

Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project ID 3080-09-60, Jefferson – Wales, CTH Y to Gruennert Street, USH 18, Jefferson County, Wisconsin and Project 3080-09-61, Jefferson – Wales, Helenville Rd to W Limit V Sullivan, USH 18, Jefferson County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2019 Edition, as published by the department, and these special provisions.

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

100-005 (20180628)

2. Scope of Work.

The work under this contract shall consist of removing asphaltic surface milling, removing distressed pavement milling, HMA pavement, base aggregate dense, grading, guardrail, erosion control, traffic control, 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.

Provide the start date and time frame for construction of the project within the 2019 construction season to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Assure that the time frame is consistent with the contract completion time. Upon approval, the engineer will issue the notice to proceed within ten calendar days before the approved start date.

To revise the start date and/or time frame, submit a written request to the engineer at least two weeks before the beginning of 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.

Paving Operations

All paving must be completed prior to October 1, 2019

Construct the HMA pavement layer so that a longitudinal cold joint only exists at the centerline of the roadway. Differing height greater than 1/2-inch between adjacent traveled lanes will not be permitted overnight. The milled surface must be paved back in its entirety before concluding work each day.

Pavement Marking Operations

Perform pavement marking operations in the following order unless approved by the engineer:

- Locate No Passing Zones
- Install Temporary Marking Line Epoxy 4-inch on the same day pavement is placed
- Install Marking Line Same Day Epoxy 4-inch on the same day pavement is placed
- Install Marking Line Epoxy 4-inch after the center line rumble strips are installed
- Install Marking Line Grooved Wet Reflective Epoxy 4-inch no more than 5 days after paving

Provide center line pavement marking in all paved areas before opening the work zone to two lane, two way traffic.

Coordination

The contractor shall notify the City of Jefferson Fire and EMS Department(s); Jefferson County Sheriff's Departments; Jefferson School District; Jefferson County Highway Department; Helenville Fire Department; St. Peter's Lutheran Church & School; Sullivan School District; and Jefferson Post Office; 72 hours in advance of the start of work, closures of streets, and prior to traffic control changes. Notifications

must be given by 4:00 PM on Wednesday for any such work to be done on the following Monday. Advance notification as described above is considered incidental to the Traffic Control bid item.

Provide 24-hour contact information, including current telephone number(s), to the engineer, for Jefferson County Sheriff's Office, Town of Jefferson, Town of Sullivan, Village of Sullivan, Jefferson County Highway Department, first responders, and the State Patrol District Headquarters 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.

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), Erin Rieser, at (608) 266-2259, or Erin.Rieser@dot.wi.gov.

The department has contracted with others to cut all trees for this project prior to construction. Remove any downed trees and grub the stumps and any remaining vegetation within the identified grubbing limits.

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 approval letter for the ECIP.

Rusty Patched Bumble Bee (*Bombus affinis*)

The rusty patched bumble bee was listed as endangered by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act, effective March 21, 2017. Construction activities such as grading outside the mowed shoulder area have the potential to impact ground nests and wildflowers that may serve as a food source for the bee. If an active rusty-patched bumblebee nest is encountered in construction areas, contact the WisDOT REC, who will coordinate with USFWS.

Blandings Turtle (*Emydoidea blandingii*)

Blandings Turtles have the potential to inhabit the wetlands located at Duck Creek for Project 3080-09-61. Install amphibian and reptile exclusion fencing in the form of silt fence with turn arounds at the end of each section of silt fence to prevent the turtles from accessing the construction zone. The fencing must be installed prior to the initiation of construction and prior to the species active period. The active period for this species begins on May 19, 2019 and ends on October 16, 2019. Install the amphibian and reptile exclusion fencing in the following manner:

