

PROJECT SPECIAL PROVISIONS**ROADWAY****MANAGING BRIDGE WASH WATER:****Description**

Collect and properly dispose of Bridge Wash Water from bridge decks.

Construction Methods

- (A) Prepare a written Bridge Wash Water management plan in accordance with the Guidelines for Managing Bridge Wash Water available at <http://www.ncdot.org/doh/preconstruct/ps/contracts/letting.html>. Submit plan and obtain approval from the Engineer prior to beginning of the bridge cleaning operation.
- (B) Prior to final payment, submit a paper copy of all completed records pertaining to disposal of Bridge Wash Water.

Measurement and Payment

Payment for collecting, sampling, testing, pH adjustment, monitoring, handling, discharging, hauling, disposing of the bridge wash water, documentation, record keeping, and obtaining permits if applicable, shall be included in the payment for other items.

DESCRIPTION OF BRIDGES:

Bridge #9 Dare County: The bridge carries US 64 over the Croatan Sound. The superstructure consists of 2 spans of 2 lines of W27x94 (Exterior Beams) and 2 lines of W27x102 (Interior Beams) at a length of 40', 278 spans of 2 lines of W27x94 (Exterior Beams) and 2 lines of W27x102 (Interior Beams) at a length of 42.5', 32 spans of 4 lines of W30x108 Beams at a length of 70', and 1 removable span at a length of 130'. The bridge is 14,265' in length with a concrete deck and a 26'-5" out to out deck width. The existing paint system is green Alkyd over primer and the estimated area to be cleaned and painted is 393,685 sq. ft.

Paints on the bridge (regardless of color), contain some amount of lead and other hazardous constituents. All cleaning and surface preparation activities must prevent dispersion of debris into the environment.

Please refer to the test results on various sections of the bridge to help determine the amount of lead on the structure. Please note this is for the Contractor's information only and the Contractor will be responsible for their own testing.

PAINTING OF STRUCTURAL STEEL

Work Schedule – Prior to beginning work, the Contractor shall submit his work schedule to the Engineer. Schedule shall be kept up to date, with a copy of the revised schedule being provided to the Engineer in a timely manner.

SSPC QP-2 Certification - The existing paint systems include toxic substances such as red lead oxide, which are considered hazardous if improperly removed. Only contractors who are currently SSPC QP-2, Category A certified, and have successfully¹ completed lead paint removal on similar structures within 18 months prior to this bid, may bid on and perform this work.

Twelve-month Observation Period - The Contractor maintains responsibility for the coating system for a twelve (12) month observation period beginning upon the satisfactory completion of all the work required in the plans or as directed by the Engineer. The Contractor must guarantee the coating system under the payment and performance bond (refer to Article 109-10). To successfully complete the observation period, the coating system must meet the following requirements after twelve (12) months service:

- No visible rust, contamination or application defect is observed in any coated area.
- Painted surfaces have a uniform color and gloss.
- Painted surfaces have an adhesion that meets an ASTM D-3359, 3A rating.

Final acceptance is made only after the paint system meets the above requirements.

Containment Plan - No work begins until the Contractor furnishes the Engineer with a containment plan for surface preparation and coating operations and the Engineer reviews and responds in writing about the acceptability of said plan. Such plan must meet or exceed the requirements of a Class 2A containment in accordance with SSPC Guide 6. Enclosure drawings and loads supported by the structure must be prepared, signed and sealed by a Registered North Carolina Professional Engineer.

In the containment plan describe how debris are contained and collected. Describe the type of tarpaulin and bracing materials and the maximum designed wind load. Describe the dust collection system and how a negative pressure of 0.03 inches of water column is maintained inside the enclosure while blasting operations are being conducted. Describe how the airflow inside the containment structure is designed to meet all applicable OSHA Standards. Describe how water run-off from rain will be routed by or through the enclosure. Describe how wash water will be contained and paint chips separated. Describe what physical containment will be provided during painting application to protect vehicles and areas not to be painted.

¹ Successfully: Work completed in accordance with contract specifications, free of citation from safety or environmental agencies.

Wash water Sampling and Disposal Plan - No work begins until the Contractor furnishes the Engineer with a containment plan for surface preparation and coating operations and the Engineer reviews and approves in writing said plan. All wash water shall be collected and sampled prior to disposal. Representative sampling and testing methodology shall conform to 15A NCAC 02B.0103, "Analytical Procedures". Wash water shall be tested for pollutants listed in 15A NCAC 02B.0211 (3), 15A NCAC 02T.0505 (b)(1) and 15A NCAC 2T.0905 (h) (See NCDOT Guidelines for Managing Bridge Wash Water). Depending on the test results, wash water disposal methods shall be described in the disposal plan. Wash water shall be disposed of in accordance with all current state and federal regulations.

