**Special Provisions**

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**STSP’S Revised November 19, 2018**

**SPECIAL PROVISIONS**

1. General.

Perform the work under this construction contract for Project 1440-15-72, 1440-15-73, Fond du Lac - Plymouth, CTH K - ECL, STH 23, Fond du Lac County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2019 Edition, as published by the department, and these special provisions.

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

100-005 (20181119)

1. Scope of Work.

The work under this contract shall consist of grading, base course, culverts, concrete pavement, HMA pavement, curb and gutter, structures B-20-205, B-20-215 and B-20-218, pavement marking, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

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.

**Construction Staging Overview**

Follow the construction operations as outlined below and as shown in the plans.

Stage 1A:

* Construct westbound STH 23 from STA 384’WB’+00 to STA 481’WB’+00.
* Construct eastbound STH 23 from STA 476’EB’+50 to east project limits.
* Construct CTH G interchange.
* Construct Old Plank Trail.
* Construct cul-du-sacs at Log Tavern Road, Banner Road, Hickory Road, and Division Road.
* Construct CTH TTT to Pit Road.
* Construct Crossover A, Crossover B1, and Crossover C.
* Construct Frontage Road.
* Construct Park and Ride.
* Construct culverts in project 1440-15-72.
* Construct structure B-20-205.
* Construct structure B-20-218.

Stage 1B:

* Open Frontage Road to provide access to CTH G from Division Road.
* Open CTH TTT access to Pit Road and remove CTH TTT access from STH 23 at STA 573’EB’+50.
* Continue to construct and complete other stage 1A objectives.

Stage 2A:

* Construct Crossover B2.

Stage 2B:

* Construct eastbound lanes from STA 399’EB’+70 to STA 425’EB’+89.
* Construct eastbound lanes from STA 442’EB’+20 to STA 451’EB’+50, and STA 461’EB’+36 to STA 476’EB’+50.
* Construct westbound lanes from STA 481’WB’+00 to STA 511’WB’+32.
* Construct J-turn intersection at Seven Hills Road south of STH 23.
* Construct maintenance crossover at STA 448’EB’+00.
* Construct intersection at CTH W south of STH 23.
* Construct J-turn intersection at CTH W north of STH 23.
* Construct intersections north of STH 23 at Log Tavern Road, Pit Road, CTH TTT, and Hillview Road.
* Remove Cattle pass structure, STA 588’WB’+50.
* Mill and pave westbound STH 23 from STA 746’WB’+75 to STA 755’WB’+90 with single closures.

Stage 2C:

* Construct median ditch and J-turn from STA 474’WB’+00 to STA 487’WB’+00.
* Construct median ditch from STA 674’WB’+00 to STA 687’WB’+00.

If the contractor fails to complete the work necessary to reopen the Frontage Road from CTH G to Division Road to through traffic prior to 12:01 AM November 1, 2020, the department will assess the contractor $750 in interim liquidated damages for each calendar day that the roadway remains closed after 12:01 AM, November 1, 2020. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

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

**STH 23 Right-of-Way Available for Construction Activities**

The contractor shall not perform construction activities nor store equipment nor materials on STH 23 right-of-way that is more than 20 feet beyond the grading limits indicated in the plan, unless approved by the engineer.

Fish Spawning

There shall be no instream disturbance of the Sheboygan River and unnamed tributary to the Sheboygan River which cross STH 23 at Station 450+50 and Station 588+75 as a result of construction activity under or for this contract, from March 1 to June 15 both dates inclusive, in order to avoid adverse impacts upon the spawning of fish species.

Any change to this limitation will require submitting a written request by the contractor to the engineer, subsequent review and concurrence by the Department of Natural Resources in the request, and final approval by the engineer. The approval will include all conditions to the request as mutually agreed upon by WisDOT and DNR.

0036 (20090901)

Migratory Birds

Swallow and other migratory birds’ nests have been observed on or under the existing bridge. All active nests (when eggs or young are present) of migratory birds are protected under the federal Migratory Bird Treaty Act.

The nesting season for swallows and other birds is usually between May 1 and August 30. Either prevent active nests from becoming established, or apply for a depredation permit from the US Fish and Wildlife Service for work that may disturb or destroy active nests. The need for a permit may be avoided by removing the existing bridge structure prior to nest occupation by birds, or clearing nests from all structures before the nests become active in early spring. As a last resort, prevent birds from nesting by installing a suitable netting device on the remaining structure prior to nesting activity. Include the cost for preventing nesting in the cost of Removing Old Structure.

0074 (20090901)

Northern Long-eared Bat *(Myotis septentrionalis)*

Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees. 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. If an individual bat or active roost is encountered during construction operations, stop work and notify the engineer and the WisDOT Regional Environmental Coordinator (REC).

In accordance to the final 4(d) rule issued for the NLEB, the department has determined that the proposed activity may affect, but will not result in prohibited take of the NLEB. The activity involves tree removal, but will not occur within 0.25 miles of a known hibernacula, nor will the activity remove a known maternity roost tree or any other tree within 150 feet of a known maternity roost tree.

If additional trees need to be removed, no Clearing shall occur without prior approval from the engineer, following coordination with the WisDOT REC. Additional tree removal beyond the area originally specified will require consultation with the United States Fish and Wildlife Service (USFWS) and may require a bat presence/absence survey. Notify the engineer if additional Clearing cannot be avoided to begin coordination with the WisDOT REC. The WisDOT REC will initiate consultation with the USFWS and determine if a survey is necessary.

Submit a schedule and description of Clearing 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.

In the Wisconsin Lane Closure System Advance Notification Table 108-1 below, available width is typically defined as the total width of the paved lane plus the paved shoulder for one direction of traffic. Since existing STH 23 has only 15 feet (12’ lane + 3’ paved shoulder) of available paved width in each direction, WisDOT allows 1 foot of the adjacent gravel shoulder to be included as part of the available width for this section of highway.

STH 23 is a designated WisDOT Freight Network Route and WisDOT Wind Tower Corridor. Maintain an available width no less than 16 feet (12’ lane + 3’ paved shoulder + 1’ additional gravel or paved shoulder) at all times in each direction, except during the allowable full closure of STH 23 and during lane closure determined necessary and approved by the engineer as discussed below. If this minimum width is maintained for traffic, advanced notification according to the Wisconsin Lane Closure System (WLCS) is not required. Movement of standard OSOW freight including wind tower base loads is scheduled to occur during this construction project. Wind tower loads that normally require 16 feet of available paved width are allowed by WisDOT Oversize/Overweight permit to travel along this section of STH 23.

For situations where the engineer determines or agrees that construction activities require lane widths less than the minimum required widths for STH 23 traffic as defined above, reduce STH 23 to a single counter-directional lane via flagging operations during daytime hours only. Prior to reducing traffic to one lane, acquire approval from the engineer to do so and provide the minimum advanced notification according to the WLCS Table 108-1 below. Notification to freight companies and WisDOT Oversize/Overweight Permits Unit of such lane closures is provided through the WLCS. Contact WisDOT Northeast Region Traffic Engineer, Rod Hamilton, at (920) 366-4747 with questions.

Allowable Full Closures

The contractor will be allowed to close STH 23 for four nighttime periods during the hours of 6:00 PM – 6:00 AM, between Monday PM – Sunday AM, to complete the culverts at STA 572’WB’+65 and STA 654’WB’+66.

If the contractor fails to open all lanes of STH 23 to traffic by 6:01 AM, hourly damages will be assessed at a rate of $250 per hour for each full or partial hour that any traffic lanes remain closed beyond 6:01 AM. Hourly damages will be assessed under administrative item 801.0104 Failing to Open Road to Traffic.

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

Wisconsin Lane Closure System Advance Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

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

Full access to side roads shall be maintained at all times except when necessary to complete construction at the side road or intersection. Do not close consecutive side roads at the same time. Side roads shall not be closed for greater than 14 consecutive calendar days.

Driveway access may be closed only for the minimum time required for construction. Prior to closing entrances, give 48-hour notice to residents and owners. Driveway access may be discontinued temporarily during removals, excavation, asphalt paving and base aggregate operations, but must be reopened on a minimum of a base aggregate surface by the end of each day. Businesses must be provided one driveway access at all times.

**Traffic Staging for Construction**

Stage 1A:

* + Eastbound and westbound traffic to remain in existing lanes.
	+ Log Tavern Road is closed permanently south of STH 23.
	+ Banner Road is closed permanently south of STH 23.
	+ Hickory Road is closed permanently north of STH 23.
	+ Division Road is closed permanently north of STH 23.
	+ Division Road is closed south of STH 23.
	+ CTH G is closed north and south of STH 23 to construct interchange. STH 23 traffic detoured from CTH T to CTH A to CTH C.

Stage 1B:

* + CTH TTT traffic utilizing new access road to Pit Road.
	+ Frontage Road traffic utilizing access from Division Road to CTH G.

Stage 2A:

* + Bi-directional single lane eastbound and westbound STH 23 traffic utilizing crossover A, westbound lanes from STA 384’WB’+00 to STA 475’WB’+00, crossover B1, and existing lanes from STA 486’WB’+00 to east project limits.

Stage 2B:

* + Bi-directional single lane eastbound and westbound STH 23 traffic utilizing crossover A, westbound lanes from STA 384’WB’+00 to STA 475’WB’+00, crossover B2, and eastbound lanes from STA 480’EB’+00 to STA 675’EB’+00.
	+ Westbound STH 23 traffic utilizing crossover C.
	+ Eastbound and westbound STH 23 traffic utilizing CTH G interchange and all 4-lanes of STH 23 from STA 695’WB’+00 to east project limits.
	+ Seven Hills Road is closed south of STH 23.
	+ CTH W is closed south of STH 23.
	+ CTH W is closed north of STH 23.
	+ Log Tavern Road is closed north of STH 23.
	+ Pit Road is closed north of STH 23.
	+ CTH TTT is closed north of CTH 23.
	+ Hillview Road is closed north of STH 23.

Stage 2C:

* + STH 23 traffic on new westbound and eastbound pavement utilizing traffic control lane closure.
	+ Westbound traffic utilizing crossover A.

**Portable Changeable Message Signs - Message Prior Approval**

After coordinating with department construction field staff, notify the Northeast Region Traffic Section at 920-366-8033 (secondary contact number is 920-360-3107) 3 business days before deploying or changing a message on a PCMS to obtain approval of the proposed message. The Northeast Region Traffic Unit will review the proposed message and either approve the message or make necessary changes.

PCMS boards shall be deployed on STH 23 7 days prior to the start of construction.

PCMS boards shall be deployed on STH 23 7 days prior to Spring startup.

