**Special Provisions**

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**STSP’S Revised July 3, 2024**

**SPECIAL PROVISIONS**

1. General.

Perform the work under this construction contract for Project 8680-00-74, USH 2 Bong Bridge B-16-0038-0013, Douglas County Wisconsin and St. Louis County MN as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2025 Edition, as published by the department, and these special provisions.

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

100-005 (20240703)

1. Scope of Work.

The work under this contract shall consist of lighting replacement, concrete parapet replacement, concrete surface repair, spot painting, spot joint work, MMA flood seal, traffic control, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

1. Prosecution and Progress.

Begin work within 10 calendar days after the engineer issues a written notice to do so.

Provide the time frame for construction of the project within the 2025 construction season to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Assure that the time frame is consistent with the contract completion time. Upon approval, the engineer will issue the notice to proceed within ten calendar days before the beginning of the approved time frame.

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

Fish Spawning

There shall be no instream disturbance of St. Louis River at Station 73+80 as a result of construction activity under or for this contract.

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

Migratory Birds

No evidence of swallow or other migratory bird nests have been observed on or under the following structures(s) during the preconstruction inspection. However, if nesting is later observed prior to or during construction, the contractor shall implement avoidance/deterrent measures or obtain a depredation permit. All active nests (when eggs or young are present) of migratory birds are protected under the federal Migratory Bird Treaty Act. The nesting season for swallows and other birds is from May 1 to August 31.

* USH 2 Bong Bridge B-16-0038-0013

Protection of Endangered Bats (Tree Clearing)

Northern long-eared bats (*Myotis septentrionalis*, or NLEB) have the potential to inhabit the project limits because they roost in trees, bridges and culverts. Roosts may not have been observed on this project, but conditions to support the species exist. The species and all active roosts are protected by the federal Endangered Species Act. If an individual bat or active roost is encountered during construction operations, stop work, and notify the engineer and the WisDOT Regional Environmental Coordinator (REC).

Ensure all operators, employees, and subcontractors working in areas of known or presumed bat habitat are aware of environmental commitments and avoidance and minimization measures (AMMs) to protect both bats and their habitat.

Direct temporary lighting, if used, away from wooded areas during the bat active season April 1 to October 31, both dates inclusive.

Contractor means and methods to remove trees will not be allowed. If it is determined that trees with a 3‑inch or greater diameter at breast height (dbh) need to be removed beyond contractor means and methods, notify the engineer to coordinate with the WisDOT REC to determine if consultation with United States Fish and Wildlife Service (USFWS) is required. The contractor must be aware that the WisDOT REC and/or USFWS may not permit modifications.

**Staging**

The department anticipates that the schedule for each stage is as follows:

**Stage 1A**

* Complete lighting replacement from STA 70+80 to 134+50.
* Complete lighting replacement on USH 2 westbound on-ramp from Susquehanna Avenue.

**Stage 1B**

* Complete lighting replacement from STA 25+00 to STA 70+80
* Complete flood sealing on USH 2 eastbound from STA 18+50 to 28+00

**Stage 2A**

* Complete MMA flood sealing of USH 2 eastbound and westbound median lanes.
* Complete centerline and inside edge line pavement marking
* Complete structure repairs and spot painting (if accessed from below/waterway)

**Stage 2B**

* Complete MMA flood sealing of USH 2 eastbound and westbound outside lanes.
* Complete spot bridge painting.
* Complete outside line pavement marking
* Complete structure repairs and spot painting (if accessed from above/roadway)

**Ramp Closures:** Are shown in Stage 2B but can occur during any stage but shall not be closed concurrently with any other ramp closure or USH 2 eastbound closure.

The following ramps may be closed and detoured for a maximum of 7 consecutive days each.

**Ramp A Closure**

* Complete flood sealing
* Complete pavement marking
* Complete ramp lighting replacement

**Ramp B Closure**

* Complete flood sealing
* Complete pavement marking
* Complete ramp lighting replacement

**Ramp C Closure**

* Complete lighting
* Complete flood sealing
* Complete pavement marking
* Complete ramp lighting replacement

**Roundabout Painting:** Roundabout painting can be performed at any time. Roundabout painting is anticipated to take place at the end of Stage 2A and beginning of Stage 2B

1. Traffic.

Keep all roads open to one lane of through traffic in each direction at all times for the duration of this project with the exception of closures described in this article. Sidewalk on structure and ramps may be closed for up to 3 weeks.

Perform the work under this contract in a manner that will interfere as little as possible with active traffic. Do not park or store vehicles, equipment, or materials on local streets adjacent to active traffic except at the time of performance of the work. Materials or equipment may be stored within the right-of-way only at locations meeting the approval of the engineer.

**Traffic Operations During All Stages**

Maintain a minimum of one 12’ lane of traffic in each direction on USH 2 at all times. Single lane long term closures shall be utilized to perform the work. “Max Width” signs will be required in advance of the project when 16’ available width cannot be maintained.

No ramp closures shall be allowed on the project during holidays and special events.

**Stage 1A Traffic**

* + USH 2 westbound will be maintained on one lane of traffic at all times utilizing a long term median lane closure from the Beginning of Project to End of Project as shown in the project’s plans.
  + USH 2 eastbound will be maintained on one lane of traffic at all times utilizing a long term median lane closure from station 55+00 to end of project as shown in the project’s plans.
  + Close outside shoulder of USH 2 westbound on ramp from Susquehanna Avenue as shown in the project’s plans.

**Stage 1B Traffic**

* + USH 2 westbound and eastbound will be maintained on one lane of traffic in each direction at all times utilizing a long term median lane closure from Beginning of Project to End of Project as shown in the projects plans.
  + USH 2 eastbound will be closed and detoured from Beginning of project to station 28+00 utilizing Ramp C.

**Stage 2A Traffic**

* + USH 2 westbound and eastbound will be maintained on one lane of traffic in each direction at all times using utilizing outside lanes and a long term median lane closure from the Beginning of Project to End of Project as shown in the project’s plans.

