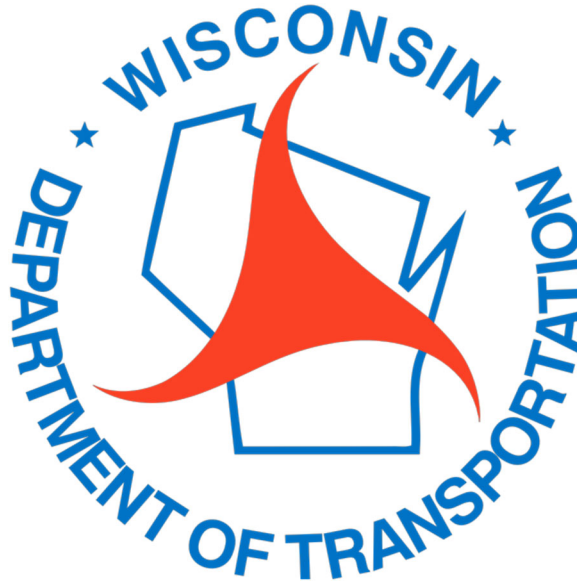


# STATE OF WISCONSIN



## SPECIAL PROVISIONS FOR PERFORMANCE BASED MAINTENANCE

2021 Edition

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## **SECTION 1 - GENERAL**

- (1) It is acknowledged that work completed through Performance Based Maintenance (PbM) projects will be consistent with section 5, Performance Based Maintenance as agreed to under the Memorandum of Understanding between the Wisconsin Department of Transportation, Wisconsin County Highway Association, and Wisconsin Transportation Builders Association dated September 13, 2015.
- (2) Authorization for the payment of this work is found under s. 84.07 (2) (b). Payment for services and materials will be made within 30 days of presentation of final county invoice and mutually agreed measurement of quantities and acceptance by the department of the work so performed.
- (3) All work performed shall adhere to the guidelines, procedures, and standards set forth by the department herein under these Special Provisions for PbM projects; State of Wisconsin, Standard Specifications for Highway and Structure Construction, 2021 Edition; the Highway Maintenance Manual; and any PbM Agreement Supplemental Specifications. If there is a discrepancy between these documents, the governing order is as outlined below:
  1. The PbM agreement and supplemental specifications
  2. PbM Special Provisions
  3. Highway Maintenance Manual
  4. Documents as outlined in section 105.4 of the Standard Specifications

## **SECTION 2 - SHOULDERING**

### **A. Description**

- (1) This section describes constructing a dense graded base using one of the following aggregates:

Crushed stone	Reprocessed material
Crushed gravel	Blended material
Crushed concrete	
- (2) This section also describes furnishing, hauling, and applying water to compact base, recompacting existing base, or dust control within the right of way.

### **B. Materials**

#### **B.1 General**

- (1) Provide aggregate conforming to 301.2 of the standard specifications for dense ¾-inch crushed stone, crushed gravel, crushed concrete, reprocessed material, or blended material.
- (2) The department reserves the right to sample and test all materials as identified in 301.2.3 of the standard specifications.
- (3) The department will incur costs to test materials from vendors that are not state certified.
- (4) Use water that is reasonably clean and free of harmful materials.

**B.2 Gradations**

Except for reprocessed asphaltic pavement, conform to the following gradation requirements:

PERCENT PASSING BY WEIGHT	
SIEVE	¾-inch
3-inch	—
1 1/2-inch	—
1 1/4-inch	—
1-inch	100
¾-inch	95-100
3/8-inch	50-90
No. 4	35-70
No. 10	15-55
No. 40	10-35
No. 200	5.0-15.0 <sup>[*]</sup>

<sup>[\*]</sup>8.0 - 15.0 percent if base is >= 50 percent crushed gravel.

**C. Construction**

**C.1 General**

- (1) Prepare shoulders by cutting to a minimum depth of 2 inches to establish a uniform depth and shape prior to placement of new material. Existing shoulders where the drop-off exceeds 2 inches are not required to be cut.
- (2) Construct dense graded base conforming to 301.3 of the standard specifications.
- (3) Using grading equipment to provide a uniform depth of new material is expected.

- (4) Use equipment that does not damage or mar the pavement surface, curbs, or appurtenances.
- (5) Do not deposit aggregate on the pavement during placement, unless the engineer specifically allows. Do not leave aggregate on the pavement overnight. After placing the shoulder aggregate, keep the pavement surface free of loose aggregate.
- (6) Spread and compact the aggregate in layers of 6 inches or less. Use standard compaction conforming to 301.3.4.2 of the standard specifications.
- (7) Water shall be available to maintain moisture for compaction and dust control as needed.
- (8) After final compaction, shape the shoulders to remove longitudinal ridges to ensure proper drainage.
- (9) Shoulder cross slope shall be graded to 4% where reasonable and shall not exceed 8% except where super-elevated curves dictate shoulder slopes outside this range.
- (10) Haul and apply the water using vehicles equipped with watertight tanks. Equip the tanks with a suitable device that allows uniform application over the specified area. Use tanks equipped with positive shut-off valves controlled while the vehicle is in motion.
- (11) Uniformly apply the water and incorporate in the manner and amounts, at the times, locations, and purposes that the engineer orders or allows. Load and unload the tank and operate the equipment in a way that does not waterlog or damage the subgrade or base.

## **C.2 Aggregate Shoulder Maintenance Installation**

Under the Aggregate Shoulder Maintenance Installation item, add aggregate, blade, shape, and compact the shoulder aggregate, before the end of the day's work, to ensure proper drainage. Do not contaminate the shoulder aggregate with deleterious material. Do not leave unfinished sections of work open to traffic without proper traffic control.

## **D. Measurement**

- (1) The department may deduct for excessive contaminated aggregate or excessive unrecovered aggregate deposited outside the outer shoulder limits (in the grass or the ditch.)
- (2) The department will determine the weight based on county provided tickets. Give the department a ticket for each load delivered to the project, showing the net weight of the load, the type of material, the date, and project number.

- (3) The department will measure the Aggregate Shoulder Maintenance - Installation and Aggregate Shoulder Maintenance - Preparation by the station. The final measurement of both items shall be equal. There is no requirement to measure each section where preparation work is needed. When measuring by the station, the measurement will be measured along the roadway centerline or reference line to the nearest tenth (0.10) of a station, which is equivalent to 10 feet. If two or more roadways occur (as with a divided highway), the measurement will be along the centerline or reference line of each roadway. Example: one mile of a single roadway = 52.8 STA.
- (4) The department will measure the Aggregate Shoulder Maintenance - Material item under this section by the ton. Any conversions or alternate measurement procedures necessary to pay in the units of TONS can be found in 301.4 of the standard specifications.
- (5) The department will measure Water by the thousand-gallon units (MGAL). The quantity measured equals the amount of water furnished and applied as needed.

