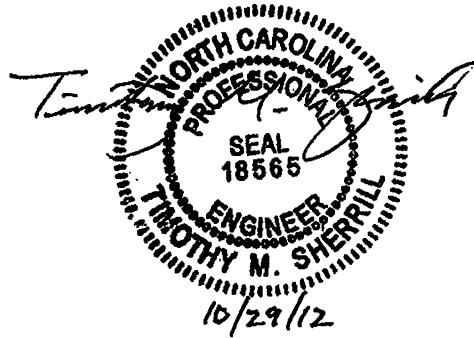


**Project Special Provisions
Structure**

Table of Contents

	Page
Scope of Work	1
Securing of Vessels (10-12-01)	1
Submittal of Working Drawings (2-10-12)	1
Falsework and Formwork (4-1-11)	7
Crane Safety (8-15-05)	12
Painting Existing Structures	13
Description of Bridges	26



SCOPE OF WORK

This work shall consist of furnishing all labor, equipment, and materials to clean and paint the structural steel of the existing bridges. Work includes: removing, containment and disposal of the existing paint system; preparation of the surface to be painted and applying the new paint system; traffic control, marking & delineation; portable lighting; erosion and sediment control; seeding and mulching all grassed areas disturbed; and all incidental items necessary to complete the project as specified and shown on the plans.

The contractor shall be responsible for fulfilling all requirements of the NCDOT Standard Specifications for Roads and Structures dated January 2012, except as otherwise specified herein.

SECURING OF VESSELS**(10-12-01)**

Secure vessels in accordance with Section 107 of the Standard Specifications and the following provision.

When utilizing barges, tugboats or other vessels, take all necessary precautions to ensure that such vessels are securely anchored or moored when not in active operation. Take all necessary measures to ensure that the vessels are operated in a manner that avoids damage to or unnecessary contact with bridges and other highway structures and attachments. If severe weather conditions are anticipated, or should be anticipated through reasonable monitoring of weather forecasts, take additional measures to protect bridges and other highway structures and attachments from extreme conditions. The Contractor is strictly liable for damages to any bridge or other highway structure or attachment caused by a vessel owned or controlled by the Contractor. The Contractor is also liable to third parties for property damages and loss of revenue caused by vessels under the Contractor's control.

SUBMITTAL OF WORKING DRAWINGS**(2-10-12)****1.0 GENERAL**

Submit working drawings in accordance with Article 105-2 of the *Standard Specifications* and this provision. For this provision, "submittals" refers to only those listed in this provision. The list of submittals contained herein does not represent a list of required submittals for the project. Submittals are only necessary for those items as required by the contract. Make submittals that are not specifically noted in this provision directly to the Resident Engineer. Either the Structure Design Unit or the Geotechnical Engineering Unit or both units will jointly review submittals.

If a submittal contains variations from plan details or specifications or significantly affects project cost, field construction or operations, discuss the submittal with and submit all copies

to the Resident Engineer. State the reason for the proposed variation in the submittal. To minimize review time, make sure all submittals are complete when initially submitted. Provide a contact name and information with each submittal. Direct any questions regarding submittal requirements to the Resident Engineer, Structure Design Unit contacts or the Geotechnical Engineering Unit contacts noted below.

In order to facilitate in-plant inspection by NCDOT and approval of working drawings, provide the name, address and telephone number of the facility where fabrication will actually be done if different than shown on the title block of the submitted working drawings. This includes, but is not limited to, precast concrete items, prestressed concrete items and fabricated steel or aluminum items.

2.0 ADDRESSES AND CONTACTS

For submittals to the Structure Design Unit, use the following addresses:

Via US mail:

Mr. G. R. Perfetti, P. E.
State Bridge Design Engineer
North Carolina Department
of Transportation
Structure Design Unit
1581 Mail Service Center
Raleigh, NC 27699-1581
Attention: Mr. P. D. Lambert, P. E.

Via other delivery service:

Mr. G. R. Perfetti, P. E.
State Bridge Design Engineer
North Carolina Department
of Transportation
Structure Design Unit
1000 Birch Ridge Drive
Raleigh, NC 27610
Attention: Mr. P. D. Lambert, P. E.

Submittals may also be made via email.

Send submittals to: plambert@ncdot.gov (Paul Lambert)

Send an additional e-copy of the submittal to the following address:
jgaither@ncdot.gov (James Gaither) jlbolden@ncdot.gov (James Bolden)

For submittals to the Geotechnical Engineering Unit, use the following addresses:

For projects in Divisions 1-7, use the following Eastern Regional Office address:

Via US mail:

Mr. K. J. Kim, Ph. D., P. E.
Eastern Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
1570 Mail Service Center
Raleigh, NC 27699-1570

Via other delivery service:

Mr. K. J. Kim, Ph. D., P. E.
Eastern Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
3301 Jones Sausage Road, Suite 100
Garner, NC 27529

For projects in Divisions 8-14, use the following Western Regional Office address:

Via US mail:

Via other delivery service:

Mr. John Pilipchuk, L. G., P. E.
 Western Regional Geotechnical
 Manager
 North Carolina Department
 of Transportation
 Geotechnical Engineering Unit
 Western Regional Office
 5253 Z Max Boulevard
 Harrisburg, NC 28075

Mr. John Pilipchuk, L. G., P. E.
 Western Region Geotechnical
 Manager
 North Carolina Department
 of Transportation
 Geotechnical Engineering Unit
 Western Regional Office
 5253 Z Max Boulevard
 Harrisburg, NC 28075

The status of the review of structure-related submittals sent to the Structure Design Unit can be viewed from the Unit's web site, via the "Contractor Submittal" link.

Direct any questions concerning submittal review status, review comments or drawing markups to the following contacts:

Primary Structures Contact: Paul Lambert
 (919) 707 – 6407
 (919) 250 – 4082 facsimile
plambert@ncdot.gov

Secondary Structures Contacts: James Gaither
 (919) 707 – 6409
 James Bolden
 (919) 707 – 6408

Eastern Regional Geotechnical Contact (Divisions 1-7): K. J. Kim
 (919) 662 – 4710
 (919) 662 – 3095 facsimile
kkim@ncdot.gov

Western Regional Geotechnical Contact (Divisions 8-14): John Pilipchuk
 (704) 455 – 8902
 (704) 455 – 8912 facsimile
jpilipchuk@ncdot.gov

3.0 SUBMITTAL COPIES

Furnish one complete copy of each submittal, including all attachments, to the Resident Engineer. At the same time, submit the number of hard copies shown below of the same complete submittal directly to the Structure Design Unit and/or the Geotechnical Engineering Unit.