**Crossing STH 23**

When crossing STH 23, provide the necessary flagging and signing to control construction equipment movements. The contractor must maintain the proper stopping sight distance for STH 23 traffic at all temporary haul road locations onto STH 23. Determine stopping sight distance with engineer. Flagging operations shall not impede traffic flow on STH 23. All crossing locations are subject to the approval of the engineer.

Maintain, repair, and restore STH 23 at crossing locations. This includes street sweeping of STH 23 at the temporary haul road locations under a flagging operation. The engineer will determine the type and quality of repair required. Existing facilities may be stabilized, reinforced, or strengthened prior to beginning crossings. This work will be incidental to the work being performed.

1. Holiday and Special Event Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying STH 23 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 22, 2020 to 6:00 AM Tuesday, May 26, 2020 Memorial Day;

- From noon Thursday, July 2, 2020 to 6:00 AM Monday, July 6, 2020 Independence Day;

- From noon Friday, September 4, 2020 to 6:00 AM Tuesday, September 8, 2020 Labor Day.

- From 6:00 AM Monday, September 21, 2020 to 6:00 AM Monday, September 28, 2020 Ryder Cup at Whistling Straits.

- From noon Friday, May 28, 2021 to 6:00 AM Tuesday, June 1, 2021 Memorial Day;

- From noon Friday, July 2, 2021 to 6:00 AM Tuesday, July 6, 2021 Independence Day;

- From noon Friday, September 3, 2021 to 6:00 AM Tuesday, September 7, 2021 Labor Day.

1. Utilities.

**I NEED TO GET THIS INFORMATION PRIOR TO FINAL PSE**

1. Coordination with Project 1440-13-72.

The department let STH 23 project 1440-13-72, West County Line to CTH P in Sheboygan County, in January of 2020. Work under this project will begin in summer 2020 and includes grading, paving, structure, and culvert extensions along STH 23. Coordinate traffic control staging, work zone traffic control, detours, roadway and lane closures, trucking activities and other work items with the project as necessary.

1. Coordination with Project 4854-04-00.

The department will let CTH G bridge replacement project 4851-04-00, Mullet Creek Bridge in Fond du Lac County, in 2021. Work under this project will begin in Fall 2021. Complete the Frontage Road from CTH G to Division Road prior to the start of this project. Coordinate traffic control staging, work zone traffic control, detours, roadway and lane closures, trucking activities and other work items with the project as necessary.

1. Coordination with Project 1009-33-31.

The department will let project 1009-33-31, deck sealing in Fond du Lac, Calumet, Winnebago, and Outagamie Counties. Work under this project will begin in 2020 and includes structure B-20-0076, STH 23 over Sheboygan River. Coordinate traffic control staging, work zone traffic control, detours, roadway and lane closures, trucking activities and other work times with the project as necessary.

1. Coordination with Businesses and Residents.

The contractor shall arrange and conduct a meeting between the contractor, the department, affected residents, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Hold the first meeting at least one week before the start of work under this contract and no further meetings will be required unless directed by the engineer. The contractor shall arrange for a suitable location for meetings that provides reasonable accommodation for public involvement. The department will prepare and coordinate publication of the meeting notices and mailings for meetings. The contractor shall coordinate the scheduling of the meeting with the engineer at least 2 weeks prior to the meeting to allow for these notifications.

1. Work by Others.

At the J turns (STH 23 & Loehr R. and STH 23 & Seven Hills Rd.), Roundabouts (STH 23 EB/WB & CTH G), and Park and Ride the Wisconsin Department of Transportation Northeast Region Electrical Unit will perform the following work:

* Provide and install the lighting control cabinet
* Terminate all electrical wire in the lighting control cabinet
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 Eric Danke at 920-492-5647.

stp-107-054 (20080901)

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

The department has obtained coverage through the Wisconsin Department of Natural Resources to discharge storm water associated with land disturbing construction activities of this contract under the Wisconsin Pollutant Discharge Elimination System General Construction Storm Water Discharge Permit (WPDES Permit No. WI-S066796-1). A certificate of permit coverage is available from the regional office by contacting Eric Danke at (920) 492-5647. Post the permit in a conspicuous place at the construction site.

stp-107-056 (20180628)

1. Notice to Contractor – Vertical and Horizontal Control.

The vertical and horizontal control provided in the contractor data packet prior to the bid letting will have data obtained in 2019. In anticipation of ground disturbance over the winter, 3 weeks prior to the start of construction in 2020 coordinate obtaining updated vertical and horizontal control with WisDOT survey staff by contacting Paul Brauer at (920) 366-1097.

In anticipation of ground disturbance over the winter, 3 weeks prior to start of construction in 2021 coordinate obtaining updated vertical and horizontal control with WisDOT survey staff by contracting Paul Brauer at (920) 366-1097.

1. Notice to Contractor – Contaminated Soils

A. Description

The Department and others have completed investigations for soil contamination for locations adjacent to, and within, the construction limits where excavation is planned. Investigations indicated that petroleum- and metals-contaminated soil is present from Station 619+00 to 620+50 from 50 feet right of the reference line to the construction limits on the right.

Supply the schedule of operations, including work in the contaminated areas, to the Engineer at the preconstruction conference. If contaminated soil or groundwater, underground storage tanks (USTs), or other waste is encountered elsewhere on the project during excavation, terminate the excavation in the area and notify the Engineer and the Environmental Consultant.

B. Coordination

Coordinate work under this Contract with the Environmental Consultant retained by the Department:

 Consultant: RMT, Inc.
Address: 744 Heartland Trail, P.O. Box 8923, Madison, WI 53708-8923
Contact: Mr. Daniel Haak 608.662.5274 or
 Mr. Mark Walter 608.662.5138
Fax: 608.831.3334

The role of the Environmental Consultant will be limited to field-screening, classifying, directing, and documenting the conformance of activities associated with the management of contaminated soil and groundwater in accordance with agreements between the Wisconsin Department of Natural Resources (WDNR) and the Department. Provide 14 calendar days advance notice of the preconstruction conference date to the Environmental Consultant. At the preconstruction conference, provide a proposed schedule for excavation activities in the area of known contamination. Identify the WDNR-licensed treatment and disposal facility to be used for treatment and disposal of contaminated soil at the preconstruction conference. Notify the Environmental Consultant 10 business days prior to commencement of the initial excavation in an area with known contamination, and again 5 business days prior to commencement of subsequent excavations in an area of known contamination. Coordinate with the Environmental Consultant to ensure that the Environmental Consultant is present prior to, and during, contaminated material management activities.

C. Groundwater Monitoring Wells

Groundwater monitoring wells are not expected to exist within the construction limits. If wells are encountered during construction, notify the Environmental Consultant and coordinate with the Environmental Consultant the abandonment of the wells by others.

D. Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of contaminated material. The excavation management plan, including these Special Provisions, has been developed in cooperation with the WDNR. The WDNR’s concurrence letter is on file at the Department. For further information regarding the investigations, including waste characterization within the project limits, contact Kathie VanPrice with the Department, at 920.492.7175.

Health and Safety Requirements for Workers Remediating Contamination.

Subsection 107.1 of the Standard Specifications is supplemented with the following:

Petroleum- and metals-contaminated soil has been identified within the limits of construction and may be encountered during excavations from Station 619+00 to 620+50 from 50 feet right of the reference line to the construction limits on the right.

Prepare a site-specific Health and Safety Plan complying with the Occupational Safety and Health Administration (OSHA) standard for Hazardous Waste Operation and Emergency Response (HAZWOPER), 29 CFR 1910.120. Specify in the site-specific Health and Safety Plan the procedure for worker decontamination and for the decontamination of equipment used in contaminated zones and of trucks used to haul contaminated material.

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

Develop, delineate, and enforce the health and safety exclusion zones for each contaminated site location pursuant to 29 CFR 1910.120.

1. Notice to Contractor – Quackenboss Property, Parcel Number 162

The Quackenboss property, parcel number 162 as shown in the plat, is not expected to be vacated until June 1, 2020. Do not perform work on this property or remove its driveway access until the property has been vacated and approval is received from the engineer.

1. Environmental Protection, Amphibian or Reptile Species

Blanding’s Turtle are known to inhabit wetlands and waterways associated with the Upper Sheboygan River Basin. It is reasonable to assume that blanding’s turtles may be present at or near the project site during construction. If project construction starts in the spring, protect the perimeter of the areas to be disturbed with properly trenched-in silt fence prior to May 1 to discourage turtles from entering the work area. Extend silt fence to include the Silt Fence Turn-Around Detail per the plan. If the construction area cannot be silt-fenced by May 1, install the silt fence prior to construction activities. Also, survey the area behind the silt fence and remove all turtles confined within the project area prior to any site disturbance. Complete the survey and removal of turtles from construction areas periodically throughout the construction period. Any amphibians or reptiles that are found in the active work zone shall be removed and relocated outside the active work zone. If there is an amphibian or reptile mortality, please contact Jay Schiefelbein at 920-360-3784.

1. Environmental Protection, Non-Aquatic Invasive Species Plants.

*Supplement Standard Spec 107.18 with the following:*

(8) Phragmites, an invasive species plant, is known to exist within the project limits and in areas that ground disturbance or excavation work is shown in the plans.

All soils containing plant or root fragments within the roadway construction limits that will be excavated or salvaged as part of the work within the contract shall be used as fill per standard spec 205.3.12, wasted on a tilled farm field that will continue to be tilled, or deposited at an engineer approved waste site. If used as fill per standard spec 205.3.12, the soils shall be buried under a minimum of 5 feet of fill not containing invasive plant or root fragments.

All waste sites are subject to review and approval by the department and shall be suitable for the waste of material containing invasive species to control their spread in compliance with NR 40. Waste sites suitable for invasive species would be areas that would prevent or control growth and spread of the plant by burying, mowing or other control practices. The contractor shall submit his method for managing phragmites infested soil on this project for approval as part of the Erosion Control Implementation Plan.

Known Phragmites locations include:

STA 500’WB’+00 to STA 504’WB’+00, LT

STA 525’EB’+00 to STA 528’EB+00, LT

The known locations of phragmites infestation noted above are shown in the plans, but other locations may exist. Notify the engineer of any additional areas of phragmites that are identified. The limits of all previously and newly identified locations of phragmites are to be verified by engineer in the field prior to any soil disturbance taking place.

Prior to moving equipment out of the infested area clean soils, seeds, plant parts, or invertebrates from exterior surfaces. Use most effective method that is practical by the following methods: Brush, broom, or other hand tools; high pressure air; steam cleaning; or portable wash station that contains runoff from washing equipment. Do not clean equipment, vehicles or trailers in or near waterways as it may promote the spread of invasive species downstream.

