PAINTING EXISTING STRUCTURES 12-07-04

The existing paint system includes toxic substances such as red lead oxide, which are considered hazardous if removed improperly.

Prequalifying to Bid

Only the contractors who meet the requirements of Section 102-2 of the *Standard Specifications* and the following will be allowed to bid on this project:

1. The Contractor performing the work shall provide documentation verifying current certification in accordance with Society of Protective Coating (SSPC) QP-2 Category A Certification.

2. Have successfully completed a lead paint removal on similar structures within 18 months prior to this bid. For this specification, successfully completing a lead removal project is defined as work completed in accordance with the contract specifications and free from citations from safety or environmental agencies.

3. The bidders shall submit proof of their current SSPC QP-2, Category A qualification certification and proof of successfully having completed a lead removal project to the Contract Officer by 4:00 p.m. on January 14, 2005. Certification shall be submitted to the following address:

Physical Address	Mailing Address:
State Contract Officer	State Contract Officer
Project Services Unit	NC Department of Transportation
Century Center Bldg. B	Contracts and Proposals
1020 Birch Ridge Drive	1591 Mail Service Center
Raleigh, NC 27610	Raleigh, NC 27699-1591

A bid received from a bidder who has not submitted the certification in accordance with the above will not be read publicly, and will be returned to the bidder unopened.

Subletting of Contract

The Contractor shall meet the requirements of Article 108-6 of the *Standard Specifications* and the following:

If the lead removal work is sublet, it shall be sublet only by approval of the Engineer in accordance with Section 108-6 of the *Standard Specifications* and shall meet the above requirements for bidding, except that the contractor shall submit the subcontractor's certification

and proof of successful project completion to the Bridge Maintenance Engineer at least 5 working days prior to beginning lead removal work.

Twelve Month Observation Period

The Contractor shall maintain responsibility for the coating system for a twelve month observation period beginning upon the satisfactory completion and acceptance of all the work required in the plans or as directed by the Engineer.

The Contractor shall guarantee the coating system under the payment and performance bonds in accordance with Article 109-10 of the *Standard Specifications*. To successfully complete the observation period, the coating system shall meet the following requirements after twelve months service:

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

Certification with Society of Protective Coatings SSPC-QP-2

Should the certification as required under the specifications expire or be revoked before the work is completed, the Contractor/subcontractor will not be permitted to work until recertified.

Should the Engineer order a suspension of work due to the Contractor's failure to maintain the aforementioned certification, the Contractor shall have no claims for additional compensation, extensions in contract time, or waiver of liquidated damages for the period or periods of such suspension.

Final acceptance and payment 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.

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

PROJECT 5B.109214.1,etc
Describe how water/paint from power wash will be contained and separated.

When power washing ,the lead paint chips shall be filtered, contained and disposed of properly.

The wastewater passing through the filter should be treated as hazardous waste until otherwise notified by the department.

Waste Handling -Use **Shamrock Environmental Corporation (336-282-2499),503 Patton Ave, Greensboro, N.C. 27406**) (the current NCDOT contractor) to dispose of paint waste. 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. Once all 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 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.

SPECIFICATIONS:

The North Carolina Department of Transportation (NCDOT) Standard Specifications for Roads and Structures dated **January 1, 2002**, together with these Special Provisions apply to this project. Surface preparation and painting are performed in accordance with Section 442 except where otherwise noted in these Special Provisions. The Paint materials must meet the applicable materials specifications under Section 1080. Materials approvals are in accordance with **4.0 Materials** of this Special Provision.

PROJECT 5B.109214.1,etc.
WAKE COUNTY

PROJECT SPECIAL PROVISION
DESCRIPTION OF BRIDGES

BRIDGE #190 Wake Co.-the bridge carries SR 2300 (Edgemont Rd.)over US 64. The superstructure consists of 2 spans of 5 lines of 44" continuous steel plate girders @ 8'-0" spacing. The bridge is 237'6" Long with concrete deck and 36' of clear roadway. The minimum roadway under clearance Is 15'-10". The existing paint system is foliage green over red lead, and the estimated area to be Cleaned and painted 16,381 sq.ft.

BRIDGE # 192 Wake Co.-the bridge carries SR 2320(Lizard Lick Rd.)over US 64. The superstructure consists of 2 spans of 6 lines of 51" continuous steel plate girders @ 8'-0" spacing. The bridge is 248'-6" Long with concrete deck and 44' of clear roadway. The minimum roadway under clearance Is 15'-11". The existing paint system is foliage green over red lead, and the estimated area to be Cleaned and painted 21,766 sq.ft .

BRIDGE # 202 Wake Co.-the bridge carries SR 2368(Green Pace Rd.)over US 64. The superstructure consists of 4 spans (2 spans of W 36 steel and 2 spans of 51"continuous steel plate girders) of 5 lines@ 8'-0" spacing. The bridge is 321'-0" long with concrete deck and 36' of clear roadway. The minimum roadway under clearance is 16'-06". The existing paint system is foliage green over red lead, and the estimated area to be cleaned and painted 21,974 sq.ft .