**Stage 2B Traffic**

* + USH 2 westbound and eastbound will be maintained on one lane of traffic in each direction at all times utilizing median lanes and a long term outside lane closure from Beginning of Project to End of Project as shown in the project’s plans.
  + Close and detour Ramp A
  + Close and detour Ramp B
  + Close and detour Ramp C

Wisconsin Lane Closure System Advance Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

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

1. Holiday and Special Event Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying USH 2 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday and special event periods:

- From noon Thursday, July 3, 2025 to 6:00 AM Monday, July 7, 2025 Independence Day;

- From noon Friday, August 29, 2025 to 6:00 AM Tuesday, September 2, 2025, Labor Day;

- From noon Thursday, November 26, 2025 to 6:00 AM Friday, November 28, 2025, Thanksgiving.

No ramp closures are allowing during holiday periods shown above. It is anticipated that reduced lane traffic control will be left in place during these periods.

stp-107-005 (20210113)

1. Environmental Protection, Aquatic Exotic Species Control.

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

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

Ensure that all equipment that has been in contact with waters of the state, or with infested or potentially infested waters, has been decontaminated for aquatic plant materials and zebra mussels before being used in other waters of the state. Before using equipment on this project, thoroughly disinfect all equipment that has come into contact with potentially infested waters. Guidelines from the Wisconsin Department of Natural Resources for disinfection are available at:

<http://dnr.wi.gov/topic/invasives/disinfection.html>

Use the following inspection and removal procedures:

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

2. Drain all water from boats, trailers, bilges, live wells, coolers, bait buckets, engine compartments, and any other area where water may be trapped;

3. Inspect boat hulls, propellers, trailers and other surfaces. Scrape off any attached mussels, remove any aquatic plant materials (fragments, stems, leaves, seeds, or roots), and dispose of removed mussels and plant materials in a garbage can before leaving the area or invested waters; and

4. Disinfect your boat, equipment and gear by either:

4.1. Washing with ~212 F water (steam clean), or

4.2. Drying thoroughly for five days after cleaning with soap and water and/or high pressure water, or

4.3. Disinfecting with either 200 ppm (0.5 oz per gallon or 1 Tablespoon per gallon) Chlorine for 10‑minute contact time or 1:100 solution (38 grams per gallon) of Virkon Aquatic for 20- to 30-minute contact time. Note: Virkon is not registered to kill zebra mussel veligers nor invertebrates like spiny water flea. Therefore, this disinfect should be used in conjunction with a hot water (>104º F) application.

Complete the inspection and removal procedure before equipment is brought to the project site and before the equipment leaves the project site.

stp-107-055 (20130615)

1. Construction Over or Adjacent to Navigable Waters.

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

This reach of the St. Louis River is regularly used by recreational watercraft. If navigational use will be impacted by the project, it will be necessary to place navigational aids such as waterway markers throughout the construction zone to promote safe passage. Prior to the placement of waterway markers, a Waterway Marker Application and Permit will need to be obtained. For reference, there are two types of waterway markers, informational or controlling/restrictive markers. If controlling/restrictive markers are required, please allot enough time to work with the municipality as a local ordinance will need to be adopted.

The general steps for submission of a Waterway Marker Application and Permit are as follows:

1. Please fil out the Waterway Marker Application and Permit form:

<http://dnr.wi.gov/files/PDF/forms/8700/8700-058.pdf> Please identify the Wisconsin Department of Transportation as the applicant.

1. Include an aerial map-diagram or engineered-diagram of the work location and the placement of the waterway markers (bouys). If proposed GPS coordinates for each bouy are not provided, then markers placed on the diagram must show distance (in feed) from each marker location and from one permanent fixture as a benchmark.
2. Forward the signed application/permit to Amy Cronk, Environmental Analysis & Review Specialist, and Madeleine Johansen, DNR Recreational Safety Warden.
3. If controlling/restrictive navigational markers are required, also provide the completed application/permit to the local municipality having jurisdictional authority over the area in which the waterway markers will be placed. Consult with the local municipality regarding their ordinance adoption process.
4. Utilities.

This contract comes under the provision of Administrative Rule Trans 220.

There are no known utility facilities within the project limits.

1. Notice to Contractor – State Owned Utility.

The department has electric facilities located on the structure for the roadway and bridge lighting. Replacement of median and ramp lighting on the MN half of the structure as well as median lighting on the WI approach will occur with this project. Lighting replacement and light base / median parapet work will require contractor to connect new fixtures to existing power.

See General Requirements for Electrical Work.

1. Notice to Contractor, U.S. Coast Guard

The U.S. Coast Guard has been coordinated with regards to the shipping channel under the center span of the structure. From June 1, 2025, through October 1, 2025, you may install scaffolding that hangs no further than 10-feet below low steel of the center tied arch span. Display steady burning yellow lights on the bottom and four-corners of the scaffolding. You may also utilize up to two barges, 40-foot by 60-foot or smaller at the bridge piers. The barges are required to monitor VHF-FM Marine Channel 16 and move as necessary to allow vessels to pass.

This authorization may be rescinded or revised at any time by Commander, Ninth Coast Guard District, should the needs of navigation change, or safety concerns arise. You are encouraged to notify all known affected marine entities of this temporary schedule. You may need to comply with the requirements of other federal, state, or local agencies. If any of the conditions above change, notify the Ninth District Coast Guard office. Contact Lee Soule at (216) 902-6085 with any questions.

1. Notice to Contractor, Verification of Asbestos Inspection, No Asbestos Found

Madison I. Seymour and Paul M. Garvey, License Number ALL-294284 and ALL-117079, inspected Structure B-16-38 for asbestos on August 5, 2024. No regulated Asbestos Containing Material (RACM) was found on this structure. A copy of the inspection report is available from Phil Keppers, (715) 395-3027, [Philip.Keppers@dot.wi.gov](mailto:Philip.Keppers@dot.wi.gov).

stp-107-127 (20220628)

1. Railroad Insurance and Coordination

To be provided by WisDOT prior to PS&E.

1. General Requirements for Electrical Work.

**General**

Notify the department’s Northwest Region Electrical Unit at (920) 366-7521 at least three (3) weeks prior to beginning the electrical work.

*Add the following to standard specification sections 651, 652, 653, 654, 655, 656, 657 and 659.*

All the work necessary to comply with revisions to standards specifications mentioned herewith shall be incidental to associated pay items or to the project including coordination, materials, and labor. No additional payment shall be made to the Contractor.