1. Environmental Protection, By-Pass Pumping.

*Add the following to standard spec 107.18:*

If by-pass pumping is required, the means and methods proposed to be used during construction shall be submitted for approval as part of the Erosion Control Implementation Plan for each location it is required. The submittal shall include how the intake will be managed to not cause an increase in the background level turbidity during pumping; equipment pumping rate capabilities; discharge energy dissipation; and erosion controls. For by-pass pumping that will extend beyond one working day, the submittal should also include how the work zone will be managed and protected should the pump fail; be shut down due to unacceptable water quality; or storm water flows exceed the pumping rate of equipment. After setup of the approved by-pass pumping operation, the contractor shall demonstrate that the means and methods will pump the water at an acceptable water quality before 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-107-035 (20180212)

1. Environmental Protection, Dewatering.

*Add the following to standard spec 107.18:*

If dewatering is required, treat the water to remove suspended sediments by filtration, settlement or other appropriate best management practice before 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 before 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.

ner-107-040 (20180212)

1. Construction Over or Adjacent to Navigable Waters.

The Sheboygan River is classified as a state navigable waterway under standard spec 107.19.

stp-107-060 (20171130)

1. Erosion Control.

*Add to standard spec 107.20 as follows:*

Perform construction operations in a timely and diligent manner, continuing all construction operations methodically from the initial topsoil stripping operation through the subsequent grading and finishing to minimize the period of exposure to erosion.

Re-topsoil graded areas within 24 hours, or as designated by the engineer, after grading is completed within those areas. Seed, fertilize, and mulch or erosion mat all topsoiled areas within five working days after placement of topsoil.

1. Erosion Control – Permanent Restoration

*Add to standard spec 107.20 as follows:*

At a minimum or as the engineer directs, for every 10 feet of fill placed or cut created, measured vertically, the contractor shall finish grade to the lines and sections the plans show and place permanent erosion control items including out to the slope intercepts. Permanent erosion control includes but is not limited to topsoil, mulch, matting, rip rap, and seeding. Do not construct the subsequent 10-foot fill or cut section until the previous 10-foot fill or cut section is restored.

1. Erosion Control Implementation Plan (ECIP).

Before submittal of the ECIP, arrange a pre-ECIP meeting with the department to go over proposed staging and environmental restrictions. Detail all temporary wetland impacts including acres of these impacts to ensure compliance with all environmental restrictions. Include plans for staging large fills and plans for placing temporary and permanent erosion control items. Detail all construction entrance locations and erosion control techniques to minimize sediment movement out of the project site.

1. Erosion Control Structures.

Within seven calendar days after completing backfill placement for B-20-205, B-20-215, and B-20-218, complete grading and topsoiling, and place all permanent erosion control devices within 100 feet of the structure, including riprap, erosion mat, ditch checks, seed, fertilizer, mulch, soil stabilizer, or any other item required by the contract or deemed necessary by the engineer. Before initial box culvert construction operations, place turbidity barriers, silt screens, and other temporary erosion control measures as the plans show, and remove them after the permanent erosion control devices are in place unless directed otherwise by the engineer.

1. Select Site Archaeological Study.

Give the department 30 days’ notice for locations of borrow pits to be used on Projects 1440-15-72/73. The department will perform a phase 1 archeological survey of the sites to determine if the sites can be cleared for archaeology, per the stipulation contained in the Section 106 Memorandum of Agreement for the project. The sites must be cleared by the department before any groundbreaking disturbances can occur and for the sites to be included in the ECIP. The department will contract with an approved archeologist to perform the phase 1 archeological survey. The department will not pay for any further investigation beyond a phase 1 archeological survey.

If the department does not clear the select sites based on the results of phase 1 archeological study the options are:

1. Choose a new site. This site will need to follow the approval process above.
2. Submit modified select site limits (if feasible based on-site limits) to avoid the resource identified during the phase 1 archaeological survey to the Bureau of Technical Services (BTS) for approval and clearance.
3. Have a qualified archaeologist, approved by the department, conduct phase 2 archaeological survey to determine if the site is significant. Submit findings to BTS for review/approval and/or coordination with WHS/SHPO.

For any of the options, discovery of an archaeological resource may prevent the department from approving the site at any point in the review process.

ner-107-020 (20190718)

1. Archaeological and Historical Findings.

*Supplement subsection 107.25(1) of the standard specifications as follows:*

These discoveries may result in potential delays to the contractor. The contractor shall stop construction in the area of the discovery to permit implementation of mitigation measures, including providing an opportunity for consulting tribes to perform tribal ceremonial activities.

1. Embankment Construction - Benching.

*Replace standard spec 205.3.2(4) with the following:*

If placing embankment on side slopes 10-feet high or higher and steeper than one vertical to 3 horizontal, cut a minimum 18-inch depth bench into the existing embankment every 3 feet of vertical fill height.

ner-207-005 (20110127)

1. QMP Subgrade.

**A Description**

(1) 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 locations the plans show.

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

(3) 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:

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

**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 perform grading work before the engineer reviews and accepts the plan. Construct the project as the 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 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 HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at each grading site during all subgrade fill placement, compaction and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

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

**B.3 Laboratory**

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

Materials Management Section

3502 Kinsman Blvd.

Madison, Wisconsin 53704

Telephone: 608-246-5388

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

**B.4 Equipment**

(1) 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 Chapter 8 and maintain a calibration record at the laboratory.

(2) 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.

(3) Conform to AASHTO T 310 and CMM Chapter 8 for density testing and gauge monitoring methods.

**B.5 Soil Source Study**

(1) 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. 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 prior to the start of subgrade fill placement.

(2) Perform characterization tests on each of the soil types selected for the soil source study. The tests 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.

(3) 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 or borrow sites greater than 15 feet in depth that were not accessible during the initial study. Include data on additional soil types identified throughout the duration of subgrade fill placement. Ensure that tests of additional soil types are complete and the engineer accepts the results before incorporating the material into the roadway foundation.

(4) Split each Proctor sample and identify 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:

NE Region Materials Lab

944 Vanderperren Way

Green Bay, Wisconsin 54304

 (5) Retain and identify 2 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**

(1) 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. Embankment for Old Plank Trail, except when independent of roadway fill.
4. Subgrade cut portions of the project.
5. Embankment in pipe culvert trenches.
6. Structure and granular backfill placed at bridge abutments.

(2) Ensure that all tests are recorded and become part of the project records. Enter QC data into the applicable materials reporting system (MRS) software within 5 business days after results are available. 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.

(3) Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, test number, each test element, applicable control limits, contractor’s individual test results, running average of the last 4 QC data points, and 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 CMM Chapter 8.

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

**B.6.2 Records**

(1) 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.

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

(3) 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**

(1) Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at each grading site during all subgrade fill placement, compaction and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

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

(2) During subgrade construction, use sampling and testing methods identified in the CMM Chapter 8 to perform the required tests at randomly selected locations at the indicated minimum frequency in B.7.4 for each grading area.

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

(4) For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically.

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

(1) 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.

(2) 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, 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**

(1) 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**

(1) Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density & Moisture(AASHTO T 310) | One per 3,000 cubic yards or portion thereof. |
| One-Point Proctor(AASHTO T 272) | One per 9,000 cubic yards or portion thereof. |

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

(1) Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density & Moisture(AASHTO T 310) | One per 3,000 cubic yards or portion thereof. |
| One-Point Proctor(AASHTO T 272) | One per 9,000 cubic yards or portion thereof. |

**B.7.4.3 Subgrade Cut**

(1) Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density & Moisture(AASHTO T 310) | Less than 2000 linear feet per roadway* One per cut area.

Greater than 2000 linear feet per roadway* One per 2,000 linear feet per roadway or portion thereof.
 |
|  |  |

**B.7.4.4 Subgrade Embankment in Culvert Pipe Trenches**

(1) Perform the required tests at the following minimum frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density & Moisture(AASHTO T 310) | Pipe diameter equal to 40-inch or Less* One (1) per trench.

Pipe diameter Greater than 40-inch* Two (2) per trench, on separate lifts.
 |
| One-Point Proctor(AASHTO T 272) | One per 3,000 cubic yards or portion thereof. |

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

(1) Perform the required tests at the following minimum frequencies:

| Test | Minimum Frequency |
| --- | --- |
| Field Density & Moisture(AASHTO T 310) | Two (2) per abutment on separate lifts |
| One-Point Proctor(AASHTO T 272) | One per 3,000 cubic yards or portion thereof. |

**B.7.5 Compaction Zones**

**B.7.5.1 Subgrade Embankment**

(1) UPPER ZONE: Embankment material placed within 6 feet of the finished subgrade elevation is classified as upper zone material.

(2) LOWER ZONE: Embankment 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**

(1) 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**

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

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

(1) Material placed within culvert pipe trenches is 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**

(1) 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**

(1) UPPER ZONE: The lower control limit for field density measurements in the upper zone is a minimum of 95% 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% of the maximum dry density for any individual test.

(2) LOWER ZONE: The lower control limit for field density measurements in the lower zone is a minimum of 93% 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% of the maximum dry density for any individual test.

**B.7.6.2 Field Moisture Content**

(1) The upper control limit for the field moisture content in the upper and lower zones is 105% of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average.

(2) The lower control limit for the field moisture content in the upper and lower zones is 65% 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**

(1) 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.

(2) 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.

(3) 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**

(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 verification and independent assurance personnel for the project.

(2) 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**

**(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 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.

(3) 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 30,000 cubic yards.

(4) 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.

(5) Compare Proctor QC and QV results. If Proctor QC and QV values are within 3.0 pcf, the test results will be deemed satisfactory and no further action is necessary. Proctor QC and QV values differing by more than 3.0 pcf will be investigated and resolved.

(6) 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.

(7) 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**

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

(2) 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.

(3) 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**

(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) 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**

(1) 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**

1. Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor’s pay. The department will administer pay reduction under the Non‑performance of QMP administrative item.
2. Select Borrow, Item 208.1100.

Conform to standard spec 208 and as follows.

**Material**

Furnish and use material that consists of granular material meeting the following requirements: Not more than 25% of that portion passing the No. 4 sieve shall pass the No. 200 sieve.

If the engineer approves, the contractor may substitute Breaker Run conforming to standard spec 311 for select borrow.

ner-208-010 (20160107)

1. QMP HMA Pavement Nuclear Density.

A Description

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

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

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

1. Selection of test sites.

2. Testing.

3. Necessary adjustments in the process.

4. Process control inspection.

 (3) Chapter 8 of the department’s construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required procedures.

<http://wisconsindot.gov/rdwy/cmm/cm-08-00toc.pdf>

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

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

B Materials

B.1 Personnel

 (1) Nuclear gauge owners and personnel using nuclear gauges shall comply with WisDOT requirements according to 460.3.3 and CMM 8-15.

