

PRELIMINARY

Special Provisions

Table of Contents

Article	Description	Page #
1.	General.....	3
2.	Scope of Work.	3
3.	Prosecution and Progress.	3
4.	Traffic.	7
5.	Holiday Work and Special Event Restrictions.....	9
6.	Utilities.....	10
7.	Public Convenience and Safety.	13
8.	Erosion Control.....	14
9.	Notice to Contractor, Stream Realignment.	14
10.	Notice to Contractor, Landmark Reference Monuments.	14
11.	Information to Bidders, U.S. Army Corps of Engineers Section 404 Permit.....	15
12.	Environmental Protection, Aquatic Exotic Species Control.....	15
13.	Environmental Protection, Dewatering.....	16
14.	Environmental Protection, By-Pass Pumping.....	16
15.	Construction Over or Adjacent to Navigable Waters.	17
16.	Native American Hiring.....	17
17.	Coordination with Businesses and Residents.	18
18.	Temporary Diversion Channels.	19
19.	Removing Old Structure Over Waterway With Minimal Debris Station 215+97.00, Item 203.0600.S.01; Station 257+35.00, Item 203.0600.S.02; Station 49+00.00, Item 203.0600.S.03.	20
20.	Select Borrow.....	21
21.	QMP Base Aggregate.	21
22.	QMP HMA Pavement Nuclear Density.....	29
23.	HMA Pavement Leveling Layer.....	36
24.	Salvaged Guardrail.....	36
25.	Fence Safety, Item 616.0700.S.	36
26.	Water.....	37
27.	Sod Water, Item 631.0300.	37
28.	Field Facilities.....	38
29.	Traffic Control.	38
30.	Nighttime Work Lighting-Stationary.....	39
31.	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch, Item 646.2304.S.	41
32.	Pavement Marking Outfall, Item 646.0805.S.	43
33.	Locating No-Passing Zones, Item 648.0100.....	43
34.	Fertilizer for Lawn Type Turf, Item SPV.0030.01.	43
35.	Reestablish Section Corner Monuments, Item SPV.0060.01.	45
36.	Verify and Replace Existing Property Monuments Project 1058-25-70, Item SPV.0105.01; Project 6580-11-60, Item SPV.0105.02.....	46

37.	Research and Locate Existing Property Monuments, Project 1058-25-70, Item SPV.0105.03; Project 6580-11-60, Item SPV.0105.04.	47
38.	Preparing Topsoil for Lawn Type Turf, Item SPV.0180.01.	48

SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1058-25-70, Shawano - Green Bay, STH 29 & STH 156 Intersection, STH 29, Shawano County, Wisconsin and Project 6580-11-60, Clintonville - Howard, STH 55 to STH 29, STH 156, Shawano County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2017 Edition, as published by the department, and these special provisions.

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 (20161130)

2. Scope of Work.

The work under this contract shall consist of Structure B-58-0129, Structure B-05-0435, Structure C-05-0151, Structure C-58-0092, removing asphaltic surface milling, HMA pavement, excavation common, borrow, base aggregate dense, culvert pipe reinforced concrete, concrete curb and gutter, guardrail, signing, pavement marking, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. Prosecution and Progress.

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

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

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

Do not begin work in 2017 prior to 6:01 AM July 5, 2017.

Do not begin work in 2018 prior to 6:01 AM April 2, 2018 unless otherwise approved by the department.

Fish Spawning

There shall be no instream disturbance of the following waters 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 various fish species.

Project 1058-25-70

- West Branch of the Suamico River (B-05-0435)
- Unnamed Tributary to the West Branch of the Suamico River (C-05-0151)
- Unnamed Tributary to the West Branch of the Suamico River (Station 24'A'+00 to Station 37'A'+00, LT; realignment along St. Augustine Road)

Project 6580-11-60

- Unnamed Tributary to Black Creek (culvert replacement at Station 10+68)
- Unnamed Tributary to Black Creek (C-58-0092)

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 (DNR) in the request, and final approval by the engineer. The approval will include all conditions to the request as mutually agreed upon by the department and DNR.

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).

- Project 1058-25-70: The department has contracted with others to cut all required trees near B-05-0435 and C-05-0151 for this project prior to construction. Remove any downed trees and grub the stumps and any remaining vegetation within the identified grubbing limits.
- Project 6580-11-60: 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.

Staged Construction

The plans provide for suggested construction stages to complete the work. Submit a detailed traffic control plan for any changes to the proposed traffic control details as shown on the plans and provided in these special provisions. Submit this plan to the engineer at least ten (10) days prior to the preconstruction conference. Review does not constitute approval.

Work under the contract is planned for two construction seasons in 2017 and 2018. Work activities are anticipated on Project 1058-25-70 in both years. Do not begin work on Project 6580-11-60 until 2018 unless approved otherwise by the engineer. Maintain traffic in accordance with the Article for Traffic.

Below is a brief description of the stages to complete the work:

2017 Construction – Stage 1

- Close outside shoulders on STH 29 and begin construction of roadway fills along St. Augustine Road and abutments of Structure B-58-0129
- Construct realignment of the Unnamed Tributary of the West Branch of the Suamico River along St. Augustine Road including restoration
- Construct Structure C-05-0151 and approaches
- Construct Structure B-05-0435 and approaches
- Construct the STH 156/CTH Y/Old 29 Drive intersection
- Mill and overlay STH 156 along Old 29 Drive and CTH Y

To accommodate field planting schedules and field access along Old 29 Drive, complete construction of C-05-0151 and reopen STH 15/Old 29 Drive to local traffic prior to closing the roadway at B-05-0435.

Within 21 calendar days of beginning reconstruction of the STH 156/Old 29 Drive/CTH Y intersection, complete the intersection work including concrete curb and gutter, HMA pavement, pavement marking, and signing on the north, south, and east legs of the intersection to allow local traffic to run on a paved surface. Temporarily cover or do not install the ultimate STH 156 route signing.

By 12:01 AM October 28, 2017, complete the following items of work:

- Construct roadway fills along St. Augustine Road to allow for settlement of the abutment fill areas prior to 2018 construction.

- Complete construction of the realignment of the Unnamed Tributary to the West Branch of the Suamico River along St. Augustine Road including all restoration of fills along St. Augustine Road from Station 21'A'+00 to Station 37'A'+00, LT.
- Structure B-05-0435, Structure C-05-0151, HMA pavement, restoration, signing, and pavement marking along STH 156, CTH Y, and Old 29 Drive from Station 215+00 to Station 286+59 and Station 2'Y'+00 to Station 12'Y'+92. Do not implement new STH 156 route signing until the end of Stage 2.
- Remove temporary concrete barrier on STH 29 and fully reopen outside shoulders prior to the 2017-2018 winter shutdown period. Restore outside slopes and ditches along STH 29 under B-58-0129 either to a safe operating condition (4:1 slopes or greater) or to the ultimate condition prior to removing the barrier.

Prior to suspension of construction operations in the fall of 2017, place all temporary and permanent erosion control devices on disturbed areas as shown on the plans or as directed by the engineer. Conduct a winter shutdown meeting with the department and the DNR prior to suspending construction operations to review the effectiveness of the installed erosion control devices and make adjustments as determined necessary to minimize erosion until construction operations resume in the spring of 2018.

2018 Construction – Stage 2

- Detour STH 156 as shown in Project 6580-11-60 and close STH 156 at STH 29 once work begins in the median of STH 29.
- Install temporary concrete barrier on the inside shoulders and close STH 29 to one lane in each direction as needed, complete Structure B-58-0129 and approaches on St. Augustine Road.
- Construct C-58-0092 and approaches on STH 156.
- Mill and overlay STH 156 and construct curve connecting STH 156 to Old 29 Drive from Station 196+50 to Station 215+00.
- Install all signing and pavement marking including STH 156 route signing along STH 29, Old 29 Drive, and CTH Y.

2018 Construction – Stage 3

- After completion of the median pier on Structure B-58-0129, remove all turning lanes along STH 29 and restore shoulders.