- Fencing must be trenched into the soil at least 4 inches and the soils must be carefully compacted against both sides of the fence for its entire length to prevent animals from passing under the fence.
- Fencing should be installed with turn-arounds at the ends furthest from the wetland habitat and at any access openings needed in the fencing, in order to redirect animals away from openings.
- Fences must be inspected at least twice weekly on non-consecutive days AND after any significant rain event (defined as a ¾ inch downpour or 1.5 inches of rain in any 24-hour period). Repairs to the fencing must be made within 24 hours of the inspection that first noted a fencing breach, such as a broken stake, hole in the fencing material, material pulled away from a stake, and objects, rain, wind or sediment that cause fences to sag which would allow the animals to overtop the fence.
- These fences must be maintained throughout the affected species' entire active period* or until all construction and landscaping activities have been completed, whichever occurs first. If the project continues into more seasons, fencing must be maintained during the animal's active season until project completion.

- Additional sediment control fencing may be required as part of other Department permit conditions.
- Any animals found on the construction side of the fence must be immediately moved unharmed to the non-construction side of the fence.

4. Traffic

Portable Changeable Message Signs (PCMS) for notifying motorists of upcoming road construction shall be in place 7 calendar days prior to any road work. Place one (1) PCMS west of the project limits of Project 3080-09-60 and one (1) PCMS east of the project limits. Place one (1) PCMS west of the project limits of Project 3080-09-61 and one (1) PCMS east of the project limits. The PCMS message shall be:

ROADWORK
STARTING
06/25/19

Maintain through traffic on USH 18 while construction is occurring and keep USH 18 open to two-way traffic at all times, except through the work zone as described below.

Restrict traffic to a single lane within the area of construction operations during daylight, working hours. Limit the single lane restriction to a single continuous length not exceeding 1.5 miles. Maintain an 11-foot lane at all times within the work zone. Complete work using traffic control suitable for moving operations.

If traffic delays become longer than 15 minutes, coordinate with the engineer to limit or alter construction operations to prevent undue inconvenience to the traveling public as specified under standard spec 108.5. The engineer may direct additional action or temporarily suspend work to mitigate recurring delays. The department will not make additional payment or extend contract time for suspensions the engineer directs under this paragraph.

USH 18 is the designated alternate route for IH 90/94. In the event of an emergency type closure on IH 90/94, the engineer may order the contractor to immediately open USH 18 to traffic in both directions. Maintain access for emergency vehicles throughout the length of the project at all times.

Ensure all commercial entrances, private entrances, and field entrances remain accessible at all times, unless the contractor obtains written permission from the property owner 48 hours in advance of closing the access.

Wisconsin Lane Closure System Advance Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

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

5. **Holiday Work Restrictions.**

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying USH 18 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Wednesday, July 3, 2019 to 6:00 AM Monday, July 8, 2019;
- From noon Friday, August 30, 2019 to 6:00 AM Tuesday, September 3, 2019.

stp-107-005 (20050502)

6. **Utilities.**

The contract for Project 3080-09-60 comes under the provision of Administrative Rule Trans 220. The contract for Project 3080-09-61 does not come under the provision of Administrative Rule Trans 220.

stp-107-065 (20080501)

Project 3080-09-60

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

The following utility companies have facilities within the project; however, no adjustments are anticipated:

- Charter Communications – Communications
- City of Jefferson – Sanitary Sewer/Water
- Paetec Communication, LLC – Communications
- TDS Telecom – Communications
- WE Energies – Gas/Petroleum
- Windstream KDL, LLC. - Communications

The following utility companies have facilities in conflict within the project limits requiring adjustments:

AT&T Wisconsin - Communications

The field contact for AT&T Wisconsin's communication line is Carol Anason. She can be reached at (920) 475-2799 or at ca2624@att.com.

AT&T Wisconsin has an underground communication line located within the project limits. The underground communication line located at the USH 18/Christberg Road intersection crosses the proposed beam guard post installation area at Sta. 132+00, 58' Lt. Contact AT&T a minimum 5 days prior to timber beam guard post installation at the USH 18/Christberg Road intersection. AT&T will provide a representative to be present during timber beam guard post installation. Layout beam guard post locations and coordinate with AT&T to confirm no conflicts are present. If it is determined that the underground communication line is in conflict with timber post installation, AT&T will relocate their facility. AT&T anticipates 7 to 10 working days for relocation work during construction.