*Add the following to standard specification subsection 651.3.1:*

Any circuit that the Contractor does not personally tag out at the disconnect shall be considered live and will be subject to being activated by another person with no notice to the Contractor. Make tagouts with manufactured tags and endorse them with the date and the name of the Contractor. Clear tagouts at the end of the workday. The Department does not employ a load dispatcher and has no intent to do so. Each electrical worker is responsible for their own protection from automatic switching and from switching by others.

*Add the following to standard specification subsection 655.3.7(4):*

Where two or more wire networks pass through a pull point, tag each circuit network (i.e. A/B/N and C/D/N) with approved all-weather tags.

**Manufacturer’s Warranty for LED luminaires:** The manufacturer shall warrant to the Department that each complete luminaire (consisting of the housing, optical assembly, LED drivers, surge protection and wiring) will be free from defects in material and workmanship for ten (10) years from the date that the luminaire are put into service. Luminaires shall be installed within one year of manufacture.

If any luminaires fail to meet the above warranty, the Department shall provide the manufacturer with a written notice of any defect within thirty (30) days after discovery of the defect. The manufacturer shall provide all materials, luminaires, replacement component parts, labor, and all incidentals necessary to restore the luminaire to a fully operational, installed condition.

1. Notice to Contractor, Electrical Equipment Lead Time.

Order equipment for lighting as soon as possible to assure the equipment is procured in a timely fashion and, therefore, installed, inspected and ready for turn-on at the required date. Coordinate with the engineer on the latest material lead time within 14 days of the notice to proceed.

1. Structure Repainting General.

A General

A.1 Inspection

On all structures in this contract, notify the engineer of any missing or broken bolts or nuts, any missing or broken rivets, or of any cracks or flaws in the steel members while cleaning or painting.

A.2 Date Painted

At the completion of all painting work, stencil in black paint or contrasting color paint the date of painting the bridge. The numbers shall be 3 inches (75 mm) in height and shall show the month and year in which the painting was completed: e.g., 11-95 (November 1995). On each bridge painted, stencil the date at two locations. On truss bridges, stencil the date on the cover plates of end posts near and above the top of the railings at the oncoming traffic end. On steel girder bridges, stencil the date on the inside of the outside stringers at the abutments. The date on grade separation bridges shall be readable when going under the structure or at some equally visible surface near the ends of the bridge, as designated by the engineer.

A.3 Graffiti Removal

Remove any graffiti on concrete abutments, piers, pier caps, parapet railings, slope paving or any other location at the direction of the engineer. Use a brush sandblast to remove graffiti.

The above work will not be measured and paid for separately but will be considered incidental to other items in the contract.

B (Vacant)

C Construction

C.1 Repainting Methods

Do not perform blasting, cleaning and painting on days of high winds. Prevailing winds in excess of 15 mph (25 km/hr) shall be considered high winds.

Place the final field coat of paint on the exterior of the exterior beams as a continuous painting operation. Stop at splices, vertical stiffeners or other appropriate locations so that lap marks are not evident or noticeable.

Completely clean and remove spent abrasive and other waste materials resulting from the contractor's operation from bridge deck surfaces, gutter lines, drains, curbs, bridge seats, pier caps, slope paving, roadway below, and all structural members and assemblies.

C.2 Inspection

*Add the following to standard spec 105.9:*

Furnish, erect and move scaffolding and other equipment to allow the inspector to closely observe all affected surfaces. The scaffolding, with appropriate safety devices, shall meet the approval of the engineer.

stp-517-005 (20150630)

1. Removing Lighting Units, Item 204.9060.S; Removing Luminaires, Item 204.9060.S

**A Description**

This special provision describes removing and salvaging or disposing of lighting units and luminaires from existing foundations. This work shall be in accordance with the plans, standard detail drawings, and as hereinafter provided.

**B Materials**

Salvage all street lighting materials from the project to the respective departments with the exception of internal pole wiring and luminaires. Salvaged materials include poles, transformer bases, arms and associated hardware.

**C Construction**

Disconnect and salvage the complete lighting unit from the locations shown in the plans and/or as designated by the Engineer.

Carefully stockpile the complete lighting unit at a location approved by the engineer. Place all equipment on blocks so as not to be in direct contact with the ground. Salvaged items shall be stored and protected from damage until ready for pick up by the respective departments. Any damage to the salvaged materials resulting from the removal and salvaging operations shall be repaired or replaced in-kind at the Contractor's expense. Contact the MNDOT electrical department, John Doe (920-674-7711), or the WisDOT NW Region electrical department, John Doe (920-674-7711) a minimum of 2 business days prior to pick up.

This item includes coordination and incidentals necessary to remove street signs and any accessories affixed to the lighting units, and make ready for reinstallation.

**D Measurement**

The department will measure Removing Lighting Units and Removing Luminaires by each unit acceptably completed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

204.9060.S Removing Lighting Units Each

204.9060.S Removing Luminaires Each

Payment is full compensation for removing and salvaging existing lighting unit components, and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

stp-204-025 (20230113)

1. Removing Electrical Conductors from Existing Conduit, Item 204.9090.S; Removing or Abandoning Existing Conduit, Item 204.9090.S

**A Description**

This special provision describes removing or abandoning existing conduit and removing electrical conductors from existing conduit conforming to standard spec 204.

**B (Vacant)**

**C Construction**

Wires shall be removed from the existing underground conduits as shown on the plans and as directed by the engineer. The engineer shall verify the extent of the wiring removal prior to disconnecting luminaires or communication equipment. Any necessary splices or disconnections shall be done as part of this pay item. Removed wires shall become property of the contractor and shall be disposed of off the project site.

Conduit shall be removed as shown on the plans and as directed by the engineer. The engineer shall verify the extent of conduit removal prior to disconnecting luminaires. Any necessary stubs shall be capped and shall be incidental to this pay item. Removed conduit shall become property of the contractor and shall be disposed of off the project site.

**D Measurement**

The department will measure Removing Electrical Wires from Existing Conduit by linear feet of conduit from where wires shall be removed and disposed of, regardless of conductor quantity within conduit, acceptably completed. The vertical length and wire slack shall be incidental to this pay item.

The department will measure Removing or Abandoning Existing Conduit by linear feet of conduit, acceptably completed.