**E. Payment**

- (1) The department will pay for measured quantities at the unit price under the following work items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
305.9505.M	Aggregate Shoulder Maintenance - Preparation	STA
305.9506.M	Aggregate Shoulder Maintenance - Installation	STA
305.9507.M	Aggregate Shoulder Maintenance - Material	TON
624.0100.M	Water	MGAL

- (2) Payment for Aggregate Shoulder Maintenance - Preparation is full compensation for cutting to establish a minimum depth of 2 inches and shape prior to placement of new material. Preparation costs shall be spread the entire length of the project. There is no requirement to measure and add up individual sections where preparation work is needed.
- (3) Payment for Aggregate Shoulder Maintenance - Installation is full compensation for adding aggregate, blading, shaping, and compacting the aggregate shoulders.
- (4) Payment for Aggregate Shoulder Maintenance - Material is full compensation for aggregate and trucking costs for material delivered to worksite.
- (5) Payment for Water is full compensation for providing, hauling, and applying or incorporating the water.

## SECTION 3 - CRACK ROUTING AND SEALING

### A. Description

This section describes routing, cleaning, drying, and sealing primary cracks and joints along the entire length of HMA pavements, at locations defined within the project limits. Primary cracks are defined as transverse, longitudinal, and centerline cracks with a width less than  $\frac{3}{4}$ -inch.

#### A.1 Rout and Seal

Primary cracks shall be routed, cleaned and sealed. Routing is required for all primary cracks less than  $\frac{3}{4}$ -inch wide. Hairline cracks will not be sealed.

#### A.2 Clean and Seal

- (1) Clean and seal (without routing) longitudinal and transverse cracks that are equal to or greater than  $\frac{3}{4}$ -inch wide. Cracks shall be thoroughly cleaned until all failed sealant, dirt, dust or deleterious material is removed. Seal the crack immediately after completion of the cleaning.
- (2) Previously sealed cracks that exhibit signs of failure allowing water to penetrate the crack, such as missing or loss of existing sealant material, cracking of the existing sealant, loss of adhesion to existing pavement and overband wear, shall be cleaned of foreign and loose material and filled without routing.

#### A.3 Rumble Strips

Longitudinal cracks intersecting milled rumble strips along the centerline or paved shoulder shall be cleaned of foreign and loose material and may be filled without routing at the department's discretion and decided on prior to quote. Care shall be taken to minimize puddling of sealant in the depressions of the rumble strips.

### B. Materials

#### B.1 Sealant Material

Furnish sealant material that conforms to the requirements of the standard specification for joint and crack sealants, hot applied, for concrete and asphalt pavements, ASTM designation: D 6690, Type II or Type IV. If the sealant is more than 12 months old from the delivery date of the product, the manufacturer's recommendations shall be used to determine if the product shall be used.

#### B.2 Sealant Requirements

- (1) Deliver the sealant in the manufacturer's original sealed container legibly marked with the following information:
  1. Manufacturer's name & Trade name of sealant.
  2. Manufacturer's batch or lot number.

3. ASTM Designation.
  4. Minimum application temperature.
  5. Maximum (or safe) heating temperature.
- (2) Before applying the sealant, submit a manufacturer's certificate of compliance certifying that the compound meets the requirements of this specification and a copy of the manufacturer's recommendations on heating, re-heating and applying the sealant.
  - (3) The temperature of the sealant in the field application equipment shall not exceed the safe heating temperature recommended by the manufacturer. Temperatures above the safe heating temperature will result in rejection of the sealant material and will require disposal of the sealant material.
  - (4) Do not place sealant if the temperature of the material is below the manufacturer's recommended minimum application/pouring temperature.
  - (5) Mixing of different manufacturer's brands or different types of sealants is prohibited.
  - (6) Document the locations where the material from each lot number of sealant is placed.

## **C. Construction Methods**

### **C.1 Weather Limitations**

- (1) Sealant materials shall only be placed during a period of rising temperature after the air and surface temperature in the shade has reached 40°F and indications are for a continued rise in temperature. During a period of falling temperatures, which may fall below 40°F, placement of the sealant material shall be suspended until the above conditions are met.
- (2) Do not place sealant material if weather conditions are raining or wet. If sealant is placed and rain falls before the sealant has properly cured, remove and replace the wet/contaminated sealant.
- (3) During the seasons when anti-icing and snow removal operations are occurring, do not "Rout and Seal" or "Clean and Seal" cracks until after a rain event has cleansed the pavement of materials from these operations. Presence of these materials will negatively affect the ability of the sealant to adhere to the pavement.
- (4) Do not perform sealing operations when de-icing chemicals are on pavement. Presence of these materials negatively affect the ability of sealant to adhere to the sidewalls of a crack.



## **C.2 Equipment**

Furnish all equipment necessary to complete the routing, cleaning, preparing and sealing of cracks in accordance with the requirements specified. Equipment required for this operation includes the following:

1. Mechanical router capable of routing the asphaltic pavement to provide a depth to width ratio of all routed cracks of 1:1 (i.e. ¾ inch depth x ¾ inch width).
2. High pressure air equipment capable of blowing sand and other foreign materials from a reservoir or crack.
3. A high capacity heat torch (heat lance) operated with propane and compressed air in combination and capable of achieving a temperature of heated air at the exit orifice of 1,800° F and a discharge velocity of 3,000 feet per second.
4. Pressure distributor for applying sealing material through a hand-operated wand or nozzle in accordance with the sealant manufacturer's instructions.

## **C.3 Construction**

- (1) Rout cracks to be sealed to a minimum width of 3/4 inch and a minimum depth of 3/4 inch.
- (2) For "Clean and Seal" cracks, remove failed sealant, dirt, dust, and any deleterious material.
- (3) If there is concrete curb and gutter, "Clean and Seal" the longitudinal joint between the pavement and concrete gutter if separation between the two surfaces is greater than 1/8 inch wide.
- (4) For "Rout and Seal" and "Clean and Seal" cracks, thoroughly clean the routed reservoirs/cracks with a minimum of one pass of the high pressure air equipment. Cleaning continues until the reservoir/crack is dry and all dirt, dust, or deleterious material is removed.
- (5) The use of a heat lance to clean and dry route cracks is optional. If a heat lance is used, condition the pavement prior to placement of the crack sealant. Immediately prior to the placement of the crack sealant, heat the surface of both sidewalls of the reservoir/crack, as well as the pavement 1 inch on either side of the sidewalls with hot compressed air from a heat lance. Do not scorch the routed reservoir, crack, or adjacent pavement surface.
- (6) For "Rout and Seal" and "Clean and Seal" cracks, apply the sealant when the material is at the application/pouring temperature recommended by the manufacturer. Fill the crack with a thin layer of sealant flush, but no more than 1/8-inch-thick, spread uniformly over the entire length of the crack. The width of the overband, including the routed reservoir, shall be a maximum of 2.5 inches wide. The maximum film thickness of the overband is limited to 1/8 inch.

- (7) At locations where crack sealant settles into the crack opening more than 1/4 inch below the pavement, apply additional material to meet the filling requirement above.
- (8) Apply single ply-toilet paper or a light coating of sand, dust or an approved de-tacking agent for use with the specified sealant to the surface of the newly placed sealant if traffic results in tracking of the crack sealing material. Repair any damage by traffic to treated pavement areas.