Waste Handling of Paint and Abrasives – Use a company from the below list of approved waste management companies. Immediately after award of the contract, the Contractor arranges for waste containers, transportation and disposal of all waste. No work begins until the Contractor furnishes the Engineer with a written waste disposal plan. Any alternative method for handling waste must be pre-approved by the Engineer.

Southern Logistics, Inc. – 312 Orvil Wright Blvd, Greensboro, NC 27409 (Ph. 336-662-0292)
A&D Environmental – 2718 Uwharrie Rd., Archdale, NC 27263 (Ph. 336-434-7750)

All removed paint shall be considered a hazardous waste. The Contractor has the option of furnishing the Engineer certified test reports showing Toxicity Characteristic Leaching Procedure (TCLP) results of the paint chips stored on site, with disposal being in accordance with "Flowchart on Lead Waste Identification and Disposal"

(www.wastenotnc.org/hwhome/guidance/guidance.htm).

If the Contractor elects to have TCLP testing done, samples shall be taken from at least 10% of the barrels to be disposed of, with at least one sample being from each bridge.

Once the waste has been collected and the quantity determined, the Contractor prepares the appropriate shipping documents and manifests and presents them to the Engineer for waste shipment and disposal. The Engineer will verify the type and quantity of waste and obtain a Temporary Waste Disposal Identification Number (TWDIN) from the NC Hazardous Waste Section.

NC Hazardous Waste Section
PO Box 27687, Raleigh, NC 27611-7687
(919) 733-2178 FAX (919) 733-4810

At the time of shipping the Engineer will sign, date and add the TWDIN in the appropriate section on the manifest. The cost for waste disposal (including any lab fees) is included in the bid price for this contract. Note NC Hazardous Waste Management Rules (15A NCAC 13A) for more information.

Equipment Mobilization - The equipment used in any travel lanes and paved shoulder must be mobile equipment on wheels that has the ability to moved on/off the roadway in less than 30 minutes. All work conducted in travel lanes must be from truck or trailer supported platforms and all equipment must be self propelled or attached to a tow vehicle at all times.

SUBLETTING OF CONTRACT:

Only contractors certified to meet SSPC QP-2, Category A, and have successfully completed lead paint removal on similar structures within 18 months prior to this bid are qualified for this work. Work is only sublet by approval of the Engineer.

SPECIFICATIONS:

Surface preparation and painting shall be in accordance with Section 442 of the Standard Specifications except where otherwise noted in these special provisions.

1.0 PREPARATION OF SURFACES

- 1.1 Before any other surface preparation is conducted, all surfaces shall be power washed to remove dust, salts, and other contaminants.
- 1.2 Blasting shall be done with recyclable steel grit meeting the requirements of Section 1080-15. The profile must be between 1.0 and 3.0 mils when measured on a smooth steel surface.
- 1.3 Before the contractor departs from the work site at the end of the work day, all debris generated during surface preparation shall be collected in approved containers.
- 1.4 The Contractor shall clean a two square foot area to demonstrate the specified finish and the inspector preserves this area by covering it with tape, plastic or some other suitable means so that it can be retained as a site standard.
- 1.5 Any area of corroded steel (steel which has lost more than 50% of its original thickness) must not be painted until the Engineer observes its condition.
- 1.6 All parts of the bridges not to be painted, and the travelling public, shall be protected from overspray.

2.0 PAINTING OF STEEL:

Paint System 1, as specified in these special provisions and Section 442 of NCDOT's Standard Specifications, is to be used for this work, with the following exception. **For this project, the IOZ primer shall be replaced with an approved Organic Zinc Primer (See section 3.0 Materials).** The top coats shall remain in accordance with Section 442.

Any area where newly applied paint fails to meet the specifications must be repaired or replaced by the Contractor. The Engineer approves all repair processes before the repair is made. Repaired areas must meet the specifications. The Contractor applies an additional finish coat of paint to areas where the tape adhesion test is conducted.

Do not apply any coating below 40° F or when a temperature of the air, surface, substrate or material is 40° F or below is predicted during the drying and curing period of the paint. Do not apply any coating above or below the manufacturers recommended application temperatures or during a period when an ambient temperature outside the recommended range is predicted during

the drying and curing period of the paint. During adverse weather, use enclosures that control atmospheric conditions artificially inside within limits suitable for painting during the painting operation and until each coat of paint is cured or until weather conditions permit its exposure in the open.