**E Payment**

ITEM NUMBER DESCRIPTION UNIT

204.9090.S Removing Electrical Conductors from Existing Conduit LF

204.9090.S Removing or Abandoning Existing Conduit LF

stp-204-025 (20230113)

1. Structure Overcoating Cleaning and Priming B-16-0038-0013, Item 517.3001.S.

A Description

This special provision describes cleaning and painting with two or three coats of paint the metal surfaces.

A.1 Areas to be Cleaned and Painted

Structure B-16-0038-0013

1. Two Coat Area: Enter the square footage SF with SP 1 cleaning.

2. Three Coat Area:

Enter the square footage SF with SP 2 cleaning.

Enter the square footage SF with SP 3 cleaning.

Enter the square footage SF with SP 11 cleaning.

Enter the square footage SF with SP 15 cleaning.

Enter the square footage SF total three-coat area.

B Materials

Furnish an epoxy coating system from the department’s APL for Paint- structure maintenance.

C Construction

C.1 Surface Preparation

Before overcoating or power tool cleaning, solvent clean all surfaces to be coated according to SSPC-SP1. A SSPC-SP Select from drop-down. Select from drop-down.Tool Cleaning according to Steel Structures Painting Council Specification Select from drop-down. will be required on all metal surfaces to be painted with a three-coat system. Prime the same day, or re-clean before application, all metal surfaces receiving a No. Select from drop-down. cleaning.

Remove all abrasive or paint residue from steel surfaces with a High Efficiency Particulate Abatement (HEPA-VAC) vacuum cleaner equipped with a brush-type cleaning tool, or by double blowing. If the double blowing method is used, vacuum the exposed top surfaces of all structural steel, including flanges, longitudinal stiffeners, splices, plates, and hangers, after the double blowing operations are completed. The air line used for blowing the steel clean shall have an inline water trap and the air shall be free of oil and water as it leaves the air line.

Take care to protect freshly coated surfaces from subsequent cleaning operations. Thoroughly wire brush damaged primed surfaces with a non-rusting tool. Clean and re-prime the brushed surfaces within the time recommended by the manufacturer.

C.2 Painting

Paint by applying two or three coats of an approved coating system as specified herein to the surfaces as described in A.1 from the department’s approved products list.

C.3 Coating Application

Apply paint in a neat, workmanlike manner. The resultant paint film shall be smooth and uniform without skips or areas of excessive paint. Apply coating according to the manufacturer’s recommendations.

Before applying the prime coat, coat with primer all edges, rivet and bolt heads, nuts and washers by using either a brush, roller, or spray application.

Dry Film Thickness per coat shall be a minimum of 3-mil. The dry film thickness shall be determined by use of a magnetic film thickness gage. The gage shall be calibrated for dry film thickness measurement according to SSPC-PA 2.

During surface preparation and coating application, the ambient and steel temperature shall be between 39 and 100 degrees F. The steel temperature shall be at least 5 degrees F above the dew point temperature, and the relative humidity shall not exceed 85%.

D Measurement

The department will measure Structure Overcoating Cleaning and Priming (Structure #) as a single unit for each structure, acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

517.3001.S Structure Overcoating Cleaning and Priming B-16-0038-0013 EACH

Payment is full compensation for preparing and cleaning the designated surfaces; and for furnishing and applying the paint.

stp-517-036 (20210708)

1. Containment and Collection of Waste Materials B-16-0038-0013, Item 517.4001.S.

A Description

This special provision describes furnishing and erecting tarpaulins to contain, collect and store the spent material from surface preparation of steel surfaces, collecting such spent material, and labeling and storing the spent material in waste containers.

B Materials

Provide 5-gallon lidded plastic containers for containing the spent material.

C Construction

Erect tarpaulins or other materials to collect all of the spent material from power tool cleaning. Consider and treat all spent material as hazardous waste.

Collect and store all waste material collected by this operation at the bridge site for disposal. Collect and store all waste materials at the end of each workday or more often if needed. Store materials in 5-gallon lidded plastic containers.

Label each container with the date the first waste was placed in the container and the words "Hazardous Waste – EPA Waste Code D008." Lock and secure all containers at the end of each workday. Keep the containers covered at all times except to add or remove waste material. Store the containers in an accessible and secured area, not located in a storm water runoff course, flood plain or exposed to standing water.

Collect the spent debris by vacuuming, shoveling, sweeping, or by channeling it directly to disposal containers. The enclosure shall be thoroughly cleaned at the end of each work day.

D Measurement

The department will measure Containment and Collection of Waste Materials (Structure) as a single unit for each structure, acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

517.4001.S Containment and Collection of Waste Materials B-16-0038-0013 EACH

Payment is full compensation for designing, erecting, operating, maintaining and disassembling the containment devices; collecting, labeling and storing spent materials in appropriate containers.

stp-517-037 (20230113)

1. Portable Decontamination Facility, Item 517.6001.S.

A Description

This special provision describes furnishing and maintaining weekly, or more often if needed, a single unit portable decontamination facility.

B Materials

Supply and operate all equipment according to OSHA.

Supply adequate heating equipment with the necessary fuel to maintain a minimum temperature of 68° F in the facility.

The portable decontamination facility shall consist of a separate "Dirty Room", "Shower Room" and "Clean Room". The facility shall be constructed so as to permit use by either sex. The facility shall have adequate ventilation.

The "Dirty Room" shall have appropriately marked containers for disposable garments, clothing that requires laundering, worker shoes, and any other related equipment. Each container shall be lined with poly bags for transporting clothing, or for disposal. Benches shall be provided for personnel.

The "Shower Room" shall include self-contained individual showering stalls that are stable and well secured to the facility. Provide showers with a continuous supply of potable hot and cold water. The wastewater must be retained for filtration, treatment, and/or for proper disposal.

The "Clean Room" shall be equipped with secure storage facilities for street clothes and separate storage facilities for protective clothing. The lockers shall be sized to store clothing, valuables and other personal belongings for each worker. Benches shall be provided for personnel.

Supply a separate hand wash facility, either attached to the decontamination facility or outside the containment.

C Construction

Properly contain, store, and dispose of the wastewater.

D Measurement

The department will measure Portable Decontamination Facility by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER DESCRIPTION UNIT

517.6001.S Portable Decontamination Facility EACH

Payment is full compensation for furnishing and maintaining a portable decontamination facility.

stp-517-060 (20230113)

1. Install Conduit Into Existing Item, Item 652.0700.S.

**A Description**

This special provision describes installing proposed conduits into an existing pull box.

