STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

July 5, 2018

Addendum No. 1

Contract No.: DA00333

WBS Element: 50196.3.1

TIP Number: R-5738

Grading, Drainage, Paving and Structure Improvements on SR1208 "Kitty Hawk Road," in Dare County

To Whom It May Concern:

Reference is made to the proposal and plans previously furnished for this project.

The following revision has been made to the proposal:

Pages 49A - 49N, "Field Painting Over Hot Dip Galvanized Surfaces" has been added to the proposal. Please insert Pages 49A - 49N, in the appropriate location.

Pages 110 - 114, "Bid Form" has been revised to include a line item for "Asphalt Concrete Intermediate Course, Type I19.0 C" and to revise the quantity for "Asphalt Binder for Plant Mix". Please void existing Pages 110 - 114 and replace with the revised Pages 110 - 114.

The amended EBS File (DA00333.001) has been uploaded to Bid Express. We apologize for any inconvenience.

Sincerely,

DocuSigned by:
CDAEAC77A6394FB...

C. E. Slachta
Division Proposals Engineer

cc: J. D. Jennings, PE
C. W. Bridgers, Jr, PE
G. A. Byrum, PE
R. W. Midgett, PE.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
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Field Painting Over Hot Dip Galvanized Surfaces 20170707

DESCRIPTION

Apply a liquid coating system in the field over new, partially weathered or weathered hot-dip galvanized steel surfaces are to be performed in accordance with the Plans, Special Provisions, *Standard Specifications* and the Departments Structural Steel Shop Coatings program. A liquid coating system incorporates all members to be hot dipped galvanized prior to field applied coating layers. The galvanization provides cathodic protection on the interior, exterior and hidden surfaces of the structural steel to be coated. Design and fabrication of members to be galvanized shall be in accordance with ASTM A-385 titled "Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip).

TWELVE-MONTH OBSERVATION PERIOD

The Contractor maintains responsibility for the coating system for a 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 shall guarantee the coating system under the payment and performance bond (refer to Article 109-10 of the *Standard Specifications*). To successfully complete the observation period, the coating system shall meet the following requirements after 12 months service:

- No visible rust, contamination or application defect is observed in any coated area.
- Painted surfaces have a uniform color and gloss.
- Acrylic top coats shall have an adhesion that meets ASTM D3359, 3A rating. On other top coats; the Department may elect to use one or a combination of the adhesion test methods that are listed under performance characteristics/data on the manufacturer's product data sheet.

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

CERTIFICATION

The minimum certifications for this work are as follows:

- When performed in the field they shall currently possess and be in good standing with SSPC QP-1program.
- When performed at shop coating facilities they shall currently possess the AISC Sophisticated Paint Endorsement (SPE) or the SSPC QP-3 certification to apply the duplex coating systems Coating facilities must be an enclosed Shop: as per modified by AISC/SSPC; an enclosed shop is a permanent facility or building (four continuous walls or partitions to grade or floor with a roof) and be a Department approved Structural Steel Coating Shop Facility as listed on the below web-link:
  - https://apps.ncdot.gov/vendor/ApprovedProducts/Producer.aspx
- Work is only sublet by approval of the Engineer

QUALITY CONTROL

All quality control (QC) personnel are subject to review and acceptance of the Engineer. The minimum certifications required are found in the Departments *Structural Steel Shop Coatings* Program. This document is available on the Materials and Tests website: https://connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx?Order=MM-05-06

NOTIFICATION OF WORK

Prior to starting work, in state shop coating facilities shall provide a minimum of three (3) working days' notice and out of state shop coating facilities shall provide a minimum of eight (8) working days' notice by submitting a notice of beginning work form (Annex 1). When submitting the form (Annex 1) the facility shall include; work schedule, days per week, hours per day and number of shifts. Typical working hours are considered Monday through Friday (8am-5pm).

If the coater and/or fabricator are at the same location no additional notification is required.

PRE-JOB MEETING

The Department may require a pre-job meeting for specific applications as determined by the Engineer.

SAFETY

Painting over galvanizing may involve the use of hazardous materials, operations, and equipment. This Project Special Provision does not address all of the potential safety concerns associated with their use. It is the responsibility of the field painting contractor to establish appropriate safety and health requirements, and determine any regulatory requirements or limitations prior to use. All equipment, procedures and methods shall fully comply with the requirements of Article 107 of the NCDOT Standard Specifications.