The first table below covers "Structure Submittals". The Resident Engineer will receive review comments and drawing markups for these submittals from the Structure Design Unit. The second table in this section covers "Geotechnical Submittals". The Resident

Engineer will receive review comments and drawing markups for these submittals from the Geotechnical Engineering Unit.

Unless otherwise required, submit one set of supporting calculations to either the Structure Design Unit or the Geotechnical Engineering Unit unless both units require submittal copies in which case submit a set of supporting calculations to each unit. Provide additional copies of any submittal as directed.

<u>STRUCTURE SUBMITTALS</u>			
Submittal	Copies Required by Structure Design Unit	Copies Required by Geotechnical Engineering Unit	Contract Reference Requiring Submittal ¹
Arch Culvert Falsework	5	0	Plan Note, SN Sheet & "Falsework and Formwork"
Box Culvert Falsework ⁷	5	0	Plan Note, SN Sheet & "Falsework and Formwork"
Cofferdams	6	2	Article 410-4
Foam Joint Seals ⁶	9	0	"Foam Joint Seals"
Expansion Joint Seals (hold down plate type with base angle)	9	0	"Expansion Joint Seals"
Expansion Joint Seals (modular)	2, then 9	0	"Modular Expansion Joint Seals"
Expansion Joint Seals (strip seals)	9	0	"Strip Seals"
Falsework & Forms ² (substructure)	8	0	Article 420-3 & "Falsework and Formwork"
Falsework & Forms (superstructure)	8	0	Article 420-3 & "Falsework and Formwork"
Girder Erection over Railroad	5	0	Railroad Provisions

Maintenance and Protection of Traffic Beneath Proposed Structure	8	0	“Maintenance and Protection of Traffic Beneath Proposed Structure at Station ____”
Metal Bridge Railing	8	0	Plan Note
Metal Stay-in-Place Forms	8	0	Article 420-3
Metalwork for Elastomeric Bearings ^{4,5}	7	0	Article 1072-8
Miscellaneous Metalwork ^{4,5}	7	0	Article 1072-8
Optional Disc Bearings ⁴	8	0	“Optional Disc Bearings”
Overhead and Digital Message Signs (DMS) (metalwork and foundations)	13	0	Applicable Provisions
Placement of Equipment on Structures (cranes, etc.)	7	0	Article 420-20
Pot Bearings ⁴	8	0	“Pot Bearings”
Precast Concrete Box Culverts	2, then 1 reproducible	0	“Optional Precast Reinforced Concrete Box Culvert at Station ____”
Prestressed Concrete Cored Slab (detensioning sequences) ³	6	0	Article 1078-11
Prestressed Concrete Deck Panels	6 and 1 reproducible	0	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	6	0	Articles 1078-8 and 1078-11
Removal of Existing Structure over Railroad	5	0	Railroad Provisions
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	2, then 1 reproducible	0	Article 420-3
Revised Bridge Deck Plans (adaptation to modular expansion joint seals)	2, then 1 reproducible	0	“Modular Expansion Joint Seals”
Sound Barrier Wall (precast items)	10	0	Article 1077-2 & “Sound Barrier Wall”

Sound Barrier Wall Steel Fabrication Plans ⁵	7	0	Article 1072-8 & “Sound Barrier Wall”
Structural Steel ⁴	2, then 7	0	Article 1072-8
Temporary Detour Structures	10	2	Article 400-3 & “Construction, Maintenance and Removal of Temporary Structure at Station _____”
TFE Expansion Bearings ⁴	8	0	Article 1072-8

FOOTNOTES

- References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Articles refer to the *Standard Specifications*.
- Submittals for these items are necessary only when required by a note on plans.
- Submittals for these items may not be required. A list of pre-approved sequences is available from the producer or the Materials & Tests Unit.
- The fabricator may submit these items directly to the Structure Design Unit.
- The two sets of preliminary submittals required by Article 1072-8 of the *Standard Specifications* are not required for these items.
- Submittals for Fabrication Drawings are not required. Submittals for Catalogue Cuts of Proposed Material are required. See Section 5.A of the referenced provision.
- Submittals are necessary only when the top slab thickness is 18” or greater.

<u>GEOTECHNICAL SUBMITTALS</u>			
Submittal	Copies Required by Geotechnical Engineering Unit	Copies Required by Structure Design Unit	Contract Reference Requiring Submittal¹
Drilled Pier Construction Plans ²	1	0	Subarticle 411-3(A)
Crosshole Sonic Logging (CSL) Reports ²	1	0	Subarticle 411-5(A)(2)
Pile Driving Equipment Data Forms ^{2,3}	1	0	Subarticle 450-3(D)(2)
Pile Driving Analyzer (PDA)	1	0	Subarticle 450-3(F)(3)

Reports ²			
Retaining Walls ⁴	8 drawings, 2 calculations	2 drawings	Applicable Provisions
Temporary Shoring ⁴	5 drawings, 2 calculations	2 drawings	“Temporary Shoring” & “Temporary Soil Nail Walls”

FOOTNOTES

1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Subarticles refer to the *Standard Specifications*.
2. Submit one hard copy of submittal to the Resident or Bridge Maintenance Engineer. Submit a second copy of submittal electronically (PDF via email) or by facsimile, US mail or other delivery service to the appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.
3. The Pile Driving Equipment Data Form is available from:
www.ncdot.org/doh/preconstruct/highway/geotech/formdet/
See second page of form for submittal instructions.
4. Electronic copy of submittal is required. See referenced provision.

FALSEWORK AND FORMWORK

(4-1-11)

1.0 DESCRIPTION

Use this Special Provision as a guide to develop temporary works submittals required by the Standard Specifications or other provisions; no additional submittals are required herein. Such temporary works include, but are not limited to, falsework and formwork.

