and contractor mutually agree to a different timeline, submit the electronic ProVAL project file containing the .ppf files for each profiler acceptance run data and Ride Quality Module Reports, in .pdf format using the department’s Materials Reporting System (MRS) software available on the department’s web site:

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

Notify the engineer when the Profiler Acceptance Run data and the Ride Quality Report have been submitted to the MRS system.

**C.5 Corrective Actions**

**C.5.1 General**

(1) Analyze the data from the PROVAL reports and make corrective action recommendations to the department. The department will independently assess whether a repair will help or hurt the long-term pavement performance before deciding on corrective action. Correct the ride as the engineer directs in writing.

**C.5.2 Corrective Actions for Localized Roughness**

(1) Apply localized roughness requirements to all pavements, including HMA III, PCC III, HMA IV, and PCC IV; except localized roughness requirements will not be applied to pavements within 25 feet of the following surfaces if they are not constructed under this contract: bridges, bridge approaches, or railroad crossings. The department may direct the contractor to make corrections to the pavement within the 25-foot exclusionary zones.

(2) The engineer will review each individual wheel track for areas of localized roughness. The engineer will assess areas of localized roughness within 5 business days of receiving notification that the reports were uploaded. The engineer will analyze the report documenting areas that exceed an IRI of 200 in/mile and do one of the following for each location:

1. Direct the contractor to correct the area to minimize the effect on the ride.

2. Leave the area of localized roughness in place with no pay reduction.

3. Except for HMA IV and PCC IV segments, assess a pay reduction as follows for each location in each wheel path:

|  |  |
| --- | --- |
| **Localized Roughness IRI****(in/mile)** | **Pay Reduction[1]****(dollars)** |
| > 200 | (Length in Feet) x (IRI –200) |

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

(3) The engineer will not direct corrective action or assess a pay reduction for an area of localized roughness without independent identification of that area as determined by physically riding the pavement. For corrections, use only techniques the engineer approves.

(4) Re-profile corrected areas to verify that the IRI is less than 140 in/mile after correction. Submit a revised ProVAL ride quality module report to the reference documents section of the MRSfor the corrected areas to validate the results.

**C.5.3 Corrective Actions for Excessive IRI**

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

|  |  |
| --- | --- |
| HMA I: | Correct to an IRI of 60 in/mile using whichever of the following methods as approved bythe engineer: |
|  | Mill and replace the full lane width of the riding surface excluding the paved shoulder.Continuous diamond grinding or fine-tooth milling the full lane width, if required, of the riding surface including adjustment of the paved shoulders.  |
| HMA II: | Correct to an IRI of 85 in/mile using whichever of the following methods as approved bythe engineer: |
|  | Mill and replace the full lane width of the riding surface excluding the paved shoulder.Continuous diamond grinding or fine-tooth milling of the full lane width, if required, of the riding surface including adjustment of the paved shoulders  |
| PCC II: | Correct to an IRI of 85 in/mile using whichever of the following methods as approved by the engineer: |
|  | Continuous diamond grinding of the full lane width, if required, of the riding surface including adjustment of the paved shoulders. Conform to sections C.1 throughC.4 of Concrete Pavement Continuous Diamond Grinding Special provision contained elsewhere in the contract.Remove and replace the full lane width of the riding surface. |

(2) Re-profile corrected segments to verify that the final IRI meets the above correction limits and there are no areas of localized roughness. Enter a revised ProVAL ride quality module report for the corrected areas to the reference documents section of the MRS. Segments failing these criteria after correction are subject to the engineer’s right to adjust pay for non-conforming work under standard spec 105.3.

**C.6 Dispute Resolution**

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

(2) If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming pavement, the department will use third party testing to resolve the dispute. The department’s Quality Assurance Unit, or a mutually agreed on independent testing company, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent tester. The department may use third party tests to evaluate the quality of questionable pavement and determine the appropriate payment.

**D Measurement**

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

**E Payment**

**E.1 Payment for Profiling**

(1) Costs for furnishing and operating the profiler, documenting profile results, and correcting the final pavement surface are incidental to the contract. The department will pay separately for engineer-directed corrective action performed within the 25‑foot exclusionary zones under C.5.2 as extra work.

**E.2 Pay Adjustment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 440.4410.S | Incentive IRI Ride | DOL |

(2) Incentive payment is not limited, either up or down, to the amount the schedule of items shows.

(3) The department will administer disincentives for ride under the Disincentive IRI Ride administrative item.

(4) The department will not assess disincentive on HMA III or PCC III segments. Incentive pay for HMA III and PCC III segments will be according to the requirements for the category of the adjoining segments.

(5) The department will adjust pay for each segment based on the initial IRI for that segment. If corrective action is required, the department will base disincentives on the IRI after correction for pavement meeting the following conditions:

|  |  |
| --- | --- |
| All Pavement: | The corrective work is performed in a contiguous, full lane width section 500 feet long, or a length as agreed with the engineer. |
| HMA Pavements: | The corrective work is a mill and inlay or full depth replacement and the inlay or replacement layer thickness conforms to standard spec 460.3.2. |
| Concrete Pavements: | The corrective work is a full depth replacement and conforms to standard spec 415. |

(6) The department will adjust pay for 500-foot long standard segments nominally one wheel path wide using equation “QMP 1.04” as follows:

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

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

|  |
| --- |
| **HMA IV and PCC IV** |
| **Initial IRI****(inches/mile)** | **Pay Adjustment[1] [2]****(dollars per standard segment)** |
| < 35 | 250 |
| ≥ 35 to < 45 | 1125-(25xIRI) |
| ≥ 45 | 0 |

 [1] If department will not assess a ride disincentive for HMA pavement placed in cold weather because of a department-caused delay as specified in 450.5(4) of the contract additional special provisions (ASP 6).

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

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

1. Shaping Roadway, Item 305.0502.S.

**A Description**

This special provision describes removing any existing longitudinal underdrain, blading the existing shoulder aggregates on the prepared foundation across the pavement removal area, and shaping and compacting the aggregate according to the pertinent provisions of standard spec 305, as shown on the plan, and as hereinafter provided.

**B (Vacant)**

**C Construction**

Prior to final shaping, remove any existing longitudinal underdrain, ensure that the existing trench drains or does not hold water in a manner that would impact the stability of the subgrade by a method determined by the contractor and approved by the engineer, back fill trench with existing shoulder aggregates and compact.

**D Measurement**

The department will measure Shaping Roadway by the station along the centerline of each roadway.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 305.0502.S | Shaping Roadway | STA |

Payment is full compensation for all blading, shaping, and compacting; for removal and disposal of the underdrain; for draining any remaining trenches; and for preparing the foundation.

1. General Storm Sewer and Pipe Culvert Construction.

Project 2788-00-72 and Project 2788-02-70 feature staged construction throughout each project, including the staged construction of proposed drainage conduits.

The contractor is responsible for maintaining the integrity of work completed in previous stages and any portion of existing roadway carrying staged traffic during the project.

All connections to previously installed storm sewer or pipe culverts are considered incidental to the associated bid item work being performed.

Any temporary shoring methods and/or materials, as determined by the contractor, deemed necessary to complete all stages and connections of storm sewer or pipe culverts is considered incidental to the associated bid item work being performed.

1. **Silt Fence Maintenance**.

**Section 628.3.4.2, 628.4.8 and 628.5.8 of the standard specifications is amended as follows:**

Silt fence maintenance shall include inspection and maintenance of Heavy Duty Silt Fence.

1. Temporary Ditch Checks.

Complete work in accordance to section 628 of the standards specifications and as herein provided. Erosion bales will not be allowed for construction of temporary ditch checks.

*Delete subsection 628.3.14(2) of the standard specifications and replace it with the following:*

(2) Construct temporary ditch checks using a manufactured alternative from the PAL. Place temporary ditch checks across ditches at locations the plans show or as the engineer directs immediately after shaping the ditches or slopes. Excavate upstream sumps as the engineer directs.

*Delete subsection 628.4.17 of the standard specifications and replace it with the following:*

(1) The department will measure Temporary Ditch Checks by the linear foot acceptably completed.

1. Mobilizations Erosion Control.

**Replace 628.5.11(2) of the standard specifications with the following:**

Failure to mobilize within 72 hours of the engineer’s written order will result in a $1500 per calendar day deduction from money due under the contract, for each calendar day of delay. The engineer may extend the 72-hour period for delays that are not the contractor’s fault

1. Mobilizations Emergency Erosion Control.

**Replace 628.5.12(2) of the standard specifications with the following:**

Failure to mobilize within 8 hours of the engineer’s written order will result in a $1500 per calendar day deduction from money due under the contract, for each calendar day of delay. The engineer may extend the 8-hour period for delays that are not the contractor’s fault.

1. Nighttime Work Lighting-Stationary.

**A Description**

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

**B (Vacant)**

**C Construction**

**C.1 General**

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

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

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.

2. Specifications, brochures, and technical data of all lighting equipment to be used.

3. The details on how the luminaires will be attached.

4. Electrical power source information.

5. Details on the louvers, shields, or methods to be employed to reduce glare.

6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.

7. Detail information on any other auxiliary equipment.

**C.2 Portable Lighting**

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

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

**C.3 Light Level and Uniformity**

Position (spacing and mounting height) the luminaires to provide illumination with an average to minimum uniformity ratio of 5:1 or less throughout the work area.