**B Materials**

Use conduits, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the standard spec.

**C Construction**

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole, or holes, for entering conduits at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the respective drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

**D Measurement**

The department measure Install Conduit Into Existing System by the unit, acceptable installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box will constitute multiple units of payment.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

652.0700.S Install Conduit Into Existing Item Each

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials. Including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.

stp-652-070 (20230629)

1. Lamp, Ballast, LED, Switch Disposal by Contractor, Item 659.5000.S.

**A Description**

This special provision describes the detachment and packaging of lamps, ballasts, LEDs, and mercury containing switches (e.g., overhead roadway lighting, underdeck bridge, wall packs, pedestrian signals, traffic control stop lights and warning flashers, fluorescent bulbs, and thermostats) removed under this contract for disposal as hazardous materials.

For Lamp, Ballast, LED, Switch Disposal by Contractor, coordinate removal from the work site by the department’s hazardous waste disposal vendor. Disposal will be billed to the department by the hazardous waste disposal vendor.

**B Materials**

**B.1 Disposal by Contractor**

Items removed under this contract will be considered the property of the department for waste generator identification. The contractor is responsible for coordinating with the department’s hazardous waste vendor for disposal:

<https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/hazwaste-contacts.pdf>

**C Construction**

**C.1 Removal**

Arrange for the de-energizing of luminaires after receiving approval from the engineer that the existing luminaires can be removed. Do not remove luminaires that cannot be replaced with proposed LED units and operational within the same workday. The new LED units need to be operational prior to sunset of the same workday.

Detach and remove luminaires and lamps from the existing traffic signal poles or respective structure. Avoid breaking fixtures whenever possible.

Lamps, ballasts, LED, and switches will become property of the department, and will be disposed of in an environmentally sound manner.

**C.2 Packaging of Hazardous Materials**

Provide a secure, level location removed from the travelled way for storage of the material for disposal.

Pack intact fixtures in the packaging of the new lamps used to replace them, or packaging affording the equivalent protection. Place in full, closed stackable cartons.

Pile cartons no more than four high if palletized and secure cartons with shrink wrap to prevent shifting or falling of the loads. Clearly mark each pallet with the words “Universal Waste Lamps” or “Universal Waste Ballasts”, the date, and the number of fixtures on each pallet.

Pack broken fixtures into (min.) 6 mil thick plastic bags and place inside sturdy cardboard boxes or the equivalent. Mark the outer packaging with the term “Broken Fixtures/Lamps”, the date and the number of broken fixtures clearly marked on the box.

The hazardous waste vendor will not accept fixtures improperly packaged. The vendor will reject any fixtures not removed as part of a contract pay item or otherwise required under this contract.

Pack ballasts and mercury containing switches in appropriate containers.

**C.3 Disposal by Contractor**

Complete the lamp and ballast inventory (<https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/dotlampballastinventory.dotx>) and contact the hazardous waste vendor to coordinate pickup and disposal at a location specified by the contractor. Consolidate all pallets and boxes from one project at a single location. Contact the hazardous waste vendor to set up an appointment for pickup. The hazardous waste vendor requires a minimum of one week advance notice to schedule pickup.

**D Measurement**

The department will measure Lamp, Ballast, LED, Switch Disposal by Contractor as each individual unit removed and received by the hazardous waste vendor, properly packaged and acceptably completed, matching the total number of units provided on the inventory form. The department will not measure broken fixtures that exceed a total of 10 percent of all fixtures to be disposed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

659.5000.S Lamp, Ballast, LED, Switch Disposal by Contractor EACH

Payment for Lamp, Ballast, LED, Switch Disposal by Contractor is full compensation for detachment, handling, packaging, labeling and scheduling disposal with the hazardous waste vendor; and scrapping and disposal of all other materials.

stp-659-500 (20220628)

1. Luminaires Utility LED B, Item 659.1120.

*Add the following to standard spec 659.2 Materials:*

(2) Furnish luminaires with a color temperature of 2700K.

1. MNDOT Lighting Unit Type 1, Item SPV.0060.01; MNDOT Lighting Unit Type 2, Item SPV.0060.02.

**A Description**

SPV is pending design discussion with MN DOT PM

**B Materials**

Type 1: 6-bolt anchor plate pattern

Type 2: 4-bolt anchor plate pattern for compatibility with existing foundation

Furnish luminaires with a color temperature of 2700K.

**C Construction**

In accordance MN standards

**D Measurement**

The department will measure MNDOT Lighting Unit Types 1 and 2 by each unit acceptably completed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.01 MNDOT Lighting Unit Type 1 Each

SPV.0060.02 MNDOT Lighting Unit Type 2 Each

Payment is full compensation for transporting all materials; installing a complete unit; for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

1. Concrete Bases Type 5 - Tall, Item SPV.0060.03.

**A Description**

This special provision describes constructing Concrete Bases Type 5 - Tall. This work shall be in accordance with the requirements of section 654 of the Standard Specifications, the plans, standard detail drawings, and as hereinafter provided.

**B Materials**

In accordance with the plans and section 654.2 of the standard specifications.

**C Construction**

In accordance with the plans and section 654.3 of the standard specifications.

**D Measurement**

The item will be measured in place by the unit and the quantity measured for payment will be the number of bases of each one installed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.03 Concrete Bases Type 5 - Tall Each

Payment for the Bases bid item is full compensation for providing concrete bases; for embedded conduit and electrical components; for anchor rods, nuts and washers; for bar steel reinforcement; for excavating, backfilling, restoring asphaltic surfaces, and disposing of surplus materials.

1. Temporary Lighting, Item SPV.0060.04.

**A Description**

Special Provision is pending

**B Materials**

XXX

**C Construction**

XXX

**D Measurement**

The department will measure Temporary Lighting by each unit acceptably completed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.04 Temporary Lighting Each

XXX

1. Marking Arrows Grooved Preformed Thermoplastic, Item SPV.0060.05; Marking Words Grooved Preformed Thermoplastic, Item SPV.0060.06.

**A Description**

This special provision describes grooving the pavement surface, and furnishing and installing preformed thermoplastic pavement marking as shown on the plans, in accordance with section 647 of the standards specifications, and as hereinafter provided.