WE Energies - Electric

The field contact for We Energies electric line is Nicole Smullen. She can be reached at (414) 460-7190 or at Nicole.Smullen@we-energies.com.

WE Energies – Electric has an overhead electric line located throughout the project limits. The power poles located at Sta. 99+45 (28' Lt.) and guy wire located at Sta. 256+35 (25' Rt.) are located within the clear zone and pose a safety hazard requiring relocation. The power poles located at Sta. 303+80 (28' Rt.), Sta. 305+75 (28' Rt.), and Sta. 307+10 (29' Rt.) and guy wire located at Sta. 301+90 (27' Rt.) are located within an urban roadway section and will be allowed to remain, but will have new pole caution

signs installed as a safety mitigation measure due to their close proximity to vehicular traffic. Relocation work including installation of new pole caution signs will be done prior to June 1, 2019.

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The following utility companies have facilities within the project; however, no adjustments are anticipated:

- AT&T Wisconsin – Communication Line
- CenturyLink – Communication Line
- Charter Communications – Communication Line
- Guardian Pipeline – Gas/Petroleum
- Level 3 Communications, LLC – Communication Line
- PaeTec Communications, LLC – Communication Line
- Sprint Communications Co LP – Communication Line
- TDS Metrocom, LLC – Communication Line
- We Energies – Electricity
- We Energies – Gas/Petroleum
- Windstream KDL, LLC – Communication Line

7. Environmental.

Special precautions for oak wilt and emerald ash borer apply to this project.

Jefferson County will cut/prune all oak tree and ash tree species prior to April 1st. Cut/pruned limbs will be removed from project site (by others).

See the DNR webpage at: <http://dnr.wi.gov/topic/foresthealth/oakwilt.html>

Do not move or transport ash material, the emerald ash borer, or hardwood debris (firewood) from Emerald Ash Borer (EAB) quarantined areas to a non-quarantined area without a compliance agreement issued by Wi Department of Agriculture, Trade, and Consumer Protection. Regulated items include cut hardwood (non-coniferous) firewood, ash logs, ash mulch or bark fragments larger than one inch in diameter, or ash nursery stock (DATCP statute 21).

For more information regarding the EAB and quarantine areas please follow the links below.

<http://datcpservices.wisconsin.gov/eab/article.jsp?topicid=20>

<http://datcpservices.wisconsin.gov/eab/articleassets/Recommendations%20to%20reduce%20the%20spread%20of%20EAB.pdf>

Protect and adequately restore all disturbed bank areas as soon as feasible.

Do not use the St. Lawrence Church and Cemetery (contributing resource of the National Register of Historic Places (NRHP) – eligible St. Lawrence Church Historic District) for borrow or waste disposal, or for construction staging operations.

Do not use the St. Lawrence Church and Cemetery (un-catalogued abuts), Christberg Cemetery un-catalogued abuts), and Zion Evangelical Cemetery (un-catalogued abuts) for borrow or waste disposal, or for construction staging operations.

Do not use the St. Peter's Cemetery (un-catalogued abuts) for borrow or waste disposal, or for the staging of personnel, equipment and/or supplies.

8. Environmental Protection.

If dewatering is required, pump water into a properly selected and sized dewatering basin before the clean/filtered water is allowed to enter any waterway or wetland. Do not place dewatering basin in any wetlands. Remove suspended solids and contaminants to the maximum extent practicable. A properly designed and constructed dewatering basin must take into consideration maximum pumping volume

(gpm or cfs) and the sedimentation rate for soils to be encountered. Do not perform dewatering activities in a wetland.

Restrict the removal of vegetative cover and exposure of bare ground to the minimum amounts necessary to complete construction. Protect and restore disturbed soil areas as soon as feasible.