#### **C.4 Documentation**

- (1) Melting kettle production data sheets shall be developed, completed, and submitted daily for each kettle on the project with the following information:
  - 1. Date, county, highway route number and highway segment.
  - 2. Weather conditions at morning, mid-day and afternoon intervals.
  - 3. Kettle number, ambient air and pavement temperature in °F at the beginning of the day, mid-day and end of day.
  - 4. Kettle temperature in °F once an hour during working production.
  - 5. Sealant material temperature in °F at the wand once an hour during working production.
  - 6. Beginning and ending locations on project for the day, including lane and direction.
  - 7. The amount of materials used for the day in pounds including lot numbers.
  - 8. Unique or atypical situations on the project that may affect the placement or performance of the sealed cracks.
  - 9. The signature of the person developing these data sheets.
- (2) If a representative from the department is not present, or has asked the county to document the production, record the required information on the melting kettle production data sheets as required during the actual working operations. At the end of each day's production, the completed sheets shall be presented to the department.

#### **C.5 Workmanship**

- (1) During crack sealing operations, the engineer may review the sealant temperatures at the melting kettle intermittently. If the temperatures are above the manufacturer's specified safe heating temperature, the sealant will be rejected. Empty the kettle of the over-heated material and legally dispose of it in an environmentally safe method.
- (2) Asphalt cracks, whether sealed by the "Rout and Seal" or "Clean and Seal" method, will be observed on a crack-by-crack basis for acceptable workmanship. Unsealed cracks shall be sealed before re-opening the roadway to traffic.

- (3) Sealed cracks shall be rejected if there is evidence of poor workmanship or obvious defects, including but not limited to the following:
  - 1. Routed reservoir not filled completely.
  - 2. Lack of bond to the sidewalls of the joint reservoir, crack or asphalt pavement.
  - 3. Excessive debris or moisture in the joint reservoir or crack.
  - 4. Contamination of the sealant.
  - 5. Excessive pools of sealant on the pavement or shoulder surface.
  - 6. Excessively wide or thick sealant overbanding.
- (4) Rejected sealed cracks shall be repaired, the sealant removed and disposed of in a legal and appropriate manner, and the cracks resealed as necessary.

**D. Measurement**

- (1) The department will measure Asphalt Pavement Rout and Seal items by the station acceptably completed.
- (2) When measuring by the station, the measurement will be measured along the roadway centerline or reference line to the nearest tenth (0.10) of a station, which is equivalent to 10 feet. If there are two roadways (as with a divided highway), the measurement will be along the centerline or reference line of each roadway. For example, if one mile of a divided roadway was routed and sealed, the total stations reported in the quantities would be 105.6 STA (52.8 STA multiplied by two roadways).
- (3) The department will measure Asphalt Pavement Rout and Seal—Material by the pounds acceptably completed.

**E. Payment**

- (1) The department will pay for measured quantities at the unit price under the following work items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
492.9010.M	Asphalt Pavement Rout and Seal - Installation	STA
492.9011.M	Asphalt Pavement Rout and Seal – High Capacity Torch	STA
492.9020.M	Asphalt Pavement Rout and Seal - Material	LB

- (2) Payment for Asphalt Pavement Rout and Seal - Installation is full compensation for rout cutting; cleaning and sealing the joint; furnishing all labor, tools, equipment, and incidentals necessary to complete the work, and providing daily production data sheets.
- (3) Payment for Asphalt Pavement Rout and Seal - Material is full compensation for furnishing asphaltic material used in crack filling and crack sealing operations.

- (4) Passing lane and turn lane lengths shall be considered incidental to the centerline length of the Asphalt Pavement Rout and Seal – Installation and Asphalt Pavement Rout and Seal – High Capacity Torch items.
- (5) Payment for Asphalt Pavement Rout and Seal – High Capacity Torch is full compensation for furnishing all labor and equipment necessary to complete the work.

## **SECTION 4 - STRUCTURE WORK**

### **I. Bridge Deck Crack Sealing**

#### **A. Description**

This section describes sealing/repairing cracks in the bridge deck with a two-part low viscosity urethane or epoxy resin in accordance with the plan details, manufacturer's recommendations or requirements, and as hereinafter provided.

#### **B. Materials**

- (1) The department may furnish the crack sealer for sealing/repairing cracks in the bridge deck. The Agreement for a project will indicate if state supplied materials will be provided.
- (2) If the department does not furnish the crack sealer, provide a commercial low-viscosity crack sealer selected from the department's approved products list for Structures, Low viscosity bridge deck sealers located on the department's website at

[Approved Products List](#)

- (3) Before using, submit the product information to engineer for approval.

#### **C. Construction**

##### **C.1 Preparation**

Clean all cracks to be sealed by mechanical means, i.e. sandblasting, high-pressure air, etc., as approved by the department. Cracks should be free of dirt, oil, dust and foreign objects. All surfaces must be clean and dry. Follow additional preparation requirements recommended or required by the manufacturer.

##### **C.2 Mixing and Application**

- (1) If mixing is necessary, mix and apply in accordance with the manufacturers recommendations. Application may be by gravity feed if the product is designed for such an application. Use cartridges and cartridge guns provided by the manufacturer or bulk mixing following the manufacturer's instructions for larger batches.
- (2) Within reason, the county will manage the amount of material needed for each location. Due to the nature of these materials, cartridges should not be opened or materials should

not be mixed when near the end of the work for each site, to prevent waste. Many times, an opened tube or mixed material will harden and cannot be used at the next location after only a short period of time has elapsed.

**C.3 Surface Cracks**

Follow manufacturer’s recommendations for preparation and placement. When necessary, per manufacturer’s recommendations, manufactured sand may be used to fill cracks prior to sealant. Work with one small section at a time. Fill all repair areas to grade. Follow manufacturer’s recommendations for handling excess material and clean up.

**D. Measurement**

The department will measure Bridge Deck Crack Sealing by the gallon. The material is usually delivered from the manufacturer in “caulk-type tubes” which vary in size. The tubes are measured by the fluid ounce (or ml) which will be converted to gallons for payment of this item. (128 fl oz = 1 gallon) The tubes, sometimes called cartridge sets, will be measured for this item even if only part of the cartridge set is used. Un-opened cartridge sets will not be measured for this item. The gallon unit will be measured (converted) to the nearest 1/100th of a gallon.

**E. Payment**

(1) The department will pay for measured quantities at the unit price under the following work item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
502.9300.M	Bridge Deck Crack Sealing	GAL

(2) Payment is full compensation for cleaning and drying the cracks; furnishing and placing the sealant; furnishing and placing small quantities of manufactured sand and for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the work.

**II. Bridge Deck Protective Surface Treatment**

**A. Description**

This section describes sealing existing structures with protective surface treatment.

**B. Materials**

(1) The department may furnish the sealant for the protective surface treatment. The Agreement for a project will indicate if state supplied materials will be provided.

(2) If the department does not furnish the sealant, provide a concrete surface sealer selected from the department’s approved products list for Portland cement concrete, Concrete protective surface treatment located on the department’s website at

[Approved Products List](#)

- (3) Before use, submit the product information to engineer for approval.

**C. Construction**

- (1) Apply protective surface treatment to the entire top surface of the bridge deck; curb, including vertical face; median and sidewalk surfaces; and the inside faces and tops of concrete parapet, unless otherwise specified.
- (2) Ensure that the concrete is surface-dry for the minimum time recommended by the manufacture before application. Delay application if rain is expected, or protect from rain for the manufacturer's specified cure time.
- (3) Ensure that the concrete is clean. Air blast immediately before applying the protective surface treatment to remove all dust or loose particles. Also ensure that application equipment is clean and functioning properly.
- (4) Use the manufacturer's recommended method to apply the product. Apply at the rate the manufacturer recommends unless that rate causes ponding.
- (5) If crack sealing is to be performed on the same structure to receive protective surface treatment, the crack sealing shall be complete, dry and cured before the protective surface treatment is applied.
- (6) Do not open the bridge to service until trafficked areas are dry enough to sustain traffic without causing damage to the treatment or creating a safety hazard.

