Wisconsin Department of Transportation

Division of Transportation Systems Development
Bureau of Project Development
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February 2, 2021

NOTICE TO ALL CONTRACTORS:

Proposal #27

1180-00-75, WISC 2021 184
Brule - Ino
CTH A to CTH E
USH 2
Bayfield County

1180-00-78, WISC 2021 185
Brule - Ino
CTH A to CTH E
USH 2
Bayfield County

8347-01-70, WISC 2021 189
T Iron River, Pedestrian Imprvmnts
USH 2 and Bohn Street Sidewalks
Non Hwy
Bayfield County

8347-01-71
Town of Iron River, USH 2 Watermain
CTH A (South) to Front Street
USH 2
Bayfield County

Letting of February 9, 2021

This is Addendum No. 01, which provides for the following:

Special Provisions:

Revised Special Provisions	
Article No.	Description
6	Utilities
10	Notice to Contractor – Contamination Beyond Construction Limits.

Added Special Provisions	
Article No.	Description
61	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S
62	HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item 460.0105.S; HMA Percent Within Limits (PWL) Test Strip Density Item 460.0110.S.
63	HMA Pavement Percent Within Limits (PWL) QMP
64	Appendix A

Schedule of Items:

Added Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	Ton	0	250	250

Plan Sheets:

1180-00-75 Revised Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
35	Miscellaneous Quantities (added one pay item)
36	HMA PWL Mixture Acceptance Table (revised quantities)

8347-01-71 Revised Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of why sheet was added)
23	Miscellaneous Quantities (added one pay item)

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

Addendum No. 01

180-00-75/78, 8347-01-70/71

February 2, 2021

Special Provisions

6. Utilities.

Replace entire article language with the following:

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

PROJECTS 1180-00-75 and 1180-00-78

Projects 1180-00-75 and 1180-00-78 come under the provisions of Administrative Rule Trans 220.

Bayfield Electric Cooperative (Electricity) has existing overhead and buried electric facilities running sub parallel to USH 2 throughout the length of the project but only directly adjacent to the north side of USH 2 between Primrose Lane and East Long Lake Road, and adjacent to the south side of USH 2 between 1,000 feet west of Haviar Road and the end of the project. Several overhead and underground USH 2 crossings exist within the project limits.

Overhead lines along the south side of USH 2 between Haviar Road and the end of the project are in the vicinity of culvert work taking place near Station 2128+43, 2136+74, 2868+10, 2186+70, 2203+45 and 2208+74. No conflicts are anticipated.

Dahlberg Light and Power (Electricity) has existing overhead electric facilities entering the project limits near Lea Street that run along the north side of USH 2 until Station 1604+75. Overhead lines also cross near Station 1568+75, 1578+80, 1581+00, 1584+35, 1587+85, 1591+00, 1591+20, 1591+70, and 1604+10. No conflicts are anticipated.

Iron River Sewer District #1 (Sewer) has existing sanitary sewer that approaches USH 2 from the north down Lea Street; this line runs east along USH 2 north and beyond the north curb line between Station 1579+00 LT and 1580+75 LT. Iron River Sewer District # 1 also has sanitary sewer running below the eastbound shoulder from Station 1579+35 RT to 1593+15 RT and from Station 1579+70 to approximately Front Street near Station 1609+00 where the footprint of USH 2 begins to narrow and the sanitary is no longer below the roadway. Sanitary sewer crossings below USH 2 are present at George Street, Bohn Street and CTH H and for the numerous service lines that extend to adjacent properties.

Adjusting sanitary manhole covers within mill and overlay areas shall be done by the contractor in accordance with Adjusting Manhole Covers, Item 611.8110. Sanitary lines are adjacent to storm sewer inlet, catch basin, and culvert pipe work as well as spot curb and gutter replacement. No conflicts are anticipated.

Iron River Sewer District #1 (Water) has existing water lines that run below the westbound USH 2 from Lea Street to approximately Front Street near Station 1609+00 where the footprint of USH 2 begins to narrow and

the water line is no longer below the roadway. The water line continues in the north USH 2 right-of-way until Fire Lake Road where it turns north and away from USH 2. Water line crossings below USH 2 are present at CTH A, Main Street, George Street, Civic Center Drive, CTH H and North Shore Drive. Numerous service lines extend from the water main to adjacent properties and fire hydrants. See the local project 8347-01-71 Town of Iron River, USH 2 Watermain between CTH A (South) to Front Street for improvements planned for water facility ahead of this project.

Adjusting water valves within mill and overlay areas and ADA curb ramp areas shall be done by the contractor in accordance with Adjusting Water Valves, Item SPV.0060.03. Water lines are adjacent to storm sewer inlet, catch basin, and pipe work as well as spot curb and gutter replacement and ADA curb ramp work. No conflicts are anticipated.

Merit Network (Communication Line) has existing underground fiber optic facilities running parallel to USH 2 within the north right-of-way from the beginning of the project until the east side of the intersection of USH 2 with Jackman Lake Rd and Wayside Rd near Station 1658+00. At this location, the buried fiber optic facility crosses USH 2 to the south right-of-way and continues east along the project, then beyond the end of the project limits.

Merit Network, Inc.'s buried facilities are near work that will be performed with the project including but not limited to the locations listed below.

- Station 1579+35 LT – curb and gutter replacement in the NE quadrant of the USH 2 and Lea St. intersection will take place above the buried fiber optic;
- Station 1582+25 LT – curb ramp replacement in the NW quadrant of the USH 2 and Main St. intersection will take place above the buried fiber optic;
- Station 1583+00 LT – curb ramp replacement in the NE quadrant of the USH 2 and Main St. intersection will take place above buried fiber optic;
- Station 1586+00 LT – curb and gutter replacement in the NW quadrant of the USH 2 and George St. intersection will take place above the buried fiber optic;
- Station 1586+50 LT – curb ramp replacement in the NE quadrant of the USH 2 and George St. intersection will take place above the buried fiber optic;
- Station 1589+30 LT – curb and gutter replacement in the NW quadrant of the USH 2 and Bohn St. intersection will take place above the buried fiber optic;
- Station 1590+00 LT – curb and gutter replacement in the NE quadrant of the USH 2 and Bohn St. intersection will take place above the buried fiber optic;
- Station 1597+00 LT – a storm sewer culvert and apron end wall will be replaced north and adjacent to the fiber optic line;
- Station 1603+83 LT – a storm sewer inlet will be replaced with a new catch basin south and adjacent to the fiber optic line in the NW quadrant of the USH 2 and CTH A intersection. Spot curb and gutter replacement will also be taking place in this area;
- Station 1604+50 LT – curb and gutter replacement in the NE quadrant of the USH 2 and CTH A intersection will take place above the buried fiber optic;
- Station 1608+00 LT – curb and gutter replacement in the NW and NE quadrants of the USH 2 and Front St. intersection will take place above the buried fiber optic;
- Station 1650+28 LT – Cleaning Culvert Pipes Full;
- Station 1663+12 RT – Cleaning Culvert Pipes Minimal, tie apron end wall;
- Station 1678+89 RT – Cleaning Culvert Pipes Minimal;
- Station 1735+90 RT – spot curb and gutter replacement in intersection radius;
- Station 1740+56 RT – reset culvert apron end wall and 1 segment of pipe, tie last 2 segments of pipe, Cleaning Culvert Pipes Minimal;
- Station 1798+00 to 1799+00 RT – medium riprap being placed in ditch over fiber optic;

- Station 1870+66 to 1881+03 RT – spot replacement of 50’ of beam guard replacement;
- Station 1897+00 to 1897+75 RT – light riprap being placed in ditch over fiber optic;
- Station 1910+00 to 1912+00 RT – spot locations of light riprap placement on slopes;
- Station 1925+00 RT – light rip rap placement in ditch/slope over fiber optic line;
- Station 1945+00 to 1950+00 RT slope repair and light riprap placement on slope;
- Station 1961+88 to 1970+13 RT – beam guard replacement and Energy Absorbing Terminal (EAT) grading;
- Station 1975+00, 1977+00, 1980+00 RT – slope repair and light riprap placement on slope;
- Station 2009+04 RT – reset culvert apron end wall and 1 segment of pipe, tie last 2 segments of pipe, Cleaning Culvert Pipes Minimal;
- Station 2021+40 RT – tie apron end wall, Cleaning Culvert Pipes Minimal;
- Station 2043+00 and 2046+00 RT – slope repair and light rip rap placement;
- Station 2067+94 RT – reset culvert apron end wall and 1 segment of pipe, tie last 2 segments of pipe, Cleaning Culvert Pipes Minimal;
- Station 2128+43 RT – North Fish Creek Tributary pipe culvert liner and medium riprap at culvert apron end wall in close proximity to fiber optic;
- Station 2136+74 RT – reset culvert apron end wall and 1 segment of pipe, Cleaning Culvert Pipes Minimal;
- Station 2168+10 RT – reset culvert apron end wall and 3 segments of pipe, tie last 3 sections, Cleaning Culvert Pipes Minimal;
- Station 2186+70 RT – new culvert apron end wall, Cleaning Culvert Pipes Minimal;
- Station 2203+45 RT – new culvert apron end wall, Cleaning Culvert Pipes Minimal;
- Station 2208+74 RT – new culvert apron end wall, Cleaning Culvert Pipes Minimal;

No conflicts are anticipated; however, due to the proximity of their facilities relative to project work, Merit Network, Inc. has requested to be notified prior to ground disturbing activities at specific locations. Upon notification Merit Network, Inc. will arrange for a representative be on site to stake their facilities prior to and monitor their facilities during ground disturbing activities. Notify Merit Network, Inc. prior to excavation activities at the following locations:

- Station 1603+83 LT – for removal of the existing storm sewer inlet and placement of the new catch basin located south and adjacent to the fiber optic line in the NW quadrant of the USH 2 and CTH A intersection.
- Station 1663+12 RT – for Cleaning Culvert Pipes Minimal and apron end wall work;
- Station 1740+56 RT – for resetting the culvert apron end wall and pipe segment, to access pipe segments for tying and Cleaning Culvert Pipes Minimal;
- Station 1798+00 to 1799+00 RT – for medium riprap placement in the ditch;
- Station 1897+00 to 1897+75 RT – for light riprap placement in ditch;
- Station 1925+00 RT – for light rip rap placement in ditch and on slope;
- Station 1945+00 to 1950+00 RT – for slope repair and light riprap placement on slope;
- Station 2203+45 RT – for placement of new culvert apron end wall and Cleaning Culvert Pipes Minimal.