Subsection 107.20 of the standard specifications is supplemented with the following:

Pursue operations in a timely and diligent manner, continuing all construction operations methodically from the initial topsoil stripping operation through the subsequent grading, re-topsoiling, and installation of erosion control devices in order to minimize the period of exposure to possible erosion.

Stockpile spoil material on upland sites an adequate distance from the stream, wetlands and ditchlines and any open water created by excavation. Install filter fabric silt fence between spoil material and the stream and between the entire disturbed area and the waterway.

WDNR mandates that appropriate erosion control measures be applied to borrow and waste areas during and following construction. Following completion of the project, restore borrow and waste areas and properly seed, mulch and protect them from the effects of erosion.

When engaged in roadway cleaning operations, the contractor shall use equipment having vacuum or water spray mechanisms to eliminate the dispersion of particulate matter into the atmosphere. If vacuum equipment is employed, it must have a suitable self-contained particulate collector to prevent discharge from the collector bin into the atmosphere.

Keep all public roadways clean and free from dirt and debris at all times, as designated by the engineer. Provide a self-contained mechanical or air conveyance street sweeper on the project at all times, and dispose of the accumulated material after swiping operations. All street sweeping due to contractor hauling operations is considered incidental to the contract.

Remove all temporary erosion control measures after disturbed areas are stabilized or at the direction of the engineer.

Provide the Erosion Control Implementation Plan (ECIP) 14 days prior to the pre-construction conference. The contractor shall prepare and submit an ECIP for the project, including borrow sites and material disposal sites, in accordance with Wis. Adm. Code Chapter TRANS 401 requirements. The erosion control implementation plan shall supplement information shown on the plans and shall not reproduce it. The erosion control implementation plan will identify how the Contractor intends to implement the project's erosion control plan.

Re-topsoil graded areas, as designated by the engineer, immediately after grading is completed within those areas. Landscape all topsoiled areas as the plan shows or as directed by the engineer within five calendar days after placement of topsoil.

Re-topsoil and install erosion mat in drainage channels within five calendar days of beginning of drainage channel grading, as designated by the engineer.

Do not wash out equipment in drainage ways or direct conduits to waters of the state. Keep slurry out of inlets and drainage ways. Remove all temporary erosion control measures after disturbed areas are stabilized or at the direction of the engineer.

Any spoils generated from beam guard or EAT installation shall be managed properly, as designated by the engineer. Beam Guard or EAT excavation material shall not contaminate the shoulder material or be placed on top of any accepted restored turf area (mulch or erosion mat).

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Wetlands have been identified at the toe of slope in all four quadrants of Box Culvert Structure B-28-55 at Duck Creek extending beyond the length of the guardrail. Wetland impacts must be avoided and/or minimized to the greatest extent practicable.

9. Base Aggregate Dense 3/4-Inch, Item 305.0110.

Add the following to standard spec 301.2.4.3:

Furnish only aggregate classified as crushed stone for Dense 3/4-Inch when used in the top 3 inches of the unpaved portion of the shoulder or for unpaved driveways and field entrances.

swr-305-001 (20170711)

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

A Description

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

B Materials

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

C Construction

C.1 Placement

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

1. Before placing rumble strips, clean the roadway of sand and other materials that may cause slippage.
2. Place one end of the rumble strips 6 inches from the roadway centerline. Extend the strips perpendicular to the direction of travel. Ensure strips lay flat on the roadway surface.
3. Only one series of rumble strips, placed before the first work zone, is required per direction of travel for multiple work zones spaced 1 mile or less apart. Work zones spaced greater than 1 mile apart require a separate series of rumble strips.

C.2 Maintenance

Maintain rumble strips as follows:

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

D Measurement

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

E Payment

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

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

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

stp-643-020 (20161130)

11. 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).

Supplement standard spec 648.32 with the following:

Locate no-passing zones prior to placement of temporary marking line epoxy 4-inch.

12. Removing Inlet Covers, Item SPV.0060.01.

A Description

This special provision describes removing inlet covers.