B.2 Testing

 (1) Conform to ASTM D2950 and CMM 8.15 for density testing and gauge monitoring methods. Conform to CMM 8-15.10.4 for test duration and gauge placement.

B.3 Equipment

B.3.1 General

 (1) Furnish nuclear gauges according to CMM 8-15.2.

 (2) Furnish nuclear gauges from the department’s approved product list at

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

B.3.2 Comparison of Nuclear Gauges

B.3.2.1 Comparison of QC and QV Nuclear Gauges

 (1) Compare QC and QV nuclear gauges according to CMM 8-15.7.

B.3.2.2 Comparison Monitoring

 (1) Conduct reference site monitoring for both QC and QV gauges according to CMM 8-15.

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

 (1) Divide the pavement into lots and sublots for nuclear density testing according to CMM 8-15.10.2.

 (2) Determine required number of tests according to CMM 8-15.10.2.1.

 (3) Determine random testing locations according to CMM 8-15.10.3.

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

 (1) Divide the pavement into lots and sublots for nuclear density testing according to CMM 8-15.10.2.

 (2) Determine required number of tests according to CMM 8-15.10.2.2.

 (3) Determine random testing locations according to CMM 8-15.10.3.

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

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

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

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

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

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

B.4.2.2.2 Width of 5 Feet or Less

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

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

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

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

B.4.2.4 Documentation

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

B.4.3 Corrective Action

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

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

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

 (4) Retesting and acceptance of replaced pavement will be as specified in standard spec 105.3.

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

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

B.5 Department Testing

B.5.1 Verification Testing

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

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

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

 (4) If the verification sublot average is more than one percent below the specified target density, compare the QC and QV sublot averages. If the QV sublot average is within 1.0 lb/ft3 of the QC sublot average, use the QC tests for acceptance.

 (5) If the first QV/QC sublot average comparison shows a difference of more than 1.0 lb/ft3 each tester will perform an additional set of tests within that sublot. Combine the additional tests with the original set of tests to compute a new sublot average for each tester. If the new QV and QC sublot averages compare to within 1.0 lb/ft3, use the original QC tests for acceptance.

 (6) If the QV and QC sublot averages differ by more than 1.0 lb/ft3 after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

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

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

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

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

B.7 Acceptance

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

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

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

E.2 Disincentive for HMA Pavement Density

 (1) The department will administer density disincentives as specified in standard spec 460.5.2.2.

E.3 Incentive for HMA Pavement Density

 (1) The department will administer density incentives as specified in standard spec 460.5.2.3.

stp-460-020 (20181119)

1. Concrete Pavement Joint Layout, Item 415.5110.S.

A Description

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

B (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 at least 7 calendar days before paving each intersection. Do not lay out joints until the engineer has reviewed the joint layout design. Mark the location of 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.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

415.5110.S 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.

stp-415-020 (20170615)

1. Concrete Masonry Endwalls, Item 504.0900.

*Add the following to standard spec 504.3:*

Concrete Masonry Endwalls shall be completed within 7 calendar days from the installation of each culvert pipe or box culvert location.

ner-504-005 (20180328)

1. Bar Steel Reinforcement HS Stainless Structures, Item 505.0800.S.;
Bar Couplers Stainless No. 4, Item 505.0984.S;
Bar Couplers Stainless No. 5, Item 505.0985.S;
Bar Couplers Stainless No. 6, Item 505.0986.S;
Bar Couplers Stainless No. 7, Item 505.0987.S;
Bar Couplers Stainless No. 8, Item 505.0988.S;
Bar Couplers Stainless No. 9, Item 505.0989.S;
Bar Couplers Stainless No. 10, Item 505.0990.S;
Bar Couplers Stainless No. 11, Item 505.0991.S.

A Description

This special provision describes furnishing and placing stainless steel reinforcing bars and associated stainless steel bar couplers.

Conform to standard spec 505 as modified in this special provision.

B Materials

B.1 General

Furnish stainless steel reinforcing bars conforming to ASTM A955 and to one of the following Unified Numbering System (UNS) designations: S31653, S31803, S32205, or S32304. Supply grade 60 bars, all of the same UNS designation. Conform to the chemical composition specified for the given UNS designation in ASTM A276 table 1.

Supply bars that are free of dirt, mill scale, oil, and debris by pickling to a bright or uniform light finish. The department may reject bars displaying rust/oxidation, questionable blemishes, or lack of a bright or uniform pickled surface.

Furnish chairs or continuous supports made of stainless steel or recycled plastic to support high-strength stainless bar steel reinforcement subject to the plastic chair restriction stated in standard spec 505.3.4(1).

Furnish couplers made from one of the UNS alloys allowed for bar steel.

Furnish tie wire made from one of the UNS alloys allowed for bar steel or from an engineer-approved plastic or nonmetallic material. Ensure that stainless steel tie wire is dead soft annealed.

B.2 Fabrication

Before fabrication, supply test results from an independent testing agency certifying that the reinforcement meets the requirements of Annex A1 of ASTM A955.

Bend bars conforming to standard spec 505.3.2 and according to ASTM A955. Bend and cut bars using equipment thoroughly cleaned or otherwise modified to prevent contamination from carbon steel or other contaminants. Use tools dedicated solely to working with stainless steel.

B.3 Control of Material

Identify reinforcement bars delivered to the project site with tags bearing the identification symbols used in the plans. Include the UNS designation, heat treat condition, heat number, grade corresponding to minimum yield strength level, and sufficient documentation to track each bar bundle to a mill test report.

Provide samples for department testing and acceptance according to CMM 8-50 Exhibit 1 requirements for concrete masonry reinforcement for uncoated bar steel.

Provide mill test reports for the project that do the following:

1. Verify that sampling and testing procedures and test results conform to ASTM A955, ASTM A276 table 1, and these contract requirements.

2. Include a chemical analysis with the UNS designation, heat lot identification, and the source of the metal.

3. Include tensile strength, yield strength, and elongation tests results conforming to ASTM A955 for each size furnished.

4. Certify that the bars have been pickled to a bright or uniform light finish.

C Construction

C.1 General

Ship, handle, store, and place the stainless steel reinforcing as follows:

1. Separate from regular reinforcement during shipping. Pad points of contact with steel chains or banding, or secure with non-metallic straps.

2. Store on wooden cribbing separated from regular reinforcement. Cover with tarpaulins if stored outside.

3. Handle with non-metallic slings.

4. Do not flame cut or weld. Protect from contamination when cutting, grinding, or welding other steel products above or near the stainless steel during construction.

5. Place on plastic or stainless steel bar chairs. If placing stainless steel chairs on steel beams, use chairs with plastic-coated feet.

6. Tie with stainless steel wire or an engineer-approved plastic or nonmetallic material.

Do not tie stainless steel reinforcing bars to, or allow contact with, uncoated reinforcing bars or galvanized steel. Maintain at least 1 inch clearance between stainless steel bars or dowels and uncoated or galvanized steel. Where 1 inch clearance is not possible, sleeve bars with a continuous polyethylene or nylon tube at least 1/8 inch thick extending at least 1 inch in each direction and bind with nylon or polypropylene cable ties. Sleeves are not required between stainless steel bars and shear studs. Stainless steel bars can be in direct contact with undamaged epoxy-coated bars.

Cut flush with the top flange or remove uncoated fasteners, anchors, lifting loops, or other protrusions into a bridge deck before casting the deck on prestressed concrete beams.

C.2 Splices

Splice as the plans show. Provide stainless steel couplers conforming to the minimum capacity, certification, proof testing, and written approval requirements of standard spec 550.3.3.4. The contractor may substitute stainless steel couplers for lap slices the plans show if the engineer approves in writing.

If increasing or altering the number or type of bar splices the plans show, provide revised plan sheets to the engineer showing the reinforcement layout, type, length, and location of revised bar splices and revised bar lengths. Obtain engineer approval for the location of new lap splices or substitution of mechanical bar couplers before fabrication. Ensure that new lap splices are at least as long as those the plans show.

D Measurement

The department will measure Bar Steel Reinforcement HS Stainless Structures by the pound acceptably completed, computed from the nominal weights of corresponding sizes for carbon steel deformed bars in AASHTO M31 regardless of stainless steel alloy provided. The department will not measure extra material used if the contractor alters the reinforcement layout as allowed under C.2, extra material for splices or couplers the plans do not show, or the weight of devices used to support or fasten the steel in position.

The department will measure the Bar Couplers Stainless bid items as each individual coupler 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

505.0800.S Bar Steel Reinforcement HS Stainless Structures LB

505.0984.S Bar Couplers Stainless No. 4 EACH

505.0985.S Bar Couplers Stainless No. 5 EACH

505.0986.S Bar Couplers Stainless No. 6 EACH

505.0987.S Bar Couplers Stainless No. 7 EACH

505.0988.S Bar Couplers Stainless No. 8 EACH

505.0989.S Bar Couplers Stainless No. 9 EACH

505.0990.S Bar Couplers Stainless No. 10 EACH

505.0991.S Bar Couplers Stainless No. 11 EACH

Payment for Bar Steel Reinforcement HS Stainless Structures is full compensation for furnishing and placing stainless steel reinforcing bars, including supports. Where the plans specify bar couplers, the department will pay for the length of bars as detailed with no deduction or increase for installation of the coupler.

Payment for the Bar Couplers Stainless bid items is full compensation for providing couplers; including bar steel that is part of the coupler and not detailed in the plan; for threading reinforcing bars; for installing and coating the splice; and for supplying and testing 3 couplers.

stp-505-005 (20190618)

1. Polymer Overlay, Item 509.5100.S.

A Description

This special provision describes providing two layers of a two-component polymer overlay system to the bridge decks the plans show.

B Materials

B.1 General

Furnish materials specifically designed for use over concrete bridge decks. Furnish polymer liquid binders from the department’s approved product list.