Personnel involved in the inspection and/or oversight of any coating application should work directly with shop coating facilities safety personnel to ensure proper safety protocol is being followed.

GALVANIZING OF MATERIALS

The fabrication facility shall consult with the galvanizer to ensure the fabricated product meets the requirements of ASTM A385 and provide the galvanizer and Department with mill test reports for the steel thickness(s) and chemistry prior to galvanizing. The fabrication facility shall specify on their purchase order No water quenching or treating with chromate conversion coatings after galvanizing. If the purchase order does not specify the above underlined statement it is the responsibility of the fabricator to test for chromate conversion coatings in accordance with ASTM D6386, Appendix X1 prior to beginning any surface preparation activities.

Galvanize material accordance with Article 1076. Prior to blast cleaning operations, shop facilities shall remove all oil, grease and anti-spatter material in accordance with SSPC SP-1. Article 1076-3 requires all welded areas to be blast cleaned to an SSPC SP-6 prior to sending to

the galvanizing facility. The galvanizing facility must be a Department approved Structural Steel Shop Galvanizing facility as listed on the NCDOT Approved Supplier listing: https://apps.ncdot.gov/vendor/approvedproducts/Producer.aspx

LIQUID COATING SYSTEM

Only paint suppliers that have a NCDOT qualified inorganic zinc primer may furnish paints for this project and the Engineer is to approve the submitted liquid coating system. All paints applied to a structure shall be from the same supplier. A complete list of Department approved inorganic zinc paint can be found at the following webpage: https://apps.ncdot.gov/vendor/approvedproducts/

The Contractor is to submit a liquid coating system to the Engineer for approval. The coating system must be of good quality, capable of providing adequate adhesion and service life when applied over the galvanized surfaces (New, Partially Weathered or Weathered galvanized surfaces). The liquid coating system shall meet the generic type(s) specified in SSPC Guide 19, Table 1 under immersion service, incorporates a stripe coat of at least 4-7 wet film thickness (WFT) and an aesthetic finish coat of 3-5 mils dry film thickness (DFT).

Top coat color shall be Federal Standard 595C color #XXXXXX unless otherwise specified by the Engineer. Additional Federal Standard colors can be found at http://www.federalstandardcolor.com/

STORAGE AND HANDLING

For all liquid paint components, the applicator shall take all necessary precautions to prevent any contamination and/or damage during handling, storage and transportation which include storing in the open air at any time during the coating process (surface preparation through curing of the top coat).

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

Coating material shall arrive at the applicator in sealed containers clearly marked with the type, batch and/or lot numbers properly labeled on the container. There shall be no modification of the coating except upon and in accordance with the express written stipulation by an authorized representative of the coating manufacturer and with specific approval of the Engineer. At the department's option, the inspector may randomly collect a sample of the coating used on the project if the material has been exposed to extremely high/low temperatures and/or exhibits excessive skinning in the container.

COATING MATERIALS

All material coatings applied shall be from the same manufacturer. Before any coatings are applied, the applicator shall provide the Engineer a copy of the product data sheet, SDS (formerly MSDS) sheet, manufacturer's certification and NCDOT HICAMS test report for each type, color and/or batch of coating used on the project.

All coating materials shall be supplied to the work site in their original unopened containers bearing the paint manufacturer's label and instructions.

PREPARATION OF SURFACES

The method, extent of surface preparation and paint materials shall be approved by the paint manufacturer.

Depending on the length of exposure of hot-dip galvanized surfaces they may have layers of zinc oxides, zinc hydroxides and zinc carbonates that must be removed before paint will adhere to the zinc coating.

Surfaces shall be free of visible signs of wet storage stain which appear as a fine white powder. The coating facility shall submit a procedure to the Department for review and approval for the removal of light and medium wet storage stain prior to removing wet storage stains. Heavy and extreme wet storage stains on hot dipped galvanized products are unacceptable to the Department. The American Galvanizing Association (AGA) has a publication for reference titled "A Guide to Minimizing and Treating Wet Storage Stain on Hot-Dip Galvanized Steel"

When hot dipped galvanized or mechanically galvanized nuts for high strength fasteners are to be installed and final tightened before surface preparation, the coating facility shall ensure the colored lubricant is removed prior to surface preparation. The quality control shall submit a procedure to the Department for review and approval for the removal of the colored lubricant. The quality control shall inspect and document the removal of any coloring dye remaining. A white cloth wipe test shall be conducted in the presence of the Department's representative that no color transfer is used to confirm that all lubricant and non-absorbed dye has been removed, leaving only the residual "stain" on the surface.