B (Vacant)

C Construction

Under the removing inlet covers bid item, remove the inlet covers.

D Measurement

The Department will measure Removing Inlet Covers by each individual unit acceptably adjusted in accordance with these specifications.

E Payment

The Department will pay for Removing Inlet Covers at the contract unit bid price as measured above. The unit price shall be full compensation for all labor, tools, equipment, and incidentals necessary to complete the items of work. Payment is also inclusive for hauling and disposing of materials.

13. HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item SPV.0060.02; HMA Percent Within Limits (PWL) Test Strip Density Item SPV.0060.03.

A Description

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

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

B Materials

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

C Construction

C.1 Test Strip

Notify the department at least 5 calendar days in advance of construction of the test strip. On the first day of production for a test strip, produce approximately 750 tons of HMA. (Note: tonnage shall be adjusted to accommodate natural break points in the project.) Test strips shall be located in a section of the roadway to allow a representative rolling pattern (i.e. not a ramp or shoulder, etc.).

C.1.1 Sampling and Testing Intervals

C.1.1.1 Volumetrics

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

During production for the test strip, HMA mixture samples shall be obtained from trucks prior to departure from the plant. Three split samples shall be collected during the production of test strip material. Sampling and splitting shall be in accordance with Appendix A: *Sampling for WisDOT PWL QMP*. These three samples will be randomly selected by the engineer from each *third* of the test strip tonnage (T), excluding the first 50 tons:

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

C.1.1.2 Density

Required field tests include contractor QC and department QV nuclear density gauge tests and pavement coring.

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

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

- pavement core sample

*If the two readings exceed 1.0 lb/ft³ of one another, a third reading shall be conducted in the same orientation as the first reading. [In this event, the engineer will average all three readings, discard the initial of the three readings which falls farthest from the average value and then average the remaining two values to represent the location for the gauge.]

Both QV and QC teams shall have two nuclear density gauges present for correlation at the time the test strip is constructed. The above testing shall be conducted in accordance with Appendix A: *Test Methods & Sampling for PWL QMP HMA Pavements*.

All test reports shall be submitted to the department upon completion, and approved before paving resumes.

C.1.2 Field Tests

C.1.2.1 Density

Daily standardization of gauges on reference blocks and a project reference site shall be performed in accordance with CMM 8-15. A standard count shall be performed for each gauge on the material placed for the test strip, prior to any additional data collection. Nuclear gauge readings and pavement cores shall be used to determine nuclear gauge correlation in accordance with Appendix A. The two to three readings for the five locations across the mat for each of two zones shall be provided to the engineer. The engineer will analyze the readings of each gauge relative to the densities of the cores taken at each location. The engineer will determine the average difference between the nuclear gauge density readings and the measured core densities to be used as a constant offset value. This offset will be used to adjust raw density readings of the specific gauge for the remainder of the project and shall appear on the density data sheet along with gauge and project identification. An offset is specific to the mix and layer, therefore a separate value shall be determined for each layer of each mix placed over a differing underlying material for the project. This constitutes correlation of that individual gauge for the given layer. Two gauges per team are not required to be onsite daily after completion of the test strip. Any data collected without a correlated gauge will not be accepted.

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

Each core 150 mm (6 inches) in diameter shall be taken at locations identified in Section C.1.1.2. Each random core shall be full thickness of the layer placed. Core densities shall be determined in accordance with AASHTO T 166. Thoroughly dry pavement cores in accordance with ASTM D 7227. The target maximum density to be used in determining core density is the average of the three volumetric/mix Gmm values from the test strip multiplied by 62.24 lb/ft³. (In the event mix and density portions of the test strip procedure are separated, the mix portion must be conducted prior to density determination. The target maximum density to determine core densities shall then be the Gmm four-test running average from the end of the previous day's production multiplied by 62.24 lb/ft³.)