Chequamegon Communications dba Norvado (Communication Line) has existing underground fiber optic facilities running parallel to USH 2 from Station 1601+00 to 1603+75 LT within the Town Iron River. North-south crossings are also present within the Town of Iron River near Station 1580+90, 1584+50 and 1603+90. In rural the rural portion of the project, Norvado has buried fiber optic running parallel to USH 2 on either the north or south side from District Avenue near Station 1613+00 to the end of the project; the

exception to this is between Station 1953+00 and 2080+00 where Norvado facilities follow the Tri-County Corridor to the north and do not have facilities within project limits through that segment.

Norvado's buried fiber optic facilities are below or adjacent to work that will be performed with the project including but not limited to the locations listed below. Depths to Norvado's cables from the existing ground surface are approximate; to determine actual depth, hand dig to expose cables.

- Station 1580+95 RT – replacement of curb and gutter. The fiber optic is approximately 40" below the existing surface;
- Station 1584+50 LT & RT – replacement of curb and gutter. The fiber optic is approximately 36" below the existing surface;
- Station 1603+90 LT – excavation for storm sewer inlet removal, catch basin installation and curb and gutter replacement. The fiber optic is approximately 36" below the existing surface;
- Station 1650+28 LT – Cleaning Culvert Pipes Full. The fiber optic is approximately 36" below the existing surface;
- Station 1663+12 LT – resetting of culvert apron end wall and 1 segment of pipe, tying last 2 segments of pipe, Cleaning Culvert Pipes Minimal. The fiber optic is approximately 36" below the existing surface;
- Station 1678+89 LT – Cleaning Culvert Pipes Minimal. The fiber optic is approximately 30" below the existing surface;
- Station 1798+00 to 1800+00 LT – installation of medium riprap in ditch;
- Station 1821+19 to 1828+10 LT – replacement of 50' of beam guard;
- Station 1842+00 to 1852+00 LT – replacement of beam guard and EAT grading;
- Station 1870+00 to 1877+00 LT – installation of light riprap on slope;
- Station 1897+00 to 18+75 RT – installation of light riprap in ditch over fiber optic;
- Station 1910+00 to 1912+00 RT – installation of spot locations of light riprap placement on slopes;
- Station 1925+00 RT – installation of light rip rap ditch/slope over fiber optic line;
- Station 2128+43 RT – installation of North Fish Creek Tributary pipe culvert liner and medium riprap at culvert apron end wall in close proximity to fiber optic;
- Station 2136+74 RT – resetting of culvert apron end wall and 1 segment of pipe, Cleaning Culvert Pipes Minimal;
- Station 2168+10 RT – resetting of culvert apron end wall and 3 segments of pipe, tying last 3 sections, Cleaning Culvert Pipes Minimal;
- Station 2186+70 RT – installation of new culvert apron end wall, Cleaning Culvert Pipes Minimal. The fiber optic is approximately 48" below the existing surface;
- Station 2203+45 RT – installation of new culvert apron end wall, Cleaning Culvert Pipes Minimal. The fiber optic is approximately 60" below the existing surface;
- Station 2208+74 RT – installation of new culvert apron end wall, Cleaning Culvert Pipes Minimal. The fiber optic is approximately 48" below the existing surface;

No conflicts anticipated.

Peninsula Fiber Network (Communication Line) has existing underground communication facilities along the south side of USH 2 near Hart Lake Rd at approximately Station 1709+00 RT and near Finger Lake Road (FR-223) at approximately Station 2036+00 RT. No conflicts are anticipated.

Xcel Energy (Gas/Petroleum) has existing buried gas main on the north side of USH 2 from Station 1587+95 to 1602+50 and along the south side of USH 2 from Station 1600+50 to approximately Station 1623+00. At Station 1623+00, the gas main ties into a north-south gas main, crosses to the north side of USH 2 and continues east to

approximate Station 1629+00. Buried gas main or service line crossings are located below USH 2 near Stations 1580+85, 1584+45, 1587+95, 1591+25, 1598+20, 1601+00, 1608+40, 1620+40 and 1622+00.

Existing buried gas main or service lines are present below curb and gutter replacement and adjacent to storm sewer work at the following locations:

- Station 1580+85 RT – buried gas line runs below curb and gutter replacement;
- Station 1587+95 LT & RT – buried gas line runs below curb and gutter replacement;
- Station 1589+25 LT – buried gas line runs below curb and gutter replacement;
- Station 1590+00 LT – buried gas line runs below curb and gutter replacement;
- Station 1591+30 RT – buried gas line runs below curb and gutter replacement;
- Station 1596+50 to 1597+00 LT – buried gas line south and adjacent to storm sewer culvert pipe replacement;
- Station 1601+00 RT – buried gas line runs below curb and gutter replacement;
- Station 1604+00 RT – buried gas line adjacent to excavation required for existing storm sewer inlet removal and placement of a new catch basin;
- Station 1604+50 RT – buried gas line below curb and gutter replacement;
- Station 1604+54 RT – buried gas line adjacent to excavation require for new storm sewer inlet;
- Station 1604+82 RT – buried gas line adjacent to excavation required for storm sewer catch basin reconstruction;
- Station 1608+37 LT & RT – buried gas line below curb and gutter replacement;

No conflicts are anticipated with the existing gas facilities.

Although Xcel Energy is not relocating due to potential conflicts with the project, Xcel Energy is planning to replace existing gas main and services between Station 1587+95 and 1608+40 during construction. Where feasible, these new gas facilities will be directionally bored; the gas main and services will be installed a minimum of 24 inches below ground surface within the right-of-way and a minimum of 30 inches when crossing below USH 2 and intersecting sideroads. Once the newly installed gas main and services are operational, the replaced facilities will be discontinued. Coordinate with Xcel Energy (gas) to determine discontinued or active status of their gas facilities in areas of planned excavation. Below is a summary of the replacement work being planned by Xcel Energy.

- New gas main will be constructed in the north right-of-way between Station 1587+97 and 1608+40. From Station 1578+79 to CTH A, the new main will generally be located 10’ north of the existing back of curb and north of the new poles being relocated by Dahlberg Light and Power Co. for project 8347-01-70. Between CTH A and Front Street, the gas main will run below the new sidewalk.
- The existing north-south gas main crossing below USH 2 near Station 1591+25 will be replaced.
- The existing north-south gas main crossing below USH 2 near Station 1601+00 will be discontinued.
- The existing north-south gas main crossing below USH 2 near Station 1608+40 will be replaced.
- The service line at Station 1598+20 will remain and be connected to the new main in the north USH 2 right-of-way;

- All existing east-west gas main and service lines in the south USH 2 right-of-way between Station 1600+50 and 1623+00 will be discontinued. New services for the impacted properties will be connected to a new main being installed within the alleyway and Mill Street located south of USH 2.

The anticipated start date for Xcel Energy's work is planned for April 1, 2021, however, the actual start date will depend on frost conditions. Xcel Energy estimates the gas main and service line work will take five to seven weeks to complete.

Coordinate project construction activities with Xcel Energy and their representatives during their facility replacement work.

Project 8347-01-70

Project 8347-01-70 does not come under the provisions of Administrative Rule Trans 220.

Chequamegon Communications dba Norvado – Communication Line

Chequamegon Communications dba Norvado has underground fiber optic facilities that cross USH 2 approximately at Station 1580+90, Station 1584+50, and Station 1603+90. No conflicts are anticipated with these facilities.

Contact Chequamegon Communications dba Norvado (3) business days prior to working in these areas so they can have representative available to perform electronic depth soundings during construction to avoid any damage to their facilities.

Dahlberg Light and Power – Electricity

Dahlberg Light and Power has overhead electric and power poles along the north side of USH 2 and various overhead crossings throughout the project limits.

Conflicts are anticipated with power poles located on the north side of USH 2 in the existing terrace from CTH A to George Street. Additional power poles are located on the north side of USH 2 at Station 1587+90, Station 1589+30, Station 1590+85, Station 1591+15, Station 1592+05, Station 1593+55, Station 1595+00, Station 1596+30, Station 1598+00, Station 1599++50, Station 1601+10, Station 1602+55, Station 1603+80, and Station 1604+60. An additional conflict exists on Bohn Street at Station 21+50, LT with the proposed storm sewer.

Dahlberg Light and Power will replace their facilities at existing locations between CTH A and George Street concurrent with construction operations under this contract.

Dahlberg Light and Power will relocate their remaining power poles in conflict to a typical location of 2.5 feet behind proposed sidewalk prior to construction operations.

Iron River Sanitary District #1 – Sanitary Sewer

Iron River Sanitary District #1 has underground sanitary facilities within the USH 2 roadway and numerous crossings throughout the project limits. No impacts are anticipated.

Iron River Sanitary District #1 – Water

Iron River Sanitary District #1 has underground water facilities within the USH 2 roadway and numerous crossings throughout the project limits. See Project 8347-01-71 for water utility work plans.

Merit Network, Inc. – Communication Line

Merit Network, Inc. has underground fiber optic facilities along the north side of USH 2 roadway throughout the project limits. No conflicts are anticipated with these facilities.

Contact Merit Network, Inc. three business days prior to working in these areas so they can have representative available.

Xcel Energy – Gas/Petroleum

Refer to the section titled "Xcel Energy (Gas/Petroleum) under Projects 1180-00-75/78 portion of the utility article for existing Xcel gas facility locations and planned relocations.

No conflicts are anticipated with the existing gas facilities.

Coordinate with Xcel Energy before placing any sidewalk or curb above any new tie-ins.

Project 8347-01-71

Project 8347-01-71 does not come under the provisions of Administrative Rule Trans 220.

Chequamegon Communications dba Norvado – Communication Line

Chequamegon Communications dba Norvado has underground fiber optic facilities that cross USH 2 approximately at Station 1580+90, Station 1584+50, and Station 1603+90. No conflicts are anticipated with these facilities.