Illuminate the area as necessary to incorporate construction vehicles, equipment, and personnel activities.

**C.4 Glare Control**

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

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

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.

2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

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

**C.5 Continuous Operation**

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

**D (Vacant)**

**E Payment**

Costs for furnishing a lighting plan, and for providing, maintaining, moving, and removing portable lighting, tower mounted lighting, and equipment-mounted lighting required under this special provision are incidental to the contract.

643-010 (20100709)

1. Traffic Control.

The work under this item shall be in accordance to the pertinent requirements of standard spec 643, as shown on the plans, or as approved by the engineer, except as hereinafter set forth.

Place traffic control devices for work in the proper location before operations proceed. Traffic Control is subject to change at the direction of the engineer in the event of an emergency.

Provide the Waukesha County Sheriff’s Department, City of Waukesha Police Department, City of Waukesha Fire Department, Wisconsin State Patrol, the Statewide Traffic Operations Center and the engineer a current telephone number with which the contractor or his representative can be contacted during non-working hours in the event a traffic control safety hazard develops.

Do not park or store equipment, vehicles, or construction materials within 30 feet of the edge of freeway traffic lanes without barrier separation for any roadway carrying freeway traffic; or within 20 feet off the edge of a freeway service interchange ramp during any time except as approved by the engineer. At such locations, the materials and equipment involved shall not constitute a hazard to the traveling public.

Do not store materials, equipment, or park vehicles within 4 feet of the row of barrels that separates traffic from the work zone.

Yield to all through traffic at all locations. Equip the top of all contractor and personal vehicles and equipment operating in live traffic lanes with a hazard identification beam (flashing yellow signal light) that is visible from 360 degrees. Operate the flashing yellow beam only when merging or exiting live traffic lanes or when parked or operating on shoulders.

Obtain approval from the engineer to use a flag person to direct, control, or stop traffic.

Do not disturb, remove or obliterate any traffic control signs, advisory signs, shoulder delineators, sand barrel array or beam guard in place along the traveled roadways not shown on the plans without the approval of the engineer.

1. 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)

1. Cover Plates Temporary, Item 611.8120.S.

**A Description**

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

**B Materials**

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

**C (Vacant)**

**D Measurement**

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

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 611.8120.S | Cover Plates Temporary | Each |

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

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

611-006 (20151210)

1. Pipe Grates, Item 611.9800.S.

**A Description**

This special provision describes furnishing and installing pipe grates on the ends of pipes as shown in the plans, and as hereinafter provided.

**B Materials**

Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish steel pipe conforming to the requirements of standard spec 506.2.3.6.

Furnish pipe grates galvanized according to ASTM A123.

Furnish angles and brackets galvanized according to ASTM A123.

Furnish required hardware galvanized according to ASTM A153.

**C Construction**

Repair pipes, rods, angles and brackets on which the galvanized coating has been damaged in accordance to the requirements of AASHTO M36M.

**D Measurement**

The department will measure Pipe Grates in units of work, where one unit is one grate completed and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 611.9800.S | Pipe Grates | Each |

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

611-010 (20030820)

1. Stone or Rock Ditch Checks, Item 628.7515.S.

**A Description**

This special provision describes furnishing and installing stone or rock ditch checks as shown on the plans or as directed by the engineer, or both, and as hereinafter provided.

**B Materials**

Provide materials conforming to size requirements for size no. 2 coarse aggregate for concrete masonry or riprap in accordance to the standard spec 501.2.5.4.4. Railroad ballast or breaker run stone conforming to the following applicable gradations may also be used:

|  |
| --- |
| **Railroad Ballast** |
| **Sieve Size** | **Percent by****Weight Passing** |
| 2 Inch | 100 |
| 1 Inch | 20 – 55 |
| 3/8 Inch | 0 -5 |

|  |
| --- |
| **Breaker Run Stone** |
| **Sieve Size** | **Percent by****Weight Passing** |
| 5 Inch | 100 |
| 1½ Inch | 0 – 50 |
| 3/8 Inch | 0 - 5 |

Incorporate stone or rock in the ditch checks that is hard, sound, and durable, and meets the approval of the engineer.

**C Construction**

Place stone or rock ditch checks immediately after shaping of the ditches or slopes is completed. Place stone or rock ditch checks at right angles to the direction of flow and construct to the dimensions and in accordance to the details shown in the plans.

Remove sediment from behind the stone or rock ditch checks when it has accumulated to one half of the original height of the dam.

**D Measurement**

The department will measure Stone or Rock Ditch Checks in volume by the cubic yard of material incorporated in the work.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 628.7515.S | Stone or Rock Ditch Checks | CY |

Payment is full compensation for furnishing, producing, crushing, loading, hauling, placing, and shaping and maintaining Stone or Rock Ditch Check.

The quantity of sediment removed shall be multiplied by a factor of ten and paid for as Marsh Excavation.

628-050 (20151210)

1. Temporary Pedestrian Surface Asphalt, Item 644.1410.S.

**A Description**

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

**B Materials**

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

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

**C Construction**

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

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

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

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

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

**D Measurement**

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

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 644.1410.S | Temporary Pedestrian Surface Asphalt | SF |

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

644-010 (20150630)

1. Temporary Curb Ramp, Item 644.1601.S.

**A Description**

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

**B Materials**

Furnish materials as follows:

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

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

**C Construction**

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

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

**D Measurement**

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

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 644.1601.S  | Temporary Curb Ramp  | Each |

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

644-020 (20150630)

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

**A Description**

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

**B Materials**

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

Furnish select 2x4 dimensional lumber.

Furnish fence fabric meeting the following requirements.

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

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

**C Construction**

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

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

**D Measurement**

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

**E Payment**

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

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

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

644-025 (20150630)

1. Removing Pavement Markings Water Blasting, Item 646.0690.S.

**A Description**

This special provision describes removing pavement markings by water blasting. Conform to standard spec 646 and 647 as modified in this special provision.

**B (Vacant)**

**C Construction**

Use water blasting to remove the following, as shown on the plan and directed by the engineer:

* Markings in areas of temporary traffic shifts
* Markings on bridge decks
* Temporary markings on the final pavement surface

Completely remove pavement marking using a truck mounted ultra high pressure pump and water tank capable of delivering a minimum of 30,000 psi and up to 40,000 psi to waterjet nozzles.. Use equipment with a vacuum recovery system that contains wastewater and debris to provide a clean, damp-dry surface, without a secondary cleanup operation. Do not scar or damage the pavement during the removal process. Limit water blasting to when the ambient temperature is at least 36 F and rising.

Properly dispose of the accumulated material off site.

**D Measurement**

The department will measure Removing Pavement Markings Water Blasting by the linear foot, up to a single 8-inch wide line, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| 646.0690.S | Removing Pavement Markings Water Blasting | LF |

Payment is full compensation for removal and disposal of all materials.

646-075 (20151210)

1. 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 project 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 ft3/min air flow and 120 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

**C.5.2 New Asphalt**

Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft3/min air flow and 120 psi air pressure to clean the groove.

**C.5.3 Existing Asphalt**

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

Use a high-pressure air blower with at least 185 ft3/min air flow and 120 psi air pressure to clean the groove.

**C.6 Tape Application**

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

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

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.
1. 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)

1. 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 project 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 ft3/min air flow and 120 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

**C.5.2 New Asphalt**

Groove pavement five or more days after paving.

Use a high-pressure air blower with at least 185 ft3/min air flow and 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 ft3/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. –
1. 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)

1. Meter Breaker Pedestal Service USH 18/STH 318 and Summit Ave, Item 656.0200.01; STH 318 and Northview Road, Item 656.0200.02

*Append 656.2.3 of the standard specifications with the following:*

The department will be responsible for the electrical 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.

Electrical 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 electrical utility company can install the service lateral. Install a 3" conduit from the point of service from the utility to the meter breaker pedestal. 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 electrical utility company.

*Append 656.5(3) of the standard specifications with the following:*

Payment is full compensation for grading the service trench; replacing topsoil; and for fertilizing, seeding, and mulching to restore the disturbed area of the service trench.

1. Traffic Signal Face, Items 658.0110 & 658.0115.

*Append 658.3.2(3) of the standard specification with the following:*

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.

1. Pedestrian Signal Face, Item 658.0416

*Append 658.2.4(1) of the standard specifications with the following:*

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, egg-crate type visor, lens and gasket mounted to door with four 1-1/2 inch stainless steel tabs.

*A p pend 658.2.4(2) of the standard specifications with the following:*

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

*Append 658.2.4(3) of the standard specifications with the following:*

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.

*Append 658.3.4(3 ) of the standard specifications with the following:*

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.

1. Pedestrian Push Buttons, Item 658.0500.

*Append 658.2.5 of the standard specification with the following:*

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.

1. Temporary Traffic Signals for Intersections, USH 18/STH 318 and Summit Avenue, Item 661.0200.01; STH 318 and Northview Road, Item 661.0200.02.

*Replace 661.2.1 (3) of the standard specification 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 at USH 18/STH 318 & Summit Avenue. Waukesha County will pay for all Energy Costs for the Temporary Traffic Signal at STH 318 & Northview Road.

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 (4) 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 (4) days prior to making the switch from the Temporary Traffic Signal to the new Permanent Traffic Signal.