B.2 Polymer Resin

Furnish a polymer resin base and hardener composed of two-component, 100 percent solids, 100 percent reactive, thermosetting compound with the following properties:

|  |  |  |
| --- | --- | --- |
| **Property** | **Requirements** | **Test Method** |
| Gel Time*[1]* | 15 - 45 minutes @73° to 75° F | ASTM C881 |
| Viscosity*[1]* | 7 - 70 poises | ASTM D2393, Brookfield RVT, Spindle No. 3, 20 rpm |
| Shore D Hardness*[2]* | 60-75 | ASTM D2240 |
| Absorption*[2]* | 1% maximum at 24 hr | ASTM D570 |
| Tensile Elongation*[2]* | 30% - 70% @ 7 days | ASTM D638 |
| Tensile Strength*[2]* | 2000 to 5000 psi @ 7 days | ASTM D638 |
| Chloride Permeability*[2]* | <100 coulombs @ 28 days | AASHTO T277 |

*[1]* Uncured, mixed polymer binder

*[2]* Cured, mixed polymer binder

Ensure that the polymer resin when mixed with aggregate has the following properties:

|  |  |  |
| --- | --- | --- |
| **Property** | **Requirement*[1]*** | **Test Method** |
| Minimum CompressiveStrength | 1,000 psi @ 8 hrs5,000 psi @ 24 hrs | ASTM C579 Method B,Modified*[2]* |
| Thermal Compatibility | No Delaminations | ASTM C884 |
| Minimum Pull-off Strength | 250 psi @ 24 hrs | ASTM C1583 |

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

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

B.3 Aggregates

Furnish natural or synthetic aggregate that is non-polishing; clean; free of surface moisture; fractured or angular in shape; free from silt, clay, asphalt, or other organic materials; and conform to the following:

Aggregate Properties

|  |  |  |
| --- | --- | --- |
| **Property** | **Requirement** | **Test Method** |
| Moisture Content*[1]* | 1/2 of the measured aggregate absorption, % | ASTM C566 |
| Hardness | ≥6.5 | Mohs Scale |
| Fractured Faces | 100% with at least 1 fractured face & 80% with at least 2 fractured faces of material retained on No.16 | ASTM D5821 |
| Absorption | ≤1% | ASTM C128 |

*[1]* Sampled and tested by the department before placement.

Gradation

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

B.4 Approval of Bridge Deck Polymer Overlay System

A minimum of 20 working days before application, submit product data sheets and specifications from the manufacturer, and a certified report of test or analysis from an independent laboratory to the engineer for approval. The department will sample and test the aggregates for gradation and moisture content before placement. If requested, supply the department with samples of the polymer for the purpose of acceptance testing.

B.4.1 Product Data Sheets and Specifications

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

B.4.2 Certified Report of Test or Analysis

Conform to the following:

*Polymer Binder:* Submit a certified report of test or analysis from an independent laboratory dated less than 3 years before the date of the project letting showing the polymer binder meets the requirements of section B.2.

*Aggregates:* Submit a certified report of test or analysis from an independent laboratory dated less than 6 months before the date of the project letting showing the aggregates meet the requirements of section B.3.

C Construction

C.1 General

Ensure that the overlay system is 1/4 inch thick or thicker.

Conform to the following:

*Field Review:* Conduct a field review of the existing deck to identify any possible surface preparation and material compatibility issues.

*Pre-Installation Meeting*: Conduct a pre-installation meeting with the manufacturer's representative and the engineer before construction. Discuss the field review findings, verification testing of the surface preparation and establish procedures for maintaining optimum working conditions and coordination of work. Furnish the engineer a copy of the recommended procedures and apply the overlay system according to the manufacturer’s instructions. Supply for the engineer’s use for the duration of the project, a Concrete Surface Profile (CSP) chip set of 10 from the International Concrete Repair Institute (ICRI).

*Manufacturer’s Representative:* An experienced manufacturer's representative familiar with the overlay system installation procedures shall be present at all times during surface preparation and overlay placement to provide quality assurance that the work is being performed properly. This requirement may be reduced at the engineer’s discretion.

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

C.2 Deck Preparation

C.2.1 Deck Repair

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

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

C.2.2 Surface Preparation

Determine an acceptable shotblasting machine operation (size of shot, flow of shot, forward speed, and/or number of passes) that provides a surface profile meeting CSP 5 (medium-heavy shotblast) according to the ICRI Technical Guideline No. 310.2. If the engineer requires additional verification of the surface preparation, test the tensile bond strength according to ASTM C1593. The surface preparation will be considered acceptable if the tensile bond strength is greater than or equal to 250 psi or the failure area at a depth of 1/4 inches or more is greater than 50 percent of the test area. Continue adjustment of the shotblasting machine and necessary testing until the surface is acceptable to the engineer or a passing test result is obtained.

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

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

Before shot blasting, remove pavement markings within the treatment area using an approved mechanical or blasting method.

Prepare the vertical concrete surfaces adjacent to the deck a minimum of 2” above the overlay according to SSPC-SP 13 (free of contaminants, dust, and loose concrete) by sand blasting, using wire wheels, or other approved method.

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

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

C.2.3 Transitional Area

If the plans show, create a transitional area approaching transverse expansion joints and ends of the deck using an approved mechanical or blasting method. Remove 1/4 inch to 5/16 inch of concrete adjacent to the joint or end of deck and taper a distance of 3 feet.

If the plans show, create a transitional area on the approach pavement. Prep and place the first lift 3 feet beyond the end of the deck the same width as the deck. Prep and place the second lift 6 feet beyond the end of the deck the same width as the deck.

C.3 Overlay Application

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

1. Ambient air temperature is below 50F or above 100F.

2. Deck temperature is below 50F.

3. Moisture content in the deck exceeds 4.5 percent when measured by an electronic moisture meter or shows visible moisture after 2 hours when measured in accordance with ASTM D4263.

4. Rain is forecasted during the minimum curing periods listed under C.5.

5. Materials component temperatures below 65F or above 99F.

6. Concrete age is less than 28 days unless approved by the engineer.

7. The deck temperature exceeds 100F.

8. If the gel time is 10 minutes or less at the predicted high air temperature for the day.

After the deck has been shotblasted or during the overlay curing period, only necessary surface preparation and overlay application equipment will be allowed on the deck. Provide appropriate protective measures to prevent contamination from equipment allowed on the deck during preparation and application operations. Begin overlay placement as soon as possible after surface preparation operations.

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

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

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

Before opening to traffic, clean expansion joints and joint seals of all debris and polymer. A minimum of 3 days following opening to traffic, remove loosened aggregates from the deck, expansion joints, and approach pavement.

C.4 Application Rates

Apply the polymer overlay in two separate courses in accordance with the manufacturer’s instructions, but not less than the following rate of application.

|  |  |  |
| --- | --- | --- |
| **Course** | **Minimum Polymer Rate*[1]*(GAL/100 SF)** | **Aggregate*[2]*(LBS/SY)** |
| 1 | 2.5 | 10+ |
| 2 | 5.0 | 14+ |

*[1]* The minimum total applications rate is 7.5 GAL/100 SF.

*[2]* Application of aggregate shall be of sufficient quantity to completely cover the polymer.

C.5 Minimum Curing Periods

As a minimum, cure the coating as follows:

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

If faster cure times are desired and achievable, submit to the engineer a certified test report from an independent laboratory showing the material is able to reach a compressive strength of 1000 psi as tested per ASTM C 579 Method B within the temperature ranges and cure times for which the product is proposed to be placed. Establish ambient air, material, and substrate temperatures from the manufacturer for field applications. Field applications will not be allowed below the documented temperatures.

C.6 Repair of Polymer Overlay

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

D Measurement

The department will measure Polymer Overlay by the square yard acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

509.5100.S Polymer Overlay SY

Payment is full compensation for preparing the surface; for tensile bond testing; for creating the transitional area; for providing the overlay; for cleanup; and for sweeping/vacuuming and disposing of excess materials.

The department will pay separately for Concrete Deck Repair.

stp-509-030 (20170615)

1. Surface Drain Pipe Corrugated Metal Slotted, 18-Inch, Item 521.2005.S.

A Description

This special provision describes furnishing and installing slotted corrugated metal pipe surface drain as the plans show.

Conform to standard spec 521 as modified in this special provision.

B Materials

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

C Construction

Before backfilling, plug the upper end of the slotted drain as the plans show or as approved by the engineer.

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

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

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

D Measurement

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

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

521.2005.S Surface Drain Pipe Corrugated Metal Slotted 18-Inch LF

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

stp-521-005 (20150630)

1. Medium Riprap, Item 606.0200.

*Add to standard spec 606.2.1(3) as follows:*

Broken concrete containing steel shall not be used as Medium Riprap.

1. Survey Monument Coordination.

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

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

ner-621-010 (20171213)

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 the plans show or as the engineer directs.

B Materials

Provide materials conforming to size requirements for size no. 2 coarse aggregate for concrete masonry or riprap according to the standard spec 501.2.5.4.5. 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 according to the details the plans show.

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 Common Excavation.

stp-628-050 (20170615)

1. Traffic Control

Perform this work conforming to standard spec 643, and as the plans show, or as the engineer approves, except as follows.

Submit to engineer for approval a detailed traffic control plan for any changes to the proposed traffic control detail as the plans show. Submit this plan ten (10) days before the preconstruction conference.

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

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

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

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

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

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

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

Do not park or store any vehicle, piece of equipment, or construction materials on the right of way, unless otherwise specified in the traffic control article or without approval of the engineer.

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

Equip all vehicles and equipment entering or leaving the live traffic lanes with a hazard identification beam (flashing yellow signal) capable of being visible on a sunny day when viewed without the sun directly on or behind the device from a distance of 1000 feet. Activate the beam when merging into or exiting a live traffic lane.

Do not disturb, remove or obliterate any traffic control signs, advisory signs, shoulder delineators or beam guard in place along the traveled roadways without the approval of the engineer. Immediately repair or replace any damage done to the above during the construction operations at contractor expense.

The traffic requirements are subject to change at the direction of the engineer in the event of an emergency.

ner-643-065 (20171213)

1. Nighttime Work Lighting-Stationary.

A Description

This special provision describes furnishing 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 before the nighttime work, furnish a lighting plan to the engineer for review and acceptance. Address the following in the plan:

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

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

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

4. Electrical power source information.

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

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

7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

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

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

C.3 Light Level and Uniformity

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

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

C.4 Glare Control

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

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

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

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

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

C.5 Continuous Operation

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

D (Vacant)

E Payment

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

stp-643-010 (20100709)

1. Select Clearing and Grubbing, Item SPV.0005.01.

**A Description**

This special provision describes selectively clearing and grubbing areas within the Schaefer Wetland Mitigation Site. Perform this work in accordance with Standard Spec 201, as shown on the plans, and as supplemented herein.

**B (Vacant)**

**C Construction**

Perform clearing and grubbing accordance with Standard Spec 201.3 except that the department will select the individual trees to be removed. Take care to not damage trees to remain.

Coordinate with department to select tree removal locations within the select tree removal areas noted on the plans. Coordinate tree removal selection with Kathie Van Price of the WisDOT NE Region at 920-492-7175. Contact the designated department contact a minimum of 14 calendar days prior to performing the work.

**D Measurement**

Measurement will be in accordance with standard spec 201.4.4.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0005.01 Select Clearing and Grubbing ACRE

Payment is full compensation in accordance with the pertinent sections of Standard Spec 201.5.