Contact Chequamegon Communications dba Norvado (3) business days prior to working in these areas so they can have representative available to perform electronic depth soundings during construction to avoid any damage to their facilities.

Dahlberg Light and Power – Electricity

Dahlberg Light and Power has overhead electric and power poles along the north side of USH 2 and various overhead crossings throughout the project limits. No conflicts are anticipated with these facilities.

Iron River Sanitary District #1 – Sanitary Sewer

Iron River Sanitary District #1 has underground sanitary facilities within the USH 2 roadway and numerous crossings throughout the project limits. No impacts are anticipated.

Iron River Sanitary District #1 – Water

Iron River Sanitary District #1 has underground water facilities within the USH 2 roadway and numerous crossings throughout the project limits. Adjustments to water utility facilities shall occur concurrent with construction operations under this project. No other impacts are anticipated.

Merit Network, Inc. – Communication Line

Merit Network, Inc. has underground fiber optic facilities along the north side of USH 2 roadway throughout the project limits. No conflicts are anticipated with these facilities.

Contact Merit Network, Inc. three business days prior to working in these areas so they can have representative available.

Xcel Energy – Gas/Petroleum

Refer to the section titled "Xcel Energy (Gas/Petroleum) under Projects 1180-00-75/78 portion of the utility article for existing Xcel gas facility locations and planned relocations.

No conflicts are anticipated with the existing gas facilities.

Coordinate project construction activities with Xcel Energy and their representatives during their facility replacement work.

10. Notice to Contractor – Contamination Beyond Construction Limits.

Replace paragraph two with the following:

The contaminated soils at the above sites are expected to be beyond the excavation limits necessary to complete the work under this project except those noted in a separate special provision titled "Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S." Control construction operations at these locations to ensure that they do not extend beyond the excavation limits indicated in the plans. If contaminated soils are encountered at these sites or elsewhere on the project during excavation, terminate excavation in the area and notify the engineer.

61. Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S.

A Description

A.1 General

This special provision describes excavating, loading, hauling, treatment and disposing of petroleum contaminated soil at a DNR approved bioremediation and disposal facility. The closest DNR approved disposal facility is

Superior City Landfill
Moccasin Mike Road
Superior, WI 54880

Vonko V Waste Campus
1100 West Gary Street
Duluth, MN 55808

Waste Management Timberline Trail RDF
N4581 Hutchinson Road
Weyerhaeuser, WI 54895

Performing this work in accordance to standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

A.2 Notice to the Contractor – Contaminated Soil Locations

The department completed testing for soil and groundwater contamination for locations within this project where excavation is required. Contaminated soil is potentially present at the following locations:

1. **Site 2 (Former gas station):** Station 1579+50 to 1580+00, from the reference line to limits on RT.
2. **Site 3 (Former Gas Station) –** Station 1581+80 to 1582+10, from reference line to limits on RT.
3. **Site 4 (Gas Pumps) –** Station 1585+30 to 1585+60, from reference line to limits on LT.

Contaminated soils and/or underground storage tanks (USTs) may be encountered at other locations within the construction limits. If contaminated soils and/or USTs are encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer and the environmental consultant. Contaminated soil at other locations shall be managed by the contractor under this contract. UST,s will be removed by others.

For further information regarding previous investigation and remediation activities at these sites contact:

Name: Daniel Haak
Address: TRC Environmental Corporation
708 Heartland Trail, Suite 3000, Madison, WI 53717
Phone: (608 826-3628
Fax: (608) 826-3941
e-mail: dhaak@trccompanies.com

A.3 Coordination

Coordinate work under this contract with the environmental consultant retained by the department:

Consultant: TRC Environmental Corporation
Address: 708 Heartland Trail, Suite 3000, Madison, WI 53717
Contact: Daniel Haak
Phone: (608 826-3628
Fax: (608) 826-3941
e-mail: dhaak@trccompanies.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be hauled to the disposal facility;
3. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil from the disposal facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Also notify the environmental consultant at least three calendar days before beginning excavation activities in each of the contaminated areas.

Identify the DNR approved disposal facility that will be used for disposal of contaminated soils and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation activities in the contaminated areas or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals for disposal of contaminated soils from the disposal facility.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated areas. Perform excavation work in each of the contaminated areas on a continuous basis until excavation work is completed. Do not transport contaminated soil or pump contaminated ground water offsite without prior approval from the environmental consultant.

A.4 Protection of Groundwater Monitoring Wells

Groundwater monitoring wells may be present within the construction limits. Protect all groundwater moinitor8ing well s to maintain their integrity. Adjust wells that do not conflict with utilities, structures, curb and gutter, etc. to be flush with the final grade. For wells that conflict with the previously mentioned items, notify the environmental consultant, and coordinate with the environmental consultant for the abandonment

or adjustment of the wells by others. The environmental consultant will provide maps indicating the locations of all known monitoring wells, if requested by the contractor.

A.5 Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of contaminated material. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR's concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding the investigations, including waste characterization within the project limits, contact Aaron Gustafson with the department, at (715) 817-0407.

A.6 Health and Safety Requirements

Add the following to standard spec 107.1 of the Standard Specifications is supplemented with the following:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products; polycyclic aromatic hydrocarbons; and metals. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer before the start of work.

Disposal of contaminated soil at the disposal facility is subject to the facility's safety policies.

B (Vacant)

C Construction

Supplement standard spec 205.3 with the following:

The environmental consultant will periodically examine excavated soil during excavations in the areas of known soil contamination within the construction limits.

Control operations in the contaminated areas to minimize the quantity of contaminated soil excavated and to ensure that the excavations do not extend beyond the minimum required to construct utilities and highway improvement unless expressly directed to do so by the engineer.

The environmental consultant will periodically evaluate soil excavated from the contaminated areas to determine if the soil will require offsite disposal or can be beneficially re-used on-site. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

On the basis of the results of such field-screening, the material will be designated for disposal as follows:

- Excavation Common consisting of clean soil and/or clean construction and demolition fill (such as clean soil, boulders, concrete, reinforced concrete, bituminous pavement, bricks, building stone, and unpainted or untreated wood), which under NR 500.08 are exempt materials, or
- Low-level contaminated material for reuse as fill within the construction limits, or
- Contaminated soil for off-site treatment and disposal at the WDNR licensed disposal facility, or
- Potentially contaminated for temporary stockpiling and additional characterization prior to disposal

Some material may require additional characterization prior to disposal. Provide for the temporary stockpiling of up to 100 cubic yards of contaminated soil on-site that require additional characterization. Construct and maintain a temporary stockpile of the material in accordance with NR 718.05(3), including, but

not limited to, placement of the contaminated soil/fill material on an impervious surface and covering the stockpile with impervious material to prevent infiltration of precipitation. The Department/s environmental consultant will collect representative samples of the stockpiled material, laboratory -analyzed the samples, and advise the contractor, within 10 business days of the construction of the stockpile, of disposal requirements. The stockpiled material shall be disposed either at the WDNR-licensed disposal facility by the contractor or, if characterized as hazardous waste, by the Department. As an alternative to temporarily stockpiling contaminated soil/fill material that requires additional characterization, the contractor has the option of suspending excavation in those areas where such soil is encountered until such time as characterization is completed.

Directly load and haul soils designated by the environmental consultant for off-site disposal to the DNR approved facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of contaminated soils or residues. Prior to transport, sufficiently dewater soils designated for off-site disposal so as not to contain free liquids. Verify that the vehicles used to transport contaminated material are licensed for such activity in accordance with applicable state and federal regulations.

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

D Measurement

The department will measure Excavation, Hauling, and Disposal of Petroleum Contaminated Soil in tons of contaminated soil, accepted by the disposal facility as documented by weight tickets generated by the disposal facility.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	TON

Payment is full compensation for excavating, segregating, loading, hauling, and treatment and disposal of contaminated soil; tipping fees including applicable taxes and surcharges; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; dewatering of soils prior to transport, if necessary.

62. HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item 460.0105.S; HMA Percent Within Limits (PWL) Test Strip Density Item 460.0110.S.

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 contracts constructed under HMA Percent Within Limits (PWL) QMP. A density test strip is required for each pavement layer placed over a specific, uniform underlying material, unless specified otherwise in the plans. Each contract is restricted to a single mix design per mix type per layer (e.g., upper layer and lower layer may have different mix type specified or may have the same mix type with different mix designs). Each mix design requires a separate test strip. Density and volumetrics testing will be conducted on the same test strip whenever possible.

Perform work according to standard spec 460 and as follows.

B Materials

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

C Construction

C.1 Test Strip

Submit the test strip start time and date to the department in writing at least 5 calendar days in advance of construction of the test strip. If the contractor fails to begin paving within 2 hours of the submitted start time, the test strip is delayed, and the department will assess the contractor $2,000 for each instance according to Section E of this document. Alterations to the start time and date must be submitted to the department in writing a minimum of 24 hours prior to the start time. The contractor will not be liable for changes in start time related to adverse weather days as defined by standard spec 101.3 or equipment breakdown verified by the department.

On the first day of production for a test strip, produce approximately 750 tons of HMA. (Note: adjust tonnage to accommodate natural break points in the project.) Locate test strips 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, obtain sufficient HMA mixture for three-part split samples from trucks prior to departure from the plant. Collect three split samples during the production of test strip material. Perform sampling from the truck box and three-part splitting of HMA according to CMM 8-36. These three samples will be randomly selected by the engineer from each *third* of the test strip tonnage (T), excluding the first 50 tons:

Sample Number	Production Interval (tons)
1	50 to 1/3 T
2	1/3 T to 2/3 T
3	2/3 T to T

C.1.1.2 Density

Required field tests include contractor QC and department QV nuclear density gauge tests and pavement coring at ten individual locations (five in each half of the test strip length) in accordance with Appendix A: *Test Methods and Sampling for HMA PWL QMP Projects*. Both QV and QC teams shall have two nuclear density gauges present for correlation at the time the test strip is constructed. QC and QV teams may wish to scan with additional gauges at the locations detailed in Appendix A, as only gauges used during the test strip correlation phase will be allowed.

C.1.2 Field Tests

C.1.2.1 Density

For contracts that include STSP 460-020 QMP Density in addition to PWL, a gauge comparison according to CMM 8-15.7 shall be completed prior to the day of test strip construction. Daily standardization of gauges on reference blocks and a project reference site shall be performed according to CMM 8-15.8. 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 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 contract. 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 and filling core holes according to Appendix A. 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.