1. Field Stone Riprap Medium, Item SPV. 0035.21, Field Stone Riprap Heavy, Item SPV.0035.22.

**A Description**

This special provision describes furnishing and installing field stone riprap as shown on the plans, and as hereinafter provided.

**B Materials**

Provide materials in accordance to section 606.2 of the standard specifications, except as modified as follows:

Riprap shall be cobblestone or fieldstone type, approved by the Engineer. Average dimension size range for Field Stone Riprap Medium shall be in accordance with medium riprap. Average dimension size range for Field Stone Riprap Heavy shall be in accordance with heavy riprap.

**C Construction**

Construct in accordance to section 606.3 of the standard specifications.

**D Measurement**

The department will measure Field Stone Riprap (type) by the cubic yard acceptably completed, measured as the volume within the limiting dimensions the contract designates or the engineer establishes in the field.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0035.21 | Field Stone Riprap Medium | CY |
| SPV.0035.22 | Field Stone Riprap Heavy | CY |

Payment is full compensation for preparing the bed, providing and placing riprap, restoring adjacent work, and disposing of surplus material. The department will pay for excavation in excess of the approximate volume of earth occupied by the riprap under the Excavation Common bid item as specified under section 205.5 of the standard specifications, or absent the bid item, as extra work.

1. Section Corner Monuments Special, Item SPV.0060.10.

**A Description**

Coordinate with Southeastern Wisconsin Regional Planning Commission (SEWRPC) for the perpetuation and replacement of a section corner (Public Land Survey System- PLSS) monument.

**B Materials**

SEWRPC will provide a pre-cast concrete monument or brass disk to be used to mark the PLSS corner.

Furnish base aggregate dense materials that conform to section 305 of the standard specifications and concrete, asphalt, topsoil or other materials depending on the surface surrounding the corner.

**C Construction**

SEWRPC will perpetuate existing section corner monument. The CONTRACTOR is responsible to coordinate with SEWRPC and the WisDOT Project Manager throughout the perpetuation and replacement process. The engineer will contact SEWRPC at (262) 953-4295 at least two weeks before starting construction operations or the preconstruction meeting to allow for section corner monument perpetuation.

CONTRACTOR must excavate and completely remove the existing monument. CONTRACTOR is responsible for providing a backfilled 3 to 4 foot deep hole where existing monument was removed. CONTRACTOR is responsible to coordinate the materials and methodology to complete the construction of the surface surrounding the monument. This may include but is not limited to a 2’ x 2’ “box out” or 24” diameter core hole in concrete, asphalt pavement/paving rings, coring to facilitate poured in place monuments, topsoil, seed and mulching or other materials or methodologies as agreed to by the CONTRACTOR and SEWPRC.

**Contact Information:**

Attn: John Washburn

Southeastern Wisconsin Regional Planning Commission

W239 N1812 Rockwood Drive

P.O. Box 1607

Waukesha, WI 53187-1607

Phone (262) 953-4295

Fax (262) 547-1103

E-mail: jwashburn@sewrpc.org

**D Measurement**

The department will measure Section Corner Monuments Special by the 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.0060.10 | Section Corner Monuments Special | Each |

Payment is full compensation for all excavating; removal of existing monument, for placing and compacting backfill material; for disposing of surplus materials; for concrete or asphalt material, finishing of roadway or other surfaces, and for all coordination with SEWRPC.

621-SER1 (20080714)

1. Removing Raised Pavement Markers, Item SPV.0060.11

**A Description**

Remove existing casting and fill original saw cut area, as directed by the engineer or shown on the plans.

**B Materials**

Furnish materials in accordance to section 646 of the standard specifications.

**C Construction**

Remove existing pavement marker casting. Clean, dry and fill existing saw cut area with either epoxy or Asphaltic Surface Temporary.

**D Measurement**

The department will measure Removing Raised Pavement Markers by the individual casting acceptably removed and filled with epoxy or Asphaltic Surface Temporary.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.11 | Removing Raised Pavement Markers | Each |

Payment for Removing Raised Pavement Markers is full compensation for removing, hauling, disposing of materials, and backfilling; cleaning and drying existing saw cut areas; and for furnishing and placing epoxy material or Asphaltic Surface Temporary.

(NER11-0303)

1. Temporary Sediment Traps, Item SPV.0060.21.

**A Description**

Design, supply and maintain a temporary sediment trap used to intercept sediment-laden runoff and to retain the sediment.

**B Materials**

In accordance with DNR Technical Standard 1063 (Sediment Trap).

**C Construction**

Design, maintain, and remove Temporary Sediment Traps following the guidance in DNR with DNR Technical Standard 1063 (Sediment Trap). Locations as directed by the engineer. General locations requiring Temporary Sediment Traps are upstream of streams and wetlands which receive sediment laden runoff. Install prior to major grading operations.

**D Measurement**

The department will measure Temporary Sediment Traps as each individual sediment trap installed in accordance to the contract and acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.21 | Temporary Sediment Traps | EACH |

Payment is full compensation for design; furnishing and maintaining each basin; for removal of the basin; and for stabilization of disturbed area after removal.

1. Cover Plates, Item SPV.0060.23.

**A Description**

Furnish and install a steel plate to cover and support asphaltic pavement, base aggregate and traffic loading at manholes, inlets and similar structures during construction operations where live traffic is present. This work shall be in accordance to the pertinent provisions of section 611 of the standard specifications, as shown on the plans, and as hereinafter provided.

**B Materials**

Provide a 0.5-inch minimum thickness steel plate that extends to the outside edge of the existing masonry.

**C Construction**

Clean out all soil, debris, other accumulated matter, and materials deposited or lodged due to the contractor’s operations from the structure prior to placing the cover plate on the structure.

**D Measurement**

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

**E Payment**

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

|  |  |  |  |
| --- | --- | --- | --- |
| ITEM NUMBER |  | DESCRIPTION | UNIT |
| SPV.0060.23 |  | Cover Plates | Each |

Payment is full compensation for cleaning out; furnishing and installing the cover plate; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

1. Inlets 5-FT Diameter, Item SPV.0060.24.

**A Description**

Furnish and install inlets in accordance to the pertinent provisions of section 611 of the standard specifications, as shown on the plans and as hereinafter provided.

**B** **(Vacant)**

**C** **(Vacant)**

**D** **Measurement**

The department will measure Inlets 5-FT Diameter 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.0060.24 | Inlets 5-FT Diameter | Each |

Payment is full compensation for providing all materials, including all masonry, conduit and sewer connections, steps and other fittings; for all excavating, backfilling, disposing of surplus material, and for cleaning out and restoring the work site; except that the department will pay for covers, including frames, grates and lids separately.

1. Connection to Existing Pipe Underdrain, Item SPV.0060.25.

**A  Description**

This special provision describes reconnecting existing pipe underdrain to new pipe underdrain.

**B  Materials**

Furnish concrete collar in accordance with standard specification 520.2.4, or flexible coupler or other watertight connection approved by the engineer.

**C  Construction**

Remove existing pipe underdrain and any existing underdrain apron end wall as necessary to provide a clean connection to the new underdrain.  Verify that positive drainage is achieved when connecting the existing and new pipe underdrains. Connect the existing pipe underdrain to the new pipe underdrain with the concrete collar, appropriate coupling, or by other means approved by the engineer.

**D  Measurement**

The department will measure Connection to Existing Pipe Underdrain by each connection acceptably installed and approved.

**E  Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.25 | Connection to Existing Pipe Underdrain | Each |

Payment is full compensation for performing all work; removal of existing pipe underdrain and existing apron endwall, furnishing and installing all materials, couplings, concrete collars necessary to make the connection; and for furnishing all labor, tools, equipment, and incidentals required to complete the work.

1. Outlet Pipe Sediment Traps Riprap Medium, Item SPV.0060.31, Outlet Pipe Sediment Traps Field Stone Medium, Item SPV.0060.32

**A Description**

Furnish and install outlet pipe sediment traps, clean and maintain sediment traps as shown on the plans or as directed by the engineer, and as hereinafter provided. Feature is intended to act as a sedimentation device during construction, and as a permanent long-term device for total suspended sediment control.

**B Materials**

Provide Riprap Medium in accordance to riprap medium type specified in section 606.2 of the standard specifications. Field Stone Medium shall be cobblestone or fieldstone type material, approved by the Engineer. Average dimension size range for Field Stone Medium shall be in accordance with medium riprap. Geotextile fabric shall be type HR in accordance with section 645.2 of the standard specifications.

**C Construction**

Place outlet pipe sediment traps immediately after placing the outlet pipe, or before the pipe system is active. Anchor all ends of geotextile and match riprap into adjacent topography. Shape riprap to create a plunge pool in accordance with the general shape and minimal dimensions shown on the plan details. Shape may be asymmetrical and is intended to maximize usable space.

Maintain and repair sediment from erosion and sedimentation. Clean out traps during construction if sumps fill with sediment. Clean out accumulated sediment from pipe outlet sediment traps at the end of construction, or after full stabilization has occurred. Perform cleaning in accordance to section 628 of the standard specifications.