Prior to surface preparation the QC shall assign piece marks to sheet pile, pipe pile and H-Pile in accordance with Article 1072-21.

Newly Galvanized Surfaces

Newly galvanized surfaces are zinc-coated steel that have been exposed to the atmosphere for less than 48 hours. These surfaces shall be prepared in accordance with ASTM D6386, Section 5. The quality control shall verify, inspect and document all phases of surface preparation that includes but not limited to the following hold points:

Surface Smoothing

Removal of all surface abnormalities listed in ASTM D6386, Section 5.2. After smoothing, all surfaces shall be inspected for conformance to the required zinc thickness in accordance with these Specifications, ASTM A123 or ASTM A153 utilizing a magnetic thickness instrument in accordance with ASTM D7091. Any area falling below the required zinc thickness, before or after removal of any high spots the quality control inspector shall submit a repair procedure to the Department for review and approval.

Surface Cleaning

Removal of oil and grease before they are coated and using a method specified in ASTM D6386, Section 5.3. Documentation shall include the type of surface cleaning method used, type of solvent, type of hand tool or power tool method used and is to be verified in the presence of the Department's representative in accordance with the ASTM F-22.

Surface Preparation

Removal of zinc oxide and zinc hydroxides must be removed before paint will adhere to the zinc coatings. Surface preparation is to be performed using one of five methods as specified in ASTM D6386, Section 5.4. Documentation shall include the SSPC AB-1 abrasive qualification test results, type of zinc phosphate treatment, wash primer or acrylic passivation/pretreatment used

Perform the following tests in the presence of the Department representative:

- Each blasting operator shall verify cleanliness of air before blasting operations in accordance with ASTM D-4285 and verify the blasting pressure and nozzle to work-piece distance.
- Quality control testing of AB-1 abrasives.
- No blasting work shall be carried out when the temperature of the steel surfaces is less than 5°F above dew point of the surrounding air, or the relative humidity of the air is greater than 85%. Use ASTM E-337 when performing ambient conditions assessments at four hour intervals or as conditions change.
- Abrasive blasting performed in accordance with SSPC SP-16. All surfaces shall be blown down with clean, dry compressed air.
- The purpose of sweep blasting is to deform, not remove the galvanized metal. Any area falling below the required zinc thickness, before or after sweep blasting, shall be repaired using a Department approved procedure. All surfaces shall be inspected utilizing a magnetic thickness instrument in accordance with ASTM D7091.

<u>Partially Galvanized Surfaces</u>

Partially galvanized surfaces have been exposed to the atmosphere for greater than 48 hours and up to one year after galvanizing and the surfaces shall be prepared in accordance with ASTM D6386, Section 6. The quality control shall verify, inspect and document all phases of surface preparation that includes but not limited to the following hold points:

Chromate Conversion Verification

The presence of chromate conversion coatings can severely impair the adhesion of some paint coating systems. If the coating facility can provide written documentation of a purchase order as stated above in "Galvanization of Materials" then no further action is required. If the coating facility cannot provide the above documentation they shall submit a procedure for testing for chromate presence as outlined in ASTM D6386, appendix X1.

Wet Storage Stain

Before preparing the surface of partially weathered galvanized steel, the surface must be checked for the presence of wet storage stain. Use a Department approved method for the removal of wet storage stain.

Surface Smoothing

Removal of all surface abnormalities listed in ASTM D6386, Section 5.2.

After smoothing, all surfaces shall be inspected for conformance to the required zinc thickness in accordance with these Specifications, ASTM A123 or ASTM A153 utilizing a magnetic thickness instrument in accordance with ASTM D7091.

Any area falling below the required zinc thickness, before or after removal of any high spots the quality control inspector shall submit a repair procedure to the Department for review and approval.

Surface Preparation

Removal of zinc oxide and zinc hydroxides must be removed before paint will adhere to the zinc coatings. Surface preparation is to be performed using one of five methods as specified in ASTM D6386, Section 5.4. Documentation shall include the SSPC AB-1 abrasive qualification test results, type of zinc phosphate treatment, wash primer or acrylic passivation/pretreatment used.