Falsework is any temporary construction used to support the permanent structure until it becomes self-supporting. Formwork is the temporary structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Access scaffolding is a temporary structure that functions as a work platform that supports construction personnel, materials, and tools, but is not intended to support the structure. Scaffolding systems that are used to temporarily support permanent structures (as opposed to functioning as work platforms) are considered to be falsework under the definitions given. Shoring is a component of falsework such as horizontal, vertical, or inclined support members. Where the term “temporary works” is used, it includes all of the temporary facilities used in bridge construction that do not become part of the permanent structure.

Design and construct safe and adequate temporary works that will support all loads imposed and provide the necessary rigidity to achieve the lines and grades shown on the plans in the final structure.

2.0 MATERIALS

Select materials suitable for temporary works; however, select materials that also ensure the safety and quality required by the design assumptions. The Engineer has authority to reject material on the basis of its condition, inappropriate use, safety, or nonconformance with the plans. Clearly identify allowable loads or stresses for all materials or manufactured devices on the plans. Revise the plan and notify the Engineer if any change to materials or material strengths is required.

3.0 DESIGN REQUIREMENTS

A. Working Drawings

Provide working drawings for items as specified in the contract, or as required by the Engineer, with design calculations and supporting data in sufficient detail to permit a structural and safety review of the proposed design of the temporary work.

On the drawings, show all information necessary to allow the design of any component to be checked independently as determined by the Engineer.

When concrete placement is involved, include data such as the drawings of proposed sequence, rate of placement, direction of placement, and location of all construction joints. Submit the number of copies as called for by the contract.

When required, have the drawings and calculations prepared under the guidance of, and sealed by, a North Carolina Registered Professional Engineer who is knowledgeable in temporary works design.

If requested by the Engineer, submit with the working drawings manufacturer's catalog data listing the weight of all construction equipment that will be supported on the temporary work. Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders. Falsework hangers that support concentrated loads and are installed at the edge of thin top flange concrete girders (such as bulb tee girders) shall be spaced so as not to exceed 75% of the manufacturer's stated safe working load. Use of dual leg hangers (such as Meadow Burke HF-42 and HF-43) are not allowed on concrete girders with thin top flanges. Design the falsework and forms supporting deck slabs and overhangs on girder bridges so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete.

When staged construction of the bridge deck is required, detail falsework and forms for screed and fluid concrete loads to be independent of any previous deck pour components when the mid-span girder deflection due to deck weight is greater than $\frac{3}{4}$ ".

Note on the working drawings any anchorages, connectors, inserts, steel sleeves or other such devices used as part of the falsework or formwork that remains in the permanent structure. If the plan notes indicate that the structure contains the necessary corrosion

protection required for a Corrosive Site, epoxy coat, galvanize or metalize these devices. Electroplating will not be allowed. Any coating required by the Engineer will be considered incidental to the various pay items requiring temporary works.

Design falsework and formwork requiring submittals in accordance with the 1995 AASHTO *Guide Design Specifications for Bridge Temporary Works* except as noted herein.

1. Wind Loads

Table 2.2 of Article 2.2.5.1 is modified to include wind velocities up to 110 mph (177 km/hr). In addition, Table 2.2A is included to provide the maximum wind speeds by county in North Carolina.

Table 2.2 - Wind Pressure Values

Height Zone feet (m) above ground	Pressure, lb/ft ² (kPa) for Indicated Wind Velocity, mph (km/hr)				
	70 (112.7)	80 (128.7)	90 (144.8)	100 (160.9)	110 (177.0)
0 to 30 (0 to 9.1)	15 (0.72)	20 (0.96)	25 (1.20)	30 (1.44)	35 (1.68)
30 to 50 (9.1 to 15.2)	20 (0.96)	25 (1.20)	30 (1.44)	35 (1.68)	40 (1.92)
50 to 100 (15.2 to 30.5)	25 (1.20)	30 (1.44)	35 (1.68)	40 (1.92)	45 (2.15)
over 100 (30.5)	30 (1.44)	35 (1.68)	40 (1.92)	45 (2.15)	50 (2.39)

2. Time of Removal

The following requirements replace those of Article 3.4.8.2.

Do not remove forms until the concrete has attained strengths required in Article 420-16 of the Standard Specifications and these Special Provisions.

Do not remove forms until the concrete has sufficient strength to prevent damage to the surface.

Table 2.2A - Steady State Maximum Wind Speeds by Counties in North Carolina

COUNTY	25 YR (mph) (km/hr)	COUNTY	25 YR (mph) (km/hr)	COUNTY	25 YR (mph) (km/hr)
Alamance	70 (112.7)	Franklin	70 (112.7)	Pamlico	100 (160.9)
Alexander	70 (112.7)	Gaston	70 (112.7)	Pasquotank	100 (160.9)
Alleghany	70 (112.7)	Gates	90 (144.8)	Pender	100 (160.9)
Anson	70 (112.7)	Graham	80 (128.7)	Perquimans	100 (160.9)

Ashe	70 (112.7)	Granville	70 (112.7)	Person	70 (112.7)
Avery	70 (112.7)	Greene	80 (128.7)	Pitt	90 (144.8)
Beaufort	100 (160.9)	Guilford	70 (112.7)	Polk	80 (128.7)
Bertie	90 (144.8)	Halifax	80 (128.7)	Randolph	70 (112.7)
Bladen	90 (144.8)	Harnett	70 (112.7)	Richmond	70 (112.7)
Brunswick	100 (160.9)	Haywood	80 (128.7)	Robeson	80 (128.7)
Buncombe	80 (128.7)	Henderson	80 (128.7)	Rockingham	70 (112.7)
Burke	70 (112.7)	Hertford	90 (144.8)	Rowan	70 (112.7)
Cabarrus	70 (112.7)	Hoke	70 (112.7)	Rutherford	70 (112.7)
Caldwell	70 (112.7)	Hyde	110 (177.0)	Sampson	90 (144.8)
Camden	100 (160.9)	Iredell	70 (112.7)	Scotland	70 (112.7)
Carteret	110 (177.0)	Jackson	80 (128.7)	Stanley	70 (112.7)
Caswell	70 (112.7)	Johnston	80 (128.7)	Stokes	70 (112.7)
Catawba	70 (112.7)	Jones	100 (160.9)	Surry	70 (112.7)
Cherokee	80 (128.7)	Lee	70 (112.7)	Swain	80 (128.7)
Chatham	70 (112.7)	Lenoir	90 (144.8)	Transylvania	80 (128.7)
Chowan	90 (144.8)	Lincoln	70 (112.7)	Tyrell	100 (160.9)
Clay	80 (128.7)	Macon	80 (128.7)	Union	70 (112.7)
Cleveland	70 (112.7)	Madison	80 (128.7)	Vance	70 (112.7)
Columbus	90 (144.8)	Martin	90 (144.8)	Wake	70 (112.7)
Craven	100 (160.9)	McDowell	70 (112.7)	Warren	70 (112.7)
Cumberland	80 (128.7)	Mecklenburg	70 (112.7)	Washington	100 (160.9)
Currituck	100 (160.9)	Mitchell	70 (112.7)	Watauga	70 (112.7)
Dare	110 (177.0)	Montgomery	70(112.7)	Wayne	80 (128.7)
Davidson	70 (112.7)	Moore	70 (112.7)	Wilkes	70 (112.7)
Davie	70 (112.7)	Nash	80 (128.7)	Wilson	80 (128.7)
Duplin	90 (144.8)	New Hanover	100 (160.9)	Yadkin	70 (112.7)
Durham	70 (112.7)	Northampton	80 (128.7)	Yancey	70 (112.7)
Edgecombe	80 (128.7)	Onslow	100 (160.9)		
Forsyth	70 (112.7)	Orange	70 (112.7)		