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/ft^3. In the event mix and density portions of the test strip procedure are separated, or if an additional density test strip is required, 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 (or three-test average from a PWL volumetric-only test strip) from the end of the previous day's production multiplied by 62.24 lb/ft^3. If no PWL production volumetric test is to be taken in a density-only test strip, a non-random three-part split mix sample will be taken and tested for Gmm by the department representative. The department Gmm test results from this non-random test will be entered in the HMA PWL Test Strip Spreadsheet and must conform to the Acceptance Limits presented in C.2.1.

Exclusions such as shoulders and appurtenances shall be tested and reported according to 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 standard spec Table 460-3. No density incentive or disincentive will be applied to shoulders or appurtenances. However, unacceptable shoulder material will be handled according to standard spec 460.3.3.1 and CMM 8-15.11.

C.1.3 Laboratory Tests

C.1.3.1 Volumetrics

Obtain random samples according to C.1.1.1 and Appendix A. Perform tests the same day as taking the sample.

Theoretical maximum specific gravities of each mixture sample will be obtained according to AASHTO T 209 as modified in CMM 8-36.6.6. Bulk specific gravities of both gyratory compacted samples and field cores shall be determined according to AASHTO T 166 as modified in CMM 8-36.6.5. 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.

C.2 Acceptance

C.2.1 Volumetrics

Produce mix conforming to the following limits based on individual QC and QV test results (tolerances based on most recent JMF):

ITEM	ACCEPTANCE 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[1]	- 0.5
Air Voids	-1.5 & +2.0
VMA in percent[2]	- 1.0
Maximum specific gravity	+/- 0.024

[1] Asphalt content more than -0.5% below the JMF will be referee tested by the department's AASHTO accredited laboratory and HTCP certified personnel using automated extraction according to ASTM D8159 as modified in CMM 8-36.6.3.1.

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

QV samples will be tested for Gmm, Gmb, and AC. Air voids and VMA will then be calculated using these test results.

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 Test Strip Spreadsheet.

If QC and QV test results do not correlate as determined by the split sample comparison, 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 conformance 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 will 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-furnished Field Density Worksheet.

C.2.3 Test Strip Approval and Material Conformance

All applicable laboratory and field testing associated with a test strip shall be completed prior to any additional mainline placement of the mix. 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. The 24-hour approval time includes only working days as defined in standard spec 101.3.

The department will evaluate material conformance 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 approved test strip is defined as the individual PWL values for air voids and density both being equal to or greater than 75, mixture volumetric properties conforming to the limits specified in C.2.1, and an acceptable gauge-to-core correlation. Further clarification on PWL test strip approval and appropriate post-test strip actions are shown in the following table:

PWL TEST STRIP APPROVAL AND MATERIAL CONFORMANCE CRITERIA

PWL VALUE FOR AIR VOIDS AND DENSITY	TEST STRIP APPROVAL	MATERIAL CONFORMANCE	POST-TEST STRIP ACTION
Both PWL $\geq$ 75	Approved[1]	Material paid for according to Section E	Proceed with Production
50 $\leq$ Either PWL < 75	Not Approved	Material paid for according to Section E	Consult BTS to determine need for additional test strip
Either PWL < 50	Not Approved	Unacceptable material removed and replaced or paid for at 50% of the contract unit price according to Section E	Construct additional Volumetrics or Density test strip as necessary

[1] In addition to these PWL criteria, mixture volumetric properties must conform to the limits specified in C.2.1, split sample comparison must have a passing result and an acceptable gauge-to-core correlation must be completed.

A maximum of two test strips will be allowed to remain in place per pavement layer per contract. If material is removed, a new test strip shall replace the previous one at no additional cost to the department. If the contractor changes the mix design for a given mix type during a contract, no additional compensation will be paid by the department for the required additional test strip and the department will assess the contractor $2,000 for the additional test strip according to Section E of this special provision. 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 $\geq$ 75
iii. Density PWL value $\geq$ 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, determination of mix conformance 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 according to 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
460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH
460.0110.S	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 contracts 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. If a test strip is delayed as defined in C.1 of this document, the department will assess the contractor $2,000 for each instance, under the HMA Delayed Test Strip administrative item. If an additional test strip is required because the initial test strip is not approved by the department or the mix design is changed by the contractor, the department will assess the contractor $2,000 for each additional test strip (i.e. $2,000 for each individual volumetrics or density test strip) under the HMA Additional Test Strip administrative item.

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:

PAY ADJUSTMENT FOR HMA PAVEMENT AIR VOIDS & DENSITY

PERCENT WITHIN LIMITS (PWL)	*PAYMENT FACTOR, PF (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 less than 50 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 according to Table 460-3 as modified herein. Pay adjustment will be determined for an acceptably completed test strip and will be computed as shown in the following equation:

Pay Adjustment = (PF-100)/100 x (WP) x (tonnage) x ($65/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:

Parameter	WP
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., traffic lane excluding shoulder) as determined in accordance with Appendix A.

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.

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63. HMA Pavement Percent Within Limits (PWL) QMP.

A Description

This special provision describes percent within limits (PWL) pay determination, providing and maintaining a contractor Quality Control (QC) Program, department Quality Verification (QV) Program, required sampling and testing, dispute resolution, corrective action, pavement density, and payment for HMA pavements. Pay is determined by statistical analysis performed on contractor and department test results conducted according to the Quality Management Program (QMP) as specified in standard spec 460, except as modified below.

B Materials

Conform to the requirements of standard spec 450, 455, and 460 except where superseded by this special provision. The department will allow only one mix design for each HMA mixture type per layer required for the contract, unless approved by the engineer. The use of more than one mix design for each HMA pavement layer will require the contractor to construct a new test strip in accordance with HMA Pavement Percent Within Limits (PWL) QMP Test Strip Volumetrics and HMA Pavement Percent Within Limits (PWL) QMP Test Strip Density articles at no additional cost to the department.

Replace standard spec 460.2.8.2.1.3.1 Contracts with 5000 Tons of Mixture or Greater with the following:

460.2.8.2.1.3.1 Contracts under Percent within Limits

(1) Furnish and maintain a laboratory at the plant site fully equipped for performing contractor QC testing. Have the laboratory on-site and operational before beginning mixture production.

(2) Obtain random samples and perform tests according to this special provision and further defined in Appendix A: *Test Methods & Sampling for HMA PWL QMP Projects*. Obtain HMA mixture samples from trucks at the plant. For the sublot in which a QV sample is collected, discard the QC sample and test a split of the QV sample.

(3) Perform sampling from the truck box and three-part splitting of HMA samples according to CMM 8-36. Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per sublot. All QC samples shall provide the following: QC, QV, and Retained. The contractor shall take possession and test the QC portions. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each sample) and the Retained portions. Additional sampling details are found in Appendix A. Label samples according to CMM 8-36. Additional handling instructions for retained samples are found in CMM 8-36.

(4) Use the test methods identified below to perform the following tests at a frequency greater than or equal to that indicated:

- Blended aggregate gradations in accordance with AASHTO T 30
- Asphalt content (AC) in percent determined by ignition oven method according to AASHTO T 308 as modified in CMM 8-36.6.3.6, chemical extraction according to AASHTO T 164 Method A or B, or automated extraction according to ASTM D8159 as modified in CMM 8-36.6.3.1.
- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166 as modified in CMM 8-36.6.5.
- Maximum specific gravity (Gmm) according to AASHTO T 209 as modified in CMM 8-36.6.6

- Air voids (V_a) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R35.

(5) Lot size shall consist of 3750 tons with sublots of 750 tons. Test each design mixture at a frequency of 1 test per 750 tons of mixture type produced and placed as part of the contract. Add a random sample for any fraction of 750 tons at the end of production for a specific mixture design. Partial lots with less than three sublot tests will be included into the previous lot for data analysis and pay adjustment. Volumetric lots will include all tonnage of mixture type under specified bid item unless otherwise specified in the plan.

(6) Conduct field tensile strength ratio tests according to AASHTO T283, without freeze-thaw conditioning cycles, on each qualifying mixture in accordance with CMM 8-36.6.14. Test each full 50,000-ton production increment, or fraction of an increment, after the first 5,000 tons of production. Perform required increment testing in the first week of production of that increment. If field tensile strength ratio values are below the spec limit, notify the engineer. The engineer and contractor will jointly determine a corrective action.

Delete standard spec 460.2.8.2.1.5 and 460.2.8.2.1.6.

Replace standard spec 460.2.8.2.1.7 Corrective Action with the following:

460.2.8.2.1.7 Corrective Action

(1) Material must conform to the following action and acceptance limits based on individual QC and QV test results (tolerances relative to the JMF used on the PWL Test Strip):

ITEM	ACTION LIMITS	ACCEPTANCE 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	
AC in percent[1]	-0.3	-0.5
Va		- 1.5 & +2.0
VMA in percent[2]	- 0.5	-1.0

[1] The department will not adjust pay based on QC AC in percent test results; however corrective action will be applied to nonconforming material according to 460.2.8.2.1.7(3) as modified herein. [2] VMA limits based on minimum requirement for mix design nominal maximum aggregate size in table 460-1.

(2) QV samples will be tested for Gmm, Gmb, and AC. Air voids and VMA will then be calculated using these test results.

(3) Notify the engineer if any individual test result falls outside the action limits, investigate the cause and take corrective action to return to within action limits. If two consecutive test results fall outside the action limits, stop production. Production may not resume until approved by the engineer. Additional QV samples may be collected upon resuming production, at the discretion of the engineer.

(4) For any additional tests outside the random number testing conducted for volumetrics, the data collected will not be entered into PWL calculations. Additional QV tests must meet acceptance limits or be subject to production stop and/or remove and replace.

(5) Remove and replace unacceptable material at no additional expense to the department. Unacceptable material is defined as any individual QC or QV tests results outside the acceptance limits or a PWL value < 50. The engineer may allow such material to remain in place with a price reduction. The department will pay for such HMA Pavement allowed to remain in place at 50 percent of the contract unit price.