Stage 2 work outside of STH 29 may continue during Stage 3.

By 12:01 AM August 18, 2018, complete the following items of work:

- Structure C-58-0092, HMA pavement, restoration, signing, and pavement marking along STH 156 from Station 1+50 to Station 215+00. Implement all new STH 156 route signing. Remove STH 156 detour.

Supplement standard spec 108.11 as follows:

If the contractor fails to complete the work necessary to complete the STH 156/Old 29 Drive/CTH Y intersection reconstruction (north, south, and east legs) including concrete curb and gutter, HMA pavement, pavement marking, and signing within 21 calendar days

of beginning the intersection reconstruction work, the department will assess the contractor \$2,065 in interim liquidated damages for each calendar day that the STH 156/Old 29 Drive/CTH Y intersection remains incomplete after 21 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the required work remains incomplete beyond 12:01 AM.

If the contractor fails to complete the work necessary to complete Stage 1 prior to 12:01 AM October 28, 2017, the department will assess the contractor \$2,065 in interim liquidated damages for each calendar day that the Stage 1 work remains incomplete after 12:01 AM, October 28, 2017. 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 the contractor fails to complete the work necessary to remove the STH 156 detour prior to 12:01 AM August 18, 2018, the department will assess the contractor \$2,065 in interim liquidated damages for each calendar day that the STH 156 detour remains in place after 12:01 AM, August 18, 2018. 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.

4. Traffic.

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 $\geq 16'$)	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.
stp-108-057 (20161130)

Local and Emergency Access

Maintain local and emergency access to the work zones on all roadways at all times.

STH 29

Maintain at least one lane in each direction with a minimum clear width of 18-feet on STH 29 at all times except during Lambeau Field events. Fully open all lanes of STH 29 for both the eastbound and both westbound lanes throughout the entire project limits for Lambeau Field events within the timeframes provided in the article for Holiday Work and Special Event Restrictions.

In 2017, the contractor may perform temporary daily lane closures on STH 29 to facilitate work. Remove temporary daily lane closures during non-work hours unless otherwise approved the engineer. Do not implement long-term lane closures on STH 29 until 2018.

Do not install inside temporary concrete barrier for pier construction of Structure B-58-0129 or implement any long-term single lane closures on STH 29 until 2018.

During lane closures, access the median work zone from the closed lane. Construction traffic from the work zone entering live traffic must run out of the closed lane unless otherwise approved by the engineer. Make material deliveries to the median when inside lane closures are in place. Yield to through traffic with all construction vehicles and equipment entering or leaving live traffic lanes.

Construction traffic cannot travel counter-directional adjacent to traffic.

Use of maintenance crossovers for u-turns will not be allowed unless both eastbound and westbound inside lanes are closed to traffic. Do not barricade maintenance crossovers.

For setting of the girders for B-58-0129, STH 29 may be closed for periods not to exceed 20 minutes between the hours of 10 PM to the following morning at 4 AM on Sunday, Monday, Tuesday, Wednesday, and Thursday nights. Allow all vehicle backups to clear the project area prior to setting up the next road closure during the above timeframe.

STH 156

Maintain two-way traffic on STH 156 and access at STH 29 until STH 156 is detoured in 2018. Prior to implementing the long-term lane closures on STH 29, detour STH 156 traffic and close STH 156 at STH 29.

St. Augustine Road

Close St. Augustine Road at STH 29 prior to beginning any work on Structure B-58-0129 and fills along St. Augustine Road that impair sight distance at the intersection.

Old 29 Drive

Maintain local and emergency access along Old 29 Drive throughout construction from STH 156, CTH Y, and Angle Drive. Do not close Old 29 Drive at B-05-0435 and C-05-0151 at the same time. Maintain local traffic on a minimum of a base aggregate driving surface at all times.

CTH Y

Maintain access on CTH Y and through the Old 29 Drive/CTH Y intersection at all times. During working hours control operations with flagging and maintain one 14-foot clear travel lane. During non-working hours restore local traffic on a minimum of a base aggregate driving surface to allow for two-way traffic.

Construction Start

Post portable changeable message signs 7 calendar days prior to the start of the project to advise traffic about planned work and 7 days prior to implementing the STH 156 detour.

Portable Changeable Message Signs – Message Prior Approval

After coordinating with the engineer, notify the North Central Region Traffic Section's engineer Chris Dries at (715) 365-5749, three business days prior to deploying or changing a message on a PCMS to obtain approval of the proposed message.

Clear Zone Working Restrictions

Do not store materials or equipment within the clear zone (shown on plans) of traffic lanes during non-working hours unless protected by concrete barrier. Remove materials from the clear zone prior to opening lane closures. Do not leave unprotected slopes steeper than 3:1 or any drop offs at the edge of the traveled way greater than 2-inches within the clear zone during non-working hours.

On STH 29, remove all temporary precast concrete barrier at the end of Stage 1 and ensure the existing clear zone (34-feet) is clear of all obstructions during winter shutdown.

5. Holiday Work and Special Event Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying STH 29, STH 32, and STH 156 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, September 1, 2017 to 6:00 AM Tuesday, September 5, 2017;
- From noon Friday, May 25, 2018 to 6:00 AM Tuesday, May 29, 2018;
- From noon Tuesday, July 3, 2018 to 6:00 AM Thursday, July 5, 2018;
- From noon Friday, August 31, 2018 to 6:00 AM Tuesday, September 4, 2018;
- For Lambeau Field events with an expected attendance of 30,000 or greater starting 5 hours prior to scheduled start time to 8 hours after this start time.

~~stp-107-005-(20050502)~~

6. Utilities.

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

There are utility facilities within the construction limits of this project. Additional detailed information regarding the location of discontinued, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. Copies may be requested from the department.

Project ID 1058-25-70

ATC Management, Inc. (ATC) is planning for a new overhead **electric transmission** facility located outside of the project construction limits crossing STH 55 approximately ¼-mile north of STH 156, crossing STH 29 near Station 315'EB'+00, and then crossing St. Augustine Road north of Cottonwood Drive. Construction of the new facility will be ongoing during project work. Coordination has been completed with ATC to provide estimated timeframes of work and access closures under this project. Review construction schedule at the preconstruction meeting. Coordinate local access along STH 29, STH 156, Old 29 Drive, CTH Y, and St. Augustine Road during this work. No conflicts are anticipated with the new transmission facility.

It is anticipated that ATC will be stringing new conductors requiring shoulder closures at the following locations:

- On STH 29 near Station 315'EB'+00 in winter 2017/2018; ATC shoulder closures are anticipated outside of the estimated timeframe of the project shoulder closures on STH 29 in 2017
- Along the detour route approximately ¼-mile north of STH 156 on STH 55 in spring 2018

Shoulder closures are anticipated for less than two weeks at each location. ATC anticipates the transmission line will be placed in-service after September 2018.

Northeast Telephone Company, LLC. (NET) has underground **communication** facilities along the left and right sides of existing STH 156, STH 156/Old 29 Drive, and existing CTH Y. NET also has underground communications facilities located along the right side of STH 29 east of STH 156

Prior to June 1, 2017; NET plans to relocate their facilities at the following locations:

- Discontinue their underground facilities along the left side of existing STH 156 from Station 199+00 to Station 203+00 and Station 3'S'+00 to Station 4'S'+80.
- Install a new underground facility across existing STH 156 and on the left side of existing Old 29 Drive extending from the pedestal near Station 6'S'+80, LT to the pedestal near Station 9'T'+25, LT.
- Discontinue their underground facilities along STH 156/Old 29 Drive from Station 209+00 to Station 212+50, LT and RT.

- Install a new underground facility near the right-of-way line of STH 156/Old 29 Drive from Station 209+00 to Station 212+50, RT.

During construction, NET plans to lower the underground communication facility from Station 3'Y'+00 to 10'Y'+00, LT after the STH 156/Old 29 Drive pavement has been removed. NET anticipates the work to take up to two working days. Provide a 10 working day notice to NET prior to needing the communication facility lowered.