1. Preparation of Upland Topsoil, Item SPV.0005.02.

**A Description**

Prepare the seed bed for planting in the upland buffer areas adjacent to the Schaefer Wetland Mitigation Site as shown on the plan and as hereinafter provided. Some seeding zones may contain areas that will not require seed bed preparation. Prior to Seed Bed Preparation, the engineer will identify these areas.

**B (Vacant)**

**C Construction**

Work the upper 6 inches of the existing topsoil at locations specified in the plan until the size of existing vegetation, stalks, leaves and other biomass does not exceed 6 inches in size, or as directed by the engineer. Perform discing no more than 7 days prior to the time of seeding or as directed by the engineer. If planting does not occur within 7 days following discing, repeat discing to ensure a proper seeding surface. Once discing has been performed, do not drive over disced areas with equipment or vehicles prior to seeding activities.

**D Measurement**

The department will measure Preparation of Upland Topsoil by the acre, 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.0005.02 Preparation of Upland Topsoil ACRE

1. Roadway Embankment, Item SPV.0035.01.

A Description

This special provision describes providing embankments and the materials needed to construct embankments. Conform to standard spec 207 and 208 and as below.

Material to construct embankments is incidental to this bid item, including Borrow.

B Materials

Furnish materials in accordance to standard spec 207.2.

If Borrow material is used conform to standard spec 208.2.

C Construction

Conform to standard spec 207.3.

If Borrow material is used conform to standard spec 208.3.

D Measurement

The department will measure Roadway Embankment by the cubic yard, acceptably completed in its final position, using the method of average end areas, with no correction for curvature. The department will determine the end areas from preconstruction cross-sections of the area being covered by the proposed embankment and from cross-sections of the completed work. The engineer and contractor may mutually agree to an alternative volume calculation method. The department will not make allowances for shrinkage, subsidence, lateral movement of the material, or for material in excess of that required for work the plans show or the engineer orders.

The department will not measure embankment material beyond the limits of the required slopes.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0035.01 Roadway Embankment CY

Payment is full compensation for placing material to construct embankments which includes hauling, placing, forming, compacting, shaping, sloping, trimming, finishing, maintaining embankments and other incidental work required under standard spec 207 and 208.

Payment includes clearing, grubbing, excavating, disposing of surplus and unsuitable material and spreading salvaged material for covering the surfaces of excavated areas within the borrow sites.

The department will pay for material obtained from within the right of way limits but outside project excavation limits, furnished under 208.2.2, at a price determined under 109.4.

The department will pay for erosion control, fertilizing, and seeding of borrow sites and associated

areas separately as specified for borrow sites and material disposal sites under 628.5.1.

The department will not pay separately for removing and disposing of rock, stone and boulders that the engineer rejects under 207.3.11.

The department will not pay separately for Borrow, 208.0100; it is incidental to this SPV.

The department will pay separately for Select Borrow under the bid item 208.1100.

1. Excavation Common Mitigation Site, Item SPV.0035.02

**A Description**

This special provision describes common excavation within the limits of the Schaefer Wetland Mitigation Site. Perform this work in accordance with Standard Spec 205, as shown on the plans, and as supplemented herein.

**B Materials**

Provide materials in accordance with Standard Spec 205.2.2.

**C Construction**

Perform construction in accordance with Standard Spec 205.3, and in accordance with the Environmental Protection, Non-Aquatic Invasive Species Plants article.

**D Measurement**

Supplement standard spec 205.4.1 with the following:

(12) The department will measure Excavation Common Mitigation Site acceptably completed by the cubic yard, computing volumes using alternate methods involving 3-dimensional measurements (surface to surface comparison). Discuss with the engineer the agreed method prior to beginning earthwork operations. Provide surface data in accordance to the article entitled Construction Staking Wetland Site of these special provisions or in a format agreed upon with the engineer.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0035.02 Excavation Common Mitigation Site CY

Payment is full compensation in accordance with the pertinent sections of Standard Spec 205.5.

1. Foundation Backfill, Item SPV.0035.03.

A Description

This special provision describes providing foundation backfill that conforms to Standard Spec 520.

B Materials

Furnish Foundation Backfill in accordance to 520.2.5.2.

C Construction

Place foundation backfill in layers no more than 8 inches thick after compaction to the top of the subgrade. Mechanically compact the entire length of each layer to the same degree as the material abutting the trench.

D Measurement

The department will measure Foundation Backfill by the Cubic Yard, acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0035.03 Foundation Backfill CY

Payment is full compensation for placing, shaping and compacting.

ner-520-025 (20190409)

1. Temporary Slope Drain, Item SPV.0060.01

A Description

This special provision describes providing, maintaining, and removing a temporary slope drain to manage runoff from bridge decks before installation of surface drains, storm sewer, and pavement on the bridge approaches or permanent slope stabilization.

B (Vacant)

C Construction

Construct temporary slope drain conforming to the details shown in the plan and as required to fit the conditions of each location. Maintain the temporary slope drain at regular intervals or as the engineer directs. At a minimum maintain temporary slope drains until installation of permanent surface drains, storm sewer, and pavement are complete for bridges with finished approaches. Maintain the temporary slope drain at bridges without finished approaches or permanent drainage structures until downstream fill slopes are stabilized to prevent runoff scour.

D Measurement

The department will measure Temporary Slope Drain as each individual location installed conforming to the contract and accepted.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.01 Temporary Slope Drain EACH

Payment is full compensation for furnishing and maintaining all materials; and for removal of the temporary slope drains.

ner-210-015 (20171213)

1. Temporary Stone Ditch Checks, Item SPV.0060.02.

A Description

This special provision describes providing temporary stone ditch checks; cleaning and maintaining ditch checks as the plans show or as the engineer directs, and removing and disposing of the ditch checks as the engineer directs.

B Materials

Conform to standard specification 606.2.1 using the following gradation:

 VOLUME OCCUPIED

 INCHES BY STONES

 >12 0%

 4-6 50% - 90%

 <2 5% or less

Material shall be visually inspected and approved by the engineer.

C Construction

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

Remove sediment from behind the stone ditch checks when it has accumulated to one half of the original height of the dam. Perform cleaning conforming to standard spec 628.

D Measurement

The department will measure Temporary Stone Ditch Checks by each item acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.02 Temporary Stone Ditch Checks EACH

Payment is full compensation for furnishing, installing, maintaining, and cleaning; for providing and installing geotextile fabric HR; disposal of sediment; and for removing temporary ditch check.

Restoration of the area after ditch check removal shall be paid for with restoration items included in the contract.

1. Temporary Sand Bag Dike, Item SPV.0060.03.

**A Description**

This work shall consist of the construction of dikes or barriers with sand filled bags as

shown on the plans and as hereinafter provided. Remove and dispose of the sand bags and

all surplus material upon completion of its use under this contract.

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**B Materials**

The bags shall be canvas, burlap, nylon or other approved material. The bags shall contain

a minimum of one half cubic foot of sand, be of one size and shape and be securely closed.

The sand shall conform to the requirements standard spec 501.2.5.3 except that standard

spec 501.2.5.3.4 shall be deleted. The maximum size of particle shall pass a No. 4 sieve.

**C (Vacant)**

**D Measurement**

The department will measure Temporary Sand Bag Dike as each individual Temporary Sand Bag Dike, acceptably completed.

**E Payment**

The department will pay for measured quantities at the contract unit price under the

following bid item:

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.03 Temporary Sand Bag Dike EA

Temporary Sand Bag Dike, measured as provided above, will be paid for as each individual temporary sand bag dike, which shall be full compensation for furnishing and installing sand

filled bags; for furnishing all excavation; for removal and disposal of the sand bags and all

waste or surplus materials, including eroded materials; for shaping and restoring the area.

Any required topsoiling, fertilizing, seeding, or mulching will be paid for under the

applicable item.

1. Inlets 4-FT Diameter Special, Item SPV.0060.04.

**A Description**

Construct Inlets 4-FT Diameter Special as shown on the plans, or as directed by the engineer, and in accordance to section 611 of the standard specifications and as hereinafter provided.

**B Materials**

Materials shall be in accordance to section 611.2 of the standard specifications. The rubber adjustment riser is to be on the department’s approved product list.

**C Construction**

Construction shall be in accordance to the plans and with section 611.3 of the standard specifications.

*Replace subsection 611.3.3(1) of the standard specifications with the following:*

Set inlet cover on rubber adjustment riser ring. Use approved mastic adhesive between the ring and the inlet structure. Use an approved polyurethane adhesive with a flexible set between the ring and the inlet cover. Use two 5/16-inch beads of adhesive placed 1 inch and 2 inches in from the outside edge of the ring. If multiple adjustment rings are necessary, a maximum of two adjustment rings can be used. A maximum of 3 inch adjustment is allowed. Use polyurethane adhesive with a flexible set to join the two rings. If the adjustment rings must be cut, the joints must be staggered and a polyurethane adhesive used to reattach the cut ends. No concrete adjustment rings or mortar is to be placed between the top of the structure and the inlet cover.

**D Measurement**

The department will measure Inlets 4-FT Diameter Special as each individual inlet acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.04 | Inlets 4-FT Diameter Special | EACH |

Payment shall be in accordance to section 611.5 of the standard specifications.

1. Manholes 5-FT Diameter Special, Item SPV.0060.05.

**A Description**

Construct Manholes 5-FT Diameter Special as shown on the plans, or as directed by the engineer, and in accordance to section 611 of the standard specifications and as hereinafter provided.

**B Materials**

Materials shall be in accordance to section 611.2 of the standard specifications. The rubber adjustment riser is to be on the department’s approved product list.

**C Construction**

Construction shall be in accordance to the plans and with section 611.3 of the standard specifications.

*Replace subsection 611.3.3(1) of the standard specifications with the following:*

Set manhole cover on rubber adjustment riser ring. Use approved mastic adhesive between the ring and the manhole structure. Use an approved polyurethane adhesive with a flexible set between the ring and the manhole cover. Use two 5/16-inch beads of adhesive placed 1 inch and 2 inches in from the outside edge of the ring. If multiple adjustment rings are necessary, a maximum of two adjustment rings can be used. A maximum of 3 inch adjustment is allowed. Use polyurethane adhesive with a flexible set to join the two rings. If the adjustment rings must be cut, the joints must be staggered and a polyurethane adhesive used to reattach the cut ends. No concrete adjustment rings or mortar is to be placed between the top of the structure and the manhole cover.

**D Measurement**

The department will measure Manholes 5-FT Diameter Special as each individual manhole acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.05 | Manholes 5-FT Diameter Special | EACH |

Payment shall be in accordance to section 611.5 of the standard specifications.

1. Seeding Upland Buffer Mix, Item SPV.0085.01; Seeding Wet Meadow and Shallow Marsh Mix, Item SPV.0085.02

**A Description**

Supply and plant seed for the upland buffer and wet meadow planting zones. Planting zones are shown on the plans or are as the engineer directs.