Replace standard spec 460.2.8.3.1.2 Personnel Requirements with the following:

460.2.8.3.1.2 Personnel Requirements

(1) The department will provide at least one HTCP-certified Transportation Materials Sampling (TMS) Technician, to observe QV sampling of HMA mixtures.

(2) Under departmental observation, a contractor TMS technician shall collect and split samples.

(3) A department HTCP-certified Hot Mix Asphalt, Technician I, Production Tester (HMA-IPT) technician will ensure that all sampling is performed correctly and conduct testing, analyze test results, and report resulting data.

(4) The department will make an organizational chart available to the contractor before mixture production begins. The organizational chart will include names, telephone numbers, and current certifications of all QV testing personnel. The department will update the chart with appropriate changes, as they become effective.

Replace standard spec 460.2.8.3.1.4 Department Verification Testing Requirements with the following:

460.2.8.3.1.4 Department Verification Testing Requirements

(1) HTCP-certified department personnel will obtain QV random samples by directly supervising HTCP-certified contractor personnel sampling from trucks at the plant. Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per sublot. All QV samples shall furnish the following: QC, QV, and Retained. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each sample) and the Retained portions. The department will take possession of retained samples accumulated to date each day QV samples are collected. The department will retain samples until surpassing the analysis window of up to 5 lots, as defined in standard spec 460.2.8.3.1.7(2) of this special provision. Additional sampling details are found in Appendix A.

(2) The department will verify product quality using the test methods specified here in standard spec 460.2.8.3.1.4(3). The department will identify test methods before construction starts and use only those methods during production of that material unless the engineer and contractor mutually agree otherwise.

(3) The department will perform all testing conforming to the following standards:

- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166 as modified in CMM 8-36.6.5.
- Maximum specific gravity (Gmm) according to AASHTO T 209 as modified in CMM 8-36.6.6.
- Air voids (Va) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R 35.
- Asphalt Content (AC) in percent determined by ignition oven method according to AASHTO T 308 as modified in CMM 8-36.6.3.6, chemical extraction according to AASHTO T 164 Method A or B, or automated extraction according to ASTM D8159 as modified in CMM 8-36.6.3.1.

(4) The department will randomly test each design mixture at the minimum frequency of one test for each lot.

Delete standard spec 460.2.8.3.1.6.

Replace standard spec 460.2.8.3.1.7 Dispute Resolution with the following:

460.2.8.3.1.7 Data Analysis for Volumetrics

(1) Analysis of test data for pay determination will be contingent upon QC and QV test results. Statistical analysis will be conducted on Gmm and Gmb test results for calculation of Va. If either Gmm or Gmb analysis results in non-comparable data as described in 460.2.8.3.1.7(2), subsequent testing will be performed for both parameters as detailed in the following paragraph.

(2) The engineer, upon completion of the first 3 lots, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. Additional comparisons incorporating the first 3 lots of data will be performed following completion of the 4th and 5th lots (i.e., lots 1-3, 1-4, and 1-5). A rolling window of 5 lots will be used to conduct F & t comparison for the remainder of the contract (i.e., lots 2-6, then lots 3-7, etc.), reporting comparison results for each individual lot. Analysis will use a set alpha value of 0.025. If the F- and t-tests report comparable data, the QC and QV data sets are determined to be statistically similar and QC data will be used to calculate the Va used in PWL and pay adjustment calculations. If the F- and t-tests result in non-comparable data, proceed to the *dispute resolution* steps found below. Note: if both QC and QV Va PWL result in a pay adjustment of 102% or greater, dispute resolution testing will not be conducted. Dispute resolution via further investigation is as follows:

[1] The Retained portion of the split from the lot in the analysis window with a QV test result furthest from the QV mean (not necessarily the sublot identifying that variances or means do not compare) will be referee tested by the bureau's AASHTO accredited laboratory and certified personnel. All previous lots within the analysis window are subject to referee testing and regional lab testing as deemed necessary. Referee test results will replace the QV data of the sublot(s).

[2] Statistical analysis will be conducted with referee test results replacing QV results.

i. If the F- and t-tests indicate variances and means compare, no further testing is required for the lot and QC data will be used for PWL and pay factor/adjustment calculations.

ii. If the F- and t-tests indicate non-comparable variances or means, the Retained portion of the random QC sample will be tested by the department’s regional lab for the remaining 4 sublots of the lot which the F- and t- tests indicate non-comparable datasets. The department’s regional lab and the referee test results will be used for PWL and pay factor/adjustment calculations. Upon the second instance of non-comparable variance or means and for every instance thereafter, the department will assess a pay reduction for the additional testing of the remaining 4 sublots at $2,000/lot under the HMA Regional Lab Testing administrative item.

[3] The contractor may choose to dispute the regional test results on a lot basis. In this event, the retained portion of each sublot will be referee tested by the department's AASHTO accredited laboratory and certified personnel. The referee Gmm and Gmb test results will supersede the regional lab results for the disputed lot.

i. If referee testing results in an increased calculated pay factor, the department will pay for the cost of the additional referee testing.

ii. If referee testing of a disputed lot results in an equal or lower calculated pay factor, the department will assess a pay reduction for the additional referee testing at $2,000/lot under the Referee Testing administrative item.

(3) The department will notify the contractor of the referee test results within 3 working days after receipt of the samples by the department's AASHTO accredited laboratory. The intent is to provide referee test results within 7 calendar days from completion of the lot.

(4) The department will determine mixture conformance and acceptability by analyzing referee test results, reviewing mixture data, and inspecting the completed pavement according to the standard spec, this special provision, and accompanying Appendix A.

(5) Unacceptable material (i.e., resulting in a PWL value less than 50 or individual QC or QV test results not meeting the Acceptance Requirements of 460.2.8.2.1.7 as modified herein) will be referee tested by the

bureau's AASHTO accredited laboratory and certified personnel and those test results used for analysis. Such material may be subject to remove and replace, at the discretion of the engineer. If the engineer allows the material to remain in place, it will be paid at 50% of the HMA Pavement contract unit price. Replacement or pay adjustment will be conducted on a sublot basis. If an entire PWL sublot is removed and replaced, the test results of the newly placed material will replace the original data for the sublot. Any remove and replace shall be performed at no additional cost to the department. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test will be conducted and under such circumstances will be entered into the HMA PWL Production spreadsheet for data analysis and pay determination.] The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this material.

Delete standard spec 460.2.8.3.1.8 Corrective Action.

C Construction

Replace standard spec 460.3.3.2 Pavement Density Determination with the following:

460.3.3.2 Pavement Density Determination

(1) The engineer will determine the target maximum density using department procedures described in CMM 8-15. The engineer will determine density as soon as practicable after compaction and before placement of subsequent layers or before opening to traffic.

(2) Do not re-roll compacted mixtures with deficient density test results. Do not operate continuously below the specified minimum density. Stop production, identify the source of the problem, and make corrections to produce work meeting the specification requirements.

(3) A lot is defined as 7500 lane feet with sublots of 1500 lane feet (excluding shoulder, even if paved integrally) and placed within a single layer for each location and target maximum density category indicated in table 460-3. The contractor is required to complete three tests randomly per sublot and the department will randomly conduct one QV test per sublot. A partial quantity less than 750 lane feet will be included with the previous sublot. Partial lots with less than three sublots will be included in the previous lot for data analysis/acceptance and pay, by the engineer. If density lots/sublots are determined prior to construction of the test strip, any random locations within the test strip shall be omitted. Exclusions such as shoulders and appurtenances shall be tested and recorded 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 standard spec Table 460-3. No density incentive or disincentive will be applied to shoulders or appurtenances. Offsets will not be applied to nuclear density gauge readings for shoulders or appurtenances. Unacceptable shoulder material will be handled according to standard spec 460.3.3.1 and CMM 8-15.11.

(4) The three QC locations per sublot represent the outside, middle, and inside of the paving lane. The QC density testing procedures are detailed in Appendix A.

(5) QV nuclear testing will consist of one randomly selected location per sublot. The QV density testing procedures will be the same as the QC procedure at each testing location and are also detailed in Appendix A.

(6) An HTCP-certified nuclear density technician (NUCDENSITYTEC-I) shall identify random locations and perform the testing for both the contractor and department. The responsible certified technician shall ensure that sample location and testing is performed correctly, analyze test results, and provide density results to the contractor weekly, or at the completion of each lot.

(7) For any additional tests outside the random number testing conducted for density, the data collected will not be entered into PWL calculations. However, additional QV testing must meet the tolerances for material conformance as specified in the standard specification and this special provision. If additional density data identifies unacceptable material, proceed as specified in CMM 8-15.11.

Replace standard spec 460.3.3.3 Waiving Density Testing with Acceptance of Density Data with the following:

460.3.3.3 Analysis of Density Data

(1) Analysis of test data for pay determination will be contingent upon test results from both the contractor (QC) and the department (QV).

(2) As random density locations are paved, the data will be recorded in the HMA PWL Production Spreadsheet for analysis in chronological order. The engineer, upon completion of the first 3 lots, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. A rolling window of 3 lots will be used to conduct F & t comparison for the remainder of the contract (i.e., lots 2-4, then lots 3-5, etc.), reporting comparison results for each individual lot. Analysis will use a set alpha value of 0.025.

i. If the F- and t-tests indicate variances and means compare, the QC and QV data sets are determined to be statistically similar and QC data will be used for PWL and pay adjustment calculations.

ii. If the F- and t-tests indicate variances or means do not compare, the QV data will be used for subsequent calculations.

(3) The department will determine mixture density conformance and acceptability by analyzing test results, reviewing mixture data, and inspecting the completed pavement according to standard spec, this special provision, and accompanying Appendix A.

(4) Density resulting in a PWL value less than 50 or not meeting the requirements of 460.3.3.1 (any individual density test result falling more than 3.0 percent below the minimum required target maximum density as specified in standard spec Table 460-3) is unacceptable and may be subject to remove and replace at no additional cost to the department, at the discretion of the engineer.

i. Replacement may be conducted on a sublot basis. If an entire PWL sublot is removed and replaced, the test results of the newly placed material will replace the original data for the sublot.

ii. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test must be conducted and under such circumstances will be entered into the data analysis and pay determination.]

iii. If the engineer allows such material to remain in place, it will be paid for at 50% of the HMA Pavement contract unit price. The extent of unacceptable material will be addressed as specified in CMM 8-15.11. The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this material.