**B Materials**

Furnish 125 mils preformed thermoplastic pavement marking from the department’s approved products list. If required, furnish sealant material recommended by the manufacturer.

**C Construction**

**C.1 General**

For quality assurance, provide the project engineer and the region’s Marking Section evidence of manufacturer training in the proper placement and installation of preformed thermoplastic pavement marking.

Plane the grooved lines in accordance with the plan details. Use grooving equipment with a free-floating, independent cutting or grinding head. Plane a minimum number of passes to create a smooth groove.

**C.2 Groove Depth**

Cut the groove to a depth of 120 mils ±10 mils deep from the pavement surface or, if tined, from the high point of the tined surface. Measure depth using a straightedge placed perpendicular to the groove. The department may periodically check groove depths.

**C.3 Groove Width – Linear Markings**

Cut the groove 1-inch wider than the width of the thermoplastic.

**C.4 Groove Position**

Position the groove edge in accordance with the plan details.

**C.4.1 Linear Marking**

Groove at a minimum of 4-inches, but not greater than, 12-inches from both ends of the line segment. Achieve straight alignment with the grooving equipment.

**C.4.2 Special Marking**

Groove at a minimum of 4-inches from the perimeter of the special marking. Groove separate areas for Word Items.

**C.5 Groove Cleaning**

**C.5.1 Concrete**

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

If water is used in the grooving process, allow the groove to dry a minimum of 24 hours after groove cleaning, after removal of excess water, and prior to pavement marking application. Clean and dry the groove for proper application of the sealant, and placement of the pavement marking. Use a high-pressure air blower with at least 185 ft3/min air flow and 90 psi air pressure to clean the groove; use of the air blower does not decrease the amount of time required for the groove to dry.

**C.5.2 Asphalt**

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

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

**C.6 Preformed Thermoplastic Application**

Preheat the surface if necessary based on manufacturer’s recommendation.

Apply preformed thermoplastic in the groove as per manufacturer’s recommendations. If manufacturer’s recommendations require a sealant, apply a sealant lower than 91g/l VOC during the following period of time due to Volatile Organic Compound Limitations:

May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee.

Use any sealant in the remainder counties and for the remainder of the year. The sealant must be wet.

**D Measurement**

The department will measureMarking Arrows Grooved Preformed Thermoplastic and Marking Words Grooved Preformed Thermoplastic by the unit, acceptably placed, or in length by the linear foot of tape placed in accordance with the contract and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.05 | Marking Arrows Grooved Preformed Thermoplastic | Each |
| SPV.0060.06 | Marking Words Grooved Preformed Thermoplastic | Each |

Payment is full compensation for cleaning and preparing the pavement surface, furnishing and installing the material; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

1. Marking Arrows Preformed Thermoplastic, Item SPV.0060.07; Marking Words Preformed Thermoplastic, Item SPV.0060.08.

**A Description**

This special provision describes furnishing and installing preformed thermoplastic pavement marking as shown on the plans, in accordance with section 647 of the standards specifications, and as hereinafter provided.

**B Materials**

Furnish 125 mils preformed thermoplastic pavement marking from the department’s approved products list. If required, furnish sealant material recommended by the manufacturer.

**C Construction**

**C.1 General**

Pavement marking described above will be placed in previously grooved areas.

**C.2 Preformed Thermoplastic Application**

Preheat the surface if necessary based on manufacturer’s recommendation.

Apply preformed thermoplastic in the groove as per manufacturer’s recommendations. If manufacturer’s recommendations require a sealant, apply a sealant lower than 91g/l VOC during the following period of time due to Volatile Organic Compound Limitations:

May 1 to September 30, both dates inclusive – the Southeast Region and the ozone non-attainment Northeast Region counties of Sheboygan, Manitowoc, and Kewaunee.

Use any sealant in the remainder counties and for the remainder of the year. The sealant must be wet.

**D Measurement**

The department will measureMarking Arrows Preformed Thermoplastic and Marking Words Preformed Thermoplastic by the unit, acceptably placed, or in length by the linear foot of tape placed in accordance with the contract and accepted.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0060.05 | Marking Arrows Preformed Thermoplastic | Each |
| SPV.0060.06 | Marking Words Preformed Thermoplastic | Each |

Payment is full compensation for cleaning and preparing the pavement surface, furnishing and installing the material; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

1. Junction Boxes 8X8X6-Inch, Item SPV.0060.XX.

**A Description**

Special Provision is pending

**B Materials**

In accordance with the plans and section 653.2 of the standard specifications.

**C Construction**

In accordance with the plans and section 653.3 of the standard specifications.

**D Measurement**

The department will measure Junction Boxes 8X8X6-Inch by each unit acceptably completed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.XX Junction Boxes 8X8X6-Inch Each

Payment for the Bases bid item is full compensation for providing concrete bases; for embedded conduit and electrical components; for anchor rods, nuts and washers; for bar steel reinforcement; for excavating, backfilling, restoring asphaltic surfaces, and disposing of surplus materials.

1. Marking Chevron Epoxy 12-Inch, Item SPV.0090.01.

**A Description**

This special provision describes providing marking epoxy 12-inch as shown on the plans and is hereinafter provided.

**B Materials**

Furnish materials according to standard spec 646.

**C Construction**

Perform work according to standard spec 646 and as shown in the plans.

**D Measurement**

The department will measure Marking Chevron Epoxy 12-Inch by the linear foot, acceptably completed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0090.01 Marking Chevron Epoxy 12-Inch Each

1. Strip Seal Gland Replacement, Item SPV.0090.02.

**A Description**

This special provision describes removing and replacing the strip seal gland according to standard spec 502, as shown on the plans, and as hereinafter provided.