NET has other facilities within the project limits, but no conflicts are anticipated.

CenturyLink Communications LLC FKA Qwest Communications has underground **communication** facilities along right side of STH 156 from the begin project limits to STH 29 where it turns east and runs along the right side of STH 29.

Prior to March 1, 2017; CenturyLink Communications LLC FKA Qwest Communications plants to lower their existing fiber optic communication facilities from Station 1965+50 Station 203+00, RT and Station 3'S'+00 to Station 9'S'+00, RT.

CenturyLink Communications LLC FKA Qwest Communications has other facilities within the project limits, but no conflicts are anticipated.

We Energies has overhead **electric** facilities along the left and right sides of STH 156/Old 29 Drive from existing STH 156 to Angle Drive, along the right side of St. Augustine Road, and along the right side of STH 29 with service crossings throughout.

Prior to May 1, 2017; We Energies plans to relocate overhead poles and overhead facilities in the area of the new overpass.

- Install a new overhead electric system along STH 29 to the west of the project area which will remove the existing crossing of the proposed St. Augustine Road near Station 18'A'+00
- Remove the overhead facilities on the right side of existing STH 156 between Old 29 Drive and STH 29 and along the right side of St. Augustine Road and replace them with an underground electric facilities extending from STH 29 to Cottonwood Drive. The proposed underground electric facility is anticipated to cross STH 29 near Station 333'EB'+00
- Install new underground electric along the right side of STH 29 east of the project area from Station 337'EB'+00 to Station 344'EB'+00 extending south to STH 156/Old 29 Drive near Station 221+00
- Relocate the overhead facility along the right side of existing and relocated STH 156 from Station 196+50 to Station 212+00 and along the left side of STH 156 from Station 212+00 to Station 223+50; the overhead electric facility is proposed to be placed over the building to be razed on Parcel 13 at approximately Station 208+50, RT

We Energies has other facilities within the project limits, but no conflicts are anticipated.

Wisconsin Public Service Corporation (WPS) has overhead **electric** distribution facilities along the left side of STH 156 and Old 29 Drive from Angle Drive to CTH Y and along left side of CTH Y with service crossings throughout.

Prior to March 1, 2017; We Energies plans to relocate overhead facilities and poles to the approximate locations listed below:

- Remove pole at Station 5'T' +50, LT; relocate to Station 205+00, LT
- Remove pole at Station 255+46, RT; relocate to Station 255+50, RT and anchor at Station 255+46, RT
- Remove pole at Station 256+00, LT; relocate to Station 255+95, LT and anchor
- Remove pole at Station 258+10, LT; relocate to 258+14, LT and lower the underground electric service
- Install new pole at Station 275+95, LT and anchor at Station 275+80, LT
- Remove pole at Station 277+80, LT; relocate to Station 277 +80, LT and anchor

WPS has other facilities within the project limits, but no conflicts are anticipated.

Wisconsin Public Service Corporation (WPS) has underground **gas** facilities along the left side of STH 156 and Old 29 Drive and along the left and right sides of existing CTH Y throughout the project limits with service crossings throughout.

Prior to May 1, 2017; WPS plans to relocate the gas main from Station 197+00 to Station 211+00 along the left side of STH 156; from Station 256+00 to Station 258+50 along the left side of STH 156/Old 29 Drive at C-05-0151; and from Station 6'Y'+50 to Station 9'Y'+00 along the right side of STH 156.

WPS has other facilities within the project limits, but no conflicts are anticipated.

Other Utilities

The following utilities are located within or near the project limits and no conflicts are anticipated:

- ANR Pipeline Company

Project ID 6580-11-60

CenturyLink has underground **communication** facilities along the right side of STH 156 from STH 55 to Station 121+00 with service crossings throughout.

Prior to May 1, 2017; CenturyLink plans discontinue their existing facility and install a new underground facility at the following locations:

- Station 6+33 to Station 18+00, RT
- Station 45+13 to Station 52+55, RT

CenturyLink has other facilities within the project limits, but no conflicts are anticipated.

CenturyLink Communications LLC FKA Qwest Communications has underground **communication** facilities along the right side of STH 156.

Prior to January 1, 2017; CenturyLink Communications LLC FKA Qwest Communications plans lower their existing facilities at the following locations:

- Station 8+75 to Station 10+25, RT
- Station 48+20 to Station 49+20, RT

CenturyLink Communications LLC FKA Qwest Communications has other facilities within the project limits, but no conflicts are anticipated.

We Energies has overhead **electric** facilities along the right side of STH 156 with service crossings throughout.

Prior to March 1, 2017; We Energies plans to relocate poles and overhead facilities between Station 45+50 and Station 51+50, RT.

We Energies has other facilities within the project limits, but no conflicts are anticipated.

Wisconsin Public Service Corporation (WPS) has underground **gas** facilities along the left side of STH 156 throughout the project limits with service crossings throughout.

Prior to May 1, 2017; WPS plans to relocate the gas main from Station 47+50 to Station 50+50, LT.

WPS has other facilities within the project limits, but no conflicts are anticipated.

Other Utilities

The following utilities are located within or near the project limits and no conflicts are anticipated:

- ATC Management, Inc.
- Northeast Telephone Company, LLC

7. Public Convenience and Safety.

Replace standard spec 107.8 (4) with the following:

Notify the following organizations and departments at least 2 business days before road closures, lane closures or detours are put into effect:

Shawano County Sheriff's Department
Brown County Sheriff's Department
Wisconsin State Patrol
Town of Maple Grove
Town of Pittsfield
Village of Pulaski

Pulaski School District

The Shawano and Brown County Sheriff's Department 911 dispatches all area police, fire and ambulance services, and will relay any notification given by the contractor.
(NCR 107.05-10152014)

8. Erosion Control.

Add the following to standard spec 107.20:

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.

Replace topsoil on disturbed areas immediately after grading is completed within those areas. Complete finishing operations, which includes seed, fertilizer, mulch and any other permanent erosion control measures required, within 14 calendar days after the placement of topsoil.

Place all temporary stock piles in upland locations protected with erosion control measures. Do not stockpile materials in wetlands, waterways, or floodplains.
(NCR 107.03-10152014)

9. Notice to Contractor, Stream Realignment.

The Unnamed Tributary of the West Branch of the Suamico River along St. Augustine Road will be realigned as part of the St. Augustine Road construction. The realignment will include installation of gravel riffles as part of the stream habitat restoration. During placement of the gravel riffles, provide Wisconsin DNR (DNR) with the opportunity to be on site. Contact the DNR representative shown in the plans at least 14 calendar days prior to placing the gravel riffles.

Construct the ultimate realigned stream, complete the stream stabilization, and ensure adequate vegetation growth has occurred within the realigned stream prior to diverting flow from the temporary stream bypass back into the ultimate stream realignment.

When working adjacent to the stream realignment on St. Augustine Road, restore and stabilize the roadway fills in a timely manner to avoid erosion into the realigned stream. Submit the proposed means and methods for coordinating construction of fills and restoration adjacent to the realigned stream as part of the Erosion Control Implementation Plan (ECIP).

10. Notice to Contractor, Landmark Reference Monuments.

For Project 1058-25-70, all section corner and reference monument perpetuation will be provided by the Brown County Surveyor's office. The Brown County Surveyor will locate, mark and tie off all section corner monuments in the project area located within Brown County. Prior to the pre-construction meeting notify Terry Van Hout, Brown County Surveyor, at (920) 448-6493 for the required schedule for locating and perpetuating the existing section corner monuments.

The Landmark Reference Monument work for Project 6580-11-60 will be completed under the pertinent items provided in the contract.

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

The department has obtained a US 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 region office by contacting Jim Volkmann at 715-365-5773. Methods of operations, including preparatory work, staging, site clean-up or storing materials, causing impacts to other wetlands or waters are not permitted.