**D. Measurement**

- (1) The department will not measure the item Bridge Deck Protective Surface Treatment in the field. The department will use the deck area listed in the Highway Structures Information System (HSIS), Bridge Inventory, Geometry tab for payment, unless one or more of the following occurs:
  - 1. A contract revision partially eliminates, completely eliminates, or affects the quantity for the item.
  - 2. The work performed was not acceptably completed.
  - 3. The quantity for the item varies by more than 5 percent from the plan quantity.
  - 4. A quantity variation causes the value of the work to vary by more than \$5,000 from the quoted amount.
- (2) The HSIS quantity is a plan quantity. Actual quantity may be higher due to vertical surfaces that need to be treated, but only the plan quantity will be used for payment.

## E. Payment

- (1) The department will pay for plan quantities at the unit price under the following item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
502.9350.M	Bridge Deck Protective Surface Treatment	SF

- (2) Payment is full compensation for resealing, including surface preparation cleaning, and daily production data sheets.

## III. Bridge Cleaning - Deck

### A. Description

Unless otherwise specified:

1. Remove all accumulated foreign material from the entire bridge deck, including the bridge deck, sidewalk, curbs, medians, inside faces and tops of concrete parapets, and at least 15 feet of the approach slabs as needed.
2. Clean expansion joints, scuppers, and drains that are part of the bridge and within 15 feet of the approach slabs.

### B. Materials

Use water that is reasonably clean and free of harmful materials including sediment and salt contaminants.

### C. Construction

#### C.1 Equipment

- (1) Furnish cleaning equipment consisting of hand tools, power brooms, air compressors, water tanks, and water pumps with associated delivery hardware necessary to properly flush, clean, and remove all foreign material from the bridge structure.
- (2) Other types of cleaning equipment may be used with the engineer's approval.
- (3) Ensure air and/or water pressure are sufficient to remove the accumulated material without damaging paint coverage any structural steel and the stain or paint coverage of other finished surfaces.

#### C.2 Cleaning

- (1) Ensure areas that have been cleaned are free of all accumulations of sand, gravel, dirt, and other foreign materials.
- (2) Prior to cleaning with water pressure, remove all accumulated foreign material from bridge sidewalks, bridge decks, curb tops, joints, drains and scuppers-and other locations specified and as directed by the department. Remove the accumulated foreign material with hand brooms, hand shovels, scrapers, vacuum cleaners or other

methods acceptable to the department. Collect this removed material and dispose of at an approved waste area according to Federal, State, and Local regulations. Use best management practices to prevent material from falling in the water or on the land below the bridge.

- (3) Use sufficient water under pressure to remove salt contaminants, dirt, and other detrimental foreign matter without damaging or removing the painted lines or other pavement markings on the bridge.
- (4) Flush all deck drains and scuppers at drains with water under pressure after the accumulated foreign material in them has been properly removed. Drain systems may have to be taken apart to remove large blockages of accumulated foreign material. Should this be necessary, return them to their original configuration immediately after cleaning. Ensure drain systems drain properly after cleaning.
- (5) Do not soil or damage private or public property during cleaning operations.

**D. Method of Measurement**

- (1) The department will not measure the item Bridge Cleaning-Deck in the field. The department will use the deck area listed in the Highway Structures Information System (HSIS), Bridge Inventory, Geometry tab for payment unless one or more of the following occurs:
  - 1. A contract revision partially eliminates, completely eliminates, or affects the quantity for the item.
  - 2. The work performed was not acceptably completed.
  - 3. The quantity for the item varies by more than 5 percent from the plan quantity.
  - 4. A quantity variation causes the value of the work to vary by more than \$5,000 from the quoted amount.
- (2) The HSIS quantity is a plan quantity. Actual quantity may be higher due to vertical surfaces that need to be cleaned, but only the plan quantity will be used for payment.
- (3) Cleaning of the approach slabs and inlets on the approach slabs is incidental to this item and no additional square footage will be added to this item for that purpose.

**E. Payment**

- (1) The department will pay for plan quantities at the unit price under the following item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
990.1000.M	Bridge Cleaning-Deck	SF

- (2) Payment is full compensation for furnishing all material, labor and equipment necessary to flush, wash, clean, remove and dispose of all foreign material and debris.



## **IV. Bridge Cleaning - Superstructure**

### **A. Description**

Unless otherwise specified remove all accumulated foreign material from the bridge superstructure, including the pier caps, trusses, interior truss members, webs, top and lower flanges of beams or girders, diaphragms, floor beams, stringers, pin and hanger assemblies, and bearings and the bearing seat area as designated.

### **B. Materials**

Use water that is reasonably clean and free of harmful materials including sediment and salt contaminants.

### **C. Construction**

#### **C.1 Equipment**

- (1) Furnish cleaning equipment consisting of hand tools, power brooms, air compressors, water tanks, and water pumps with associated delivery hardware necessary to properly flush, clean, and remove all foreign material from the bridge structure.
- (2) Other types of cleaning equipment may be used with the engineer's approval.
- (3) Ensure air and/or water pressure are sufficient to remove the accumulated material without damaging paint coverage of the structural steel.
- (4) Other equipment such as high-reach trucks, and under bridge access trucks or movable scaffolds may be necessary to gain access to areas designated for cleaning.

#### **C.2 Cleaning**

- (1) Ensure areas that have been cleaned are free of all accumulations of sand, gravel, dirt, bird nests and excreta, and other foreign materials.
- (2) Take care not to remove or damage bird screens.
- (3) Prior to cleaning with water pressure, remove all accumulated foreign material from pier caps, trusses, interior truss members, webs, top and lower flanges of beams or girders, diaphragms, floor beams, stringers, pin and hanger assemblies, and bearings and the bearing seat area as designated by the department. Remove the accumulated foreign material with hand brooms, hand shovels, scrapers, vacuum cleaners or other methods acceptable to the department. Collect this removed material and dispose of at an approved waste area according to Federal, State, and Local regulations. Use best management practices to prevent material from falling in the water or on the land below the bridge.
- (4) Use sufficient water under pressure to remove salt contaminants, dirt, and other detrimental foreign matter without damaging or removing the existing paint coverage.

Stop the cleaning operation if removal of or damage to existing paint coverage occurs. In this situation, adjust the water pressure to a level that does not damage or remove the paint coverage.

- (5) Care shall be taken during washing to not dislodge caulking from field splices and other locations. Report locations of loose or dislodged caulk to the region bridge engineer.
- (6) Do not soil or damage private or public property during cleaning operations.

**D. Method of Measurement**

The department will measure Bridge Cleaning – Superstructure as each individual bridge superstructure acceptably completed. Bridges deleted from the agreement will not be paid.

**E. Payment**

- (1) The department will pay for measured quantities at the unit price under the following work item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
990.1010.M	Bridge Cleaning - Superstructure	EACH

- (2) Payment is for full compensation for furnishing all material, labor, equipment, and performing all work necessary to flush, washes, clean, remove and dispose of all foreign material and debris.