**B Materials**

Supply seed samples and germination test data and store and deliver seed in accordance with standard spec 630.

Provide seed specifications from the vendor to the engineer at least 10 days prior to planting for review and approval.

Provide seed free of non-seed debris and invasive weed species.

Use the following seeding schedule in each of the designated zones. Prior to seeding, obtain approval from the engineer for any substitutions or changes to the seeding schedule.

|  |
| --- |
| **Seeding Upland Buffer Mix**  |
| **Common Name** | **Scientific Name** | **Seeding Rate** |
| Switch Grass | *Panicum virgatum* | 1 lb/acre |
| Indian Grass | *Sorghastrum nutans* | 3 lbs/acre |
| Big Bluestem | *Andropogon geradii* | 3 lbs/acre |
| Canada Wild Rye | *Elymus canadensis* | 4 lb/acre |
| Yellow Coneflower | *Ratibida pinnata* | 3 oz/acre |
| Black Eyed Susan | *Rudbeckia hirta* | 1 oz/acre |
| Purple Prairie Clover | *Dalea purpurea* | 4 oz/acre |

Sow Seeding Upland Buffer Mix at a rate of 11.5 lbs/acre.

|  |
| --- |
| **Seeding Wet Meadow Mix and Shallow Marsh Mix** |
| **Common Name** | **Scientific Name** | **Seeding Rate** | **Percentage** |
| Fringed Brome | *Bromus ciliates* | 1.24 lbs/acre | 15.46% |
| Bluejoint | *Calamagrostis canadensis* | 0.08 lbs/acre | 1.00% |
| Virginia Wild Rye | *Elymus virginicus* | 2.02 lbs/acre | 25.19% |
| Reed Manna Grass | *Glyceria grandis* | 0.26 lbs/acre | 3.24% |
| Annual Rye | *Lolium italicum* | 1.30 lbs/acre | 16.21% |
| Fowl Bluegrass | *Poa palustris* | 1.54 lbs/acre | 19.20% |
| Prairie Cordgrass | *Spartina pectinata* | 0.50 lbs/acre | 6.23% |
| Pointed Brome | *Carex scoparia* | 0.14 lbs/acre | 1.75% |
| Fox Sedge | *Carex vulpinoidea* | 0.40 lbs/acre | 4.99% |
| Green Bulrush | *Scirpus atrovirens* | 0.08 lbs/acre | 1.00% |
| Wool Grass | *Scripus cyperinus* | 0.04 lbs/acre | 0.50% |
| Soft Stem Bulrush | *Scripus validus* | 0.16 lbs/acre | 2.00% |
| Water Plantain | *Alisma trivale* | 0.08 lbs/acre | 1.00% |
| Swamp Milkweed | *Asclepias incarnate* | 0.02 lbs/acre | 0.25% |
| Swamp Aster | *Aster puniceus* | 0.01 lbs/acre | 0.12% |
| Flat-Topped Aster | *Aster umbelltus* | 0.01 lbs/acre | 0.12% |
| Joy-Pye Weed | *Eupatorium maculatum* | 0.01 lbs/acre | 0.12% |
| Boneset | *Eupatorium perfoliatum* | 0.01 lbs/acre | 0.12% |
| Sneezeweed | *Helenium autumnale* | 0.01 lbs/acre | 0.12% |
| Tall Blazingstar | *Liatris pycnostachya* | 0.03 lbs/acre | 0.37% |
| Great Blue Lobelia | *lobelia siphilitica* | 0.01 lbs/acre | 0.12% |
| Monkey Flower | *Mimulus ringens* | 0.01 lbs/acre | 0.12% |
| Common Arrowhead | *Sagittaria latifolia* | 0.04 lbs/acre | 0.50% |
| Blue Vervain | *Verbena hastata* | 0.02 lbs/acre | 0.25% |

Sow Seeding Wet Meadow Mix at a rate of 8.02 lbs/acre.

**C Construction**

Prepare seed beds and sow the required seed in accordance to applicable portions of standard spec 630 and the requirements in the article for Preparation of Upland Topsoil.

Contact the NE Region Environmental Section, (920) 492-7738, and the engineer a minimum of two weeks prior to seeding to allow for direction on final seeding locations.

Sow seeding at the following rates or as directed by the engineer:

* Sow Seeding Upland Buffer Mix at a rate of 11.5 lbs/acre.
* Sow Seeding Wet Meadow and Shallow Marsh Mix at a rate of 8.02 lbs/acre.

**D Measurement**

The department will measure Seeding Upland Buffer Mix and, Seeding Wet Meadow and Shallow Marsh Mix, by the pound, 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.0085.01 | Seeding Upland Buffer Mix | LB |
| SPV.0085.02 | Seeding Wet Meadow and Shallow Marsh Mix | LB |

 |  |  |

1. Low Maintenance Seed Mix, Item SPV.0085.03

**A Description**

This special provision describes furnishing and sowing Low Maintenance Seed Mix in accordance to section 630 of the standard specifications and as hereinafter described at the locations shown in the plan.

**B Materials**

Furnish one of the following seed mixes: “No-Mow” seed mix as produced by Prairie Nursery, Westfield, Wisconsin; “Eco-Grass” as produced by Prairie Moon Nursery, Winona, MN; or an approved equal.

**C Construction**

Prepare the seed bed in accordance to subsection 630.3.2 of the standard specifications. Sow the seed mix in accordance to subsection 630.3.3 of the standard specifications. Sow seed at a rate that is in accordance to the manufacturer’s recommendations.

**D Measurement**

The department will measure Low Maintenance Seed Mix by the pound 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.0085.03 | Low Maintenance Seed Mix | LB |

Payment is full compensation for performing the work as described in 630.5 of the standard specification.

(NER14-1103)

1. Fence Chain Link Polymer-Coated 6-Ft. B-20-218, Item SPV.0090.01

**A** **Description**

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

**B** **Materials**

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

**B.1 Fabric**

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

**B.2 Framework**

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

**B.3 Fittings**

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

**B.4 Bolts**

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

**B.5 Tests**

**B.5.1 Fabric and Tie Wire**

Breaking Strength: ASTM A370

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM F668

Adhesion: ASTM F668

Accelerated Aging Test: ASTM F668, D1499

Mandrel Bend Test: ASTM F668

**B.5.2 Framework**

Tensile and Yield Strength: ASTM E8

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM E376

Adhesion: ASTM F1043

Accelerated Aging Test: ASTM F1043, D1499

**B.5.3 Fittings**

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM F626

Adhesion: ASTM F1043 (same test as for framework)

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

**B.6 Submittals**

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

David Nelson

WisDOT (Bureau of Structures)

4822 Madison Yards Way

Madison, WI 53705

**B.6.1 Shop Drawings**

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

**B.6.2 Specification Compliance**

Submit certification of compliance with material specifications. Provide material certification and test documentation for fabric, framework, fittings and hardware that shows that all materials meet or exceed the specifications of this contract and the tests in section B5 of this specification. This document shall provide the name, address and phone number of the manufacturer, and the name of a contact person.

**C** **Construction**

**C.1 Delivery, Storage and Handling**

Deliver material to the site in an undamaged condition. Upon receipt at the job site, all materials shall be thoroughly inspected to ensure that no damage occurred during shipping or handling and condition of materials is in conformance with these specifications. If polymer-coating is damaged, Contractor shall repair or replace components as necessary to the approval of the Engineer at no additional cost to the Owner. Carefully store material off the ground to ensure proper ventilation and drainage and to provide protection against damage caused by ground moisture. Handle all polymer-coated material with care.

**C.2 Touch-up and Repair**

For minor damage caused by shipping, handling or installation to polymer-coated surfaces, touch-up the finish conforming to the manufacturer’s recommendations. Provide touch-up coating such that repairs are not visible from a distance of 6-feet. If damage is beyond repair, the fencing component shall be replaced at no additional cost to the Owner. The Contractor shall provide the Engineer with a copy of the manufacturer’s recommended repair procedure and materials before repairing damaged coatings.

**C.3 General**

Install the chain link fence conforming to ASTM F567 and the manufacturer’s instructions. The Contractor shall provide staff that is thoroughly familiar with the type of construction involved and materials and techniques specified. Chain link fabric shall be installed on the side of the posts indicated on the plans. Fabric shall be attached to the end posts with tension bars and tension bands. It shall be attached to rails, and posts without tension bands, with tie wires. The fabric shall be installed and pulled taut to provide a smooth and uniform appearance free from sag, without permanently distorting the fabric diamond or reducing the fabric height. Install top rail to pass through line post caps and form a continuous brace between end posts. Minimum length of top rail between splices shall be 20-feet. Splice top rail at joints with sleeves for a rigid connection. Locate splices near 1/4-point of post spacing. Heads of bolts shall be on the side of the fence adjacent to pedestrian traffic.

**D** **Measurement**

The department will measure Fence Chain Link Polymer-Coated 6-Ft. by the linear foot acceptably furnished and installed.

**E** **Payment**

The department will pay for the measured quantity at the contract unit price under the

following bid item:

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0090.02 | Fence Chain Link Polymer-Coated 6-Ft. B-20-218 | LF |

Payment for Fence Chain Link Polymer-Coated 6-Ft. B-20-218 is full compensation for fabricating, galvanizing and polymer-coating all fence components, and transporting to jobsite; and for erecting components to create a polymer-coated fence system, including any touch-up and repairs.

1. Removing Centerline Rumble Strips, Item SPV.0090.02

A Description

This special provision describes removing centerline rumble strips by milling and filling with HMA 4-MT 58-28 S as the plans show. Conform to standard spec 204, standard spec 460 and as follows.

B Materials

Use HMA 4-MT 58-28 S conforming to standard spec 460. Use Tack Coat conforming to standard spec 455.2.5.

QC testing and HMA density testing is waived regardless of tonnage. Acceptance will be by visual inspection unless defined by contract change order.

C Construction

Remove centerline rumble strips by asphaltic surface milling to a width of 2 feet and a depth of 2 inches.

Before filling the existing rumble strip depressions, clean the depressions by sweeping, flushing, or using a stream of compressed air; then, coat the depressions with tack coat. Fill in the depressions with HMA 4-MT 58-28 S. Overfill the rumble strips slightly and compact using a plate tamper or static roller so that the final compacted surface is flush with the existing pavement.

D Measurement

The department will measure Removing Centerline Rumble Strips by the linear foot.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0090.02 Removing Centerline Rumble Strips LF

Payment is full compensation for all work under this item including removing centerline rumble strips by asphaltic surface milling, cleaning the milled depressions; furnishing and applying tack coat; and for furnishing and placing HMA 4-MT 58-28 S.