**D Measurement**

The department will measure Outlet Pipe Sediment Traps (type) by each item acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.31 | Outlet Pipe Sediment Traps Riprap Medium | Each |
| SPV.0060.32 | Outlet Pipe Sediment Traps Field Stone Medium | Each |

Payment is full compensation for installing, maintaining and cleaning, disposal of sediment, and for furnishing all labor, tools, equipment, materials, including riprap, field stone, and geotextile fabric; and incidentals necessary to complete the contract work.

1. Lighting Control Cabinet, Item SPV.0060.70.

**A Description**

This special provision describes furnishing and installing lighting control cabinet, associated electrical equipment and concrete base as shown on the plans and hereinafter provided.

**B Materials**

**B.1 Contactor**

Provide an electrically held multi-pole contactor with coil capable of operating at the nominal voltage specified integral. Provide Square D, Type S series (open type) or equal by General Electric or Cutler-Hammer.

**B.2 Photocell**

Provide a button type photocell that is rated for 240V, 1800W with 30-60 second delay between “on-off” operation.

**B.3 Circuit Breakers and Fuses**

The circuit breakers shall be capable of surface mounting with line and load lugs by Square D, F-Frame type or equal by Cutler-Hammer or General Electric. Provide appropriate AIC ratings.

Provide a 1 pole, 15 amp, control breaker for the control circuit.

All breakers shall be from the same manufacturer.

**B.4 Bus Bars**

Provide aluminum or copper ground and insulated neutral bus bars with wire range capabilities as indicated on the plans.

**B.5 Hand-Off-Auto Switch**

Provide a 3-position manual return selector switch in a NEMA 1 enclosure with legend plate as manufactured by Square D Type K, or equal by Cutler-Hammer or General Electric.

**B.6 Enclosure**

Provide a NEMA 4X enclosure made from .125" Type 5052-H32 aluminum. Provide a double flanged doorframe. Provide stainless steel for all exterior hardware. Provide a 3/4" diameter stainless steel door handle with three point latching system and hasp. Provide a natural aluminum mounting panel at back (interior) of enclosure. Do not provide louvers. Cabinet secured by a contractor furnished weatherproof padlock. The enclosure shall have an aluminum mill finish. Provide an enclosure manufactured by APX Enclosures, Cleveland Manufacturing or Southern Manufacturing.

**B.7 Power Distribution Blocks**

Provide aluminum power distribution blocks with lug wire ranges on the main and branches as indicated on the plans with clear plastic covers as manufactured by Square D Type LB or equal by Cutler-Hammer or General Electric.

**B.8 Concrete Base**

Conform to section 654.2 of the Standard Specifications.

**C Construction**

Use a UL Listed Panel Builder to assemble the lighting control cabinet. The control cabinet requires service entrance rating. Assemble the lighting control cabinet with all of its electrical components, wiring and parts in a neat and orderly fashion and as shown on the plans. Pretest the cabinet prior to shipment to the site.

Mount all equipment to panel in enclosure. Train the cables in straight horizontal and vertical directions and be parallel next to and adjacent to other cables whenever possible. Secure all wiring using screw attachment type straps; adhesive type will not be allowed.

Install photocell in the overhang of the control cabinet facing down and apply silicon caulk to maintain integrity of the enclosure.

Construct concrete base in conformance with section 654.3 of the Standard Specifications.

Cabinet and components shall be designed as Service Equipment. No service disconnect exterior of the Lighting Control Cabinet shall be allowed.

Lighting Control Cabinet will be 480/240 volt single phase, 100 amps.

**D Measurement**

The department will measure Lighting Control Cabinet as each individual unit, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.70 | Lighting Control Cabinet | Each |

Payment is full compensation for photocontrol, contactor, circuit breakers, fusing, distribution blocks, enclosure, bus bars, selector switch, grounding and electrical components, concrete base; and for all labor, tools, equipment and incidentals necessary to complete the work.

1. Luminaires Utility 21 Count LED 75 WATT Type III, Item SPV.0060.71.

**A Description**

This special provision describes furnishing and installing luminaires in accordance to sections 651 through 660 of the standard specifications, as shown on the plans or as approved by the engineer, and as hereinafter provided.

**B Materials**

Cooper Lumark LDRC-T3-E03-E. Heavy-duty cast aluminum housing and removable door 3G vibration tested to ensure strength of construction and longevity in application. Die-cast aluminum door frame features integral hinges for tool-less maintenance access.

**C Construction**

Furnish and install LED luminaires together with hardware and fittings as the plans show. Install luminaires on luminaire arms with an initial rake of plus 3-degrees, this measurement includes the rake of the arm. Install luminaires on luminaire arms level in the longitudinal direction of the roadway except on segments where the profile is sloped greater than 3-degrees. In this case the engineer will determine the longitudinal level of the luminaires.

**D Measurement**

The department will measure Luminaires Utility 21 Count LED 75 Watt Type III 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.0060.71 | Luminaires Utility 21 Count LED 75 Watt Type III | Each |

Payment is full compensation for providing all materials including luminaires, ballasts, lamps, fittings, brackets, hardware and attachments; for luminaire fusing if required.

1. Internal Manhole Sealing System, SPV.0060.72.

**A Description**

This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site. Pavement Cleanup includes surveillance and reporting of all active haul routes.

**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, maximum 18% 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 in accordance 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.0060.72 | 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.

1. Pavement Cleanup Project 2788-00-72, Item SPV.0075.01; Project 2788-02-70, Item SPV.0075.02.

**A Description**

This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site. Pavement Cleanup includes surveillance and reporting of all active haul routes.

**B Materials**

**B.1 Pavement Cleanup**

Furnish a vacuum-type street sweeper equipped with a power broom, water spray system, and a vacuum collection system.

Utilize vacuum equipment with a self-contained particulate collector capable of preventing discharge from the collection bin into the atmosphere.

Use a vacuum-type sweeper as the primary sweeper, except as specified herein or approved by the engineer.

**C Construction**

**C.1 Surveillance**

Provide daily surveillance of active haul routes to identify if material is being tracked from the jobsite. Document the condition of the roads and if they needed to be swept in a daily report. Submit reports to the engineer daily, including hourly metered tickets for that day’s sweeping activities. Clean up spillage and material tracked to/from the project within an hour of occurrence or as directed by the engineer. Perform cleanup operations in a safe manner.

**C.2 Pavement Cleanup**

Keep all pavements, curb lanes and gutters both closed and open to public traffic within the job-site boundaries free of dust and debris generated from any activity under the contract. Keep all pavements, curb lanes and gutters adjacent to the project free of dust and debris that are affected by land disturbing, dust generating activities, as defined in the contractor's dust control implementation plan.

Provide routine sweeping of all pavements, curb lanes and gutters on local street active haul routes a minimum of once a day as defined in the Dust Control Implementation Plan (DCIP) or as directed by the engineer. Include the following roadways for routine sweeping:

Summit Avenue (Woodland Hills to Maple Way)

Merrill Hills Road (Madison Street to Summit Avenue)

Meadowbrook Road (Summit Avenue to Rolling Ridge Drive)

Northview Road (Hilltop Drive to Patrick Lane)

E. Coldwater Creek Drive (Meadowbrook Road to Patrick Lane)

Patrick Lane (E. Coldwater Creek Drive to Northview Road)

W. Coldwater Creek Drive (Meadowbrook Road to West Limits)

And any other roadways approved by the department

In addition to routine sweeping, conduct sweepings as the engineer directs or approves, to deal with dust problems that might arise during off-work hours or emergencies. Provide the engineer with a contact person available at all times to respond to requests for emergency sweeping. Respond to emergency sweeping requests within 4 hours of notice.

**D Measurement**

The department will measure Pavement Cleanup (Project) by the hour acceptably completed.

Tickets shall include date, company, operator name, equipment make/model, routes swept, and total hours. Total hours shall be to the nearest 0.25 hour that work under this item was performed.

Compensation for mobilizing equipment shall be included in the contract price for Pavement Cleanup and no additional compensation therefore will be allowed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0075.01 | Pavement Cleanup Project 2788-00-72 | HR |
| SPV.0075.02 | Pavement Cleanup Project 2788-02-70 | HR |

Payment is full compensation for daily surveillance; preparing and submitting the daily surveillance report with hourly metered tickets; mobilization; sweeping; and disposing of materials.

1. Concrete Curb and Gutter 24-Inch, Item SPV.0090.01

Construct the concrete curb and gutter in accordance to section 601 of the standard specifications and in accordance to the plan details.

1. Construction Staking sidewalk, Item SPV.0090.02

**A Description**

Work under this item consists of contractor-performed construction staking required to establish the horizontal and vertical position for the sidewalk and to establish the required positions of the pedestrian ramps. Perform all work under this item according to standard spec 105.6 and 650. Construction Staking Sidewalk includes staking of the pedestrian ramps.

**B (Vacant)**

**C Construction**

Use methods that conform and are in accordance to the pertinent requirements of section 650.3 of the standard specifications. Place construction stakes for sidewalk at intervals of 25 feet. A minimum of two stakes per cross section is required. Set and maintain as necessary additional stakes per cross section to achieve the required accuracy and to satisfy the method of operations. Set additional construction stakes as necessary to establish location and grade of sidewalk, including points of change in alignment grade, along intersecting walks, at pertinent points of the pedestrian ramps, and at the radius points of intersecting walks. Locate all sidewalk construction stakes to within 0.02 foot of the true horizontal position and establish the grade elevation to within 0.01 foot of the true vertical position.