**V. Bridge Cleaning - Sweeping Deck**

**A. Description**

Unless otherwise specified:

1. Remove all accumulated foreign material from the entire bridge, including the bridge deck, sidewalk, curbs and at least 15 feet of the approach slabs as needed.
2. Clean expansion joints, scuppers, and drains that are part of the bridge and within 15 feet of the approach slabs.

**B. Materials (Vacant)**

**C. Construction**

**C.1 Equipment**

- (1) Furnish cleaning equipment consisting of hand tools or power brooms to remove all foreign material from the bridge deck.
- (2) Other types of cleaning equipment may be used with the engineer’s approval.

**C.2 Cleaning**

- (1) Ensure areas that have been cleaned are free of all accumulations of sand, gravel, dirt, and other foreign materials.
  
- (2) Remove all accumulated foreign material from bridge sidewalks, bridge decks, curb tops, joints, drains and scuppers-and other locations specified and as directed by the department. Remove the accumulated foreign material with hand brooms, hand shovels, scrapers, vacuum cleaners or other methods acceptable to the department. Collect this removed material and dispose of at an approved waste area according to Federal, State, and Local regulations. Do not at any time allow this removed material to fall or be disposed of in the water or on the land below the bridge.
  
- (3) Do not soil or damage private or public property during cleaning operations.

**D. Method of Measurement**

- (1) The department will not measure the item Bridge Cleaning-Sweeping Deck in the field. The department will use the deck area listed in the Highway Structures Information System (HSIS), Bridge Inventory, Geometry tab for payment unless one or more of the following occurs:
  - 1. A contract revision partially eliminates, completely eliminates, or affects the quantity for the item.
  - 2. The work performed was not acceptably completed.
  - 3. The quantity for the item varies by more than 5 percent from the plan quantity.
  - 4. A quantity variation causes the value of the work to vary by more than \$5,000 from the quoted amount.
  
- (2) The HSIS quantity is a plan quantity.
  
- (3) Cleaning of the approach slabs and inlets on the approach slabs is incidental to this item and no additional square footage will be added to this item for that purpose.

**E. Payment**

- (1) The department will pay for plan quantities at the unit price under the following item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
990.1020.M	Bridge Cleaning – Sweeping Deck	SF

- (2) Payment is full compensation for furnishing all labor and equipment necessary to clean, remove and dispose of all foreign material and debris.

## SECTION 5 – SEAL COAT

### I. Seal Coat

#### A. Description

- (1) This section describes applying asphaltic material, aggregate cover, and fog seal on a previously completed asphalt surface.

#### B. Materials

##### B.1 Asphaltic Material

- (1) Furnish asphaltic materials for seal coats and fog seals conforming to section 455 of the standard specifications.
- (2) Provide CRS-2P or HFRS-2P, asphaltic material for seal coat. Provide CRS-2P or HFRS-2P, asphaltic material for fog seal when fog seal is applied in conjunction with seal coat. The CRS-2P and HFRS-2P, asphaltic material for seal coat and fog sealing, shall meet the following requirements for the type and grade specified. Only Asphaltic Material supplied from a certified source is approved for use.
- (3) The asphalt emulsion shall be compatible with the cover aggregate. Provide the supplier of the asphalt emulsion test results from the aggregate sample. The supplier of the emulsion will provide a certification that the emulsion is compatible with the aggregate.
- (4) The emulsified asphalt shall meet the requirements of AASHTO M-316 subject to the following modification:
  1. Polymer-modified cationic emulsified asphalt, (CRS-2P), and polymer-modified anionic emulsified asphalt, (HFRS-2P) shall be produced by using polymer modified base asphalt only. The use of Latex modification shall not be allowed. Any emulsion not meeting this requirement shall not be used.

##### B.2 Aggregate

- (1) Provide aggregate conforming to section 475 of the standard specifications. Use aggregates, uniform in quality and free from wood, bark, roots, and other deleterious materials. Furnish aggregate conforming to the following table:

(2)

**Table 5-1**

Sieve Size	Percent Passing By Weight		
	#1	#2	#3
3/8 inch (9.5mm)	100	100	100
#4 (4.75mm)	90-100	90-100	85-100
#8 (2.36mm)	45-75	5-10	10-40
#16 (1.19mm)	-	-	0-10
#40 (.425mm)	0-8	-	-
#200 (.075mm)	0-2	0-1	0-1

- (3) At least two weeks before construction, sample the cover aggregate from the various sources. The engineer and county will jointly obtain the samples. The department's engineer will submit the aggregate sample to the department's laboratory for testing of gradation. Sample the aggregate in accordance with Chapter 8 of the department's Construction and Materials Manual. The engineer will provide the results to the county.
- (4) The engineer may take a sample of the aggregate and re-test the gradation of the cover aggregate during seal coat operations.

**B.3 Water**

Use potable water, compatible with the seal coat.

**B.4 Seal Coat Design**

- (1) Provide the following to the engineer at least two weeks before beginning construction:
  - 1. Seal coat aggregate design application rate (Lbs/SY).
  - 2. Asphalt emulsion design application rate (Gal/SY).
  - 3. Source(s) of aggregate and asphalt emulsion.
- (2) The department may postpone the start of work until receipt of the seal coat design and approval by the engineer.
- (3) If the aggregate material specified in Table 1 is unavailable or is cost prohibitive to obtain, the county may submit a proposed seal coat design prior to providing a quote. The proposed design should include a listing of projects and roadways where the seal coat design has been utilized within the last four years. The proposed alternative design will be reviewed and approved by the engineer with concurrence from the Bureau of Highway Maintenance prior to the county providing a quote for the project.

**B.5 Temporary Raised Pavement Markers**

- (1) Provide single or multi-cover tabs in color shown in the standard detail drawing "Standard Application for Temporary Raised Pavement Markers, Type II". Markers shall be of polyurethane material and a minimum size of 4 inches (width) x 2 inches (height).

A reflective surface shall be affixed along the top of the marker body on one or both sides. The reflective surface shall be 4 inches wide and 0.25 inches high.

#### **B.6 Permanent and Temporary Pavement Markings**

Provide pavement marking materials conforming to sections 646 to 649 of the standard specifications.

### **C. Construction**

#### **C.1 General**

- (1) Schedule a meeting at least seven calendar days before beginning seal coat operations. The purpose of the meeting will be to discuss the seal coat operations, equipment, material sources, traffic control, and staffing for the project. Coordinate the time and location with the department's engineer.
- (2) Construct seal coat to the full width of the existing surface unless the contract or engineer specify otherwise.

#### **C.2 Equipment**

- (1) Distributor: use a distributor as specified in section 455.3.2.2 of the standard specifications.
- (2) Aggregate Spreader: Use a self-propelled mechanical type aggregate spreader capable of distributing the aggregate uniformly to the required width and at the designed rate. Use a self-propelled type mounted on pneumatic-tired wheels.
- (3) Rollers: Provide a minimum of two self-propelled rollers. At least one roller will be a pneumatic-tire roller. Steel-wheel rollers must weigh between 6 and 9 tons. The compaction width of the rollers shall be of sufficient width so that the entire width of the treatment area is covered in one pass by all the rollers.
- (4) Brooms: Provide motorized brooms with a positive means of controlling vertical pressure and capable of cleaning the road surface prior to spraying asphaltic material and removing loose aggregate after seal coating.