For the span(s) of girders over the boat channel, the original deck forms are present and will need to be cleaned to SSPC SP 2 standard and apply a coat of Epoxy Mastic Aluminum or such suitable coating approved by the Engineer. All steel to steel contact in this area will be sealed with a suitable caulking

Should the contractor elect to apply Organic Zinc Primer at or below 50 F the recoat window shall be a minimum of 24 hours or as necessary for the solvent to fully evaporate from the coating.

No application of acrylic coats (intermediate, stripe or top) shall be applied when the air or substrate is below 50 F.

3.0 MATERIALS:

All **Organic Zinc-Rich** coatings submitted for use shall be evaluated for performance through the National Transportation Product Evaluation program (NTPEP) for Structural Steel Coatings as part of a Coating System that appears on one of the North East Protective Coatings Committee's (NEPCOAT) Qualified Products Lists. Submission of products through AASHTO/NTPEP is a continuous process and manufacturers may submit systems at any time. Prior to the start of work, a 1 quart unmixed sample kit (including the zinc dust) of the Organic Zinc Primer shall be sent to the Materials and Tests Unit for verification testing.

Only paint suppliers that have a NCDOT qualified inorganic zinc primer may furnish paints for this project. Choose a pre-qualified paint supplier from the list at this web address: <http://www.ncdot.org/doh/operations/materials/chemical/aproducts.html>. Only companies with a 4 listed under NCDOT Paints Furnished have approved inorganic Zinc Primers. All paints applied to a structure must be from the same supplier. Before any paints are applied the Contractor provides the Engineer a manufacturer's certification that each batch of paint meets the requirements of the applicable Section 1080 of NCDOT's Standard Specifications.

The inspector randomly collects a one quart sample of each paint product used on the project. Additional samples may be collected as needed to verify compliance to the specifications.

3.1 REQUIREMENTS FOR SUITABLE CAULKING

Submit for approval to Division 1, Engineer of Record and Materials & Tests Unit, Chemical Testing Engineer.

A. APPROVAL

1. Manufacturer's letter certifying the Caulking Compound supplied to the project will meet or exceed Department expectations and will be adequate for the intended use.

2. Contractor shall submit for approval necessary paperwork at a minimum of 7 working days prior to Pre-Construction Meeting:
 - Product data sheet
 - MSDS sheet
 - Letter from paint manufacturer stating caulking material is suitable and compatible with the type and brand of paint being used on the project.
3. Show typical markings on the packaging and any date markings.
4. Provide application instructions and temperature limitations.
5. State effective product life.

B. WORK SEQUENCE

Contractor shall apply suitable caulking in accordance to the manufacturer's product data sheet. In no case shall caulking be applied to moist, damp or frost bearing surfaces or if temperature will fall below freezing for more than 48 hours.

Suitable caulking shall be applied to all steel to steel contract surfaces after application of the primer coat.

C. ACCEPTANCE BY DEPARTMENT

The Engineer of Record & Chemical Testing Engineer will review the manufacturer's submittal for compliance with specification requirements.

D. FIELD DOCUMENTATION REQUIREMENTS

Accepted suitable caulking products will be accepted if they can be identified in the field by manufacturer name and (if applicable) brand name.

4.0 INSPECTION:

Quality Assurance Inspection - The Contractor furnishes all necessary apparatus such as ladders, scaffolds and platforms as required for the inspector to have reasonable and safe access to all parts of the work. The contractor illuminates the surfaces to be inspected to a minimum of 50-foot candles of light.

Contractor must insure that chloride levels on the surfaces prior to each coat of paint are below 7 PPM using an acceptable sample method in accordance with SSPC Guide 15. The frequency

of testing shall be 5 tests per 1000 square feet until a pattern of acceptable results are achieved then reduced to 1 test per 1000 square foot.

NOTE- Contractor has the option to expose each layer of paint applied permitting proper curing to outside exposure. Random quality assurance testing of chloride levels will be done to assure all layers of paint have acceptable chloride levels prior to the application of the next layer.

The Contractor shall verify the cure of organic zinc rich primer in accordance with one of the following test methods:

ASTM D 3363- 2H
ASTM D 4541- minimum of 400 PSI

NCDOT reserves the right for ongoing QA (Quality Assurance) inspection to include but not limited to Surface contamination testing, Adhesion pull testing and DFT readings as necessary to assure quality.

The contractor informs the Engineer of all scheduled and unannounced inspections from SSPC, OSHA, EPA and/or others that come on site.