If the contractor chooses a method of construction that is not covered by the department's 404 Permit, obtain the proper additional permits required from the US Army Corps of Engineers. It is the contractor's responsibility to determine if additional permits are required. Obtain the additional permits prior to beginning construction operations requiring the permits. No time extensions as discussed in standard spec 108.10 will be granted for the time required to apply for and obtain the additional permits. The contractor must be aware that the US Army Corps of Engineers may not grant the additional permits.
(NCR 107.07-10152014)

12. Environmental Protection, Aquatic Exotic Species Control.

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

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

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

1. Prior to leaving the contaminated site, wash machinery and ensure that the machinery is free of all soil and other substances that could possibly contain exotic invasive species;

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

Complete the inspection and removal procedure before equipment is brought to the project site and before the equipment leaves the project site.
stp-107-055 (20130615)

13. 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 prior to discharge. Submit the proposed means and methods of dewatering for each required location for approval as part of the Erosion Control Implementation Plan (ECIP). Include details of how the intake will be managed to not cause an increase in the background level turbidity prior to treatment and any additional measures 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

Work includes furnishing all materials, excavation, maintenance, cleaning, disposal of surplus material and removal of the dewatering system and is incidental to contract work.
(NCR 107.13-04012016)

14. Environmental Protection, By-Pass Pumping

Supplement 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 (ECIP) for each location it is required. The submittal shall include how the intake will

be managed to not cause an increase in the background level turbidity during pumping; equipment pumping rate capabilities; discharge energy dissipation; and erosion controls.

For by-pass pumping that will extend beyond one working day, the submittal should also include how the work zone will be managed and protected should the pump fail; be shut down due to unacceptable water quality; or storm water flows exceed the pumping rate of equipment.

After setup of the approved by-pass pumping operation, the contractor shall demonstrate that the means and methods will pump the water at an acceptable water quality prior to starting work that necessitates the by-pass pumping.

The cost of all work and materials associated with by-pass pumping is incidental to the bid items the work is associated with. Erosion control devices beyond the discharge energy dissipation point will be paid for at the contract unit prices for the items that are included in the plan.

(NER 11-0711)

15. Construction Over or Adjacent to Navigable Waters.

Add the following to standard spec 107.19:

The West Branch of the Suamico River, the Unnamed Tributaries to the West Branch of the Suamico River, and the Unnamed Tributaries to the Black Creek are classified as navigable waterways.

stp-107-060 (20150630)

16. Native American Hiring.

Pre-Bid

Before bid submittal, contact the Oneida Nation to provide information on hiring procedures and future employment opportunities, and gather information on the tribal work force.

Oneida Nation tribal labor office contact information:

Travis J. Wallenfang, Indian Preference Coordinator
Oneida Tribe of Indians of Wisconsin
Skenandoah Complex
909 Packerland Drive
Green Bay, Wisconsin 54303
Office: 920.496.5316
Cell: 920.412.1981
Email: twallenf@oneidanation.org

Maintain documentation of all efforts made to communicate with Oneida Nation. Pre-bid, submit documentation to the Bureau of Project Development at DOTDTSDDHighwayConstructionContractors@dot.wi.gov in conjunction with the Proposal

Request Form. The Eligible Bidders list will not be updated until this documentation is received. Include the following information in documentation:

- Proposal number/route number/termini/county
- Person(s) contacted
- Method of communication (phone, email, written, in person)
- Information exchanged (hiring procedures, available positions, referrals received, employee performance, etc)

After Execution

At a minimum of three days before the tribal coordination meeting, contact the Oneida Nation to provide the following information regarding available employment opportunities for prime and subcontractors:

- Job classification/trade
- Job qualifications and required skills
- Employment period
- Wage
- Copy of job application

After receiving employment opportunities, the Travis J. Wallenfang will within two business days provide employment referrals, or provide other recruitment sources to obtain qualified referrals.

Document all efforts made to communicate job opportunities and the results of hiring activities throughout the life of the contract. At any time during the life of the contract, provide Oneida Nation communication documentation within five business days of request by the department.

Tribal Coordination Meeting

Between execution of contract and the project preconstruction conference, setup and coordinate a meeting with the Tribal officials and leaders at Oneida Nation and notify and invite WisDOT Statewide Tribal Liaison, 4802 Sheboygan Ave, Room 451, P.O. Box 7965, Madison, WI 53707-7965, kelly.jackson@dot.wi.gov, (608) 266-3761. The prime contractor and all subcontractors shall attend this meeting. Discuss available employment opportunities and other tribal areas of interest such as scope of work, Tribal regulations, borrow sites, waste sites, and available aggregate.

Project Completion

As a part of the document submittals required under standard spec 109.7, submit documentation summarizing communications regarding job opportunities throughout the life of the contract. Provide final report to the tribe and Statewide Tribal Affairs compiling the results of hiring activities for the prime contractor as well as for subcontractors at all tiers.

stp-107-200 (20140630)

17. 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 access during construction operations. Hold the first meeting at least one week prior to the start of work under this contract in 2017 and again in 2018. No further meetings will be required unless directed by the engineer. The contractor shall arrange for a suitable location for the meeting(s) that provides reasonable accommodation for public involvement. The department will prepare and coordinate publication of the meeting notices and mailings for the meeting(s). The contractor shall schedule the meeting(s) with at least 2 weeks prior notice to the engineer to allow for these notifications.
~~stp-108-060 (20141107)~~

18. Temporary Diversion Channels.

Install and remove temporary stream bypass diversion channels at locations identified on the plans. Submit the proposed means and methods for implementing the temporary stream diversion channel at each location as part of the Erosion Control Implementation Plan (ECIP).

As provided in the plans, construct the diversion channel to accommodate a Q2 flow with 6 to 12-inches of freeboard. Payment for the temporary diversion channel will be made in accordance with the pertinent items included in the contract and as shown on the plan details:

- Polyethylene Sheeting
- Riprap Light
- Excavation for Structures
- Removing Old Structure Over Waterway with Minimal Debris
- Backfill Structure

Prior to structure removals and new installations at locations requiring diversion channels, excavate the channel to dimensions that meet field conditions, as shown on the plans, and as directed by the engineer. Ensure that material removed from the excavation area is properly stockpiled and isolated from the waterway or adjacent wetland areas by proper erosion control. Install sand bags or other means approved by the engineer to prevent water from entering the channel on the upstream and downstream ends until the channel is ready to open. Other means used shall not involve dredging or removing soil from the “live” unprotected waterway. Before placing polyethylene sheeting, remove stones, roots, sticks, and other materials that interfere with the sheeting bearing completely on the soil.

Line the channel bed and banks with polyethylene sheeting and maintain extra sheeting width on each side to trench in and secure the edges on top of the channel banks. Secure the sheeting from wind and water dislocation. Overlap adjacent sheets a minimum of 3-feet in the direction of flow and seal the edges with waterproof tape or other engineer-approved method. Trench in the upstream leading edge of the polyethylene sheeting. Patch damaged areas with sheeting overlapped a minimum of 3-feet and seal the joints with waterproof tape or other engineer-approved method. Maintain the sheeting and make satisfactory repairs of damaged areas.

Place a 6-inch minimum layer of clean light riprap across the width of the channel bed and

along the channel's length. Place light riprap on channel bends, where required, to minimize erosion potential.

After obtaining the engineers approval, open the downstream end of the channel and allow water to backflow into the channel. When the water has stabilized in the channel, open the upstream end. Maintain the channel during its use. Ensure the polyethylene sheeting remains securely in place.

Upon completion of all work within the area of the waterway and as directed by the engineer, install sand bags or other means in the upstream end of the diversion channel first, and then in the downstream end. Dewater the diversion channel by a method approved by the engineer. Remove and properly dispose of all sheeting and sediment deposits. Backfill the excavated area of the channel in accordance with standard spec 207.

Fish that become stranded in dewatered areas or temporary channels should be captured and returned to the active channel immediately

19. Removing Old Structure Over Waterway With Minimal Debris Station 215+97.00, Item 203.0600.S.01; Station 257+35.00, Item 203.0600.S.02; Station 49+00.00, Item 203.0600.S.03.