**B Materials**

Provide a minimum polychloroprene strip seal thickness of ¼ inch for non-reinforced elastomeric glands, and 1/8 inch for reinforced glands. Furnish the strip seal gland in lengths suitable for a continuous one- piece installation at each individual expansion joint location. Provide preformed polychloroprene strip seals that conform to the requirements of ASTM D3542, and have the following physical properties:

|  |  |  |
| --- | --- | --- |
| **Property Requirements** | **Value** | **Test Method** |
| Tensile Strength, minimum | 2000 psi | ASTM D412 |
| Elongation at Break, minimum | 250% | ASTM D412 |
| Hardness, Type A, Durometer | 60±5 pts. | ASTM D2240 |
| Compression Set, 70 hours at 212ºF, maximum | 35% | ASTM D395 Method B Modified |
| Ozone Resistance, after 70 hrs. at 100ºF under 20% Strain, with 100 pphm ozone | No cracks | ASTM D1149 |
| Mass Change in Oil #3 after 70 hours 212ºF, maximum | 45% | ASTM D471 |

The manufacturer and model number shall be one of the following approved strip seal expansion device products and shall be compatible with the existing extrusion:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model Number for Strip Seal Gland Size\* | | |
| Manufacturer | 4-Inch | 5-Inch | 6-Inch |
| D.S. Brown | SSA2-A2R-400 | SSA2-A2R-XTRA | SSA2-A2R-XTRA |
| R.J. Watson | RJA-RJ400 | RJA-RJ500 | RJA-RJ600 |
| Watson Bowman | A-SE400 | A-SE500 | A-SE800 |
| Commercial Fabricators | A-AS400 | - | - |

\*Expansion device strip seal gland size shall match existing.

Furnish manufacturer’s certification for production of polychloroprene represented showing test results for the cured material supplied and certifying that it meets all specified requirements.

Furnish manufacturer’s certification for adhesive attesting the materials meet the specification requirements.

**C Construction**

Install the elastomeric strip seal gland with tools recommended by the manufacturer, and with a lubricant adhesive conforming to the requirements of ASTM D4070.

**D Measurement**

The department will measure Strip Seal Gland Replacement by the lineal foot acceptably completed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0090.02 Strip Seal Gland Replacement LF

Payment is full compensation for removing existing strip seal, furnishing and replacing the new strip seal gland, and for furnishing and performing all cleaning.

1. Marking Line Grooved Wet Ref Contrast Epoxy 6-Inch, Item SPV.0090.03; Marking Line Grooved Wet Ref Contrast Epoxy 10-Inch, Item SPV.0090.04.

**A Description**

This special provision describes providing grooved wet reflective contrast epoxy 60inch and 10-inch as shown on the plans and is hereinafter provided.

**B Materials**

Furnish materials according to standard spec 646.

**C Construction**

Perform work according to standard spec 646 and as shown in the plans.

**D Measurement**

The department will measure Marking Line Grooved Wet Ref Contrast Epoxy 6-Inch and Marking Line Grooved Wet Ref Contrast Epoxy 10-Inch by the linear foot, acceptably completed.

**E Payment**

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

ITEM NUMBER DESCRIPTION UNIT

SPV.0090.03 Marking Line Grooved Wet Ref Contrast Epoxy 6-Inch LF

SPV.0090.04 Marking Line Grooved Wet Ref Contrast Epoxy 10-Inch LF

1. Methacrylate Flood Seal (Bridge), Item SPV.0180.01; Methacrylate Flood Seal (Ramps), Item SPV.0180.02

**A Description**

This special provision describes surface preparation of bridge deck, furnishing and applying a protective methacrylate sealer and broadcast sand, and any incidentals necessary to complete the project as specified or as shown in plans or as authorized by the Engineer.

**B Materials**

The bridge deck sealer shall consist of a methacrylate sealant, sand to prefill cracks, and broadcast sand.

**B.1 Methacrylate Sealant**

The following methacrylate sealants are acceptable for use provided that the requirements of this specifications are met:

|  |  |
| --- | --- |
| **Product** | **Manufacturer** |
| MasterSeal 630 (formerly Degadeck Crack Sealer Plus) | BASF |
| T-78 | Transpo Industries |
| KBP 204 P SEAL | Kwik Bond Polymers |

or an approved equal

**B.2 Fine Grade Sand**

Provide fine grade sand for prefilling large cracks unable to be prefilled with sealant alone. Fine grade sand shall pass the No. 20 sieve and be retained on the No. 40 sieve.

Submit sand material data to the Engineer for review and address all written comments. Submit storage and use plan to the Engineer documenting procedures for maintaining dry sand and within gradation requirements above.

**B.3 Broadcast Sand**

Provide a commercial quality dry blast sand with an average absorption of no more than 1%. 95% of the sand shall pass the No. 8 sieve and at least 95% shall be retained on the No. 20 sieve.

**C Construction**

**C.1 General**

**C.1.1 Pre-Installation Conference**

Conduct a pre-installation conference with the manufacturer's representative prior to construction to establish procedures for maintaining optimum working conditions and coordination of work. Furnish the engineer with a copy of the recommended procedures and the manufacturer’s instructions.

**C.1.2 Contractor Personnel Requirements**

Experienced personnel are required to be actively present during the seal application.

A technical representative from the sealer manufacturer must be present during first application. The need for manufacturer’s representative may be waived if the contractor provides evidence and reference contacts for work involving at least 5 bridges treated with the same products and within the last two years. Contractor experience record in no way relieves the contractor from applying in accordance with this specification and as recommended by the manufacturer.

**C.1.3 Material Storage and Safety Plan**

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

Safety Plan: Prior to arrival of the product on the job site, provide a product shipping, storage, and use safety plan to detail how the product will be delivered and stored on site in a manner that will not allow the constituent components to come in contact with each other in the event of a spill or container leakage. This plan must also include a description of the safety training workers applying the product have received regarding the product’s use, and list any and all safety precautions which must be taken during application of the product.

**C.2 Surface Preparation**

**C.2.1 General:**

Prepare the entire deck (or portion of the deck to be overlaid in one placement when staged construction is being employed) to ensure the concrete surface is dry, thoroughly clean, and free from dust or other loose material. Prepare concrete surfaces in accordance with these specifications dependent on whether the surfaces are of recently cast concrete (new construction) or of existing concrete.

Do not remove or damage striping or traffic markings in sound condition.

Do not perform surface preparation more than 24 hours prior to the application of the methacrylate sealer. The prepared surface shall not be exposed to vehicular or pedestrian traffic other than that required for sealer placement and approved by the Engineer. If the prepared surface is reopened to traffic prior to sealer placement, the surface shall be re-inspected for any contaminates and subsequently remove contaminates by use of abrasive blasting or shotblasting at no additional cost to the department.

The engineer may consider alternate surface preparation methods per the methacrylate sealer manufacturer’s recommendations. The engineer must approve the final surface preparation and deck cleanliness prior to the contractor placing the methacrylate sealer. Prior to methacrylate sealer placement, cure concrete for a minimum of 21 days.