BRIDGE # 204 Wake Co.-the bridge carries SR 2406(Shepard School Rd.) over US 64. The superstructure consists of 2 spans of 6 lines of 60" continuous steel plate girders @ 7'-6" spacing. The bridge is 235'-0"long with concrete deck and 40' of clear roadway. The minimum roadway under clearance Is 16'-04". The existing paint system is foliage green over red lead, and the estimated area to be Cleaned and painted 23,960 sq.ft .

BRIDGE # 208 Wake Co.-the bridge carries SR 2320 (Debnam Rd.) over US 64. The superstructure consists of 4 spans (2 spans of W33 and 2 spans of 61"continuous steel plate girders) 5 lines @ 8'-0" spacing. The bridge is 318'-0"long with concrete deck and 36' of clear roadway. The minimum roadway under clearance is 16'-10". The existing paint system is foliage green over red lead, and the estimated area to be cleaned and painted 26,091 sq.ft.

BRIDGE # 212 Wake Co.-the bridge carries SR 2337 (Pipen Rd.) over US 64. The superstructure consists of 2 spans of 4 lines of 50" continuous steel plate girders @ 8'-6" spacing. The bridge is 232'-0" long with concrete deck and 30' of clear roadway. The minimum roadway under clearance Is 16'-1". The existing paint system is foliage green over red lead, and the estimated area to be Cleaned and painted 13, 586 sq.ft

BRIDGE # 30 Wake Co.-the bridge carries NC 96 over US 64. The superstructure Consists of 2 spans of 10 lines of 72" continuous steel plate girders @ 7'-9 ½" spacing . The bridge is 255'-0" long with concrete deck and 68' of clear roadway. The minimum roadway under clearance Is 16'-02". The existing paint system is foliage green over red lead, and the estimated area to be Cleaned and painted 49,730 sq.ft .

BRIDGE # 15 Wake Co.-the bridge carries US 264 over US 64. The superstructure consists of 4 spans(2 spans of W36 and 2 spans of 63" continuous steel plate girders) 12 lines @ 8'-0" spacing. The bridge is 340'-8 5/8" long with concrete deck and 86' of clear roadway. The minimum roadway under clearance is 16'-03". The existing paint system is foliage green over red lead, and the estimated area to be cleaned and painted 52,462 sq.ft

PROJECT 5B.109214.1,etc.
WAKE COUNTY

1.0 STRUCTURES TO BE PAINTED:

ITEM	ROUTE	BRIDGE #	BRIDGE LENGTH	GIRDER #LINES	EST.SURF. AREA SFT.	SPANS DESC.
1	SR 2300	190	237.5	5	16,381	2 CONT.
2	SR 2320	192	248.5	6	21,766	2 CONT.
3	SR 2368	202	321	5	21,974	2 CONT.&2 SIMP.
4	SR 2406	204	235	6	23,960	2 CONT.
5	SR 2320	208	318	5	26,091	2 CONT.&2 SIMP.
6	SR 2337	212	232	4	13,586	2 CONT.
7	NC 96	30	255	10	49,730	2 CONT.
8	US 264	15	340.7	12	52,462	2 CONT.&2 SIMP.
			TOTAL	AREA	225,950	

***Estimates of surface area may vary significantly from the actual quantity and the contractor is responsible for determining the actual area to be painted.**

Paints regardless of color, on all bridges contain lead and other hazardous constituents. All cleaning and surface preparation activities must prevent dispersion of debris into the environment.

2.0 DESCRIPTION OF THE WORK TO BE DONE:

2.1 Items 4 through 8 Remove all old paint from exposed surfaces; clean surfaces to an SSPC SP-10 finish; and apply **Paint System 1** as specified in Section 442 of NCDOT's Standard Specifications.

2.2 Items 1 through 3 Remove all old paint from exposed surfaces; clean surfaces to an SSPC SP-10 finish; and apply Sherwin Williams Corothane I Galvapac {Two Pack) Zinc Primer, B65G10/B65D210 at a thickness of 3-4 mils DFT. Topcoat with Sherwin Williams Fast Clad Urethane, B65-950 Series/B65V950 at a thickness of 6-9 mils DFT. This system will be referred to as **Paint System SW** throughout the rest of this specification. Refer to product data pages for information relative to material storage, ambient-surface & material temperatures, dew point, mixing, reduction, sweat in times, pot life, application equipment, worker safety, etc.

2.3 In addition to the requirements of Section 442-5. No paint is applied when the steady wind speed is greater than 10 miles per hour.

2.4 Restricted Work Periods - Note the restrictions for the Prime Contractor.

3.0 PREPARATION OF SURFACES:

3.1 Power washing with low pressure water – Before any other surface preparation are conducted, all surfaces shall be power washed to remove dust, salts, and other contaminants.