Conform to standard spec 203 as modified in this special provision.

Add the following to standard spec 203:

203.3.6 Removals Over Waterways and Wetlands

203.3.6.2 Removing Old Structure Over Waterway with Minimal Debris

- (1) Remove the existing structures over the following waterways in large sections and conforming to the contractor's approved structure removal and clean-up plan.
 - Station 215+97.00 C-5-54 over the West Branch of the Suamico River
 - Station 257+35.00 over the Unnamed Tributary of the West Branch of the Suamico River
 - Station 49+00.00 C-58-90 over the Unnamed Tributary of the Black Creek

During superstructure removal, prevent all large pieces and minimize the number of small pieces from entering the waterway or wetland. Remove all reinforcing steel, all concrete, and all other debris that falls into the waterway or wetland. The contractor may leave limited amounts of small concrete pieces scattered over the waterway floor or wetland only if the engineer allows.

- (2) Submit a structure removal and clean-up plan as part of the erosion control implementation plan required under standard spec 107.20. Do not start work under the structure removal and clean-up plan without the department's written approval of the plan. Include the following information in the structure removal and clean-up plan:
 - Methods and schedule to remove the structure.
 - Methods to control potentially harmful environmental impacts.

- Methods for superstructure removal that prevent all large pieces and minimize the number of small pieces from entering the waterway or wetlands.
 - Methods to control dust and contain slurry.
 - Methods for removing piers and abutments. If blasting in water, include restrictions that regulatory agencies and the contract require.
 - Methods for cleaning the waterway or wetlands.
- (3) If stockpiling spoil material, place it on an upland site an adequate distance from the waterway, wetland, or any open water created by excavation. Install silt fence between the spoil pile and the waterway, wetland, or excavation site.

Add the following Removing Old Structure bid item to standard spec 203.5.1:

ITEM NUMBER	DESCRIPTION	UNIT
203.0600.S.01	Removing Old Structure Over Waterway With Minimal Debris Station 215+97.00	LS
203.0600.S.02	Removing Old Structure Over Waterway With Minimal Debris Station 257+35.00	LS
203.0600.S.03	Removing Old Structure Over Waterway With Minimal Debris Station 49+00.00	LS

stp-203-020 (20080902)

20. Select Borrow.

Replace standard specification 208.2(2) with the following:

For select borrow excavation furnish material that consists of granular material meeting the requirements for Grade 2, in section standard spec 209.2.

Do not use material obtained from sources of disintegrated granite.
(NCR 208.01-04012016)

21. QMP Base Aggregate.

A Description

A.1 General

- (1) This special provision describes contractor quality control (QC) sampling and testing for base aggregates, documenting those test results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.
- (2) Conform to standard spec 301, standard spec 305, and standard spec 310 as modified here in this special provision. Apply this special provision to material placed under all of the Base Aggregate Dense and Base Aggregate Open Graded bid items, except do not

apply this special provision to material classified as reclaimed asphaltic pavement placed under the Base Aggregate Dense bid items.

- (3) Do not apply this special provision to material placed and paid for under the Aggregate Detours, Breaker Run, Select Crushed, Pit Run, Subbase, or Riprap bid items.
- (4) Provide and maintain a quality control program, defined as all activities related to and documentation of the following:
 1. Production and placement control and inspection.
 2. Material sampling and testing.
- (5) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:
<http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/default.aspx>

A.2 Small Quantities

- (1) The department defines a small quantity, for each individual Base Aggregate bid item, as a contract quantity of 9000 tons or less of material as shown in the schedule of items under that bid item.
- (2) The requirements under this special provision apply equally to a small quantity for an individual bid item except as follows:

A.2.1 Quality Control Plan

- (1) Submit an abbreviated quality control plan consisting of the following:
 1. Organizational chart including names, telephone numbers, current certification(s) with HTCP number(s) and expiration date(s), and roles and responsibilities of all persons involved in the quality control program for material under affected bid items.

A.2.2 Contractor Testing

1.

Contract Quantity	Minimum Required Testing per source
≤ 6000 tons	One stockpile test prior to placement, and two production or one loadout test.
> 6000 tons and ≤ 9000 tons	One stockpile and Three placement tests ^[3] [4] [5]

^[1] Submit production test results to the engineer for review prior to incorporating the material into the work. Production test results are valid for a period of 3 years.

^[2] If the actual quantity overruns 6,000 tons, on the next day of placement perform one randomly selected placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

^[3] If the actual quantity overruns 9000 tons, on the next day of placement perform one randomly selected placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

^[4] For 3-inch material or lift thickness of 3-inch or less, obtain samples at load-out.

- [5] Divide the aggregate into uniformly sized sublots for testing
2. Stockpile testing for concrete pavement recycled in place will be sampled on the first day of production.
 3. Until a four point running average is established, individual placement tests will be used for acceptance. Submit aggregate load-out and placement test results to the engineer within one business day of obtaining the sample. Assure that all properties are within the limits specified for each test.
 4. Material represented by a sublot with any property outside the specification limits is nonconforming. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

A.2.3 Department Testing

- (1) The department will perform testing as specified in B.8 except as follows:
 - Department stockpile verification testing prior to placement is optional for contract quantities of 500 tons or less.

B Materials

B.1 Quality Control Plan

- (1) Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not place base before the engineer reviews and comments on the plan. Construct the project as that plan provides.
- (2) Do not change the quality control plan without the engineer's review. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in each of the contractor's laboratories as changes are adopted. Ensure that the plan provides the following elements:
 1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
 2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication means that will be used, and action time frames.
 3. A list of source and processing locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
 4. Test results for wear, sodium sulfate soundness, freeze/thaw soundness, and plasticity index of all aggregates requiring QC testing. Obtain this information from the region materials unit or from the engineer.
 5. Descriptions of stockpiling and hauling methods.
 6. Locations of the QC laboratory, retained sample storage, and where control charts and other documentation is posted.
 7. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

B.2 Personnel

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

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

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

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

B.3 Laboratory

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

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

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

B.4 Quality Control Documentation

B.4.1 General

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

B.4.2 Records

- (1) Document all placement observations, inspection records, and control adjustments daily in a permanent field record. Also include all test results in the project records. Provide test results to the engineer within one business day after obtaining a sample. Post or distribute tabulated results using a method mutually agreeable to the engineer and contractor.

B.4.3 Control Charts

- (1) Plot gradation and fracture on the appropriate control chart as soon as test results are available. Format control charts according to CMM 8.30. Include the project number on

base placement control charts. Maintain separate control charts for each base aggregate size, source or classification, and type.

- (2) Provide control charts to the engineer within one business day after obtaining a sample. Post or distribute charts using a method mutually agreeable to the engineer and contractor. Update control charts daily to include the following:
 1. Contractor individual QC tests.
 2. Department QV tests.
 3. Department IA tests.
 4. Four-point running average of the QC tests.
- (3) Except as specified under B.8.2.1 for nonconforming QV placement tests, include only QC placement tests in the running average. The contractor may plot process control or informational tests on control charts, but do not include these tests, conforming QV tests, or IA tests in the running average.

B.5 Contractor Testing

- (1) Test gradation, fracture, liquid limit and plasticity index during placement for each base aggregate size, source or classification, and type.
- (2) Perform one stockpile test from each source prior to placement.
- (3) Test gradation once per 3000 tons of material placed or fraction thereof. Determine random sample locations and provide those sample locations to the engineer. Obtain samples after the material has been bladed, mixed, and shaped but before compacting; except collect 3-inch samples or lift thickness of 3-inch or less from the stockpile at load-out. Do not sample from material used to maintain local traffic or from areas of temporary base that will not have an overlying pavement. On days when placing only material used to maintain local traffic or only temporary base that will not have an overlying pavement, no placement testing is required.
- (4) Split each contractor QC sample and identify it according to CMM 8.30. Retain the split for seven calendar days in a dry, protected location. If requested for department comparison testing, deliver the split to the engineer within one business day.
- (5) The engineer may require additional sampling and testing to evaluate suspect material or the technician's sampling and testing procedures.
- (6) Test fracture for each gradation test until the fracture running average is above the lower warning limit. Subsequently, the contractor may reduce the frequency to one test per 10 gradation tests if the fracture running average remains above the warning limit.
- (7) Test the liquid limit and plasticity index for the first gradation test. Subsequently, test the liquid limit and plasticity index a minimum of once per 10 gradation tests.