B. Review and Approval

The Engineer is responsible for the review and approval of temporary works' drawings.

Submit the working drawings sufficiently in advance of proposed use to allow for their review, revision (if needed), and approval without delay to the work.

The time period for review of the working drawings does not begin until complete drawings and design calculations, when required, are received by the Engineer.

Do not start construction of any temporary work for which working drawings are required until the drawings have been approved. Such approval does not relieve the Contractor of the responsibility for the accuracy and adequacy of the working drawings.

4.0 CONSTRUCTION REQUIREMENTS

All requirements of Section 420 of the Standard Specifications apply.

Construct temporary works in conformance with the approved working drawings. Ensure that the quality of materials and workmanship employed is consistent with that assumed in the design of the temporary works. Do not weld falsework members to any portion of the permanent structure unless approved. Show any welding to the permanent structure on the approved construction drawings.

Provide tell-tales attached to the forms and extending to the ground, or other means, for accurate measurement of falsework settlement. Make sure that the anticipated compressive settlement and/or deflection of falsework does not exceed 1 inch (25 mm). For cast-in-place concrete structures, make sure that the calculated deflection of falsework flexural members does not exceed 1/240 of their span regardless of whether or not the deflection is compensated by camber strips.

A. Maintenance and Inspection

Inspect and maintain the temporary work in an acceptable condition throughout the period of its use. Certify that the manufactured devices have been maintained in a condition to allow them to safely carry their rated loads. Clearly mark each piece so that its capacity can be readily determined at the job site.

Perform an in-depth inspection of an applicable portion(s) of the temporary works, in the presence of the Engineer, not more than 24 hours prior to the beginning of each concrete placement. Inspect other temporary works at least once a month to ensure that they are functioning properly. Have a North Carolina Registered Professional Engineer inspect the cofferdams, shoring, sheathing, support of excavation structures, and support systems for load tests prior to loading.

B. Foundations

Determine the safe bearing capacity of the foundation material on which the supports for temporary works rest. If required by the Engineer, conduct load tests to verify proposed bearing capacity values that are marginal or in other high-risk situations.

The use of the foundation support values shown on the contract plans of the permanent structure is permitted if the foundations are on the same level and on the same soil as those of the permanent structure.

Allow for adequate site drainage or soil protection to prevent soil saturation and washout of the soil supporting the temporary works supports.

If piles are used, the estimation of capacities and later confirmation during construction using standard procedures based on the driving characteristics of the pile is permitted. If preferred, use load tests to confirm the estimated capacities; or, if required by the Engineer conduct load tests to verify bearing capacity values that are marginal or in other high risk situations.

The Engineer reviews and approves the proposed pile and soil bearing capacities.

5.0 REMOVAL

Unless otherwise permitted, remove and keep all temporary works upon completion of the work. Do not disturb or otherwise damage the finished work.

Remove temporary works in conformance with the contract documents. Remove them in such a manner as to permit the structure to uniformly and gradually take the stresses due to its own weight.

6.0 METHOD OF MEASUREMENT

Unless otherwise specified, temporary works will not be directly measured.

7.0 BASIS OF PAYMENT

Payment at the contract unit prices for the various pay items requiring temporary works will be full compensation for the above falsework and formwork.

CRANE SAFETY

(8-15-05)

Comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors, sub-contractors, and fully operated rental companies shall comply with the current Occupational Safety and Health Administration regulations (OSHA).

Submit all items listed below to the Engineer prior to beginning crane operations involving critical lifts. A critical lift is defined as any lift that exceeds 75 percent of the manufacturer's crane chart capacity for the radius at which the load will be lifted or requires the use of more than one crane. Changes in personnel or equipment must be reported to the Engineer and all applicable items listed below must be updated and submitted prior to continuing with crane operations.

CRANE SAFETY SUBMITTAL LIST

- A. **Competent Person:** Provide the name and qualifications of the “Competent Person” responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
- B. **Riggers:** Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.
- C. **Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.
- D. **Certifications:** **By July 1, 2006**, crane operators performing critical lifts shall be certified by NC CCO (National Commission for the Certification of Crane Operators), or satisfactorily complete the Carolinas AGC’s Professional Crane Operator’s Proficiency Program. Other approved nationally accredited programs will be considered upon request. All crane operators shall also have a current CDL medical card. Submit a list of anticipated critical lifts and corresponding crane operator(s). Include current certification for the type of crane operated (small hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

PAINTING EXISTING STRUCTURES

REV 1/2012

Specialty Items:

Description of Work - This work shall consist of furnishing all labor, equipment, and materials to clean and paint the structural steel of the existing bridges. Work includes: removing, containment and disposal of the existing paint system; preparation of the surface to be painted and applying the new paint system; traffic control, marking & delineation; portable lighting; erosion and sediment control; seeding and mulching all grassed areas disturbed; and all incidental items necessary to complete the project as specified and shown on the plans.

The contractor shall be responsible for fulfilling all requirements of the NCDOT Standard Specifications for Roads and Structures dated January 2012, except as otherwise specified herein.