1. Relapping Steel Plate Beam Guard, Item SPV.0090.03

A Description

This special provision describes removing and reinstalling beam guard. Conform to section 614 of the standard specifications and as shown in the plans.

B Materials

Provide hardware that conforms to standard spec 614.

C Construction

Remove bema guard rail and reset so lap splices are in the direction of traffic.

D Measurement

The department will measure Relapping Steel Plate Beam Guard by the linear foot acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0090.03 Relapping Steel Plate Beam Guard LF

Payment is full compensation for removing and resetting of beam guard rail and for providing replacement hardware as needed.

1. Construction Staking Wetland Site, Item SPV.0105.01

**A Description**

Perform work according to standard spec 650.

Perform all survey required to layout and construct the Schaefer Wetland Mitigation Site.

*Add to standard spec 105.6.2 with the following:*

The department will not perform any construction staking for the Schaefer Wetland Mitigation Site. Perform all survey required to layout and construct the work for the Schaefer Wetland Mitigation Site, subject to engineer’s approval.

The department may choose to perform quality assurance survey during construction of the Schaefer Wetland Mitigation Site. This quality assurance survey does not relieve the contractor of the responsibility for furnishing all survey work required under this contract.

*Delete standard spec 650.1.*

**B (Vacant)**

**C Construction**

Perform survey required under this item in accordance to all pertinent requirements of standard spec 650. Survey includes all other miscellaneous survey required to layout and construct all work under this contract in the Schaefer Wetland Mitigation Site.

The department will provide primary horizontal and vertical control for construction of earthwork along with a disk containing 3-dimensional surface data. The 3-dimensional data will include the existing ground surface and proposed surface(s) for the mitigation site. The data for the existing ground surface was collected by the department using conventional ground survey methods (non-flight). The contractor is responsible for utilizing the 3-dimensional data to complete the earthwork construction to the lines and grades as shown on the plans.

Complete site grading construction staking for both the subgrade and finished grade in accordance with standard spec 650.3.

**D Measurement**

The department will measure Construction Staking Wetland Site as a single lump sum unit of work, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0105.01 | Construction Staking Wetland Site | LS |

Payment is full compensation for performing all survey work required to lay out and construct the Schaefer Wetland Mitigation Site.

Culvert pipe staking at the Schaefer Wetland Mitigation Site will be paid separately under the applicable bid item provided in the contract.

Payment is full compensation in accordance to standard spec 630.5.

1. Temporary Bypass Channel, STA 572+65, Item SPV.0105.02

A Description

This special provision describes providing a temporary bypass channel for the drainage way through structures the bid items designate. The contractor may propose other alternatives for a temporary bypass channel as long as the proposed alternative is outlined in the ECIP. Materials used for alternative proposals are incidental to this item.

B Materials

Construct temporary bypass channel conforming to the details provided in the plan. Provide polyethylene sheeting conforming to standard spec 628.2 and provide select crushed material conforming to to standard spec 312.

C Construction

Construct temporary bypass channel conforming to standard spec 205.3 and 628.3. Maintain channel flow at all times and minimize erosion into the existing stream using appropriate erosion control measures.

D Measurement

The department will measure Temporary Bypass Channel STA 572+65, including all stages, as a single lump sum of work acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0105.02 Temporary Bypass Channel STA 572+65 LS

Payment is full compensation for furnishing materials, any excavation required, hauling, placing all materials, including sand bags, polyethylene sheeting, anchors, and select crushed material, and for channel change removal.

1. Temporary Bypass Channel, STA 588+75 – STA 603+07, Item SPV.0105.03

A Description

This special provision describes providing a temporary bypass channel for the drainage way through structures the bid items designate. The contractor may propose other alternatives for a temporary bypass channel as long as the proposed alternative is outlined in the ECIP. Materials used for alternative proposals are incidental to this item.

B Materials

Construct temporary bypass channel conforming to the details provided in the plan. Provide polyethylene sheeting conforming to standard spec 628.2 and provide select crushed material conforming to to standard spec 312.

C Construction

Construct temporary bypass channel conforming to standard spec 205.3 and 628.3. Maintain channel flow at all times and minimize erosion into the existing stream using appropriate erosion control measures.

D Measurement

The department will measure Temporary Bypass Channel STA 588+75 – STA 603+07, including all stages, as a single lump sum of work acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0105.03 Temporary Bypass Channel STA 588+75 – STA 603+07 LS

Payment is full compensation for furnishing materials, any excavation required, hauling, placing all materials, including sand bags, polyethylene sheeting, anchors, and select crushed material, and for channel change removal.

1. Salvaged Topsoil 12-Inch, Item SPV.0180.02

**A Description**

Perform this work in accordance to standard spec 625, as shown on the plans and as supplemented herein.

Remove topsoil from the sites of proposed excavations and embankments in amounts and depth available and necessary to cover the work slopes. This work also includes reclamation, placing, spreading, and finishing of this topsoil.

**B Materials**

Furnish and use materials in the work that conform to the pertinent requirements of standard spec 625.5.

**C Construction**

*Add to standard spec 625.3 with the following:*

Place and spread the topsoil to a minimum depth of 12-inches.

**D Measurement**

The department will measure Salvaged Topsoil 12-Inch by the square yard, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0180.02 | Salvaged Topsoil 12-Inch | SY |

Payment is full compensation for removing, stockpiling, reclaiming, hauling, and placing this material; for undercutting excavations, or underfilling embankments necessary to receive this material.

The department will make no deductions from the Excavation bid item for the quantities of salvaged topsoil material obtained from areas of cut sections. Additionally the department will not measure or pay for the volumes of salvaged topsoil removed from site of proposed embankments under the Excavation bid items, or make any allowance, adjustments, or measurements for payment under the Excavation bid items for undercutting cut sections, or underfilling embankments.

1. Salvaged Topsoil Over Riprap, Item SPV.0180.03

**A Description**

This special provision describes placing salvaged topsoil over riprap areas.

**B Materials**

Furnish and use materials in the work that conform to the pertinent requirements of standard spec 625.2.

**C Construction**

*Supplement standard spec 625.3 with the following:*

Place and spread the salvaged topsoil to a depth necessary to fill in the voids within the riprap areas. Extend the salvaged topsoil flush with the top of the riprap.

**D Measurement**

The department will measure Salvaged Topsoil Over Riprap by the square yard, acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0180.03 | Salvaged Topsoil Over Riprap | SY |

Payment is full compensation in accordance with the pertinent sections of Standard Spec 625.5.2.

The department will pay for riprap under the pertinent items provided in the contract.

1. Contaminated Soil Management, Item SPV.0195.01

A Description

This work will conform with the requirements of Section 205 of the Standard Specifications; to pertinent parts of the Wisconsin Administrative Code, Chapters NR 700-754, Environmental Investigation and Remediation of Environmental Contamination; Wisconsin Administration Code, Chapters NR 500-555, Solid Waste ; and as shown on the plans and as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

This work consists of excavating, segregating, temporarily stockpiling, loading, hauling, and treating and disposing petroleum- or solvent-contaminated soil at a WDNR-licensed treatment and disposal facility. The nearest WDNR-licensed treatment and disposal facility is:

Veolia ES Hickory Meadows Landfill, L.L.C.
W3105 Schneider Rd.
Hilbert, WI 54129
920.853.8553

B. (Vacant)

C. Construction

Subsection 205.3 of the Standard Specifications is supplemented with the following:

The Environmental Consultant will periodically examine excavated soil during excavations in the areas of known petroleum and metals contamination from Station 619+00 to 620+50 from 50 feet right of the reference line to the construction limits on the right.

Control construction operations at these locations to ensure that excavations do not extend beyond the minimum required to construct utilities and highway improvement unless expressly directed to do so by the Engineer.

When material is encountered outside the above-identified limits of known contamination that appears to have been contaminated with petroleum or metals products; or other obvious potentially contaminated materials are encountered; or material exhibits characteristics of industrial-type wastes, such as fly ash, foundry sand, and cinders; or if underground storage tanks are encountered, suspend excavation in that area and notify the Engineer.

Assist the Environmental Consultant in collecting soil samples using excavation equipment. The Environmental Consultant will collect soil samples from the excavations. The sampling frequency will be a maximum of one sample for every 20 cubic yards excavated.

It is anticipated that the majority of the contaminated soil excavated from the areas of known contamination will be designated for reuse as backfill. The Environmental Consultant will field-screen material during excavations in the areas of known contamination and in other potentially contaminated areas encountered during excavations. On the basis of the results of such field-screening, the material will be designated for disposal as:

* Low-level contaminated soil for reuse as backfill in the excavation from which it came
* Contaminated material for disposal at the WDNR-licensed treatment and disposal facility
* Potentially contaminated material for temporary stockpiling and additional characterization prior to disposal

Some material may require additional characterization prior to disposal. Provide for the temporary stockpiling of up to 50 cubic yards of contaminated soil on-site that require additional characterization. Construct and maintain a temporary stockpile of the material in accordance with NR 718.05(3), including, but not limited to, placing the contaminated soil/fill material on an impervious surface and covering the stockpile with impervious material to prevent infiltration of precipitation. The Department's Environmental Consultant will collect representative samples of the stockpiled material, laboratory-analyze the samples, and advise the Contractor, within 10 business days of the construction of the stockpile, of disposal requirements. The stockpiled material shall be disposed either at a WDNR-licensed treatment and disposal facility or by the Department. As an alternative to temporarily stockpiling contaminated soil/fill material that is encountered in areas that require additional characterization, the Contractor has the option of suspending excavation in those areas until such time as characterization is completed.

Verify that the vehicles used to transport contaminated material are licensed for such activity in accordance with applicable state and federal regulations.

The Environmental Consultant will be responsible for obtaining the necessary disposal facility approvals and WDNR approvals for treatment and disposal. Do not transport contaminated soil or regulated solid waste off-site without obtaining the approval of the Engineer and notifying the disposal facility.

The Department will be the generator of all contaminated soil and regulated solid waste from this construction project. The Department or assigned designee will execute all manifests required for the transportation and disposal of such material from this project.

D. Measurement

The Department will measure contaminated soil by the ton of soil accepted by the WDNR-licensed treatment and disposal facility and as documented by load tickets. Load tickets must be delivered to the Engineer within 10 business days of the date on which the soil was accepted by the WDNR-licensed treatment and disposal facility.

E. Payment

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

|  |  |  |
| --- | --- | --- |
| Item No. | Description | Unit |
| SPV.0195.01 | Management of Contaminated Soil | Ton |

This payment for the Management of Contaminated Soil is full payment for excavating, segregating, loading, transporting, temporarily stockpiling, and treating/disposing contaminated material, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work in accordance with the Contract.