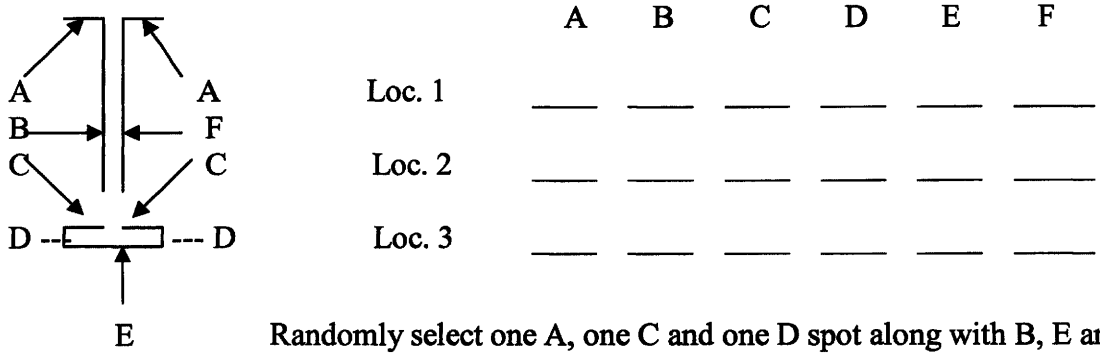
Inspection Instruments - The Contractor furnishes at least the following calibrated instruments at site and conducts the quality control testing:

Sling Psychrometer - ASTM E-337 – Bulb type
Surface Temperature Thermometer
Wind Speed Indicator
Tape Profile Tester – ASTM D-4417 Method C
Surface Condition Standards – SSPC VIS-1 and VIS-3
Wet Film Thickness Gage – ASTM D-4414
Dry Film Thickness Gage – SSPC-PA2 Modified
Pencil Hardness- ASTM D-3363
Solvent Rub Test Kit – ASTM D-4752
Adhesion Tape Kit – ASTM D-3359
Elcometer and dollies
Surface Contamination Analysis Kit or (Chloride Level Test Kit)

The Contractor maintains a daily quality control record in accordance with Section 442-12 and such records must be available at the job site for review by the inspector and be submitted to the

Engineer as directed. In addition to the information required on M&T-610, the Contractor shall submit all DFT readings as required on M&T611.

- A. The dry film thickness is measured at each spot as indicated on the attached diagram at no less than three random locations along each girder in each span. Also dry film thickness is measured at no less than six random spots per span on diaphragms/ "K" frames. Each spot is an average of three to five readings in accordance with SSPC PA-2.



- B. Two random adhesion tests per span are conducted on interior surfaces after the paint has been properly cured, and will be touched up by the Contractor. One random Cut Tape adhesion test per span is conducted on interior surface after the finish coat is cured, and will be touched up by the Contractor.

5.0 SAFETY AND ENVIRONMENTAL COMPLIANCE PLANS

Personnel access boundaries are delineated for each work site using signs, tape, cones or other approved means. Submit copies of safety and environmental compliance plans that comply with SSPC QP-2 Certification requirements.

6.0 ENVIRONMENTAL MONITORING

Comply with Section 442-13(B) of NCDOT’s Standard Specifications.

A “Competent Person²” is on site during all surface preparation activities and monitors the effectiveness of containment and dust collection systems. Any visible emissions outside the containment enclosure or pump monitoring results exceeding the level of 30 µg/m³ TWA is justification to suspend the work. Before any work begins the Contractor provides a written summary of the responsible person’s safety training.

² **Competent Person** as defined in OSHA 29 CFR 1926.62 is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who have authorization to take prompt corrective measures to eliminate them.

7.0 HEALTH AND SAFETY RESPONSIBILITY

Comply with Section 442-13(C) of NCDOT's Standard Specifications. Insure employee blood sampling test results are less than 50 micrograms per deciliter. Remove employees with a blood sampling test of 50 or more micrograms per deciliter from work activities involving any lead exposure.

An employee who has been removed with a blood level of 50 micrograms per deciliter or more shall have two consecutive blood sampling tests indicating that the employee's blood lead level is at or below 40 micrograms per deciliter before returning to work activities involving any lead exposure.

8.0 STORAGE OF PAINT AND EQUIPMENT

The Prime Contractor provides a location for materials, equipment and waste storage. Tarpaulins are spread over all pavements and surfaces underneath equipment utilized for abrasive recycling and other lead handling equipment or containers.

9.0 UTILITIES

The Contractor protects all utility lines or mains which may be supported on, under, or adjacent to bridge work sites from damage and paint over-spray.