Work Schedule – Prior to the pre-construction meeting, 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 (as determined by the Engineer).

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 all similar structures within 18 months prior to this bid, may bid on and perform this work. **The apparent low bidder shall submit a list of projects for which QP2 work was performed within the last 18 months including owner contact information and submit to the Assistant State Bridge Management Engineer a “Lead Abatement Affidavit” by 12:00 noon of the third day following the opening of bids. This form may be downloaded from:**

<http://www.ncdot.gov/projects/ncbridges/#stats>

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.

Submittals - All submittals must be submitted to the Engineer for review and approval prior to the pre-construction meeting:

- Containment Drawings sealed by NC Professional Engineer
- Bridge Wash Water Sampling & Disposal Plan
- Sub- Contractor identification
- Lighting Plan for night work in accordance with NCDOT *Standard Specifications* Section 1413.
- Traffic Control Plan
 - a) NCDOT certified supervisors, flaggers and traffic control devices
- Health & safety Plan²
 - a) ²Plan must address the minimum required topics as specified by the SSPC QP-1 and QP-2 program to also include hazard communication, respiratory health, emergency procedures, and local hospital and treatment facilities to include directions and phone numbers, disciplinary criteria for workers who violate the plan and accident investigation.

¹ Successfully: All lead abatement work completed in accordance with contract specifications, free of citation from safety or environmental agencies. Lead abatement work shall include but not be limited to: abrasive blasting; waste handling, storage and disposal; worker safety during lead abatement activities (fall protection, PPE, etc.); and containment. This requirement is in addition to the contractor pre-qualification requirements covered by NCDOT Std. Specification, Section 102-2.

² SSPC QP-1 required minimum: Hazardous Materials, Personal Protective Equipment, General Health and Safety, Occupational Health and Environmental

Controls, Personal Protective Equipment, Fire Protection and Prevention, Signs Signals, and Barricades, Materials Handling, Storage, Use, and Disposal, Hand and Power Tools, Welding and Cutting, Electrical, Scaffolds, Fall Protection, Cranes, Derricks, Hoists, Elevators, and Conveyors, Ladders, Toxic and Hazardous Substances, Airless Injection and HPWJ.

- b) Contractor shall provide the Engineer a letter of certification that all employees performing work on the project have blood lead levels that are below the OSHA action level.
- c) Competent Person qualifications and summary of work experience.
- Environmental Compliance Plan
- Quality Control Plan (Project Specific)
 - a) Quality control qualifications and summary of work experience
- Bridge and Public Protection Plan (Overspray, Utilities, etc. - Project/Task Specific)
- Abrasive Blast Media
 - a) Product Data Sheet
 - b) Blast Media Test Reports in accordance with NCDOT *Standard Specification* Section 1080-15.
- Coating Material
 - a) NCDOT HICAMS Test Reports (testing performed by NCDOT Materials & tests Unit).
 - b) Product Data Sheets
 - c) Material Safety Data Sheets
 - d) Product Specific Repair Procedures
 - e) Acceptance letters from paint manufacturer's for work practices that conflict with Project Special Provisions and or paint manufactures product data sheets.

Pre-Construction Meeting – Submittals shall be reviewed and be approved by the engineer prior to scheduling the Pre-Construction Meeting. The Contractor shall allow for a review process of no less than two (2) weeks.

When requesting a pre-construction meeting the Contractor must contact the Engineer at least 7 working days in advance of the desired pre-construction date. The contractor's project supervisor, competent person, quality control personnel and certified traffic control supervisor shall be in attendance for the Pre-Construction meeting in order for the Contractor and DOT team to establish roles responsibilities for various personnel during project duration and to establish realistic timeframes for problem escalation.

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. Allow a minimum of two weeks for review of the plan. Such plan must meet or exceed the requirements of 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 is 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 the public and areas not to be painted.

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 link below for 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.

<http://www.ncdot.gov/prjects/ncbridges/#stats>

Waste Handling of Paint and Abrasives – The Contractor will comply with the Resource Conservation and Recovery Act (RCRA – 40 CFR 261 - 265) and the Occupational Safety and Health Act (OSHA - 29 CFR 1910 - 1926) regulations for employee training, and for the handling, storage, labeling, recordkeeping, reporting, inspections and disposal of all hazardous waste generated during paint removal.

A summary of Generator Requirements is available at the above NCDOT web link which cites the specific regulations for each Generator category. Quantities of waste by weight and dates of waste generation must be recorded. Waste stored at the project site must be properly labeled.

The North Carolina Department of Environment and Natural Resources (NCDENR) have adopted RCRA as the North Carolina Hazardous Waste Management Rules and are responsible for enforcement. The "Hazardous Waste Compliance Manual for Generators of Hazardous Waste" is published by the Compliance Branch of the Division of Waste Management of NCDENR, and can be found at

<http://portal.ncdenr.org/web/wm/hw/rules>

The Contractor is required to maintain compliance with all federal, state and local regulations. Failure to comply with the regulations could result in fines and loss of qualified status with NCDOT.

Use a company from the below list of approved waste management companies or an approved equal. Immediately after award of the contract, the Contractor arranges for waste containers, sampling and testing, 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 Orville Wright Dr., Greensboro, NC 27409 (Ph. 336-662-0292)
A&D Environmental – PO Box 484, High Point, NC 27261 (Ph. 336-434-7750)

Poseidon Environmental Services, Inc. – 837 Boardman-Canfield Rd #209, Youngstown, OH (Ph. 330-726-1560)
Clean Harbors Reidsville, LLC – 208 Watlington Industrial Drive, Reidsville, NC 27320 (Ph. 336-342-6106)

Waste and Wash Water Sampling

All removed paint and spent abrasive media shall be tested for lead following the SW-846 TCLP Method 1311 Extraction, as required in 40 CFR 261, Appendix 11, to determine whether it must be disposed of as hazardous waste. The Contractor shall furnish the Engineer certified test reports showing TCLP results and Iron analysis of the paint chips stored on site, with disposal being in accordance with “Flowchart on Lead Waste Identification and Disposal”.

http://portal.ncdenr.org/c/document_library/get_file?p_l_id=38491&folderId=328599&name=DLFE-9855.pdf

The Competent Person shall obtain composite samples from each barrel of the wash water and waste generated by collecting two or more portions taken at regularly spaced intervals during accumulation. Composite the portions into one sample for testing purposes. Do not obtain portions of the composite sample from the very first or last part of the accumulation process. The sample(s) should be acquired after 10 percent or before 90 percent of the barrel has accumulated. Due to the difficulty of acquiring samples the intent is to provide samples that are representative of widely separated portions, but not the beginning and end of wash water or waste accumulation.