B.6 Test Methods

B.6.1 Gradation

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

B.6.2 Fracture

- (1) Test fracture conforming to CMM 8.60. The engineer will waive fractured particle testing on quarried stone.
- (2) Maintain a separate fracture control chart for each base aggregate size, source or classification, and type. Set the lower control limit at the contract specification limit, either specified in another special provision or in table 301-2 of standard spec 301.2.4.5. Set the lower warning limit 2 percent above the lower control limit. There are no upper limits.

B.6.3 Liquid Limit and Plasticity

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

B.7 Corrective Action

B.7.1 General

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

B.7.2 Placement Corrective Action

- (1) Do not blend additional material on the roadbed to correct gradation problems.
- (2) Notify the engineer whenever the running average exceeds a warning limit. When two consecutive running averages exceed a warning limit, the engineer and contractor will discuss appropriate corrective action. Perform the engineer's recommended corrective action and increase the testing frequency as follows:
 1. For gradation, increase the QC testing frequency to at least one randomly sampled test per 1000 tons placed.
 2. For fracture, increase the QC testing frequency to at least one test per gradation test.
- (3) If corrective action improves the property in question such that the running average after four additional tests is within the warning limits, the contractor may return to the testing frequency specified in B.5.3. If corrective action does not improve the property in question such that the running average after four additional individual tests is still in the warning band, repeat the steps outlined above starting with engineer notification.
- (4) If the running average exceeds a control limit, material starting from the first running average exceeding the control limit and ending at the first subsequent running average inside the control limit is nonconforming and subject to pay reduction.
- (5) For individual test results significantly outside the control limits, notify the engineer, stop placing base, and suspend other activities that may affect the area in question. The engineer and contractor will jointly review data, data reduction, and data analysis; evaluate sampling and testing procedures; and perform additional testing as required to determine the extent of potentially unacceptable material. The engineer may direct the contractor to remove and replace that material. Individual test results are significantly outside the control limits if meeting one or more of the following criteria:
 1. A gradation control limit for the No. 200 sieve is exceeded by more than 3.0 percent.
 2. A gradation control limit for any sieve, except the No. 200, is exceeded by more than 5.0 percent.
 3. The fracture control limit is exceeded by more than 10.0 percent.

B.8 Department Testing

B.8.1 General

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

B.8.2 Verification Testing

B.8.2.1 General

- (1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel

must meet the same certification level requirements specified in B.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

- (2) The department will conduct QV tests of each base aggregate size, source or classification, and type during placement conforming to the following:
 1. Perform one stockpile test from each source prior to placement.
 2. At least one random test per 30,000 tons, or fraction of 30,000 tons, placed.
- (3) The department will sample randomly, at locations independent of the contractor's QC work, collecting one sample at each QV location. The department will collect QV samples after the material has been bladed, mixed, and shaped but before compacting; except, for 3-inch aggregates or for a lift thickness of 3-inch or less, the department will collect samples at load-out. The department will split each sample, test half for QV, and retain half.
- (4) The department will conduct QV tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.
- (5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to the specification, the department will take no further action. If QV test results are nonconforming, add the QV to the QC test results as if it were an additional QC test.

B.8.3 Independent Assurance

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

B.9 Dispute Resolution

- (1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur,

seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

- (2) Production test results, and results from other process control testing, may be considered when resolving a dispute.
- (3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C (Vacant)

D (Vacant)

E Payment

- (1) Costs for all sampling, testing, and documentation required under this special provision are incidental to this work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the non-performance of QMP administrative item.
- (2) For material represented by a running average exceeding a control limit, the department will reduce pay according to CMM 8-10.6.2 for the affected Base Aggregate bid items listed in subsection A. The department will administer pay reduction under the Nonconforming QMP Base Aggregate Gradation or Nonconforming QMP Base Aggregate Fracture Administrative items. The department will determine the quantity of nonconforming material as specified in B.7.2.

stp-301-010 (20161130)

22. QMP HMA Pavement Nuclear Density.

A Description

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

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

- (2) Provide and maintain a quality control program defined as all activities and documentation of the following:
 1. Selection of test sites.
 2. Testing.
 3. Necessary adjustments in the process.
 4. Process control inspection.
- (3) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required procedures. Obtain the CMM from the department's web site at:
<http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm>
- (4) The department's Materials Reporting System (MRS) software allows contractors to submit data to the department electronically, estimate pay adjustments, and print selected reports. Qualified personnel may obtain MRS software from the department's web site at:
<http://www.atwoodsystems.com/mrs>

B Materials

B.1 Personnel

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

B.2 Testing

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

B.3 Equipment

B.3.1 General

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

information or schedule a time to perform calibration verification, contact the department's Radiation Safety Officer at:

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

B.3.2 Comparison of Nuclear Gauges

B.3.2.1 Comparison of QC and QV Nuclear Gauges

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

B.3.2.2 Comparison Monitoring

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

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

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

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

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

Table 1

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

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

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

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

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

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

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

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

B.4.2.2.2 Width of 5 Feet or Less

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

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

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

B.4.2.4 Documentation

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

B.4.3 Corrective Action

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

B.5 Department Testing

B.5.1 Verification Testing

- (1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will test randomly at locations independent of the contractor's QC work. The department will perform verification testing at a minimum frequency of 10 percent of the sublots and a minimum of one subplot per mix design. The sublots selected will be within the active work zone. The contractor will supply the necessary traffic control for the department's testing activities.
- (2) The QV tester will test each selected subplot using the same testing requirements and frequencies as the QC tester.
- (3) If the verification subplot average is not more than one percent below the specified minimum target density, use the QC tests for acceptance.
- (4) If the verification subplot average is more than one percent below the specified target density, compare the QC and QV subplot averages. If the QV subplot average is within 1.0 lb/ft³ of the QC subplot average, use the QC tests for acceptance.

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

B.5.2 Independent Assurance Testing

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

B.6 Dispute Resolution

- (1) The testers may perform investigation in the work zone by analyzing the testing, calculation, and documentation procedures. The testers may perform gauge 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 subplot density test results or retesting of the subplot in dispute within 48 hours of paving. Traffic control costs will be split between the department and the contractor.
- (4) If investigation finds that both gauges are in error, the contractor and engineer will reach a decision on resolution through mutual agreement.

B.7 Acceptance

- (1) The department will not accept QMP HMA Pavement Nuclear Density if a non-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 according to standard spec 460.5.2.2.

E.3 Incentive for HMA Pavement Density

- (1) The department will administer density incentives according to standard spec 460.5.2.3.

stp-460-020 (20161130)

23. HMA Pavement Leveling Layer.

Standard spec 460.5.2.3 is supplemented with the following:

Any material used for a leveling or wedging layer shall be exempt from pavement density testing requirements, incentive, and disincentive.

The department will provide acceptance of the compacted leveling or wedging layer in accordance with standard spec 450.3.2.6.2.

24. Salvaged Guardrail.

Salvage guardrail in accordance with standard spec 614 at the locations shown on the plans. Guardrail from Project 1058-25-70 will be salvaged for Brown County. Guardrail from Project 6580-11-60 will be salvaged for Shawano County. Stockpile materials separately for each county. The engineer will supply the county contacts and designate the location within the project limits to stockpile materials.