**D Measurement**

The department will measure Construction Staking Sidewalk by the linear foot acceptably completed, measured along each sidewalk centerline. The staking of the pedestrian ramps is incidental to the item Construction Staking Sidewalk and will not be measured. The department will not measure construction staking for base underlying sidewalk. The department will not measure construction staking for sidewalk that is parallel to the adjacent roadway.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.01090.02 | Construction Staking Sidewalk | LF |

Payment is full compensation for locating and setting all construction stakes and for relocating and resetting damaged or missing construction stakes. Section 650.5.(2) shall apply for final payment. The staking of the pedestrian ramps is incidental to the item Construction Staking Sidewalk and will not be paid.

650-SER2 (20160722)

1. Pre-Paving Televising Sanitary Main Line, Item SPV.0090.72; Pre-Paving Televising Sanitary Lateral, Item SPV.0060.73

**A Description**

This special provision amendment describes the televising of the sanitary main line sewer and laterals after all underground work is complete but before the final asphalt surface is placed. The underground work includes any activity that could potentially damage a sewer facility, which includes but is not limited to utility installation including third party utility work.

**B Materials**

The televising work shall be done by an independent television inspection service in accordance with 7.1.2 in the Standard Specifications for Sewer and Water Construction in Wisconsin, 6th Edition and the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification (PACP) and Lateral Assessment and Certification Program (LACP) standards. All inspection shall be collected using PipeTech Software by Peninsular Technologies. Inspections conducted with other software packages or converted to other formats will not be accepted.

The televising camera used for the inspection shall be one specifically designed and constructed for sanitary sewer inspection. The camera shall be a pan-and-tilt type capable of radial inspection of the top, bottom, and sides of the pipe including lateral connections. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the City of Waukesha. If the equipment proves to be unsatisfactory, it shall be replaced with adequate equipment.

Lateral cameras shall be color, shall be self-leveling, and equipped with a footage counter to provide on screen display of footage measurement.

**C Construction**

* The main line sewer sections, defined as the length of pipe from center of manhole or structure to center of manhole or structure, shall be televised one section at a time.
* For the televising of laterals, the main line sewer television camera shall be used to position the lateral camera launcher. At a minimum, the lateral sewer camera shall inspect laterals to the right-of-way limits, or in the case of a lateral replacement, to the upstream limit of the replacement plus an additional five (5) feet upstream. Video recording shall continue during the entire camera withdrawal sequence. The television inspection of the lateral must be from inside the main line sewer up into the lateral and shall include a spot location with depth at the curb line and back of sidewalk. Inspections from cleanouts, excavations, or other access points will not be accepted.
* The Contractor shall fully televise both ends of the main line pipe so the connections at the manholes can be evaluated.
* Wherever possible the inspections shall be performed in the upstream to downstream direction.
* When sewer conditions prevent forward movement of the camera, the camera shall be withdrawn, and Contractor shall televise the line from the opposite direction.
* The camera shall be directed through the sewer at a uniform, slow rate. In no case will the video camera record while moving at a speed greater than 30 feet per minute. If the inspection is rejected due to camera speeds exceeding 30 feet per minute, the inspection recordings shall be redone at no additional cost to the City of Waukesha.
* Flow levels within existing sewers to be inspected shall not exceed 5% of the pipe diameter. If water levels prevent adequate televising of the sewer, then conducting the work during low flow periods or other methods like plugging and bypass pumping shall be implemented.
* The survey unit shall be slowed, stopped, or backed-up to perform detailed inspections of significant features. The camera shall be stopped at all defects, changes in material, water level, size, side connections, manholes, junctions, or other unusual areas. When stopped at the defect or feature, the operator shall pan the camera to the area and along the circumference of the pipe.
* The operator shall also record audio of the type of defect or feature, clock position, footage, extent or other pertinent data.
* Audio shall be recorded during each inspection by the operating technician, electronic voice text recognition or approved equal on the inspection video as the sewer is inspected and shall include the sewer location, identification of beginning and terminating manholes including location (address or cross streets), inspection direction, length of inspection, side sewer identification, flow information, complete descriptions of the sewer line conditions as they are encountered, description of the rehabilitation work, reason for termination, and other relevant commentary to the inspections. Voice descriptions should be made: 1) at points of pipe failure or weakness, 2) at points of infiltration, 3) at the location of service connections, 4) at points where unusual conditions are noted, and 5) at points where digital still photos are taken.
* In addition, the audio reports shall include the distance traveled on the specific run, a description of abnormal conditions in the sewer and side sewer connections as they are encountered, explanations for pausing, backing up, or stopping the survey, and the final measured center to center distances between consecutive manholes. The audio portion of the composite video shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report. Audio dubbing after the inspection is prohibited.
* If the video and/or audio recording is of poor quality, the City of Waukesha has the right to require a re-submittal of the affected sewer sections and the inspection will not be deemed complete until an acceptable video and audio recording is made, submitted to, and accepted by the City of Waukesha.
* Measurement for location of defects and actual length of pipe shall be by means of a calibrated meter on the camera with a digital readout on the video monitor. This readout shall be included in the video recording. Marking on cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Measurement will be accurate to one foot per 100 feet of inspected pipe. Accuracy of the distance meter shall be checked by use of a walking meter, roll-a-tape, or other suitable device, and the accuracy shall be satisfactory to the City of Waukesha.
* All inspections shall be performed by NASSCO PACP certified personnel. Use of PACP certified technicians to review/document defects in the office (post process) is not acceptable.
* Any structural defects found along the main line sewer and laterals shall be immediately brought to the City of Waukesha’s attention for a determination of the necessary repair.
* The inspection data shall be compatible with the City’s GIS and Asset Management Systems and shall be collected with PipeTech.
* Television Inspection Logs: Electronic media location records shall be kept by the Contractor and shall clearly show the location, by distance in 1/10 of a foot, from the center of the starting manhole or structure to each observation during inspection. Observations shall include, but not limited to, infiltration, service connections, unusual conditions, roots, cracks, fractures, broken pipe, presence of scale and corrosion, and other discernible features, as defined in the PACP defect codes, shall be recorded on electronic media and a copy of such records shall be supplied to the City of Waukesha.
* Digital photographs of the pipe condition and all defects shall be taken by the Contractor. Photographs shall be located by distance in 1/10 of a foot, from the center of the starting manhole or structure.
* Electronic media recordings collected with including the digital video, images, and data files shall be created for each sewer section inspected. Files shall be submitted on DVD, flash drive, or portable hard drive. The purpose of electronic media recording shall be to supply a visual and audio record of the condition of the sewer lines that may be replayed by the City of Waukesha. Once recorded, the video shall become the property of the City of Waukesha.

The City of Waukesha shall provide maps showing the structure and section numbers to be used.

The Contractor shall be notified in writing of any deficiencies revealed by the television inspection that will require repair, following which the Contractor shall excavate and make the necessary repairs and schedule a television re-inspection of the repaired or corrected areas. Television re-inspection shall be at the Contractor’s expense.

**D Measurement**

The department will measure Pre-Paving Televising Sanitary Lateral by each, acceptably completed. The department will measure Pre-Paving Televising Sanitary Main Line by the linear foot, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.73 | Pre-Paving Televising Sanitary Lateral | Each |
| SPV.0090.72 | Pre-Paving Televising Sanitary Main Line | LF |

Payment is full compensation for the above described work.

1. Heavy Duty Silt Fence, Item SPV. 0090.21.

**A Description**

This special provision describes the delivery, installation, maintenance and removal of Heavy Duty Silt Fence. Install fence as directed by the engineer. Do not remove fence until directed by the engineer. If so directed by the engineer, remove silt at no additional costs. Silt shall be removed before the removal of the fence.

**B Materials**

Provide Heavy Duty Silt Fence consisting of a composite of woven wire fence fabric, posts, geotextile, sand bags and fasteners to be assembled by the contractor. Woven wire fence fabric shall be a standard field fence type a minimum of 4 feet high, a maximum mesh spacing of 6-inches and minimum 14-1/2 gauge wire.

Provide “studded tee” or “U” type metal posts with a minimum length of 8 feet –3 inches and a minimum weight of 1.3 lb/ft.

Provide geotextile fabric meeting the following requirements

|  |  |  |  |
| --- | --- | --- | --- |
| Property | Unit | Test Method | Minimum Average Roll Value |
| Grab Tensile Strength | LB. | ASTM D4632 | 380 |
| Grab Tensile Elongation | % | ASTM D4632 | 50 |
| Puncture Strength | LB. | ASTM D4833 | 240 |
| Trapezoid Tear Strength | LB. | ASTM D4533 | 145 |
| Apparent Opening Size | U.S. Standard Sieve | ASTM D4751 | 170 (0.09 mm) |
| Permittivity | sec-1 | ASTM D4491 | 0.7 |
| Water Flow Rate | Gal/min/ft2 | ASTM D4491 | 50 |
| UV Resistance after 500 hours | % strength retained | ASTM D4355 | 70 |

Furnish a manufacturer’s Certified Report of Test or Analysis that the geotextile fabric delivered for use in the work meets the above requirements to the engineer at least 15 days prior to use in the work. Provide geotextile fabric bearing markings to clearly identify it with the applicable test report furnished to the engineer.

Supply material in 15’9” wide rolls and cut in half.