3.2 Blasting is done with recyclable steel grit meeting the requirements of Section 1080- For structures 4-8 the profile must be between 1.0 and 3.5 mils when measured on a smooth steel surface. For structures 1-3, the profile must be between 1.0 and 2.0 mils when measured on a smooth steel surface.

3.3 Before the contractor departs from the work site at the end of the work day, all debris generated during surface preparation are collected in approved containers.

3.4 The Contractor cleans a two square foot area at each structure 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.

3.5 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.

4.0 PAINTING OF STEEL:

Paint System 1 and Paint System SW as specified in these special provisions and Section 442 of NCDOT's Standard Specifications are used for this work. System 1 is an inorganic zinc primer and acrylic top coats used over blast cleaned surfaces. System SW is a moisture curing urethane zinc rich primer containing micaceous iron oxide and an aliphatic polyurea urethane top coat used over blast cleaned surfaces. Each structure has a separate paint system and paint systems must not be mixed on the same structure.

Any area where the 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.

5.0 MATERIALS:

Only paint suppliers that have a NCDOT qualified inorganic zinc primer may furnish paints for structures 4-8 on this project. 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.

For structures 1-3 of this project, use the previously specified Fast Clad Urethane System manufactured by Sherwin Williams. Each batch of paint used on structures 1-3 should meet the following specifications:

Galvapac Primer (mixed): Volume Solids, 67% ± 2; VOC (unreduced) <340 g/l, 2.8 lbs./gal.: % zinc in dry film, 83% ± 2.

Fast Clad Urethane (mixed): Volume Solids, 64 % ± 2; VOC (Unreduced) 289 g/l, 2.4 lbs./gal.; Color, FSC 595 # XXXXX.

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

6.0 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.

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

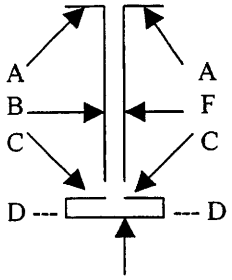
Inspection Instruments - The Contractor furnishes the following calibrated instruments at site to conduct the quality control testing:

Sling Psychometer - ASTM E-337
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 [A]
Solvent Rub Test Kit – ASTM D-4752
Adhesion Test Kit – ASTM D-3359 [B]

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.

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.



	A	B	C	D	E	F
Loc. 1	____	____	____	____	____	____
Loc. 2	____	____	____	____	____	____
Loc. 3	____	____	____	____	____	____

Randomly select one A, one C and one D spot along with B, E and F.

B. Two random adhesion tests per span are conducted on interior surfaces after the properly cured.

7.0 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 which comply with SSPC QP-2 Certification requirements.

8.0 ENVIRONMENTAL MONITORING:

Comply with Section 442–13(B) of NCDOT's Standard Specifications.

A "Competent Person[2]" 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.

9.0 HEALTH AND SAFETY RESPONSIBILITY:

Comply with Section 442-13(C) of NCDOT's Standard Specifications and insure employee blood lead results are less than 30 micrograms per deciliter. Remove employees with 30 or more micrograms per deciliter from work activities involving any lead exposure until the blood lead level drops below 30.

10.0 STORAGE OF PAINT AND EQUIPMENT:

[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.

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.

11.0 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.

12.0 PAYMENT:

The cost of inspection, surface preparation and repainting the existing structure is included in the lump sum price bid for **"Cleaning and Repainting of the Existing Structures"**. 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.

The cost of containment, handling and disposal of debris, all personal protective equipment, and all personal hygiene requirements is included in the lump sum price bid.

This price shall be full compensation for all 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.

Contract Number C203184
Wake County, North Carolina
Paint System SW
Corothane ® I Galvapact Two Pack Zinc Primer, B65G10/B69D210
Fast Clad Urethane, B65-950 Series/B65V950

Anchor pattern/Profile:	1.5 to 3.5 mils
Galvapac Zinc Primer:	
Dry Film Thickness:	3.0 to 5.0 mils dry
Application Conditions:	
Air Temperature	35° F, 5° above the dew point and rising
Surface Temperature	35° F
Material Temperature	45° F
Humidity	99%
Test to topcoat:	50 MEK double rub or thumb pressure test
Continuous Agitation:	Yes
Pot Life:	Moisture Cure Urethane, no pot life other than being humidity sensitive.
Accelerator:	Use Corothane ® IKA Accelerator B65V11 to reduce minimum topcoat time. If used, pot life will be approximately 1 hour at 77° F
Fast Clad Urethane:	
Dry Film Thickness:	6.0 to 9.0 mils dry
Application Conditions:	
Air Temperature	35° F, 5° above the dew point and rising
Surface Temperature	35° F
Material Temperature	45° F
Humidity	85%
Pot Life:	2 hours @ 77° F
System:	
Time Lapse to Check DFT Measurements, Zinc, Urethane & System	8 to 12 hours at 77° 12 to 16 hours at 40° F
Adhesion, ASTM D4541:	30 days based on NTPEP standards