10.0 PAYMENT

The cost of inspection, surface preparation and repainting the existing structure is included in the lump sum price bid for *Painting of Structural Steel*. This price is full compensation for furnishing all inspection equipment, all paint, cleaning abrasives, cleaning solvents and all other materials; preparing and cleaning surfaces to be painted; applying paint in the field; protecting work, traffic and property; and furnishing blast cleaning equipment, paint spraying equipment, brushes, rollers and any other hand or power tools and any other equipment..

Pollution Control will be paid for as the contract lump sum price. Such price and payment will be full compensation for all containment, handling and disposal of debris and wash water, all personal protective equipment, and all personal hygiene requirements inspection equipment, all materials and labor necessary to fully contain the blast debris; daily collection of the blast debris into the specified containers; and any measures necessary to ensure conformance to all safety and environmental regulations as directed by the Engineer.

Pay Item	Pay Unit
Painting of Structural Steel	Lump Sum
Pollution Control	Lump Sum

NOTE TO CONTRACTOR:

The Contractor shall be responsible for returning any disturbed areas back to its original condition. This work may include, but will not be limited to, grading, seeding and mulching, etc. All materials and labor necessary to perform the above mentioned work will be considered incidental to the various contract items and no direct payment will be made for these activities.

PAINT SAMPLING AND TESTING:

(8-15-06)

SP10 R45

Revise the *2006 Standard Specifications* as follows:

Page 10-190, Article 1080-4, Delete the first paragraph and replace with the following:

All paint will be sampled, either at the point of manufacture or at the point of destination. Inspection and sampling will be performed at the point of manufacture wherever possible. The Contractor shall not begin painting until the analysis of the paint has been performed, and the paint has been accepted.

CHANGEABLE MESSAGE SIGNS:

(11-21-06)

SP11 R11

Revise the *2006 Standard Specifications* as follows:

Page 11-9, Article 1120-3, Replace the 3rd sentence with the following:

Sign operator will adjust flash rate so that no more than two messages will be displayed and be legible to a driver when approaching the sign at the posted speed.

COAST GUARD NOTIFICATION:

The Contractor will not be allowed to begin any work associated with the channel span until a proposed work plan has been approved by the United States Coast Guard. The Contractor shall submit his proposed work plan to the Resident Engineer for forwarding to the Coast Guard for approval. These plans shall be submitted to the Engineer a minimum of two (2) months prior to the date the Contractor plans on beginning his operations in the channel span. The proposed work plan shall detail the change in vertical clearance for the channel span during the Contractor's time of operation in this area; detail the work to be performed and how said work will be performed; detail schedules (including begin and end dates) for work on the channel span; and any other information that will help describe the work to the Coast Guard and assist in putting together the required Notice to Mariners that will be broadcast during the channel span work.

ACCESS/TRAFFIC CONTROL-(LUMP SUM)

Repairs to Bridge #9 can be accomplished by access from the topside or from underneath. Means and methods are the contractor's responsibility and will not be established by NCDOT. All access either from above or below is considered incidental to the other items of work and the cost of providing access shall be included in the unit prices bid for the various pay items of the work.

The Contractor shall provide all traffic control for this project in accordance with the NCDOT Standard Drawings and Specifications, MUTCD and any Coast Guard requirements for waterway traffic. Contractor shall maintain traffic during construction and to provide, install and maintain all traffic control devices as well as provide all notices, signs, buoys, lighting, communication equipment and all else to provide safe passage to the boat traffic.

If/when lane closures are used, no more than two lane closures of 1000' length each are permitted on the bridge at any time. If two lane closures are used, they shall be in the same direction of traffic (either northbound or southbound) and be separated a minimum of ½ mile. If the two lane closures are within ½ mile of each other, incorporate them into a single lane closure not to exceed a total length of 2,000 feet.

Submit a traffic control plan to the Engineer for approval prior to beginning work.

The lump sum bid price for traffic control on the above mentioned project will include all items associated with furnishing installing and maintaining traffic control devices.

The lump sum price for traffic control on the above mentioned project includes but is not limited to providing Signs (portable, stationary, barricade or detour), Truck Mounted Impact Attenuators (TMIA), Changeable Message signs (CMS), Flashing Arrow Panel (FAP), Pilot Vehicle, Flaggers, Cones and Drums as shown in the Roadway Standard Drawings or as directed by the Engineer.

Payment will be made under:

Pay Item	Pay Unit
Traffic Control	Lump Sum



John S. Kite, Jr.
5/29/09