D Measurement

The department will measure the HMA Pavement bid items acceptably completed by the ton as specified in standard spec 450.4 and as follows in standard spec 460.5 as modified in this special provision.

E Payment

Replace standard spec 460.5.2 HMA Pavement with the following:

460.5.2 HMA Pavement

460.5.2.1 General

(1) Payment for HMA Pavement Type LT, MT, and HT mixes is full compensation for providing HMA mixture designs; for preparing foundation; for furnishing, preparing, hauling, mixing, placing, and compacting mixture; for HMA PWL QMP testing and aggregate source testing; for warm mix asphalt additives or processes; for stabilizer, hydrated lime and liquid antistripping agent, if required; and for all materials including asphaltic materials.

(2) If provided for in the plan quantities, the department will pay for a leveling layer, placed to correct irregularities in an existing paved surface before overlaying, under the pertinent paving bid item. Absent a plan quantity, the department will pay for a leveling layer as extra work.

460.5.2.2 Calculation of Pay Adjustment for HMA Pavement using PWL

(1) Pay adjustments will be calculated using 65 dollars per ton of HMA pavement. The HMA PWL Production Spreadsheet, including data, will be made available to the contractor by the department as soon as practicable upon completion of each lot. The department will pay for measured quantities of mix based on this price multiplied by the following pay adjustment calculated in accordance with the HMA PWL Production Spreadsheet:

PAY FACTOR FOR HMA PAVEMENT AIR VOIDS & DENSITY

PERCENT WITHIN LIMITS *(PWL)*	*PAYMENT FACTOR, PF* *(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] Any material resulting in PWL value less than 50 shall be removed and replaced unless the engineer allows 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 shall be in accordance with standard spec Table 460-3. Pay adjustment will be determined on a lot basis and will be computed as shown in the following equation.

Pay Adjustment = (PF-100)/100 x (WP) x (tonnage) x ($65/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:

Parameter	WP
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 placed (i.e., from truck tickets), and $PF_{density}$ will be multiplied by the calculated tonnage used to pave the mainline only (i.e., travel lane excluding shoulder) as determined in accordance with Appendix A.

The department will pay incentive for air voids and density under the following bid items:

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.

The department will administer a disincentive under the Disincentive HMA Binder Content administrative item for each individual QV test result indicating asphalt binder content below the Action Limit in 460.2.8.2.1.7 presented herein. The department will adjust pay per sublot of mix at 65 dollars per ton of HMA pavement multiplied by the following pay adjustment calculated according to the HMA PWL Production Spreadsheet:

AC Binder Relative to JMF	Pay Adjustment / Sublot
-0.4% to -0.5%	75%
More than -0.5%	50%[1]

[1] Any material resulting in an asphalt binder content more than 0.5% below the JMF AC content shall be removed and replaced unless the engineer allows 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. Such material will be referee tested by the department's AASHTO accredited laboratory and HTCP certified personnel using automated extraction according to automated extraction according to ASTM D8159 as modified in CMM 8-36.6.3.1.

Note: PWL value determination is further detailed in the *Calculations* worksheet of the HMA PWL Production spreadsheet.

64. Appendix A.

Test Methods & Sampling for HMA PWL QMP Projects.

The following procedures are included with the HMA Pavement Percent Within Limits (PWL) Quality Management Program (QMP) special provision:

- WisDOT Procedure for Nuclear Gauge/Core Correlation – Test Strip
    - WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production
    - Sampling for WisDOT HMA PWL QMP
    - Calculation of PWL Mainline Tonnage Example

WisDOT Procedure for Nuclear Gauge/Core Correlation – Test Strip

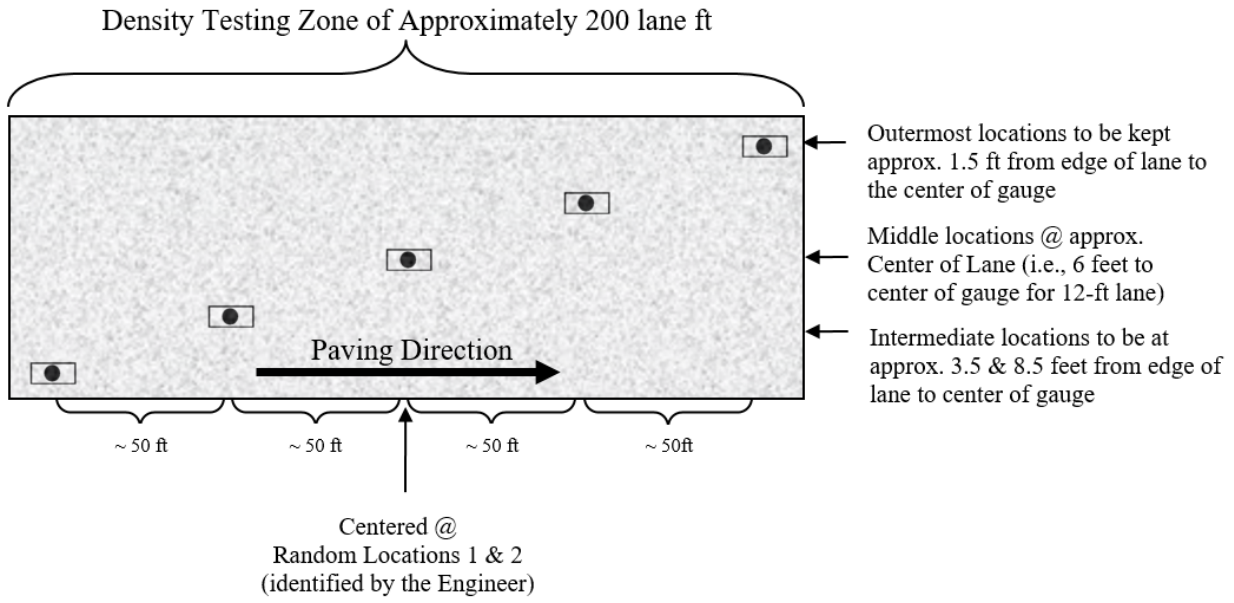

Figure 1: Nuclear/Core Correlation Location Layout

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 Figure 1. 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 pcf of one another, a third reading is conducted in the same orientation as the first reading. In this event, all three readings are averaged, the individual test reading of the three which falls farthest from the average value is discarded, and the average of the remaining two values is used to represent the location for the gauge.

The zones are supposed to be undisclosed to the contractor/roller operators. The engineer will not lay out density/core test sites until rolling is completed and the cold/finish roller is beyond the entirety of the zone. Sites are staggered across the 12-foot travel lane, and do not include shoulders. The outermost locations should be 1.5-feet from the center of the gauge to the edge of lane. [NOTE: This staggered layout is only applicable to the test strip. All mainline density locations after test strip should have a longitudinal- as well as transverse-random number to determine location as detailed in the *WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production* section of this document.]

Individual locations are represented by the  symbol as seen in Figure 1 above. The symbol is two-part, comprised of the nuclear test locations and the location for coring the pavement, as distinguished here:

The nuclear site is the same for QC and QV readings for the test strip, i.e., the QC and QV teams are to take nuclear density gauge readings in the same footprint. Each of the QC and QV teams are to take a minimum of two one-minute readings per nuclear site, with the gauge rotated 180 degrees between readings, as seen here:

(a) (b)

Figure 2: Nuclear gauge orientation for (a) 1st one-minute reading and (b) 2nd one-minute reading

Photos should be taken of each of the 10 core/gauge locations of the test strip. This should include gauge readings (pcf) and a labelled core within the gauge footprint. If a third reading is needed, all three readings should be recorded and documented. Only raw readings in pcf should be written on the pavement during the test strip, with a corresponding gauge ID/SN (generalized as QC-1 through QV-2 in the following Figure) in the following format:

Figure 3: Layout of raw gauge readings as recorded on pavement

Each core will then be taken from the center of the gauge footprint and will be used to correlate each gauge with laboratory-measured bulk specific gravities of the pavement cores. One core in good condition must be obtained from each of the 10 locations. If a core is damaged at the time of extracting from the pavement, a replacement core should be taken immediately adjacent to the damaged core, i.e., from the same footprint. If a core is damaged during transport, it should be recorded as damaged and excluded from the correlation. Coring after traffic is on the pavement should be avoided. The contractor is responsible for coring of the pavement. Coring and filling of 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. Core density testing will 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 initial testing and is responsible for any verification testing.

Each core 150 mm (6 inches) in diameter will be taken at locations as identified in Figure 1. Each random core will be full thickness of the layer being placed. The contractor is responsible for thoroughly drying cores obtained from the mat in accordance with ASTM D 7227 prior to using specimens for in-place density determination in accordance with AASHTO T 166 as modified by CMM 8-36.6.5.

Cores must be taken before the pavement is open to traffic. Cores are cut under department/project staff observation. Relabel each core immediately after extruding or ensure that labels applied to pavement prior to cutting remain legible. The layer interface should also be marked immediately following extrusion. Cores should be cut at this interface, using a wet saw, to allow for density measurement of only the most recently placed layer. Cores should be protected from excessive temperatures such as direct sunlight. Also, there should be department custody (both in transport and storage) for the cores until they are tested, whether that be immediately after the test strip or subsequent day if agreed upon between Department and Contractor. Use of concrete cylinder molds works well to transport cores. Cores should be placed upside down (flat

surface to bottom of cylinder mold) in the molds, one core per mold, cylinder molds stored upright, and ideally transported in a cooler. Avoid any stacking of pavement cores.

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.

WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production

For nuclear density testing of the pavement beyond the test strip, QC tests will be completed at three locations per sublot, with a sublot defined as 1500 lane feet. The three locations will represent the outside, middle, and inside of the paving lane (i.e., the lane width will be divided into thirds as shown by the dashed longitudinal lines in Figure 3 and random numbers will be used to identify the specific transverse location within each third in accordance with CMM 8-15). Longitudinal locations within each sublot shall be determined with 3 independent random numbers. The PWL Density measurements do not include the shoulder and other appurtenances. Such areas are tested by the department and are not eligible for density incentive or disincentive. Each location will be measured with two one-minute gauge readings oriented 180 degrees from one another, in the same footprint as detailed in Figure 2 above. Each location requires a minimum of two readings per gauge. The density gauge orientation for the first test will be with the source rod towards the direction of paving. QV nuclear testing will consist of one randomly selected location per sublot. The QV is also comprised of two one-minute readings oriented 180 degrees from one another. For both QC and QV test locations, if the two readings exceed 1.0 pcf of one another, a third reading is conducted in the same orientation as the first reading. In this event, all three readings are averaged, the individual test reading of the three which falls farthest from the average value is discarded, and the average of the remaining two values is used to represent the location for the gauge. The sublot density testing layout is depicted in Figure 4, with QC test locations shown as solid lines and QV as dashed.