25. Fence Safety, Item 616.0700.S.

A Description

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

B Materials

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

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3 inch max
Resin/Construction:	High density polyethylene mesh

Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction

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

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

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

D Measurement

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

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

stp-616-030 (20160607)

26. Water

Provide the necessary environmental protection against aquatic exotic species control and pathogens if water source(s) is/are from surface waters of the state.
(NCR 624.01-12152015)

27. Sod Water, Item 631.0300.

Replace standard spec 631.3.5(1) with the following:

Under the Sod Water bid item, furnish and apply water to sodded or seeded lawn areas or sensitive areas designated in the plan.

Moisten sodded or seeded areas thoroughly after staking and cleanup.

Keep all sodded or seeded areas thoroughly moist by applying a minimum of 1 inch of water per week, minus applicable rainfall, for a minimum of 30 consecutive days. Do not leave un-watered for more than 3 days unless rainfall is sufficient and the engineer determines it does not require watering. Apply water in a manner to preclude washing or erosion.
(NCR 631.01-12152015-rev)

28. Field Facilities.

Add the following to standard spec 642.3:

Set up the field office within seven days after notice from the project engineer.

Provide a parking area large enough to park a minimum of six cars directly adjacent to the field office. The parking area and approach to the field office shall be well drained and consist of a crushed base aggregate or an existing paved surface and shall be ready for use within seven days after the field office is set up.
(NCR 642.02-04062016)

29. Traffic Control.

Add the following to standard spec 643.3.1:

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.

Provide the engineer, Village of Pulaski Police and Fire Department(s), County Sheriff's Department(s), and the State Patrol District Headquarters responsible for that county the current telephone number(s) the contractor or their representative can be contacted at all times in the event a safety hazard develops. Repair, replace or restore the damaged or disturbed traffic control devices within two hours from the time notified or made aware of the damaged or disturbed traffic control devices.

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.

Lighting devices shall be covered or rendered inoperative when not in use.

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

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.

At no time may stop signs be removed or moved without flag persons present.

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

(NCR 643.01-10152014/NER09-1119 - rev)

30. Nighttime Work Lighting-Stationary.

A Description

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

B (Vacant)

C Construction

C.1 General

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

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

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.
2. Specifications, brochures, and technical data of all lighting equipment to be used.
3. The details on how the luminaires will be attached.
4. Electrical power source information.
5. Details on the louvers, shields, or methods to be employed to reduce glare.
6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.
7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

Provide portable lighting that is sturdy and free standing and does not require any guy wires, braces, or any other attachments. Furnish portable lighting capable of being moved as

necessary to keep up with the construction project. Position the portable lighting and trailers to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment. Provide lightning protection for the portable lighting. Portable lighting shall withstand up to 60 mph wind velocity.

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

C.3 Light Level and Uniformity

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

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

C.4 Glare Control

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

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

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.
2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

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

C.5 Continuous Operation

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

D (Vacant)

E Payment

Costs for furnishing a lighting plan, and for providing, maintaining, moving, and removing portable lighting, tower mounted lighting, and equipment-mounted lighting required under this special provision are incidental to the contract.
stp-643-010 (20100709)

31. Pavement Marking Grooved Wet Reflective Epoxy 4-Inch, Item 646.2304.S.

A Description

This special provision describes furnishing, grooving, and installing wet reflective epoxy pavement marking as shown on the plans, in accordance with standard spec 646, and as hereinafter provided.

B Materials

Furnish a 20 mils application of modified epoxy binder pavement marking, from the Wisconsin's Approved Products List, in a grooved slot. Provide a double drop system of 5.3 pounds per gallon of wet reflective elements from Wisconsin's Approved Products List and Utah Performance beads mixture at a drop rate of 12-22 pounds per gallon.

Replace standard spec 646.2.3 (1) with the following:

Furnish Utah Performance beads with the following gradation:

Utah Bead Gradation

US Mesh	Percent Passing (ASTM D1214)
18	65-80
20	
25	
30	30-50
40	
50	0-5

Beads **shall** achieve a minimum of 275 mcd (dry reading), initial for white and 180 mcd (dry reading) for yellow.

C Construction

C.1 General

For quality assurance, provide the project engineer and the region's Marking Section evidence of manufacturer training in the proper placement and installation of the grooved wet reflective epoxy.

Plane the grooved lines in accordance with details in the plan. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove. Remove lane line and center line pavement markings during the grooving process.

C.2 Groove Depth

Cut the groove to a depth of 80 mils \pm 10 mils from the pavement surface. The department may periodically check groove depths.

C.4 Groove Width – Longitudinal Markings

Cut the groove 1 inch wider than the width of the pavement marking.

C.5 Groove Position

Position the groove edge in accordance with Standard Detail Drawing Pavement Marking (Mainline). If necessary, groove a minimum of 4 inches from both ends of the pavement marking segment. Achieve straight alignment with the grooving equipment.

C.6 Groove Cleaning

C.6.1 Concrete

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

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, and prior to pavement marking application. The groove surface shall be clean and dry before applying the marking. Use a high-pressure air blower with at least 185 ft³/min air flow and 120 psi air pressure to clean the groove.

C. 6.2 Asphalt

Groove pavement five or more days after paving.

If opening to traffic an asphalt lane that is not grooved, place temporary pavement marking. For asphalt lanes not open to traffic, temporary pavement marking is not required.

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

Use a high-pressure air blower with at least 185 ft³/min air flow and 90 psi air pressure to clean the groove.

D Measurement

The department will measure Pavement Marking Grooved Wet Reflective Epoxy (width) bid items by the linear foot of line, acceptably completed.

The department will measure Pavement Marking Grooved Contrast Wet Reflective Epoxy (width) bid items by the linear foot of line, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF

Payment is full compensation for cleaning and preparing the pavement surface; furnishing and installing the epoxy, 3M elements and beads; and for removing existing or temporary marking, if necessary.

stp-646-024 (20161130)

32. Pavement Marking Outfall, Item 646.0805.S.

A Description

This special provision describes furnishing and installing Pavement Marking Outfall according to standard spec 646, as shown on the plans, and as hereinafter provided. Pavement Marking Outfall shall consist of furnishing and installing white non-reflectorized markings of the specified material.

B Materials

Furnish paint that conforms to requirements of standard spec 646.2.2.

C Construction

Apply the paint a minimum thickness of 15 mils and position it on the pavement centered on the centerline of the outfall.

D Measurement

The department will measure Pavement Marking Outfall in place as units.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
646.0805.S	Pavement Marking Outfall	Each

Payment is full compensation for furnishing all materials; preparing the surface; and for applying and protecting the work.

stp-646-035 (20030820)

33. Locating No-Passing Zones, Item 648.0100.

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

stp-648-005 (20060512)

34. Fertilizer for Lawn Type Turf, Item SPV.0030.01.

A Description

This special provision describes furnishing and incorporating fertilizing material in the soil on areas of seeding or sod.

B Materials

Use fertilizers per standard spec 629.2.1.1 (1) and hereinafter provided.

The total of nitrogen, phosphoric acid, and potash shall equal at least 41 percent. At least 80% of the nitrogen shall be water insoluble.

If using fertilizer with a nitrogen, phosphoric acid, and potash total greater than 41 percent, maintain a ratio of 4-1-2 (N-P-K) and apply at a rate that provides the equivalent amount of nitrogen, phosphoric acid, and potash that is provided by a fertilizer with a 41 percent total.

Provide a slow release type fertilizer with a 14-week residual effect after activation into the soil conforming to the following minimum requirements:

Nitrogen,.....	not less than 22%
Phosphoric Acid,.....	not less than 5%
Potash,.....	not less than 10%

C Construction

Uniformly apply the fertilizer to the seeding areas, and incorporate it into the soil by light discing or harrowing. If applying granular fertilizer, ensure it is well pulverized and free from lumps.

If incorporating fertilizer into topsoiled areas, apply it just before, and in conjunction with, final discing or harrowing, or if hand manipulating the topsoil, apply it just before final raking and leveling.

If fertilizing areas to receive sod, spread the fertilizer at the rate specified below uniformly over the soil before placing sod, and then work the fertilizer into the soil while preparing the earth bed as specified in standard spec 631.3.1.