**C Construction**

Install the Heavy Duty Silt Fence as directed by the engineer. Space ties and anchors to adequately resist wave action. Install Heavy Duty Silt Fence within wetlands on the slope intercept line to minimize wetland impacts.

**D Measurement**

The department will measure Heavy Duty Silt Fence by the linear foot along the fence.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0090.21 Heavy Duty Silt Fence L.F.

Payment is full compensation for all furnishing, assembling, erecting, maintaining, and removing the silt fence; and for furnishing all labor, tools, equipment and incidentals necessary to complete this item of work.

1. Type UF Cable, 2 Conductor, No. 14, Item SPV.0090.41.

**A Description**

This special provision describes furnishing and installing cable for confirmation lights and making all connections conforming to standard spec 655, as shown on the plans and as hereinafter provided.

**B Materials**

When EVP confirmation 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 (Vacant)**

**D Measurement**

The department will measure Type UF Cable, 2 Conductor, No. 14, by the linear foot of cable complete in place.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0090.41 | Type UF Cable, 2 Conductor, No. 14 | LF  |

Payment shall be 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, for testing; and incidentals necessary to complete the work.

1. 8-Inch Water Main Relocation, SPV.0090.082; 12-Inch Water main Relocation, SPV.0090.083; 16-Inch Water Main Relocation, SPV.0090.084.

**A Description**

This special provision describes relocating existing Waukesha Water Utility water main which is in conflict with proposed storm sewer, end walls, rip rap, or other proposed project work. The work shall be in accordance with the Water Main Details and at the locations shown on the Storm Sewer Layout Plans.

**A.1 Specifications**

All construction and installation shall be in accordance with the *Specifications for Water main & Service Lateral Materials and the Installation of Water Main & Appurtenances for Waukesha Water Utility of the City of Waukesha dated August 29, 2014*, the regulations of the Department of Natural Resources (WDNR), the *Standard Specifications for Sewer and Water Construction in Wisconsin – Sixth Edition*, AWWA Specifications, manufacturers’ recommendations and these provisions.

**A.2 Site Conditions**

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 within the right-of-way to resolve conflicts during 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 bidding and therefore the Contractor shall be solely responsible for all damages resulting from the Contractors activities.

**A.3 Insurance**

Contractor 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 duration of the project.

**A.4 Pre-Construction Meeting**

Prior to commencing any water main work, a pre-construction meeting will be conducted. The Contractor will not receive approval to undertake any work without a pre-construction meeting or approval of the Waukesha Water Utility.

**A.5 Service Provided By Waukesha Water Utility**

**A.5.1 Staking**

Staking will 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 working days) notice of and staking needs.

**A.6.2 Inspection**

A Waukesha Water Utility representative will provide inspection for all water main installation and abandonment. Contractor shall provide a minimum of 72 hours (3 working days) 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.

Contractor shall be responsible for damage to adjoining buildings and grounds caused during 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 bidding and therefore the Contractor shall be solely responsible for all damages resulting from the Contractors activities. Claims for extra cost or time must be submitted in writing to the Waukesha Water Utility prior to proceeding with any work.

**A.7 Notification**

Contractor shall notify all utilities having facilities in the project area, the police and the fire departments when construction will commence. Notice shall be given 72 hours prior to the start of construction.

**B Materials**

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

Ductile Iron Pipe, Special Thickness Class 52, in accordance with AWWA C151 with cement mortar lining complying with ANSI A-21.4 or AWWA C104 and with asphaltic outside coating 1 mil thick. Factory-manufactured ductile iron / cast iron long pattern sleeves shall be used at the connections to the existing cast iron water main. Joints shall be compact style in accordance with AWWA C153 with cement mortar lining complying with AWWA C104 and with asphaltic outside coating 1 mil thick. All joints shall be restrained.

Contractor shall submit to the Inspector and Owner, for approval, a list of all materials intended to be used prior to ordering and delivery to the job site, including the names of all material suppliers.

Continuous tracer wire shall be installed with all water pipe, including PVC and Ductile Iron water mains. Tracer wire shall be installed in such a manner as to be able to trace all water mains without loss or deterioration of signal. Tracer wire system must pass a conductivity test before final acceptance of the water main installation is accepted by the Waukesha Water Utility. All tracer wire ends must be grounded. At the point of connection between either cast or ductile iron water mains, with any new water main, the tracer wire shall be properly connected to the iron pipe with either a cad weld or a conductivity clamp. Tracer wire shall be placed along the entire length of pipe and fitting sand taped at a minimum of every ten (10) feet to the top of the pipe. Tracer wire shall be kept taut during backfill so the wire does not slide down along the side of the water main. Tracer wire shall be protected from damage during water main installation. No breaks or cuts in the tracer wire or wire insulation will be permitted. All tracer wire splices shall have the wire end looped a minimum of four (4) times, the joint must be soldered and the connection shall be covered with a waterproof wrap that is approved for underground wire splices.

Tracer wire shall be a minimum of twelve (12) gauge solid core copper electric wire with blue PVC coating and rated for wet conditions, or #12 AW HS-CCS high-strength copper clad steel conductor (HS-CCS), insulated with a 30 mil, high density, high molecular weight polyethylene (HDPE) insulation, and rated for direct burial use at 30 volts. HS-CCS conductor must be 21% conductivity for locating purposes, with minimum break load of 380 pounds. Standard tracer wire is unacceptable.

Whenever Ductile Iron pipe is installed, the Contractor shall encase pipe in eight (8) mil polyethylene. The polyethylene shall be furnished in either tube or sheet form. Installation shall be by a method described in accordance with ANSI/AWWA C105/A21.5 - Latest Revision. All joints shall be lapped and taped sufficiently to prevent the soil from coming in contact with the pipe. Contractor shall take care in placing the polyethylene and in backfilling to prevent tearing and puncturing the wrapping and shall conform to the requirements of Chapter 4.4.4 of the Standard Specifications for Sewer and Water Construction in Wisconsin.

Where the existing or new offset water main is within 24 inches of the storm sewer, or where rip rap is placed over existing water main, a minimum of 2-inches of closed cell rigid polystyrene insulation board intended for underground installation shall be placed between the two pipes. The cost for insulation shall be shall be included in the linear foot of pipe being constructed unless called out separately on the plans. Contractor shall provide insulation as noted and offset water main at the size and location noted on the Water Main Details and Storm Sewer Layout plans.

All cast-iron fittings and valves shall be completely wrapped with eight (8) mil polyethylene wrap to protect them from corrosion. If the fitting or valve cannot be wrapped practically in a tube, a double wrap of flat sheet or split tube shall be used. The wrap shall extend approximately 18 inches beyond all joints. All seams shall be taped securely.

Storage of materials for construction will be permitted on the job site with prior 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.

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.

 The Contractor is responsible for hauling and removal of all surplus excavated material.

**C Construction**

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

Contractor shall be solely responsible for providing trench support in accordance with 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.

**C.1 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 three feet and a minimum compaction of 95% Standard Proctor Density in the top three feet of the excavated material or granular backfill. Testing will be done at no cost to the Contractor.

**C.2 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.

All water mains (connections, pipe, and fittings) shall be disinfected by swabbing with a strong chlorinated solution. At the completion of construction, the relocated water main segment shall be flushed by opening a nearby hydrant. Contractor shall provide a clean fire hose or other approved device to directly convey the flushed water into the storm sewer. The fire hydrant and storm sewer structure shall be selected to comply with approved traffic control plans. These flushing methods must use the appropriate number of hoses or other DIRECT conveyance devices to reach the minimum water flow rate of two and half (2½’) feet per second of water flow in the main as required for proper flushing. These hoses or devices must be supplied, installed and removed by the Contractor. THE WATER MUST BE DISCHARGED IN SUCH A MANNER AS TO NOT PROMOTE EROSION OF THE AREA OR MOVEMENT OF SITE MATERIALS OFF SITE OR INTO THE STORM SEWER SYSTEM. This may require discharge directly into an established storm sewer inlet, or conveyance to a clean and paved surface to utilize the existing curbs and storm sewer system. Flow of water from flushing or testing directly across disturbed surfaces will not be allowed. Flow of water within an existing curb and gutter line will only be allowed if the area is completely free of gravel and debris and if the flow fully remains on the undisturbed surface. It may be necessary to remove the inlet protection used during construction for the periods when flushing is occurring; these protections must be properly replaced when flushing has ended. Depending on the situation, it may also be necessary to stub up a temporary storm sewer inlet at flushing points if the distance to an established storm sewer system is too great.

**C.3 Coordination**

Contractor shall coordinate the following with Waukesha Water Utility:

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

Contractor shall coordinate with Waukesha Water Utility all work associated with connecting the offset water main to the old water main. The Waukesha Water Utility will assist in turning the existing valves to isolate these areas for the installation of the water main offsets.  The water mains will not be allowed to be shut down before 8:00 am. Contractor shall be responsible for notifying all customers when their water will be shut off. Notification should be done at least 24 hours prior to shut down whenever possible. No extra costs or change orders will be allowed for down time associated with the Waukesha Water Utility crews turning the water off or on.

A schedule showing tentative dates for water main construction shall be provided to the Water Utility at least 2 weeks prior to construction. 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 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 Owner.

Waukesha Water Utility will provide inspection services for this work and shall be notified a minimum of three (3) days prior to the work being performed.