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

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

[Exclusions such as shoulders and appurtenances shall be tested in accordance with CMM 8-15. However, all acceptance testing of shoulders and appurtenances will be conducted by the department, and average lot (daily) densities must conform to Table 460-3.]

C.1.3 Laboratory Tests

C.1.3.1 Volumetrics

Obtain random samples according to Appendix A. Obtain HMA mixture samples from trucks at the plant. Perform tests the same day as taking the sample.

Bulk specific gravities shall be determined for cores in accordance with AASHTO T 166. The bulk specific gravity values determined from field cores shall be used to calculate a correction factor (i.e., offset) for each QC and QV nuclear density gauge. The correction factor will be used throughout the remainder of the layer. QC and QV teams may wish to scan with additional gauges at the locations detailed in C.1.1 above, as only gauges used during the test strip correlation phase will be allowed on the remainder of the project.

C.2 Acceptance

C.2.1 Volumetrics

Conform to the following limits based on individual QC and QV test results (tolerances based on initial JMF/mix design):

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

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

QV test results will be determined for air voids and VMA, Gmm, and Gmb, and AC.

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

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

C.2.2 Density

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

TABLE 460-3 MINIMUM REQUIRED DENSITY^[1]

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

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

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

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

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

C.2.3 Test Strip Acceptance

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

The PWL values for air voids and density shall be calculated after determining core densities. An acceptable test strip is defined as the individual PWL value for air voids and density both above 75, and an acceptable gauge-to-core correlation.

If either PWL value for the test strip is below 50, the material is nonconforming and the test strip is unacceptable. Material allowed to remain in place requires another test strip prior to additional paving. If material is removed, a new test strip shall replace the previous one at no additional cost to the department. For simultaneously conducted density and volumetric test strip components, the following must be achieved:

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

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

D Measurement

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

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.02	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH
SPV.0060.03	HMA Percent Within Limits (PWL) Test Strip Density	EACH

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

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

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

Acceptable HMA mixture placed on the project as part of a volumetric or density test strip will be compensated by the appropriate HMA Pavement bid item with any applicable pay adjustments.

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

The department will adjust pay for each test strip as follows:

PAY ADJUSTMENT FOR HMA PAVEMENT AIR VOIDS & DENSITY

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

where,

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

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

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

$$\text{Pay Adjustment} = (PF - 100) / 100 \times (WP) \times (\text{tonnage}) \times (\$65/\text{ton})^*$$

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

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

<u>Parameter</u>	<u>WP</u>
Air Voids	0.5
Density	0.5

Individual Pay Factors for each air voids (PF_{air voids}) and density (PF_{density}) will be determined. PF_{air voids} will be multiplied by the total tonnage produced (i.e., from truck tickets), and PF_{density} will be multiplied by the calculated tonnage used to pave the mainline only (i.e., excluding shoulder) as determined in accordance with CMM 8-15.

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

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

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

bts-PWL Test Strip (20171002)

14. Verify Landmark Reference Monuments, Item SPV.0060.04.

A Description

This special provision describes verifying, restoring, and preserving reference (witness) monuments for existing U.S. public land survey corners.

B Materials

Provide reference monument materials that satisfy Wisconsin Administrative Code Chapter A-E 7.07. The Department will furnish aluminum monument caps if requested.

C Construction

Complete work under the direction of a Registered Land Surveyor in the state of Wisconsin, in accordance with the pertinent requirements of standard spec 621.3 and as follows.

Obtain existing tie sheets from the county surveyor. Locate and verify existing U.S. public land survey corner monuments and reference ties to at least 4 reference monuments. Restore or reestablish missing or damaged reference monuments.

If required, install temporary reference monuments for construction. Provide a temporary tie sheet to the Department and the county surveyor for use by the public during the construction phase of the project and before final monumentation is complete.

Prepare and file final U.S. public land survey monument records in accordance with the Wisconsin Administrative Code Chapter A-E 7.08. Provide a copy to the WisDOT SW Region Madison Survey Coordinator.