Apply fertilizer containing 41 percent total of nitrogen, phosphoric acid, and potash at 7 pounds per 1000 square feet of area, unless the contract specifies otherwise. For Fertilizer for Lawn Type Turf that contains a different percentage of components, determine the application rate by multiplying the specified rate by a dimensionless factor determined as follows:

Conversion Factor = $41 / \text{New Percentage of Components}$

D Measurement

The department will measure Fertilizer for Lawn Type Turf by the hundred pounds (CWT) acceptably completed, and it will be measured based on an application rate of 7 pounds per 1000 square feet. The department will not measure fertilizer used for the bid items under section 632. The measured quantity equals the number of hundred-weight (CWT) of material

determined by multiplying the actual number of CWT. of material incorporated by the ratio of the actual percentage of fertilizer components used to 41 percent for Fertilizer for Lawn Type Turf.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0030.01	Fertilizer for Lawn Type Turf	CWT

Payment is full compensation for providing, hauling, placing, and incorporating the fertilizer into the soil.

(NCR 629.01-10152014)

35. Reestablish Section Corner Monuments, Item SPV.0060.01.

A Description

This special provision describes reestablishing section corner monuments.

B Materials

Provide one of the following survey monuments for each location: A Berntsen Steel Nail Marker, for placement in asphalt pavement; a Berntsen BP1 Brass Marker with anchoring plug for placement in concrete pavement; or a Berntsen Aluminum Break-Off Monument for placement in locations outside the pavement area.

C Construction

C.1 General

All survey work required to reestablish the survey monument from the reference monuments shall be performed by, or under the direction of, a professional land surveyor. Provide an updated county specified tie sheet(s) to the County Surveyor and the Project Engineer. Provide county coordinates for all ties and monuments shown on the tie sheet(s). Obtain an example of the specified tie sheet(s) from the corresponding County Surveyor.

C.2 Berntsen Steel Nail Marker

Locate the exact position for the monument on the asphalt pavement. Drive the Berntsen Steel Nail Marker into the pavement until the top of the Steel Nail Marker is countersunk below the surrounding finished asphalt pavement as shown on the plan details.

C.3 Berntsen BP1 Brass Marker

Drill a hole in the finished concrete pavement using a Berntsen "Survey Marker Countersink Drill Bit", Item # BPMDDL. Insert the ribbed plastic expansion plug into the drilled hole. Tap the brass marker stem into the expansion plug until the top of the brass marker is countersunk below the surrounding finished concrete pavement as shown on the plan details.

C.4 Berntsen Aluminum Break-off Monument

Install according to the pertinent provisions of standard spec 621.3 for Non-Driven Aluminum Monuments and the plan details.

D Measurement

The department will measure Reestablish Section Corner Monuments by each individual section corner monument acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.01	Reestablish Section Corner Monuments	Each

Payment is full compensation for providing survey monuments; all excavation, backfilling, and drilling necessary to place section corner monuments; furnishing a professional land surveyor and all survey work; and preparing and delivering tie sheets.
(NCR 650.03-04302015)

36. Verify and Replace Existing Property Monuments Project 1058-25-70, Item SPV.0105.01; Project 6580-11-60, Item SPV.0105.02.

A Description

This special provision describes verifying the location of, and replacing existing property monuments, which were previously located under the item “Research and Locate Existing Property Monuments”, that are determined to be lost or disturbed.

This provision does not relinquish the contractor of his responsibility under standard spec 107.11.

B Materials

Provide replacement property monuments that are one-inch inside diameter by 24-inch long iron pipe or ¾-inch diameter iron rod or rebar that are 24 inches long in locations outside of pavement areas, a Berntsen Steel Nail Marker for placement in asphalt pavement, or a Berntsen BP1 Brass Marker with anchoring plug for placement in concrete pavement.

C Construction

After construction is completed, verify the location of all property monuments previously located under the item “Research and Locate Existing Property Monuments”. Replace or reset as necessary, any property monuments that are lost or disturbed.

Prepare a property monument location map showing the type of monuments originally found, and the type of replacement monument used to replace or reset the lost or disturbed monuments, with their coordinates. A legible tax map or right-of-way plat is acceptable as a base map for the property monument location map. The property monument location map shall explicitly state that the replaced or reset monuments are not being certified as an actual property monument, only that evidence of a property monument was found and reset.

Provide a copy of the property monument location map to the engineer and the county surveyor.

All work under this item is to be performed by, or under the direction of, a professional land surveyor registered in the State of Wisconsin.

D Measurement

The department will measure Verify and Replace Existing Property Monuments (Project) 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	Verify and Replace Existing Property Monuments Project 1058-25-70	LS
SPV.0105.02	Verify and Replace Existing Property Monuments Project 6580-11-60	LS

Payment is full compensation for all survey work necessary to verify the location of all property monuments previously located under the item “Research and Locate Existing Property Monuments”; replacing or resetting, as necessary, property monuments that are lost or disturbed from their original location; furnishing property monuments; furnishing a professional land surveyor; preparing, annotating and delivering the property monument location map.

(NCR 650.02-04302015)

37. Research and Locate Existing Property Monuments, Project 1058-25-70, Item SPV.0105.03; Project 6580-11-60, Item SPV.0105.04.

A Description

This special provision describes researching and locating existing property monuments located within permanent easement, temporary easement or construction permit areas, within the construction limits, that may be lost or disturbed by construction operations.

This provision does not relinquish the contractor of his responsibility under standard spec 107.11.

B (Vacant)

C Construction

Prior to construction, research, locate and document the adjacent property monuments located within permanent easement, temporary easement and construction permit areas. Tie the located property monuments in with coordinates accurate to 1:3000 and tied to at least two adjacent section corners that will not be disturbed by any project.

Prepare a property monument location map showing the type of monuments originally found with their coordinates. A legible tax map or right-of-way plat is acceptable as a base map for the property monument location map. Provide a copy of the property monument location map to the engineer and region right of way plat coordinator.

All work under this item is to be performed by, or under the direction of, a professional land surveyor registered in the State of Wisconsin.

After construction is completed property monument locations will be verified and reset, if necessary, under the item titled "Verify and Replace Existing Property Monuments".

D Measurement

The department will measure Research and Locate Existing Property Monuments (Project) 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.0105.03	Research and Locate Existing Property Monuments Project 1580-25-70	LS
SPV.0105.04	Research and Locate Existing Property Monuments Project 6580-11-60	LS

Payment is full compensation for all research, field survey, locating, and recording of field data necessary to locate and determine coordinates for existing property monuments within the construction limits prior to construction; furnishing a professional land surveyor; preparing, annotating and delivering the property monument location map to the engineer. (NCR 650.01-04302015)

38. Preparing Topsoil for Lawn Type Turf, Item SPV.0180.01.

A Description

This special provision describes preparing the bed of topsoil or salvaged topsoil, for seeding or placing sod.

B (Vacant)

C Construction

Prepare and finish the subgrade so that rocks, concrete debris, or wood larger than three inches in diameter are not present within 1 foot of the finished surface of the topsoil.

Remove or break down all clods and lumps in the topsoil by using harrows or discs, screening, or other appropriate methods to provide a uniformly textured soil, in which 100 percent of the topsoil passes a one-inch sieve and at least 90 percent passes a No. 10 sieve.

Remove rocks, twigs, clods, and other foreign material that will not break down, and dress the entire surface to present a uniform appearance.

Shape the topsoil so that the horizontal or sloped surface between any two points ten feet apart does not vary by more than one inch. Roll with a turf type roller to a uniform minimum compacted depth of 6 inches.

Shape and compact the topsoil adjacent to pavements, sidewalks and curbs to 1 inch below the top of the abutting surface. Before seeding, correct locations that vary by more than 1/4-inch.

D Measurement

The department will measure Preparing Topsoil for Lawn Type Turf acceptably completed in area by the square yard.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.01	Preparing Topsoil for Lawn Type Turf	SY

Payment is full compensation for preparing the subgrade and topsoil bed for sod or seed as described above.

(NCR 625.01-04302015)