Perform sampling by passing a receptacle completely through the discharge stream, or by completely diverting the discharge into a sample container. If discharge of the wash water or waste is too rapid to divert the complete discharge stream, discharge into a container or transportation unit sufficiently large to accommodate and then accomplish the sampling in the same manner as given above.

Until test results are received, all waste shall be stored and labeled as “NCDOT Bridge Paint Removal Waste-Pending Analysis” and include the date generated and contact information for the Division HazMat Manager or Project Engineer. Waste containers shall be stored in an enclosed, sealed and secured storage container **protected from traffic from all directions.** **A protection plan for these containers must be approved by the Engineer. If adequate protection cannot be obtained by use of existing guardrail, the contractor will be required to provide adequate protection.** Once test results are received and characterized, waste shall be labeled as either “Hazardous Waste-Pending Disposal” or “Paint Waste-Pending Disposal”.

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. The Engineer will verify the type and quantity of waste and obtain a Provisional EPA ID number from the

NC Hazardous Waste Section
North Carolina Department of Environment & Natural Resources
1646 Mail Service Center

Raleigh, NC 27699
Phone (919) 508-8400 Fax (919) 715-4061

At the time of shipping the Engineer will sign, date and add the ID number in the appropriate section on the manifest. The maximum on-site storage time for collected waste shall be 90 days. All waste whether hazardous or non-hazardous will require numbered shipping manifests. The cost for waste disposal (including lab and Provisional EPA ID number) is included in the bid price for this contract. Note NC Hazardous Waste Management Rules (15A NCAC 13A) for more information. Provisional EPA ID numbers may be obtained at this link:

<http://portal.ncdenr.org/web/wm/provisional-hw-notification-page>

Testing labs shall be certified in accordance with North Carolina State Laboratory Public Health Environmental Sciences. List of certified laboratories may be obtained at this link:

(<http://slphreporting.ncpublichealth.com/EnvironmentalSciences/Certification/CertifiedLaboratory.asp>)

All test results shall be documented on the lab analysis as follows:

1. For leachable lead
 - a. Soils/Solid/Liquid- EPA 1311/200.7/6010

All sampling shall be done in presence of the Engineer's representative.

Equipment Mobilization - The equipment used in any travel lanes and paved shoulder must be mobile equipment on wheels that has the ability to move 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.

QUALITY CONTROL INSPECTOR – The Contractor provides a quality control inspector in accordance with the SSPC QP guidelines to ensure that all processes, preparation, blasting and coating application are in accordance with the requirements of the contract. The inspector shall have written authority to perform QC duties to include continuous improvement of all QC internal procedures. The presence of the engineer or inspector at the work site shall in no way lessen the contractor's responsibility for conformity with the contract

QUALITY ASSURANCE INSPECTOR- The quality assurance inspector which may be a Department employee or a designated representative of the Department shall observe, document, assess and report that the Contractor is complying with all of the requirements of the contract. Inspectors employed by the Department are authorized to inspect all work performed and materials furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication or manufacture of the materials to be used. The inspector is not authorized to alter or waive the requirements of the contract. Each stage in preparing the structure to be coated which includes but not limited to washing, blasting, coating testing and inspection shall be inspected and approved by the Engineer or his authorized representative .

SUBLETTING OF CONTRACT:

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

SPECIFICATIONS:

The North Carolina Department of Transportation (NCDOT) Standard Specifications for Roads and Structures dated January 2012; 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 3.0 Materials of this Special Provision.

1.0 PREPARATION OF SURFACES:

- 1.1 Power washing – Before any other surface preparation are conducted, all surfaces shall be power washed to remove dust, salts, dirt and other contaminants. All wash water shall be contained, collected and tested in accordance with the requirements of NCDOT Managing Bridge Wash Water specification. Under no circumstances will surface preparation or painting activities be started over cleaned surfaces until all surfaces are free of standing water and dry to the touch, and then only after approval by the Engineer.
- 1.2 Blasting is 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. A minimum of two tests per beam/girder and two tests per span of diaphragms/cross bracing shall be conducted and documented.
- 1.3 Tarpaulins are spread over all pavements and surfaces underneath equipment utilized for abrasive recycling and other lead handling equipment or containers. This requirement shall be enforced during activity and inactivity of equipment.
- 1.4 Before the contractor departs from the work site at the end of the work day, all debris generated during surface preparation and all dust collector hoses, tarps, or other appurtenances containing blasting residue are collected in approved containers.
- 1.5 The Contractor cleans a three inch by three inch 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 the DFT gage adjustment standard. An acceptable alternative is for the Contractor to provide a steel plate with similar properties and geometry as the substrate to be measured.
- 1.6 The contractor and or quality assurance representative shall notify the Engineer of any area of corroded steel which has lost more than 50% of its original thickness.
- 1.7 All parts of the bridges not to be painted, and the travelling public, shall be protected from overspray. The Contractor shall submit a plan to protect all parts of bridge that are not required to be painted, in addition to a plan to protect the

traveling public and surrounding environment while applying all coats of paint to a structure.

- 1.8 Contractor must insure that chloride levels on the surfaces are 7 ug/cm^2 or lower using an acceptable sample method in accordance with SSPC Guide 15. The frequency of testing shall be 2 tests per span after all surface preparation has been completed and immediately prior to painting. Test areas selected shall represent the greatest amount of corrosion in the span as determined by the Engineers' representative.
- 1.9 All weld splatter, slag or other surface defects resulting in a raised surface above the final paint layer shall be removed prior to application of primer coat.

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. System 1 is an inorganic zinc primer, two coats acrylic paint and one stripe coat of acrylic paint over blast cleaned surfaces in accordance with SSPC-SP-10 (Near White Blast). Perform all mixing operations over an impervious surface with provisions to prevent runoff to grade of any spilled material. The contractor is responsible for reporting quantities of thinner purchased as well the amounts used. No container with thinner shall be left uncovered, when not in use.