Perform the following tests in the presence of the Department representative:

- Each blasting operator shall verify cleanliness of air before blasting operations in accordance with ASTM D-4285 and verify the blasting pressure and nozzle to work-piece distance.
- Quality control testing of AB-1 abrasives
- No blasting work shall be carried out when the temperature of the steel surfaces is less than 5°F above dew point of the surrounding air, or the relative humidity of the air is greater than 85%. Use ASTM E-337 when performing ambient conditions assessments at four hour intervals or as conditions change.
- Abrasive blasting performed in accordance with SSPC SP-16. All surfaces shall be blown down with clean, dry compressed air.
- The purpose of sweep blasting is to deform, not remove the galvanized metal. Any area falling below the required zinc thickness, before or after sweep blasting, shall be repaired using a Department approved procedure. All surfaces shall be inspected utilizing a magnetic thickness instrument in accordance with ASTM D7091.

Pretreatment

The formation of zinc oxide on the surface will begin very quickly so the paint coating should be applied within 30 minutes after surface preparation. The Department encourages the coating facility to submit a pretreatment as described in ASTM D6386, Section 5.4.3 thru 5.4.5. If a pretreatment is approved and applied, it may not be necessary to paint immediately.

<u>Weathered Galvanized Surfaces</u>

Weathered galvanized surfaces have been exposed to the atmosphere for than one year after galvanizing the surfaces and shall be prepared in accordance with ASTM D6386, Section 7. The

quality control shall verify, inspect and document all phases of surface preparation that includes but not limited to the following hold points:

Surface Cleaning

Removal of organic compounds such oil, grease, soot on the surface of the part, surface cleaning in accordance with ASTM D6386; Section 5.3 shall be performed before any other cleaning is performed.

Documentation shall include the type of surface cleaning method used, type of solvent, type of hand tool or power tool method used and is to be verified in the presence of the Department's representative in accordance with the ASTM F-22.

Surface Preparation

The natural corrosion of the zinc metal produces a roughened surface film. The surface preparation that is needed is a power wash with warm water to remove loose particles from the surface. The power wash shall use a pressure of $\leq$ 1450 psi so as not to damage the protective film.

Pretreatment

The coating facility shall provide a pretreatment as recommended by the coating manufacturer and approved by the Department. Pretreatment types are shown in ASTM D6386, Section 5.4.

COATING APPLICATION

In some atmospheric conditions, such as high humidity or high temperature or both, the formation of zinc oxide on the freshly prepared surfaces will begin very quickly. Zinc oxide formation is not visible to the unaided eye; therefore, in any atmosphere, painting shall be started within an hour after surface preparation.

All paint is to be applied as required by Article 442-9. The completed coating shall be free from visible defects such as runs, sags, pinholes, voids, bubbles, grit, dust inclusion and be of good visual appearance. The top coat shall completely cover the color of the underlying layers. The stripe coat shall be applied by brush or roller only and applied in accordance with Article 442-9(A).

Cure of acrylic/waterborne stripe coats shall be accessed by using the thumb test in accordance with ASTM D1640 prior to the application of any successive layers of paint. Cure of other generic paint types not listed shall use the more restrictive dry to recoat or dry to topcoat times as stated on the paint manufacturers written instructions Contact surfaces and field welding locations shall meet the requirements of Article 442-10(C)(1)(b)(e).

Any area where newly applied paint fails to meet the specifications shall be repaired or replaced by the Contractor. The Engineer approves all repair processes regardless of size before the repair is made. Repaired areas shall meet these specifications.

COATING APPLICATION TIME

In some atmospheric conditions, such as high humidity or high temperature or both, the formation of zinc oxide on the freshly prepared surfaces will begin very quickly.

Newly Galvanized Surfaces
Zinc oxide formation is not visible to the unaided eye; therefore, in any atmosphere, painting shall be started within an hour after surface preparation.

Partially Galvanized Surfaces
If no protective treatment such as those described in ASTM D6386, Section 5.4.3 thru 5.4.5 is applied, in some atmospheric conditions, such as high humidity, or high temperature, or both, the formation of zinc oxide on the surface will begin very quickly so the paint coating shall be applied within 30 min.

Weathered Galvanized Surfaces
The paint shall be applied no later than eight (8) hours after surface preparation.

INSPECTION
QC is required to record and maintain inspections that are specified by the contract and in accordance with the current Standard Specifications, ensuring that they are signed by the QC inspector who performed the inspection. These records shall be available at the shop for review and submitted to the Quality Assurance representative at the end of each work week or as directed.