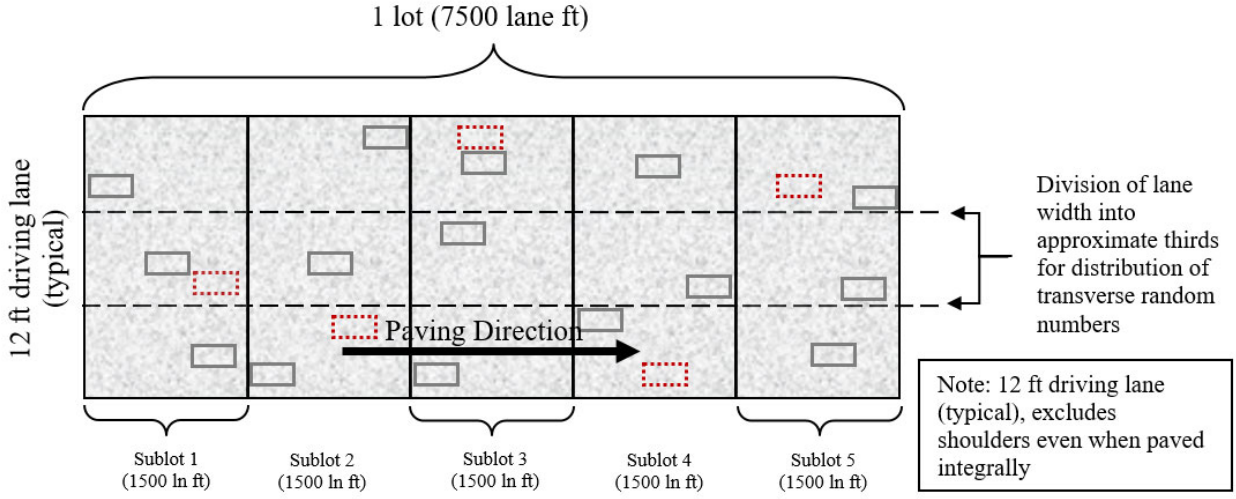

Figure 4: Locations of main lane HMA density testing (QC=solid lines, QV=dashed)

Raw nuclear density data must be shared by both parties at the end of each shift. Paving may be delayed if the raw data is not shared in a timely manner. QC and QV nuclear density gauge readings will be statistically analyzed in accordance with Section 460.3.3.3 of the HMA PWL QMP SPV. (Note: For density data, if F-

and t-tests compare, QC data will be used for the subsequent calculations of PWL value and pay determination. However, if an F- or t-test does not compare, the QV data will be used in subsequent calculations.)

Investigative cores will be allowed on the approaching side of traffic outside of the footprint locations. Results must be shared with the department.
The QV density technician is expected to be onsite within 1 hour of the start of paving operations and should remain on-site until all paving is completed. Perform footprint testing as soon as both the QC and QV nuclear density technician are onsite and a minimum of once per day to ensure the gauges are not drifting apart during a project. Footprint testing compares the density readings of two gauges at the same testing location and can be done at any randomly selected location on the project. Both teams are encouraged to conduct footprint testing as often as they feel necessary. Footprint testing does not need to be performed at the same time. At project start-up, the QV should footprint the first 10 QC locations. Individual density tests less than 0.5% above the lower limit should be communicated to the other party and be footprint tested. Each gauge conducts 2 to 3 1-minute tests according to CMM 8-15 and the final results from each gauge are compared for the location. If the difference between the QC and QV gauges exceeds 1.0 pcf (0.7 percent) for an average of 10 locations, investigate the cause, check gauge moisture and density standards and perform additional footprint testing. If the cause of the difference between gauge readings cannot be identified, the regional HMA Coordinator will consult the RSO, the regional PWL representative and the BTS HMA unit to determine necessary actions. If it is agreed that there is a gauge comparison issue, perform one of the following 2 options:

New Gauge Combination

- All 4 gauges used on the test strip must footprint 10 locations on the pavement. Pavement placed on a previous day may be used.
- The results of the footprint testing will be analyzed to see if a better combination of acceptable gauges is available.
- If a better combination is found, those gauges should be used moving forward.
- If a better combination cannot be found, a new gauge correlation must be performed. (see below)

Re-correlation of Gauges

- Follow all test strip procedures regarding correlating gauges except the following:
    - The 10 locations can be QC or QV random locations
    - The locations used may have been paved on a previous day
- Retesting with gauges must be done immediately prior to coring.
- New gauge offsets will be used for that day's paving and subsequent paving days. New gauge offsets will not be used to recalculate density results from prior days.

Density Dispute Resolution Procedure

Density results may be disputed by the contractor on a lot by lot basis if one of the following criteria is met:

- The lot average for either QC or QV is below the lower specification limit.
- The lot average for QC is different from the lot average for QV by more than 0.5%.

In lieu of using density gauges for acceptance of the lot, the lot will be cored in the QV locations. The results of the cores from the entire lot will be entered in the spreadsheet and used for payment. If the pay factor increases, the contractor will only receive the additional difference in payment for the disputed lot. If the pay factor does not increase, the department will assess the contractor $2,000 for the costs of additional testing.

Notify the engineer in writing before dispute resolution coring. Immediately prior to coring, QC and QV will test the locations with nuclear density gauges.

Under the direct observation of the engineer, cut 100 or 150 mm (4 or 6 inch) diameter cores. Cores will be cut by the next working day not to exceed 48 hours after placement of the last QV test of the lot. Prepare cores and determine density according to AASHTO T166 as modified in CMM 8-36.6.5. Dry cores after testing. Fill core holes according to Appendix A and obtain engineer approval before opening to traffic. The department will maintain custody of cores throughout the entire sampling and testing process. The department will label cores, transport cores to testing facilities, witness testing, store dried cores, and provide subsequent verification testing. If a core is damaged at the time of coring, immediately take a replacement core 1 ft ahead of the existing testing location in the direction of traffic at the same offset as the damaged core. If a core is damaged during transport, record it as damaged and notify the engineer immediately.

Sampling for WisDOT HMA PWL QMP Production

Sampling of HMA mix for QC, QV and Retained samples shall conform to CMM 8-36 except as modified here.

Delete CMM 8-36.4 Sampling Hot Mix Asphalt and replace with the following to update sublot tonnages:

Sampling Hot Mix Asphalt

At the beginning of the contract, the contractor determines the anticipated tonnage to be produced. The frequency of sampling is 1 per 750 tons (sublot) for QC and Retained Samples and 1 per 3750 tons (lot or 5 sublots) for QV as defined by the HMA PWL QMP SPV. A test sample is obtained randomly from each sublot. Each random sample shall be collected at the plant according to CMM 8-36.4.1 and 8-36.4.2. The contractor must submit the random numbers for all mix sampling to the department before production begins.

Example 1

Expected production for a contract is 12,400 tons. The number of required samples is determined based on this expected production (per HMA PWL QMP SPV) and is determined by the random sample calculation.

Sample 1 – from 50 to 750 tons
Sample 2 – from 751 to 1500 tons
Sample 3 – from 1501 to 2250 tons
Sample 4 – from 2251 to 3000 tons
Sample X – .....
Sample 16 – from 11,251 to 12,000 tons
Sample 17 – from 12,001 to 12,400 tons

The approximate location of each sample within the prescribed sublots is determined by selecting random numbers using ASTM Method D-3665 or by using a calculator or computerized spreadsheet that has a random number generator. The random numbers selected are used in determining when a sample is to be taken and will be multiplied by the sublot tonnage. This number will then be added to the final tonnage of the previous sublot to yield the approximate cumulative tonnage of when each sample is to be taken.

To allow for plant start-up variability, the procedure calls for the first random sample to be taken at 50 tons or greater per production day (not intended to be taken in the first two truckloads). Random samples calculated for 0-50 ton should be taken in the next truck (51-75 ton).

This procedure is to be used for any number of samples per contract.

If the production is less than the final randomly generated sample tonnage, then the random sample is to be collected from the remaining portion of that sublot of production. If the randomly generated sample is calculated to be within the first 0-50 tons of the subsequent day of production, it should be taken in the next truck. Add a random sample for any fraction of 750 tons at the end of the contract. Lot size will consist of 3750 tons with sublots of 750 tons. Partial lots with less than three sublot tests will be included into the previous lot, by the engineer.

It's intended that the plant operator not be advised ahead of time when samples are to be taken.

If belt samples are used during troubleshooting, the blended aggregate will be obtained when the mixture production tonnage reaches approximately the sample tonnage. For plants with storage silos, this could be up to 60 minutes in advance of the mixture sample that's taken when the required tonnage is shipped from the plant.

QC, QV, and retained samples shall be collected for all test strip and production mixture testing using a three-part splitting procedure according to CMM 8-36.5.2.

Calculation of PWL Mainline Tonnage Example

A mill and overlay project in being constructed with a 12-foot travel lane and an integrally paved 3-foot shoulder. The layer thickness is 2 inches for the full width of paving. Calculate the tonnage in each sublot eligible for density incentive or disincentive.

Solution:

$$\frac{1500\ ft\ \times\ 12\ ft}{9\ sf/sy} \times \frac{2\ in\ \times 112\ lb/sy/in}{2000\ lb/ton} = 224\ tons$$

Schedule of Items

Attached, dated February 2, 2021, are the revised Schedule of Items Page 15.

Plan Sheets

The following 8½ x 11-inch sheets are attached and made part of the plans for this proposal:
Revised: 35 and 36. Also includes one revised page 23 for project 8347-01-71.