Adjustment of valve boxes or curb stops. Contractor shall identify proposed grade changes that affect valve boxes or curb stops and notify Waukesha Water Utility providing at least 24 hour notice.

**D Measurement**

The department will measure 8-Inch Water Main Relocation, 12-Inch Water Main relocation and 16-Inch Water Main Relocation by the linear foot, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.82 | 8-Inch Water Main relocation | LF |
| SPV.0090.83 | 12-Inch Water Main relocation | LF |
| SPV.0090.84 | 16-Inch Water Main relocation | LF |

Payment is full compensation for all furnishing, assembling, erecting, maintaining, and removing the water main; for necessary materials, excavation, backfill, compaction and maintenance of trenches; for hauling and disposal; and for furnishing all labor, tools, equipment and incidentals necessary to complete this item of work.

1. Concrete Pavement Joint Layout, Item SPV.0105.01.

**A Description**

This special provision describes providing a concrete pavement or concrete base joint layout design for intersections and marking the location of all joints in the field.

**B Materials (Vacant)**

**C Construction**

Plan and locate all points necessary to establish the horizontal position of the transverse and longitudinal joints in the concrete to prevent uncontrolled cracking. Submit a joint layout design to the engineer before paving each intersection. Mark the location of all concrete joints in the field. Follow the plan details for joints in concrete making adjustments as required to fit field conditions.

**D Measurement**

The department will measure Concrete Pavement Joint Layout as a single lump sum unit for all joint layout designs and marking acceptably completed under the contract.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.01 | Concrete Pavement Joint Layout | LS |

Payment is full compensation for providing the intersection joint layout designs and marking all joints in the field. The department will adjust pay for crack repairs as specified in standard spec 415.5.3.

1. Remove Traffic Signals, USH 18 and CTH TT, Item SPV.0105.41.

**A Description**

This special provision describes removing existing traffic signals at the intersections of USH 18 and CTH TT in accordance to the pertinent provisions of section 204 of the standard specifications 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 five 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, emergency vehicle pre-emption (EVP) 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 five 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 as a single lump sum unit of work for each intersection acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.41 | Remove Traffic Signals, USH 18 and CTH TT | LS |

Payment is full compensation for removing, disassembling traffic signals, scrapping of some materials, disposing of scrap material and for delivering the requested materials to the department.

658-SER1 (20101021)

1. Remove Traffic Signals, CTH TT and Northview Road, Item SPV.0105.42.

**A Description**

This special provision describes removing existing temporary traffic signals at the intersection CTH TT and Northview Road in accordance to the pertinent provisions of section 204 of the standard specifications 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 Fred Patzer in the Waukesha County Electrical Unit, at (262) 424-9129 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.

Waukesha County 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 County.

All existing above ground traffic signal equipment being removed (cabinets and contents. poles, cameras, signal faces, pedestrian push buttons, etc.) shall be removed and returned to Waukesha County. Properly dispose of the all signal cable, internal wires and street lighting cable. Deliver the remaining materials to the Waukesha County public works storage facility located at 1801 Woodburn Rd, Waukesha, WI 53188. Contact Fred Patzer in the Waukesha County Electrical Unit, at (262) 424-9129 at least three working days prior to delivery to make arrangements.

**D Measurement**

The department will measure Remove Traffic Signals as a single lump sum unit of work for each intersection acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.42 | Remove Traffic Signals, CTH TT and Northview Road | LS |

Payment is full compensation for removing, disassembling traffic signals, scrapping of some materials, disposing of scrap material and for delivering the requested materials to Waukesha County.

1. Remove Loop Detector Wire and Lead-in Cable, USH 18 and CTH TT, Item SPV.0105.43.

**A Description**

This special provision describes removing loop detector wire and lead-in cable at the intersection of USH 18 and CTH TT. Removal will be in accordance to section 204 of the standard specifications, 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 five 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 the measured quantity at the contract unit price under the following bid item:

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.43 | Remove Loop Detector Wire and Lead in Cable, USH 18 and CTH TT | LS |

Payment is full compensation for removing, scrapping, and disposing of material and incidentals necessary to complete the contract work.

1. Install State-Furnished Traffic Signal Cabinet, USH 18/STH 318 and Summit Avenue, Item SPV.0105.45; STH 318 and Northview Road, Item SPV.0105.46.

**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 (5) working days prior to picking the materials up. The department will provide notification at the preconstruction 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 sections 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2 of the standard specifications.

**C Construction**

Perform work in accordance to sections 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 of the standard specifications except as specified below.

Request a signal inspection of the completed signal installation to the project engineer at least five working days prior to the time of the requested inspection. The department’s Region Electrical personnel will perform the inspection.

Install the state-furnished traffic signal cabinet on the concrete control cabinet base the same day it is delivered to the site location.

**D Measurement**

The department will measure Install State-Furnished Traffic Signal Cabinet as a single lump sum unit of work in place and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.45SPV.0105.46 | Install State-Furnished Traffic Signal Cabinet, USH 18/STH 318 and Summit AvenueInstall State-Furnished Traffic Signal Cabinet, STH 318 and Northview Road | LSLS |

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.

1. EVP Detector Head Installation, USH 18/STH 318 and Summit Avenue, Item SPV.0105.47; STH 318 and Northview Road, Item SPV.0105.48.

**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/STH 318 and Summit Avenue and STH 318 and Northview 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 five 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 contractor shall 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 transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Head, EVP Confirmation Lights and EVP Detector Head Mounting Brackets as a single lump sum unit of work in place and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.47 | EVP Detector Head Installation, USH 18/STH 318 and Summit Avenue | LS |
| SPV.0105.48 | EVP Detector Head Installation, STH 318 and Northview 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; and incidentals necessary to complete this item of work.

1. Transporting Signal and Lighting Materials at USH 18/STH 318 and Summit Avenue, Item SPV.0105.49; STH 318 and Northview Road, Item SPV.0105.50.

**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 (5) 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 in place and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.49SPV.0105.50 | Transporting Signal and Lighting Materials at USH 18/STH 318 and Summit Avenue Transporting Signal and Lighting Materials at STH 318 and Northview Road | LSLS |

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.

1. Temporary Vehicle Detection System, USH 18/STH 318 and Summit Avenue, Item SPV.0105.51; STH 318 and Northview Road, Item SPV.0105.52.

**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 Payment**

The department will measure Temporary Vehicle Detection System for Intersect (Location) as a single lump sum unit of work, acceptably completed.

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.51 | Temporary Vehicle Detection System, USH 18/STH 318 and Summit Avenue | LS |
| SPV.0105.52 | Temporary Vehicle Detection System, STH 318 and Northview 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

1. Temporary Infrared EVP System USH 18/STH 318 and Summit Avenue, Item SPV.0105.53; STH 318 and Northview Road, Item SPV.0105.54.

**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, Alex Damien, (262) 524-3907, adamien@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), furnished, installed, and completely operational, as a single complete unit of work per intersection, complete in place and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.53 | Temporary Infrared EVP System, USH 18/STH 318 and Summit Avenue | LS |
| SPV.0105.54 | Temporary Infrared EVP System, STH 318 and Northview 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; for cleaning up and properly disposing of waste; and incidentals necessary to complete the contract work.

1. Geogrid Reinforcement, Item SPV.0180.01.

**A Description**

This special provision describes furnishing and installing geogrids for subgrade stabilization, base reinforcement, or pavement structure applications in accordance with the plans, section 645 of the standard specifications, and as hereinafter provided.

**B Materials**

Provide geogrid that consists of either single or joined multiple layers of a uniform rectangular grid of bonded, formed, or fused polymer tensile strands crossing with a nominal right angle orientation. The polymer shall consist of polyester, polypropylene, polyamide, or polyethylene. The grid shall maintain dimensional stability during handling, placing, and installation. The geogrid shall be insect, rodent, mildew, and rot resistant. Minimum geogrid width shall be 6.0 feet.

Provide geogrid that complies with the following physical properties:

|  |  |  |
| --- | --- | --- |
| Test | Method | Value (1) |
| Tensile Strength at 5% Strain, | ASTM D 4595 (2) | 450 min. |
| Both Principal Directions (lb/ft) |  |  |
|  |  |  |
| Flexural Rigidity | ASTM D 1388 (3) | 150,000 min. |
| Both Principal Directions (mg-cm) |  |  |
|  |  |  |
| Aperture Area (in2) | Inside Measurement (4) | 5.0 max |
| Aperture Dimension (in) | Inside Measurement (4) | 0.5 min. |

|  |  |
| --- | --- |
| * (1)
 | * (1) All numerical values represent minimum/maximum average roll values, i.e. the average minimum test results on any roll in a lot should meet or exceed the minimum specified value.
 |
| * (2)
 | * (2) The tensile strength (T) of a joined multi-layered geogrid shall be computed using the following equation:
 |



where

*n* = the number of individual layers in the joined multi-layered geogrid,

*t* = the tensile strength of a single layer of geogrid as determined using testing method ASTM D4595, and

*f* = reduction factor based on the number of layers comprising the multi-layered system and determined by the equation f=1.00 - [0.04(n - 1)].

|  |  |
| --- | --- |
| * (3)
 | * (3) Values shall be determined by Option “A” (Cantilever Test) of testing method ASTM D1388 using test specimens that are 36 inches 0.04 inch long. Test specimen widths for differing geogrids shall be variable and equal to one element plus ½ the aperture width on both sides of that element. An element is defined as the minimum number of parallel strands that form a distinguishable repeating pattern.
 |
| * (4)
 | * (4) Aperture Area and Aperture Dimension for joined multi-layer geogrids shall be determined based on measurement of a single layer of the geogrid.
 |

Protect the geogrid from ultraviolet radiation and from damage due to shipping and handling. Keep the geogrid dry until it is installed. The geogrid rolls shall be clearly marked to identify the material contained.