**C.2.2 Surface Preparation for New Construction:**

Remove substances such as dirt, oil, curing compound, paint, grease, slurry, laitance, and other foreign or potentially detrimental materials by water blasting, light sandblasting, wire brushing, or other methods acceptable to the Engineer, all in accordance with the penetrant sealer manufacturer’s recommendations. Determine an acceptable method that removes substances without damaging the underling substrate. Concrete removals shall not exceed 1/16 inch in depth.

**C.2.3 Surface Preparation for Existing Concrete:**

Remove substances such as dirt, oil, asphalt, rubber, paint, carbonation, grease, slurry, membranes, rust, weak surface mortar, laitance, and other foreign or potentially detrimental materials by abrasive blasting. Determine an acceptable shotblasting machine operation (size of shot, flow of shot, forward speed, and/or number of passes) that provides a surface profile meeting CSP 3 (light shotblast) according to the ICRI Technical Guideline No. 310.2. If the engineer requires additional verification of the surface preparation, test the tensile bond strength according to ASTM C1593. The surface preparation will be considered acceptable if the tensile bond strength is greater than or equal to 250 psi or the failure area at a depth of 1/4 inches or more is greater than 50 percent of the test area. Continue adjustment of the shotblasting machine and necessary testing until the surface is acceptable to the engineer or a passing test result is obtained. Prepare the entire deck using the final accepted adjustments to the shotblasting machine as determined above. Thoroughly blast clean with hand-held equipment any areas inaccessible by the shotblasting equipment.

**C.2.4 Concrete Surface Cleaning Operation:**

Just prior to methacrylate sealer placement, clean all dust, debris, and concrete fines from the deck surface including vertical faces of curbs and barrier walls up to a height of 2-in above the surface with compressed air. Use a direct 125 psi air blast, from a compressor unit with a minimum pressure of 365 ft3 / min., over the entire surface to remove all dust and debris paying special attention to carefully clean all deck cracks. Use a suitable oil trap between the air supply and nozzle. Use ASTM D4285 "Standard Test Method for Indicating Oil or Water in Compressed Air" to ensure the compressed air is oil and moisture free. The air stream must be free of oil and moisture. Any grease, oil, or other foreign matter that rests on or has absorbed into the concrete shall be removed completely.

Perform a visual inspection of the surface that is to receive the methacrylate sealer. Locate and mark all cracks greater than 0.024 inch. Unless directed otherwise on the plans, prefill all cracks greater than 0.024 inch with the same methacrylate sealer or a pre-promoted version of the sealer prior to the methacrylate sealer. Where sealant soaks-in/withdraws from top of crack, place fine grade sand in crack and reapply methacrylate sealant to seal to top of crack. When sealant has not retreated after gel time, the crack is considered prefilled. Do not fill crack with sand beyond top of concrete surface.

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

Provide shielding as necessary to prevent dust or debris from striking vehicular traffic.

Air dry a wet deck for a minimum of forty-eight (48) hours before applying the sealer. Dry time may be reduced to 24 hours if an approved ASTM D4263 moisture test reveals the concrete is dry. Do not apply sealer materials during wet weather conditions or if adverse weather conditions are anticipated within twelve (12) hours of the completion of sealer application. Do not mix or apply any of these products at temperatures lower or higher than those specified in their product literature. Apply the sealant at the coolest time of the day within these limitations. Application by spray methods will not be permitted during windy conditions, if the Engineer predicts unsatisfactory results.

The Engineer shall approve the prepared surface prior to applying the methacrylate sealer.

**C.3 Application of the Sealer**

Apply the sealer conforming to the manufacturer’s instructions.

Apply an approved methacrylate to bridge deck or on surfaces as directed by the Engineer. At least 30 calendar days before the start of the work, provide the Engineer with the sealer Manufacturer's written instructions for application and use.

Do not thin or alter the methacrylate sealer unless specifically required in the Manufacturer's instructions.

Mix the sealer before and during its use as recommended by the Manufacturer. Distribute the sealant as a flood coat in a gravity-fed process by broom, roller, or with a spray bar near the surface so the spray pattern and coverage rates are reasonably uniform to the satisfaction of the Engineer. Apply the sealant at a minimum rate of 90 square feet/gallon.

Protect all expansion joints and prevent the crack sealant from contacting the strip seal glands. Protect all striping and traffic markings from marring, sealant application and reduction in reflective properties. Replace any striping and traffic markings that are marred by sealant.

Prior to completion of gel time of the flood seal and before broadcasting sand, broom uncured sealant in the direction of tining or deck grooves to promote maintenance of the deck texture for traction.

Broadcast sand to refusal into uncured resin to create traction and absorb sealant that is not penetrating into cracks. Broadcast approved sand into the wet, uncured resin no sooner than 10 minutes after applying resin but within gel time of product, unless directed otherwise by the Manufacturer. Apply approved sand at a minimum rate of 250 lbs. per 1000 square feet.

Allow the sealant to dry according to the Manufacturer's instructions. Do not allow vehicular traffic onto the treated areas until the sealer has dried and the treated surfaces provide safe skid resistance and traction. Remove non-adhered sand from bridge deck and joints by power sweeping the deck and vacuuming the joints. Traffic or equipment will be allowed on the sealed deck after the Engineer has determined:

1. The treated deck surface is tack-free and non-oily;

2. The sand cover adheres and resists brushing by hand;

3. Excess sand and absorbent material has been removed; and

4. No sealant material will be tracked beyond limits of treatment by traffic

**D Measurement**

The department will measure Methacrylate Flood Seal bid item in area by the square yard acceptably completed.

**E Payment**

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

|  |  |  |
| --- | --- | --- |
| ITEM NUMBER | DESCRIPTION | UNIT |
| SPV.0180.01  SPV.0180.02 | Methacrylate Flood Seal (Bridge)  Methacrylate Flood Seal (Ramps) | SY  SY |

Payment for Methacrylate Flood Seal is full compensation for furnishing and applying the sealer to the bridge decks, as described above, including surface preparation, and all incidentals thereto. Cleanup of excess sand in joints and on bridge deck will not be paid for separately. Restoration of damaged or marred striping will be considered incidental to application requirements of Methacrylate Flood Seal. (20241028)