#### **C.3 Weather Limitations**

Construct seal coat operations in accordance with the following:

1. Not before May 1 or after August 31.
2. Work only during daylight hours.
3. Start when the pavement and air temperature are 60°F and rising.
4. The road surface is dry and there shall be no standing water.
5. Do not apply before impending rains if rain will damage the material before placing and rolling the cover aggregates.
6. Do not perform work during foggy weather.

#### **C.4 Road Surface Preparation**

- (1) Immediately before applying the asphaltic material, clean the pavement surface with a power broom to remove dirt, clay or other objectionable matter. Clean depressions not reached by the power broom, using hand brooming.
- (2) Remove vegetation from cracks or joints.
- (3) Cover iron fixtures in or near the pavement to prevent adherence of the asphaltic material. Suitable covering includes plywood disks, sand, Kraft paper, roofing felt or other approved methods. Remove the protective coverings before opening the road to traffic.

#### **C.5 Temporary Raised Pavement Markers**

- (1) Install Temporary Raised Pavement Markers, Type II in accordance with manufacturer recommendations. Bonding surface must be free of dust, dirt, oil and moisture.
- (2) Temporary Raised Pavement Markers shall be used to substitute for pavement markings that are covered during seal coat operations. The temporary pavement markers shall be placed in accordance with the standard detail drawing "Standard Application for Temporary Raised Pavement Markers, Type II".
- (3) If temporary same day pavement marking is being applied or if the road is detoured during construction, a reduced amount of temporary raised pavement markers may be used to locate the centerline and the channelizing lines. The following spacing requirements shall be used if temporary raised pavement markers are used in conjunction with same-day pavement markings operations or detours:
  1. Center line, lane line, and edge line: Place markers at 100-foot spacing.
  2. Barrier lines: Place marker at the beginning and end of barrier line.
  3. 8-inch channelizing line: Place two markers side-by-side at the beginning and the end of the channelizing line.
  4. Dashed 8-inch Line: Place one marker at the beginning of every other segment of the dashed line.
- (4) Remove protective covers from the reflective tabs prior to opening the closed lane(s) to traffic.

#### **C.6 Traffic Control**

For roadways with annual daily traffic (ADT) less than 3,500 vehicles per day (vpd), use of pilot vehicles to lead traffic through the work zone shall be optional. Use of pilot vehicles shall be required on roadways with ADT greater than or equal to 3,500 vpd.

### **C.7 Application of Asphaltic Material**

Begin the rate of application for the asphaltic material as determined by the seal design. After sealing 200 feet of the road segment, pause sealing operations to ensure the application rate of the asphaltic material is adequate given the field conditions. After applying the asphaltic material to 200-foot segment, place the seal coat aggregate at the design application rate. Inspect the aggregate in the wheel paths for proper embedment. Make adjustments to the rate of application, if necessary. At a minimum, construct one full lane width at a time. Make additional adjustments to the rate of application during the project if needed.

### **C.8 Application of Aggregate**

- (1) Apply the aggregates at the rate identified in the seal coat design.
- (2) Place aggregate within minutes of applying the asphaltic material. Make additional adjustments to the rate of application during the project if needed.
- (3) The speed of the spreader shall be such that the aggregate does not turn over and starting and stopping of the spreader is minimized. The edges of the aggregate applications shall be sharply defined. Do not use previously applied aggregates.

### **C.9 Rolling Operations**

- (1) Roll the surface immediately after spreading the aggregate. Begin at the edges and continue to the center, lapping  $\frac{1}{2}$  the roller width on each pass. Roll the aggregate so the entire width of the treatment area is covered in one pass by all the rollers. After this initial rolling, perform subsequent rolling using both steel wheel rollers and pneumatic-tire rollers until thoroughly embedding the aggregate and the surface is smooth and uniform in texture. Take care when reversing the roller direction to avoid displacing or loosening the cover aggregate or damaging the asphaltic material.
- (2) Proceed at a recommended speed less than or equal to 5 miles per hour (7 feet per second), to prevent turning over aggregate.
- (3) Make at least three complete passes over the aggregate. Roll the aggregate so the entire width of the treatment area is covered in one pass by all the rollers.
- (4) Self-propelled pneumatic tired compacting equipment must have a compaction width of at least five feet.

### **C.10 Sweeping**

- (1) A light brooming of the seal coat should occur before vehicular traffic is allowed on the surface. No downward pressure should be exerted on the broom during the initial



sweeping. Care should be taken not to dislodge the cover aggregate from the emulsion during the initial sweeping.

- (2) Re-sweep seal coat areas the day after the initial sweeping. Dispose of the surplus seal coat aggregate in a manner satisfactory to the engineer.

#### **C.11 Protection of the Surface**

No traffic is permitted on the seal coat until after the initial rolling has been completed and the asphaltic material has set and will not pick up on vehicle tires.

#### **C.12 Application of Asphaltic Material for Fog Sealing**

- (1) A fog seal shall not be installed as a standalone product and shall be in addition to seal coat installation.
- (2) Fog seal completed seal coated areas, after the final sweeping and before placement of permanent pavement markings. Construct the fog seal as follows: Construct a 100-foot test strip. Review the application of diluted (1:1) asphaltic material and adjust the application rate as needed. Apply between 0.07 to 0.18 gallons per square yard, diluted. Apply the fog seal to minimize the amount of overspray. Do not allow traffic on the fog seal until it has cured.

#### **C.13 Pavement Markings**

- (1) Pavement markings shall conform to sections 646 through 648 of the standard specifications.
- (2) Place Seal Coat – Temporary Pavement Marking Same Day Paint in accordance with 646.3.1.3 of the standard specifications.
- (3) Apply permanent markings to the surface within 14 days of completing the seal coat placement.

#### **D. Measurement**

- (1) The department will measure Seal Coat-Installation by the square yard acceptably completed.
- (2) The department will measure Seal Coat-Asphaltic Material (Item) by the gallon acceptably completed.
- (3) The department will measure Seal Coat-Aggregate Material by the square yard acceptably completed.
- (4) The department will measure Seal Coat-Pavement Marking Paint by the linear foot acceptably completed.

- (5) The department will measure Seal Coat – Special Pavement Marking Paint as each individual special pavement marking acceptably completed.
- (6) The department will measure Seal Coat-Temporary Pavement Marking Same Day Paint by the linear foot acceptably completed.
- (7) The department will measure Temporary Raised Pavement Markers, Type II as each individual raised pavement marker acceptably completed.

**E. Payment**

- (1) The department will pay for measured quantities at the unit price under the following work items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
475.9000.M	Seal Coat-Installation	SY
475.9100.M	Seal Coat-Asphaltic Material for Seal Coat	GAL
475.9110.M	Seal Coat-Asphaltic Material for Fog Seal	GAL
475.9120.M	Seal Coat-Aggregate Material	SY
646.9000.M	Seal Coat-Pavement Marking Paint	LF
646.9010.M	Seal Coat-Special Pavement Marking Paint	EACH
646.0402.M	Seal Coat – Temporary Pavement Marking Same Day Paint	LF
649.2102.M	Temporary Raised Pavement Markers, Type II	EACH

- (2) Payment for Seal Coat-Installation and Seal Coat-Aggregate Material is full compensation for preparing the surface; for heating and applying asphaltic material; for drying or moistening, applying, and rolling the cover aggregate; and for brooming, finishing and maintaining the surface.
- (3) Payment for Seal Coat-Asphaltic Material bid items is full compensation for providing the asphaltic material; and for transporting and heating.
- (4) Payment for the Pavement Marking bid items under this section is full compensation for preparing the surface, for providing all temporary and permanent marking, and for protecting marking until dry or cured.
- (5) Payment for Temporary Raised Pavement Markers, Type II is full compensation for preparing the surface; providing and installing temporary pavement marking reflective tabs; and removing protective covers.