Deliver a sample of the geogrid material to the engineer at least ten days prior to its incorporation into the work. At the same time, furnish a manufacturer’s Certified Report of Test or Analysis that verifies that the geogrid delivered for use on the work meets the above requirements. Samples of geogrid for test purposes will be obtained from the job site for each 10,000 square yards or portions thereof used on the contract.

**C Construction**

Prior to placement of the geogrid, bring the indicated placement surface to the required lines, grades, and dimensions as shown on the plans. Smooth and shape the surface to eliminate any rocks, clods, roots, or other items that may cause damage to the geogrid during placement or covering.

Place the geogrid on the prepared surface at the locations and to the limits as shown on the plans. After placement, pull the geogrid taut and secure it using pins, clips, staples, or other devices to prevent movement or displacement. Place parallel strips of geogrid with a minimum overlap of 24 inches. Lap butt joints between roll ends a minimum of 12 inches. Fasten all lapped sections together by using ties, straps, clips, or other devices to develop a secure joint that meets the approval of the engineer. No vehicles or construction equipment shall be permitted to operate directly on the geogrid.

Cover small rips, tears, or defects in the geogrid with an additional section of geogrid; secure the additional geogrid in place so that it overlaps the damaged area by at least 3 feet in all directions. Remove and replace geogrid sections with large rips, tears, defects, or other damage at the direction of the engineer. Take responsibility for all costs to repair or replace damaged or defective geogrid.

After placement, cover the geogrid to the indicated depth with the type of material required on the plans or in the special provisions. Placing, spreading, and compacting of this material shall comply with the applicable sections of the standard specifications or special provisions except that the initial lift of material placed on the geogrid must be at least 4 inches. Place, spread, and compact the required backfill material so that the geogrid is not displaced or damaged. The engineer may require changes in equipment and/or operations to prevent such damage or displacement.

**D Measurement**

The department will measureGeogrid Reinforcement by the square yard of surface area upon which the geogrid has been placed and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0180.01 | Geogrid Reinforcement | SY |

Payment is full compensation for furnishing, transporting, and installing the geogrid; furnishing and installing all devices and materials necessary to join or secure the geogrid in place; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

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1. Water Main Insulation, 2-Inch; Item SPV.0180.82.

**A Description**

This special provision describes furnishing and installing water main insulation in accordance with the plans and as hereinafter provided.

**B Materials**

Provide water main insulation as shown on the plans.

All insulation shall be closed cell rigid 2-Inch polystyrene insulation board.

**C Construction**

Prior to placement of the insulation board, bring the indicated placement surface to the required lines, grades, and dimensions as shown on the plans. Smooth and shape the surface to eliminate any rocks, clods, or other items that may cause damage to the insulation board during placement or covering.

Where the existing water mains are within 24-inches of the storm sewer, or where rip rap is placed over existing water main, a minimum of 2-inches of closed cell rigid polystyrene insulation board intended for underground installation shall be placed between the two pipes.

Contractor shall provide insulation at the size and location as noted on the Water Main Details and Storm Sewer Layout plans.

Place the water main insulation board on the prepared surface at the locations and to the limits as shown on the plans. No vehicles or construction equipment shall be permitted to operate directly on the board.

After placement, cover the insulation board to the indicated depth with the type of material required on the plans or in the special provisions. Placing, spreading, and compacting of this material shall comply with the applicable sections of the standard specifications or special provisions. Place, spread, and compact the required backfill material so that the insulation board is not displaced or damaged. The engineer may require changes in equipment and/or operations to prevent such damage or displacement.

**D Measurement**

The department will measureWater Main Insulation, 2-Inch by the square yard of surface area upon which the insulation board has been placed and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0180.82 | Water Main Insulation, 2-Inch | SY |

Payment is full compensation for furnishing, transporting, and installing the water main insulation; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

1. Cold Patch, Item SPV.0195.01

**A Description**

This special provision describes furnishing, stockpiling, placing, and maintaining cold patch material. Use the cold patch material for short term maintenance purposes to fill potholes/voids in the existing pavement surface that the engineer deems necessary.

**B Materials**

**B.1 General**

Furnish cold patch that is a combination of course aggregate, natural sand and bituminous material MC-250. Design the mixture to have: a workability range of 15-100º F without the addition of heat, good adhesion to wet surfaces, and resistance to damage by water, salt and deicing products. Design a uniform mixture that does not require any mixing or special handling prior to use.

**B.2 Gradations**

Conform to the following gradation requirements:

 SIEVE SIZE PERCENT PASSING

 (by weight)

 1/2 Inch (12.5mm) 100

3/8 Inch (9.5mm) 90 - 100

 No. 4 (4.75 mm) 90 Max

 No. 8 (2.38mm) 20 - 65

 No. 200 (.074mm) 2 - 10

 Bitumen 4.8 - 5.4

**B.3 Contracts With Less Than 10 Tons of Mixture**

The engineer may waive QC testing on contracts with less than 10 tons of mixture. If testing is waived, acceptance will be by visual inspection unless defined otherwise by contract change order.

**B.4 Temporary Pavements**

The engineer may waive all testing for temporary cold patch, defined for this purpose as cold patch that will be placed and removed before contract completion.

**C Construction**

**C.1 General**

Choose a smooth, firm, and well-drained area for an on-site covered stockpile that is cleared of vegetation and foreign material that may contaminate the cold patch. Make the stockpile easily accessible, maintainable and replenishable at any time during the project. The stockpile is not to exceed 10 tons on site at any given time unless approved by the engineer. Remove and dispose of any unused portions of the stockpile at the completion of the project unless otherwise directed by the engineer.

Application of the cold patch must be able to be accomplished by hand labor. Remove all ponded water and loose debris prior to filling any potholes/voids. Place material into the pothole/void and compact flush with a tamper, roller, or vehicle tire. Traffic must be able to travel over the patch immediately after installation.

**D Measurement**

The department will measure cold patch by the ton stockpiled on site.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0195.01 | Cold Patch | Ton |

Payment for cold patch is full compensation for the patch; preparing the pothole/void for material furnishing and providing a covered stockpile of material, compacting, and maintaining and for removal and disposal of any unused portions of the stockpile at the completion of the project

1. Reconstructing Sanitary Manholes, Item SPV.0200.72.

*Conform to standard spec 611, except revise standard spec 611.3.5 and standard spec 611.3.7 with the following:*

**A Description**

This special provision amendment describes replacement or addition of the barrel, cone, chimney, frame, and cover. The barrel and cone sections shall be replaced in those locations indicated on the plans, and shall consist of a precast barrel and cone or slab section as site conditions dictate. 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 EPP 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.

**C Construction**

Reuse existing sanitary frames and covers for the following manholes owned by the City of Pewaukee:

* Sta. 324+00, 80’ LT along Meadowbrook Road
* Sta. 47+14, 13’ RT along Northview Road
* Sta. 44+70, 11’ RT along Northview Road

Pick up new sanitary frames and covers for manholes owned by the City of Waukesha from the City of Waukesha Municipal Garage at 300 Sentry Drive. Contact Joe Deleon, (262) 524-3615, to make arrangements.

* Sta. 43+10, 75’ LT along Summit Avenue
* Sta. 44+50, 60’ LT along Summit Avenue
* Sta. 46+45, 50’ LT along Summit Avenue
* Sta. 48+94, 2’ LT along gas station driveway.

The adjustment rings 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.

The Contractor must adjust all manholes to final pavement grade. No other material shall be used in the construction of the chimney section beyond those materials specified.  This includes shims of any material, bricks, stones, etc.  If after pavement placement, foreign material is discovered (i.e. shims) in a chimney, the pavement surrounding the structure shall be removed and replaced at the Contractor’s expense to the limits described below:

Required correction at manholes in concrete pavement:

* The Contractor shall sawcut the concrete pavement along longitudinal and transverse joints in order to re-set the manhole chimney according to the specifications. The concrete areas to be removed must be full panels.
* Place new concrete around the manhole according to the concrete pavement section of these specifications.

Required correction at manholes in HMA pavement:

* The Contractor shall sawcut the HMA pavement that is to be removed in order to re-set the manhole chimney according to the specifications.
* The HMA surface shall be milled from the flange to the nearest HMA pavement joint (if the structure is in the centerline, the area to be milled is flange to flange). The length of the milled area shall be equal to the width.
* The lower courses around the manhole shall be replaced and compacted.
* Place a tack coat and pave a new surface lift of HMA pavement that matches the existing HMA pavement and the re-set manhole.
* The seam created at the existing HMA pavement shall be infrared heated to blend and fuse the new HMA pavement to the existing.

**D Measurement**

The department will measure Reconstructing Sanitary Manholes per vertical foot, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0200.72 | Reconstructing Sanitary Manholes | Vert. Ft. |

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