D Measurement

The department will measure Verify Landmark Reference Monuments by each U.S. public land survey corner acceptably verified, tied and preserved.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.04	Verify Landmark Reference Monuments	EACH

Payment is full compensation for obtaining existing tie sheets; for locating and preserving corner monuments; for locating, verifying, restoring and preserving reference monuments; for providing reference monument materials; for temporary reference monuments; and for preparing and filing final monument records.

Restoring or reestablishing missing or damaged survey corners will be considered extra work. Replacing survey corners damaged due to construction operations is incidental to the contract.

(SWR 621.03-20171023)

15. Profile Curb Cut, Item SPV.0090.01.

A Description

This special provision describes providing a sawcut at the flow line of existing curb or curb and gutter in order to remove the existing curb head as shown on the plans and as hereinafter provided. Perform this work in accordance to standard spec 690, the construction details and hereinafter provided.

B Materials

Furnish materials that are in accordance to the pertinent requirements of standard spec 690.

C Construction

Perform this work in accordance to the construction details and standard spec 690.

D Measurement

The department will measure Profile Curb Cut by the linear foot, acceptably completed, measured along the existing face of curb.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.01	Profile Curb Cut	LF

Payment is full compensation for Profile Curb Cut including; excavation, removal and disposal of the existing curb head and sludge.

swr-690-001 (20160601)

16. Removing Distressed Pavement Milling, Item SPV.0180.01.

A Description

This special provision describes the removal and disposal of additional 2-inches of asphaltic pavement by milling in areas of distressed pavement. This will be completed in spot locations throughout the project as directed by the engineer.

B (Vacant)

C Construction

C.1 Milling

Use a milling machine designed and constructed for milling pavements without tearing or gouging the underlying surface. Space the teeth on the drum to mill a surface finish that is acceptable to the engineer. Shroud the machine to prevent discharge of any loosened material into adjacent work areas or live traffic lanes. Equip the machine with electronic devices that provide accurate depth, grade, and slope control, and an acceptable dust control system.

The milling operation is to be done in a manner to prevent damage to the remaining pavement. It should result in a reasonably uniform plane surface free of excessively large scarification marks, and with the uniform transverse slope required on the plans or directed by the engineer.

Any milled surface will not be allowed during nonworking hours. Windrowing or storing of the removed milled asphaltic pavement on the road is only permitted in connection with the continuous removal and pick-up operation. During nonworking hours, clear the road of all materials and equipment.

The removed material shall become the property of the contractor. Properly dispose of it in accordance with section 204 of the standard specifications.

C.2 Cleaning

Clean the milled surface by removing all dust, dirt, debris, or other foreign or loose material.

C.3 Pavement Prep

The cleaned milled surface will have Tack Coat applied and be filled with Asphaltic Surface.

D Measurement

The department will measure Removing Distressed Pavement Milling by the square yard, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.01	Removing Distressed Pavement Milling	SY

Payment is full compensation for removing the asphaltic surface; cleaning the milled surface; properly disposing of all materials; and for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work. Tack Coat and Asphaltic Surface will be paid for separately.

swr-204-006 (20180824)

17. Extra Depth HMA Pavement, Item SPV.0195.01.

A Description

This special provision describes furnishing and placing HMA mixture in the Extra Depth Milling locations.

B Materials

Furnish HMA that is according to the pertinent requirements of standard spec 460.2. Use HMA Pavement 4 LT 58-28 S mixture.

C Construction

Place the mixture in a single 2-inch compacted layer in areas of extra depth milling. Construct conforming to standard spec 460.3.

D Measurement

The department will measure Extra Depth HMA Pavement by the ton acceptably completed using the methods specified in standard spec 460.4.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.01	Extra Depth HMA Pavement	TON

Payment is full compensation for providing HMA mixture designs; for preparing foundation; for furnishing, preparing, hauling, mixing, placing, and compacting mixture; for QMP testing and aggregate source testing; for warm mix asphalt additives or processes; and for all materials except asphaltic materials.