## II. Pilot Vehicle

### A. Description

This section describes providing a vehicle and driver to serve as a pilot vehicle to lead the traveling public and construction vehicles through the work zone where 2-way traffic is restricted to only one lane.

### B. Materials

- (1) The pilot vehicle shall be equipped and licensed for operation on public roadways in accordance with the applicable State laws.
- (2) The vehicle shall carry the county's insignia and shall be equipped with a rear facing, rigidly mounted portable changeable message board or a rigidly mounted sign having a fluorescent orange background with black lettering bearing the message:

“PILOT CAR – FOLLOW ME”

- (3) The sign shall be Manual on Uniform Traffic Control Devices sign code G20-4, sized at 36 inches x 18 inches.
- (4) The sign shall be securely covered or removed when not in use.
- (5) The pilot vehicle shall be equipped with and have flashing, yellow lights operating.

### C. Construction

- (1) The vehicle, while in use, shall be used exclusively to lead and assist traffic movement.
- (2) During construction, a pilot vehicle shall be kept in continuous operation. Delays to traffic movement will not be allowed for refueling, driver relief, or any other foreseeable reason.
- (3) During seal coat operations, the pilot vehicle will drive at a speed of 35 miles per hour (mph) or less through the work zone. If the pilot vehicle drives on any portion of the recently sealed surface that has not be swept at least once, maintain speeds of 25 mph or less. During fog seal operations, the pilot vehicle will drive at a speed of 45 mph or less through the work zone.
- (4) Pilot vehicle drivers shall be properly licensed and shall be familiar with and always observe the “Rules of the Road” for proper, safe, and courteous driving.
- (5) Pilot vehicle drivers shall have undergone the training for flaggers as described in section 104.6.1 of the standard specifications.

**D. Measurement**

- (1) The department will measure Furnish and Operate Pilot Vehicle by the day acceptably completed. Operation for four hours or less shall be considered as one-half day and operation for more than four hours shall be considered as a full day.
- (2) Calculate the number of days as follows:

$$T_D = D \times N$$

**Where:**

$T_D$  = Total days

$D$  = Number of days pilot vehicles are required for sealing and sweeping operations

$N$  = Number of pilot vehicles required to lead traffic through sealing and sweeping operations

Example: A seal coat operation takes a total of four days to complete. Two days for placement of the seal coat and two days for final sweeping of the seal coat. Two pilot vehicles are required to lead traffic during seal coat operations and two pilot vehicles are required to lead traffic during sweeping operations. The bid item for pilot vehicles is calculated as follows:

$$T_D = \begin{matrix} \textit{Seal Coat Operation} & \textit{Sweeping Operation} \\ (2 \text{ days} \times 2 \text{ pilot vehicles}) & + & (2 \text{ days} \times 2 \text{ pilot vehicles}) \end{matrix}$$

$$T_D = 8 \text{ days}$$

**E. Payment**

- (1) The department will pay for measured quantities at the unit price under the following item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
643.0200.M	Furnish and Operate Pilot Vehicle	DAY

- (2) Payment for Furnish and Operate Pilot Vehicle is full compensation for providing vehicles and drivers.

## SECTION 6 - MOBILIZATION

### A. Description

This section describes the work and operations necessary to move personnel, equipment, supplies, and incidentals to the project site.

### B. Materials (Vacant)

### C. Construction (Vacant)

### D. Measurement

The department will measure Mobilization as one each for each segment identified and acceptably completed. Mobilization for segments deleted from the agreement will not be paid.

### E. Payment

- (1) The department will pay for measured quantities at the unit price under the following item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
619.9100.M	Mobilization	EACH

- (2) Payment for Mobilization is full compensation for all work necessary to move personnel, equipment, supplies and incidentals to the project site.

## SECTION 7 - TRAFFIC CONTROL

### A. Description

This section describes providing flagging and erecting, maintaining, moving, and removing temporary traffic signs, and demountable legend plaques, pavement markings, drums, barricades, flexible tubular markers, arrow boards, portable changeable message signs (PCMS), and lights.

### B. Materials

#### B.1 General

- (1) Furnish materials conforming to the Manual on Uniform Traffic Control Devices (MUTCD) including the Wisconsin supplement (WMUTCD) and meeting the criteria for acceptable devices according to the ATSSA publication Quality Guidelines for Temporary Traffic Control Devices, and section 643.2 of the standard specifications.
- (2) Furnish materials from the department's Approved Products List as follows:
- Drums
  - Barricades
  - Warning lights and attachment hardware

- Flexible tubular marker posts including bases
- Sign sheeting
- 42-inch cone assemblies

## **B.2 Portable Changeable Message Sign**

- (1) Furnish trailer-mounted portable changeable message signs that conform to the minimum requirements of the MUTCD. Shock mount the electronics and sign assembly to a street-legal trailer that has top fenders and 4 leveling jacks. Provide a battery power supply with a solar powered charging system and a backup power source. Do not use gasoline or diesel-powered equipment.
- (2) Ensure that the associated sign controller conforms to the following:
  1. Has a power supply capable of providing continuous operation.
  2. Has a screen for reviewing messages before being displayed on the sign.
  3. Is controlled by an onboard computer programmable via an onboard input device and, if the special provisions require, programmable remotely. Ensure that the computer is capable of storing and recalling at least 150 programmed messages.
  4. Has a secure cabinet and requires a username and password to access the computer interface.
  5. Automatically adjusts the sign's intensity to maintain legibility under varying light conditions.
- (3) Provide a line matrix, character matrix, or full matrix sign message display no greater than 11-1/2 feet wide and capable of displaying 3 lines sequentially with 8 or more 18-inch high by 11-inch-wide characters per line. Do not provide signs that have only flip-disk message displays for freeways or expressways.

## **C. Construction**

- (1) Perform this work according to Part VI of the MUTCD, WMUTCD and section 643.3 of the standard specifications. The Guidelines for Construction, Maintenance and Utility Operations flip book is an abbreviated version of Part VI of the MUTCD and it provides a good reference for Performance Based Maintenance work.
- (2) Install or relocate PCMS units at locations the engineer directs. Ensure that the PCMS is level and operating satisfactorily before activating. Maintain the PCMS in good working condition. Repair damaged or malfunctioning PCMS units within two hours after discovering a problem. Remove the PCMS from the project when no longer needed.
- (3) If the onboard computer cannot be programmed remotely, provide the proposed message(s) to the engineer two weeks before deploying the message. The region's traffic section will review the proposed message and either approve the message or make necessary changes.