END OF ADDENDUM

ROADSIDE CLEARING
202.0105

CAT	STATION	STA	REMARKS
0010	PROJECT	10	UNDIST.
TOTAL 001		10	

EXCAVATION, HAULING, AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL
205.0501.S

CAT	STATION	TO	STATION	LOC	TON	REM
0010	1579+50	-	1580+00	RT	25	
0010	1581+80	-	1582+10	RT	25	
TOTAL 0010					50	

REMOVING CONCRETE SURFACE PARTIAL DEPTH
204.0109.S

CAT	STATION	TO	STATION	LOC	SF	REMARKS
0010	1579+00	-	1611+50	RT	6,500	GUTTER
TOTAL 0010					6,500	

REMOVING ASPHALTIC SURFACE BUTT JOINTS
204.0115

CAT	STATION	SY	REMARKS
0010	PROJECT	1,633	SIDE RDS
0010	1567+23	333	BEGIN
0010	2213+62	333	END
TOTAL 001		2,299	

REMOVING ASPHALTIC SURFACE MILLING
204.0120

CAT	STATION	TO	STATION	SY
0010	1568+25	-	2213+62	266,703
TOTAL 0010				266703

REMOVING CONCRETE SIDEWALK
204.0155

CAT	STATION	LOC	SY	REMARKS
0010	1582+25	LT	18	CURB
0010	1582+25	RT	13	RAMPS
0010	1583+00	RT	34	"
0010	1586+50	LT	8	"
TOTAL 0010			73	

REMOVING GUARDRAIL
204.0165

CAT	STATION	LOC	LF	REM
0010	1780+00	LT	25	CLASS A
0010	1834+00	LT	50	CLASS A
0010	1845+00	LT	500	MIDWEST
0010	1872+00	RT	75	CLASS A
0010	1887+00	LT	100	CLASS A
0010	1895+00	LT	200	CLASS A
0010	1910+00	LT	50	CLASS A
0010	1927+00	LT	50	CLASS A
0010	1964+00	RT	400	MIDWEST
0010	2126+00	LT	25	CLASS A
TOTAL 0010			1,475	

EXCAVATION COMMON
205.0100

CAT	STATION	CY	REMARKS
0010	PROJECT	100	UNDIST.
TOTAL 0010		100	

REMOVING CURB & GUTTER
204.0150

CAT	STATION	LF	REMARKS
0010	PROJECT	1,815	UNDIST.
TOTAL 0010		1,815	

SELECT BORROW
208.1100

CAT	STATION	CY	REMARKS
0010	PROJECT	200	UNDIST.
TOTAL 0010		200	

REMOVE STORM SEWER SUMMARY

CAT	STATION	DIST.	LOC	204.0215 REMOVING CATCH BASINS EACH	204.0220 REMOVING INLETS EACH	204.0245.01 REMOVING STORM SEWER (12-INCH) LF	204.0245.03 REMOVING STORM SEWER (18-INCH) LF	204.0245.04 REMOVING STORM SEWER (24-INCH) LF	REMARKS
0010	1578+73	44'	RT		1		18		I-1
0010	1579+32	46'	RT		1				I-2
0010	1582+08	25'	LT		1				I-4
0010	1586+00	46'	RT		1				I-8
0010	1586+37	46'	RT		1				I-9
0010	1592+70	25'	RT	1					CB-7
0010	1592+71	25'	LT	1					CB-8
0010	1593+14	25'	RT			62			CB-7-I
0010	1596+96	60'	LT					28	UNNAMED
0010	1603+83	25'	LT		1				I-13
0010	1604+03	46'	RT		1				I-14
0010	1606+71	25'	RT	1					CB-13
TOTAL 0010				3	7	62	18	28	0

PREPARE FOUNDATION FOR ASPHALTIC PAVING (1180-00-75) (01. TBD)
211.0100.01

CAT	STATION	LS
0010	PROJECT	1
TOTAL 0010		1

SHAPING SHOULDERS
305.0500

CAT	STATION	TO	STATION	LOC	STA	REMARKS
0010	1567+25	-	1582+25	LT&RT	30	
0010	1616+00	-	2213+62	LT&RT	1,195	
TOTAL 0010					1,225	

BASE AGGREGATE SUMMARY
305.0110 305.0120

CAT	STATION	TO	STATION	TON	TON	REMARKS
0010	1567+25	-	2213+62	9,500		SHLDR
0010	1842+00		LT	66		EATS
0010	1961+88		RT	66		EATS
	PROJECT		UNDIST.		23	INLET RPR
TOTAL 0010				9,632	23	

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HMA PWL MIXTURE ACCEPTANCE TABLE

LOCATION	STATION	TO	STATION	APPLICATION	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
									MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12' DRIVING LANE, BYPASS LANES AND PASSING LANES	1526+26	TO	2213+62	UPPER LAYER	4MT58-34V	4MT58-34V	21556	1.75	PWL INCENTIVE AIR VOIDS 460.2010	PWL DENSITY INCNETIVE 460.2005
12' DRIVING LANE, BYPASS LANES AND PASSING LANES	1526+26	TO	2213+62	LOWER LAYER	MILLED HMA	4MT58-34V	18475	1.50	PWL INCENTIVE AIR VOIDS 460.2010	ACCEPTED BY ORDINARY COMPACTION
10' PARKING LANE	1579+25	TO	1608+00	PARKING LANES	EXISTING MILLED HMA	4MT58-34V	744	1.75	PWL INCENTIVE AIR VOIDS 460.2010	ACCEPTANCE TESTING BY DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE
5' SHOULDER LOWER LAYER	1526+26	TO	1579+25	SHOULDER	3' MILLED HMA, 2' HMA PATCH	4MT58-34V	69	1.50	PWL INCENTIVE AIR VOIDS 460.2010	ACCEPTANCE TESTING BY DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE
5' SHOULDER LOWER LAYER	1608+00	TO	2213+62	SHOULDER	3' MILLED HMA, 2' HMA PATCH	4MT58-34V	3391	1.50	PWL INCENTIVE AIR VOIDS 460.2010	ACCEPTANCE TESTING BY DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE
5' SHOULDER UPPER LAYER	1526+26	TO	1579+25	SHOULDER	HMA LOWER LAYER	4MT58-34V	80	1.75	PWL INCENTIVE AIR VOIDS 460.2010	ACCEPTANCE TESTING BY DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE
5' SHOULDER UPPER LAYER	1608+00	TO	2213+62	SHOULDER	HMA LOWER LAYER	4MT58-34V	3956	1.75	PWL INCENTIVE AIR VOIDS 460.2010	ACCEPTANCE TESTING BY DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE
SIDE ROAD RADII UPPER LAYER	1526+26	TO	2213+62	SIDE ROADS	MILLED HMA	4MT58-34V	627	1.75	PWL INCENTIVE AIR VOIDS 460.2010	ACCEPTANCE TESTING BY DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE

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REMOVING CONCRETE PAVEMENT

STATION	LOCATION	204.0100 SY	REMARKS
CATEGORY 0010			
USH 2			
1595+95 - 1608+62	0.0' - 10.0' LT	1410	MAY CONTAIN REINFORCEMENT
ITEM TOTAL		1410	

REMOVING CONCRETE SIDEWALK

STATION	LOCATION	204.0155 SY	REMARKS
CATEGORY 0010			
USH 2			
1579+37 - 1581+00	LT	226	CONTAINS REINFORCEMENT
1582+96 - 1585+97	LT	211	CONTAINS REINFORCEMENT
1586+49 - 1587+65	LT	98	CONTAINS REINFORCEMENT
ITEM TOTAL		535	

REMOVING CURB & GUTTER

STATION	LOCATION	204.0150 LF	REMARKS
CATEGORY 0010			
USH 2			
1579+34 - 1582+26	LT	303	
1582+94 - 1586+00	LT	325	
1586+60 - 1589+48	LT	302	
1589+81 - 1604+00	LT	1432	
1604+46 - 1607+98	LT	374	
1608+31 - 1608+60	LT	38	
FRONT STREET			
3001+21 - 3001+47	RT	41	
ITEM TOTAL		2815	

EXCAVATION, HAULING, AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL

STATION	LOCATION	205.0501.S LF	REMARKS
CATEGORY 0010			
USH 2			
1585+30 - 1585+60	LT	200	10 FT TO 40 FT LEFT OF CENTERLINE
ITEM TOTAL		200	

REMOVING STORM SEWER

STATION	LOCATION	204.0245.01 12-INCH LF	204.0245.02 15-INCH LF	204.0245.03 18-INCH LF	REMARKS
CATEGORY 0010					
USH 2					
1582+09	LT	20			
1583+24	LT	20			
1585+72	LT		20		
1588+00	LT			20	
1589+12	LT	20			
1592+70	LT	20			
1604+79	LT	20			
1606+70	LT	20			
ITEM TOTAL		120	20	20	

FINISHING ROADWAY (8347-01-71)

CATEGORY	LOCATION	213.0100.04 EACH
0010	PROJECT	1
ITEM TOTAL		1

Addendum No. 01
ID 8347-01-71
Revised Sheet 23
February 2, 2021

PROJECT NO: 8347-01-71	HWY: NON HWY	COUNTY: BAYFIELD	MISCELLANEOUS QUANTITIES	SHEET 23	E

FILE NAME : U:\FJ\IRRSD\151385\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\DWG\SHEET\030201-MQ WM.DWG
LAYOUT NAME - 01
PLOT DATE : 1/28/2021 4:34 PM PLOT BY : DEAN STODOLA PLOT NAME : PLOT SCALE : 1" = 1'
WISDOT/CADDS SHEET 42

Proposal ID: 20210209027 Project(s): 1180-00-75, 1180-00-78, 8347-01-70, 8347-01-71

Federal ID(s): WISC 2021185, WISC 2021184, WISC 2021189, N/A

SECTION: 0001 Roadway Construction

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0434	SPV.0105 Special 31. Abandon Existing Water Main	LS	LUMP SUM	_____._____
0436	SPV.0105 Special 32. Maintain Water Service During Construction	LS	LUMP SUM	_____._____
0438	SPV.0180 Special 01. Geotextile Fabric Type FF	10.000 SY	_____._____	_____._____
0440	205.0501.S Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	250.000 TON	_____._____	_____._____
	Section: 0001		Total:	_____._____
			Total Bid:	_____._____