Apply two inch (2") stripe coat by **BRUSH OR ROLLER ONLY** to all exposed edges of steel including fasteners before applying the finish coat. Locate the edge or corner in the approximate center of the paint stripe.

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.

3.0 MATERIALS:

Only paint suppliers that have a NCDOT qualified inorganic zinc primer may furnish paints for 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 the *Standard Specifications*.

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.

Do not expose paint materials to rain, excessive condensation, long periods of direct sunlight, or temperatures above 110F or below 40F. In addition, the Contractor shall place a device which records the high, low and current temperatures inside the storage location. Follow the manufacturer's storage requirements if more restrictive than the above requirements.

4.0 INSPECTION:

Surface Preparation for System 1 shall be in accordance with SSPC SP-10. Any area(s) not meeting the requirements of SSPC SP 10 shall be remediated prior to application of coating. Surface inspection is considered ready for inspection when all blast abrasive, residue and dust is removed from surfaces to be coated.

Quality Assurance Inspection - The Contractor furnishes all necessary OSHA approved 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. All access points shall be illuminated to a minimum of 20-foot candles of light.

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 and the Division Safety Engineer of all scheduled and unannounced inspections from SSPC, OSHA, EPA and/or others that come on site and furnishes the Engineer a copy of all inspection reports except for reports performed by a third party and or consultant on behalf of the contractor.

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
- Solvent Rub Test Kit – ASTM D-4752
- Adhesion Test Kit – ASTM D-3359 Method A (Tape Test)
- Adhesion Pull test – ASTM D-4541
- 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 by these Special Provisions on a form equivalent to M&T-611.

The dry film thickness is measured at each spot as indicated on the attached diagram at no less than specified for each paint system as listed below:

Dry film thickness is measured at each spot on the attached diagram and at the required number of locations as specified below:

1. For span members less than 45 feet; three random locations along each girder in each span.
2. For span members greater than 45 feet; add 1 additional location for each additional 10 feet in span length.

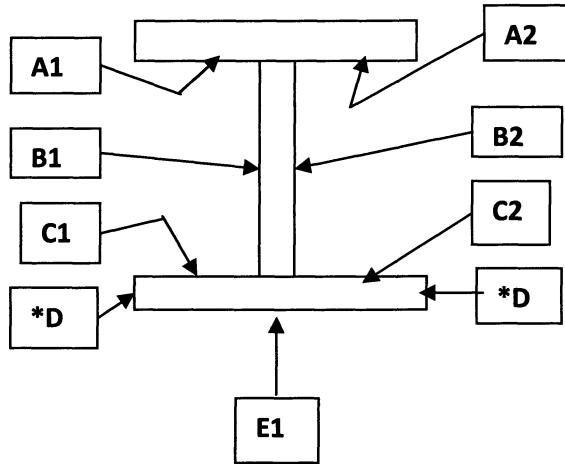
DFT measurements for the prime coat shall not be taken for record until the zinc primer has cured in accordance with ASTM D-4752 (MEK Rub Test) with no less than a four resistance rating.

Stiffeners and other attachments to beams and or plate girders shall be measured at no less than five random spots per 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 individual gage readings as defined in SSPC PA-2. No spot average shall be less than 80% of minimum DFT for each layer applied; this does not apply to stripe coat application. Spot readings that are non-conforming shall be re-accessed by performing additional spot measurements not to exceed one foot intervals on both sides of the low areas until acceptable spot averages are obtained. These non-conforming areas shall be corrected by the contractor prior to applying successive coats.

Less than 36" in height and/or bottom flanges less than 16" in width.

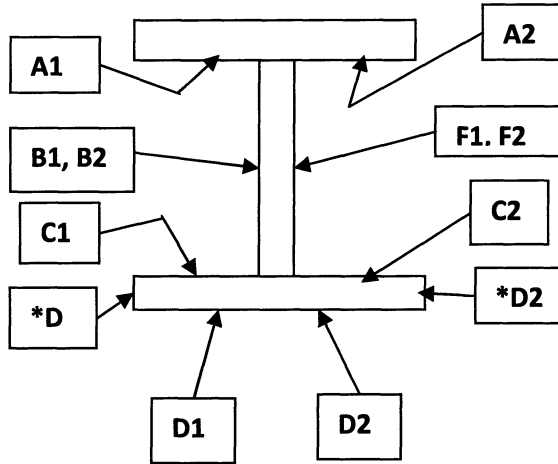
**7 Spot Areas
21 Individual DFT Readings**



***D areas are only included when flange thickness is one inch (1") or greater.**

36" in height or greater and/or bottom flanges greater than 16" in width.

**10 Spot Areas
30 Individual DFT Readings**



***D areas are only included when flange thickness is one inch (1") or greater.**

- A. Two random adhesion tests (1 test=3 dollies) per span are conducted on interior surfaces in accordance with ASTM D-4541 (Adhesion Pull Test) after the prime coat has been properly cured in accordance with ASTM D-4752 (MEK Rub Test) with no less than a 4 resistance rating, and will be touched up by the Contractor. The required minimum average adhesion is 400 psi.
- B. Cure of the intermediate and stripe coats shall be accessed by utilizing the thumb test in accordance with ASTM D-1640 (Curing Formation Test) prior to the application of any successive layers of paint.
- C. One random Cut Tape adhesion test per span is conducted in accordance with ASTM D-3359 (X-Cut Tape Test) on interior surface after the finish coat is cured. Repair areas shall be properly tapered and 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 Person³” is on site during all surface preparation activities and monitors the effectiveness of containment, dust collection systems and waste sampling. Before any work begins the Contractor provides a written summary of the responsible person’s safety training.

Area sampling will be performed for the first two (2) days at each bridge location. The area sample will be located within five feet of the containment and where the highest probability of leakage will occur (access door, etc.). Results from the area sampling will be given to the Engineer within seventy-two (72) hours of sampling (excluding weekends) If the results of the samples exceed 20 ug/m³ corrective measures must be taken and monitoring will be continued until two consecutive samples come back less than 20 ug/m³.

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.

Where schools, housing and/or buildings are within five hundred (500) feet of the containment, the Contractor shall perform initial TSP-Lead monitoring for the first ten (10) days of the project; during abrasive blasting, vacuuming and containment removal. Additional monitoring will be required during abrasive blasting two days per month thereafter. Results of the TSP monitoring at any location shall not exceed 1.5 ug/m³.