**D. Measurement**

- (1) The department will measure one Traffic Control item for each project segment identified and acceptably completed. In the case where the item Traffic Control, Non-standard Working Hours is applied to a segment, this item is in addition to one of the other traffic control items.
- (2) Traffic Control, Non-standard working hours applies to work performed after 6:00 pm and before 6:00 am on weekdays. All work on Saturdays and Sundays is non-standard.
- (3) Traffic Control, Mobile Operation on the Shoulder does not include any lane closures.
- (4) Traffic Control, Lane Closure Intersection is to be used for intersections where channelizing devices, arrow boards or lane closures are necessary on the cross-road as well as the highway of the primary work.
- (5) The department will use the unit quantity for payment unless one or more of the following occurs:
  - 1. A contract revision partially eliminates, completely eliminates, or affects the quantity for the item.
  - 2. The work performed was not acceptably completed.

**E. Payment**

- (1) The department will pay for measured quantities at the unit price under the following work items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
643.9520.M	Traffic Control, Mobile Operation on the Shoulder	EACH
643.9530.M	Traffic Control, Mobile Operation on a Two-Lane Road	EACH
643.9540.M	Traffic Control, Mobile Operation on a Two-Lane Road Using Flaggers	EACH
643.9550.M	Traffic Control, Mobile Operation on a Multi-Lane Road	EACH
643.9560.M	Traffic Control, Half Road Closure on Multi-Lane Road	EACH
643.9570.M	Traffic Control, Lane Closure – Intersection	EACH
643.9580.M	Traffic Control, Shoulder Closure on Divided Roadway	EACH
643.9590.M	Traffic Control, Work on Shoulder	EACH
643.9600.M	Traffic Control, Lane Closure on Divided Roadway	EACH
643.9610.M	Traffic Control, Lane Closure with Temporary Signals	EACH
643.9620.M	Traffic Control, Non-standard Working Hours	EACH
643.9630.M	Traffic Control, Street Closure with Detour	EACH

- (2) Payment for the Traffic Control items is full compensation for providing flagging; constructing, assembling, painting, hauling, erecting, re-erecting, maintaining, restoring, and removing traffic signs, drums, barricades, and similar control devices, including arrow boards and portable changeable message signs (PCMS), unless provided otherwise; for partially or fully covering or uncovering signs; for providing, placing, and maintaining lights, including the fuel or power unless provided otherwise; and for providing, applying, and removing pavement markings, unless provided otherwise. If Traffic Control is not specified, but is later found necessary and is required, the department will pay for this work as extra work.
- (3) If Traffic Control, Street Closure with Detour is used the department will provide approved detour plan.
- (4) Non-Standard Working Hours shall be used when work is scheduled outside of the County's normal working hours for the current season.

## **SECTION 8 - CONCRETE JOINT REPAIR**

### **I. Concrete Pavement Repair, Concrete Pavement Replacement**

#### **A. Description**

Conform to the requirements of 416 of the [standard specifications](#) and the standard detail drawings (SDD), "Concrete Pavement Repair and Replacement" and any associated SDDs found in Chapter 16 of the department's Facilities Development Manual (FDM).

#### **B. Materials (Vacant)**

#### **C. Construction (Vacant)**

#### **D. Measurement (Vacant)**

#### **E. Payment (Vacant)**



## SECTION 9 - WORK ITEMS

Activity	Item Number	Description	Unit
Shouldering	305.9505.M	Aggregate Shoulder Maintenance - Preparation	STA
	305.9506.M	Aggregate Shoulder Maintenance – Installation	STA
	305.9507.M	Aggregate Shoulder Maintenance – Material	TON
	624.0100.M	Water	MGAL
Crack Rout/Seal	492.9010.M	Asphalt Pavement Rout and Seal – Installation	STA
	492.9011.M	Asphalt Pavement Rout and Seal – High Capacity Torch	STA
	492.9020.M	Asphalt Pavement Rout and Seal – Material	LB
Structures	502.9300.M	Bridge Deck Crack Sealing	GAL
	502.9350.M	Bridge Deck Protective Surface Treatment	SF
	990.1000.M	Bridge Cleaning - Deck	SF
	990.1010.M	Bridge Cleaning - Superstructure	EACH
	990.1020.M	Bridge Cleaning - Sweeping Deck	SF
Seal Coat	475.9000.M	Seal Coat-Installation	SY
	475.9100.M	Seal Coat – Asphaltic Material for Seal Coat	GAL
	475.9110.M	Seal Coat – Asphaltic Material for Fog Seal	GAL
	475.9120.M	Seal Coat – Aggregate Material	SY
	643.0200.M	Furnish and Operate Pilot Vehicle	DAY
	646.0402.M	Seal Coat – Temporary Pavement Marking Same Day Paint	LF
	646.9000.M	Seal Coat – Pavement Marking Paint	LF
	646.9010.M	Seal Coat – Special Pavement Marking Paint	EACH
649.2102.M	Temporary Raised Pavement Markers, Type II	EACH	
Mobilization	619.9100.M	Mobilization	EACH
Traffic Control	643.9520.M	Traffic Control, Mobile Operation on the Shoulder	EACH
	643.9530.M	Traffic Control, Mobile Operation on a Two-Lane Road	EACH
	643.9540.M	Traffic Control, Mobile Operation on a Two-Lane Road Using Flaggers	EACH
	643.9550.M	Traffic Control, Mobile Operation on a Multi-Lane Road	EACH
	643.9560.M	Traffic Control, Half Road Closure on Multi-Lane Roadway	EACH
	643.9580.M	Traffic Control, Shoulder Closure on Divided Roadway	EACH
	643.9570.M	Traffic Control, Lane Closure – Intersection	EACH
	643.9590.M	Traffic Control, Work on Shoulder	EACH
	643.9600.M	Traffic Control, Lane Closure on Divided Roadway	EACH
	643.9610.M	Traffic Control, Lane Closure with Temporary Signals	EACH
	643.9620.M	Traffic Control, Non-standard Working Hours	EACH
643.9630.M	Traffic Control, Street Closure with Detour	EACH	

<b>Activity</b>	<b>Item Number</b>	<b>Description</b>	<b>Unit</b>
Concrete Joint Repair	205.0100.M	Excavation Common	CY
	416.0610.M	Drilled Tie Bars	EACH
	416.0620.M	Drilled Dowel Bars	EACH
	416.1710.M	Concrete Pavement Repair	SY
	416.1720.M	Concrete Pavement Replacement	SY
	690.0250.M	Sawing Concrete	LF
	305.0125.M	Base Aggregate Dense 1 ¼-Inch	CY
Nonstandard Item Numbers	801.0117.M	Railroad Flagging Reimbursement	DOL
	SPV.0025.XXX.M	{Bid Item Description}	CF
	SPV.0035.XXX.M	{Bid Item Description}	CY
	SPV.0045.XXX.M	{Bid Item Description}	DAY
	SPV.0060.XXX.M	{Bid Item Description}	EACH
	SPV.0070.XXX.M	{Bid Item Description}	GAL
	SPV.0090.XXX.M	{Bid Item Description}	LF
	SPV.0095.XXX.M	{Bid Item Description}	LM
	SPV.0125.XXX.M	{Bid Item Description}	MI
	SPV.0170.XXX.M	{Bid Item Description}	STA
	SPV.0180.XXX.M	{Bid Item Description}	SY
	SPV.0195.XXX.M	{Bid Item Description}	TON