This project may involve lead and other toxic metals such as arsenic, cadmium and hexavalent chromium. It is the contractor’s responsibility to test for toxic metals and if found, comply with the OSHA regulations, which may include medical testing.

³ **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 spaced one week apart 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.

Prior to blasting operations the Contractor shall have an operational OSHA approved hand wash station at each bridge location and a decontamination trailer at each bridge or between bridges unless the work is on the roadway, or the contractor can show reason why it is not feasible to do so in which the Contractor will provide an alternative site as approved by the Engineer. The contractor shall assure that all employees whose airborne exposure to lead is above the PEL shall shower at the end of their work shift.

All OSHA recordable accidents that occur during the project duration are to be reported to the Engineer within twenty four (24) hours of occurrence. In addition, for accidents that involve civilians and or property damage that occur within the work zone the Division Safety Engineer shall be notified immediately.

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. All land and or lease agreements that involve private property shall disclose to the property owner that lead and other heavy metals may be present on the Contractor's equipment. Prior to storing the Contractor's equipment on private property the Engineer shall receive a notarized written consent signed by the land owner submitted at least forty-eight (48) prior to using property. All storage of paint, solvents and other materials applied to structures shall be stored in accordance with Section 442 of the Specifications or manufacturers' requirements. The more restrictive requirements will apply.

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 *Cleaning and Repainting of Bridge #__*. 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; containment, handling and disposal of debris and wash water, all personal protective equipment, and all personal hygiene requirements.

Pollution Control will be paid for at the contract lump sum price which price will be full compensation for all collection, handling, storage, air monitoring, and disposal of debris and wash water, all personal protective equipment, and all personal hygiene requirements, and all equipment, material and labor necessary to fully contain the blast debris; daily collection of the blast debris into specified containers; and any measures necessary to ensure conformance to all safety and environments regulations as directed by the Engineer.

Payment will be made under:

Pay Item	Pay Unit
Cleaning and Repainting of Bridge #__	Lump Sum
Pollution Control	Lump Sum

DESCRIPTION OF BRIDGES

ANSON COUNTY

Bridge #14: This bridge was built in 1954 and is located on US 52 over South Fork Jones Creek near Morven in Anson County, NC. The bridge has an overall length of 120'-9" and consists of 3 total spans with 3-40'-3" long spans with 4 lines of 33WF130 exterior steel girders and 33W141 interior steel girders with diaphragms. The existing paint system is aluminum over red lead, and the estimated area to be cleaned and painted is

4,120 sq. ft.

MECKLENBURG COUNTY

Bridge #153: This bridge was built in 1971 and is located on La Salle Street over I-77 in Charlotte in Mecklenburg County, NC. The bridge has an overall length of 262'-0" and consists of 4 total spans with 1- 43'-6", 2-96'-3" and 1-26'-0" long span with 10 lines of 30WF99 interior girders on spans 1 and 4 and 36WF135 exterior girders on spans 1 and 4 and variable size girders for spans 2 & 3 (36WF194 and 36WF260) with diaphragms. The existing paint system is aluminum over red lead, and the estimated area to be cleaned and painted is

26,375 sq. ft.

Bridge #176: This bridge was built in 1955 and is located on US21 over SR 2004 in Huntersville in Mecklenburg County, NC. The bridge has an overall length of 159'-0" and consists of 3 total spans with 2-57'-0" and 1-45'-0" long span with 4 lines of 36W150 steel girders with diaphragms. The existing paint system is aluminum over red lead, and the estimated area to be cleaned and painted is

5,715 sq. ft.

Bridge #215: This bridge was built in 1970 and is located on an I-77 ramp over Irwin Creek in Charlotte in Mecklenburg County, NC. The bridge has an overall length of 341'-0" and consists of 4 total spans with 2-88'-6" and 2-82'-0" long span with 4 lines of 36" deep steel girders of varying weights with diaphragms. The existing paint system is aluminum over red lead, and the estimated area to be cleaned and painted is

13,535 sq. ft.

Bridge #283: This bridge was built in 1972 and is located on I-77 Southbound lane over Andrill Terrace and Irwin Creek in Charlotte in Mecklenburg County, NC. The bridge has an overall length of 290'-6" and consists of 4 total spans with 1-57'-9", 2-86'-6" and 1-59'-9" long span with 4 lines of 36WF135 steel girders on exterior girders spans 1 & 4 and 33WF118 steel girders on interior girders spans 1&4 and 36WF194 steel girders on spans 2 & 3 with diaphragms. The existing paint system is aluminum over red lead, and the estimated area to be cleaned and painted is

11,330 sq. ft.

Bridge #363: This bridge was built in 1956 and is located on NC 16 NBL over the Catawba River on the Mecklenburg/Gaston county line in Mecklenburg County, NC. The bridge has an overall length of 1058'-11" and consists of 10 spans 4-75'-2", 2-73'-6" and 3-203'-9" long spans with 4 lines of 36WF150 steel with cover plates on spans 1,2,3,7,8&9 and 2 plate girder sections with floor beams, struts, stiffeners, cross frames and longitudinal bracing for spans 4,5&6. The existing paint system is aluminum over red lead, and the estimated area to be cleaned and painted is

133,962 sq. ft.

Bridge #460: This bridge was built in 1981 and is located on US 521 SBL over US 74/US 29 in Charlotte in Mecklenburg County, NC. The bridge has an overall length of 187'-3" and consists of 3 total spans with 1-39'-6", 1-116'-3" and 1-31'-6" long span with 5 lines of 30W99 steel girders with haunches on spans 1 & 3 and plate girders on span 2 with cross frame diaphragms on all three spans. The existing steel is weathering steel, and the estimated area to be cleaned and painted is

12,675 sq. ft.

UNION COUNTY

Bridge #34: This bridge was built in 1951 and is located on Concord Avenue over US-74 in Monroe in Union County, NC. The bridge has an overall length of 180'-0" and consists of 4 total spans with 2-37'-6" and 2-52'-6" long spans with 4 lines of 30W108 steel girders on spans 1&4 and 36W160 steel girders on spans 2&3 with diaphragms. The existing paint system is aluminum over red lead, and the estimated area to be cleaned and painted is

6,515 sq. ft.