Final Visual Inspection Acceptance Criteria
Visual examination using line of sight vision of surface preparation or coating inspection shall be done at an angle not less than 30 degrees and at a distance of no more than twenty four inches (24”). Ambient lighting as measured at the inspection surface shall not be less than 50 foot candles.

Any surface contamination of the end product as a result of improper storage and/or protection as defined by the Engineer shall be removed by applicator prior to final acceptance by the Department.

At a minimum the quality control forms shall be on their company letterhead/logo that uses a Daily inspection report form equivalent to the information required on M&T-610. Submit all Dry Film Thickness (DFT) readings on a form equivalent to M&T-611 to include any pre-treatment applications.
Digital versions of these forms can be found on the NCDOT Materials and Tests webpage:
https://connect.ncdot.gov/resources/Materials/Pages/ChemicalLaboratory.aspx

Dry Film Thickness

Dry film thickness measurements are mandatory for the QC and quality assurance inspectors on the application of the **pretreatment, intermediate and top coat as applicable.** Measurements shall be taken with a Type 2 gage as defined in SSPC PA-2, recorded to the frequency specified in this program and on a form similar to the M&T Form 611.

The type 2 gage needs to be adjusted to account for the profile of the substrate in order to read the thickness directly. The QC shall use and provide the quality assurance inspector with a gage adjustment method as prescribed in SSPC PA-2, Appendix 8.

QC and quality assurance shall measure and record the dry film thickness (DFT) for the coating application and for those products identified in Figures 1, 2, 3 ,4, 5 & 6 as applicable for that specific product. These requirements are applicable to each individual component and shall be obtained as identified in the appropriate Figures 1 through 6 below.

Random locations are defined as equally spaced inspection intervals along the entire length of the member.

All spot readings are defined as the average of 3 to 5 individual gage readings obtained within a 1 ½" diameter circle at each random location and must meet the minimum requirement specified. Discard any single unusually high or low gage readings that are not repeated consistently. The average of the acceptable gage readings is the spot measurement.

For products not identified in Figures 1, 2, 3, 4, 5 & 6 the DFT inspection shall include each surface area, change in contour, face, leg, flange, edge and side for that member.

H & Sheet Pile Members

- 8 random locations for surface area identified above for members ≤ 45 feet.
- For members greater than 45 feet in length, one additional location shall be required for each additional 10 feet in length.

Pipe Pile Members

- 8 random locations for surface area identified above for members ≤ 45 feet in length and up to 24" in diameter.
- For members greater than 45 feet in length, one additional location shall be required for each additional 10 feet in length.
- 10 random locations for surface area identified above for members ≤ 45 feet in length for diameters greater than 24" and up to 48" in diameter.
- For members greater than 45 feet in length and over 24" in diameter to 48" in diameter, one additional location shall be required for each additional 10 feet in length.
- For members greater than 48" in diameter, consult the Engineer for DFT testing interval.

Bearing Assemblies

- For each bearing assembly, 5 random location areas per bearing face, in addition to measure 3 spot areas on each plate edges when greater than one inch in thickness.

Diaphragm/Cross-Frames/X and/or K Frame Assembly

- For each assembly that is ≤ 5 feet in length; 5 random locations that encompass the entire assembly shall be examined. For assemblies greater than 5 feet in length one additional location shall be required for each additional 12" in length.

When a spot reading is non-conforming, the extent of the non-conforming area will be determined by taking additional spot readings not to exceed a one foot interval in all directions until acceptable spot averages are obtained. Material that does not meet the

minimum DFT shall be demarcated using a non-staining material and documented. The operator shall repair these deficient areas in accordance with their pre-approved procedure.

Adhesion Strength

The adhesion strength of the top coat shall be measured in accordance with ASTM D-4541. After completion of the adhesion testing, affected surfaces shall be repaired. Provide repair procedures that are pre-approved by the Department and address adhesion and cohesion failures in the intermediate/topcoat layer. One test equals 3 dollies in which the applicator shall properly taper and touch up all repair areas in accordance with SSPC PA-1, Section 11.

If there is a failure associated with any one test an additional test is required. If additional failures occur, the applicator shall document the location and type of failure and provide the Department with a corrective action plan for review and approval.

Adhesion tests shall be performed at least once on the prepared surface, with a minimum of one test per shift and per lot. A lot shall be defined as follows:

- A lot is one or more articles of the same type and size comprising a single order or a single delivery load, whichever is the smaller, or any number of articles identified as a lot by the applicator, when these have been coated within a single production shift and in the same production area.

Figure 1
Sheet Piles

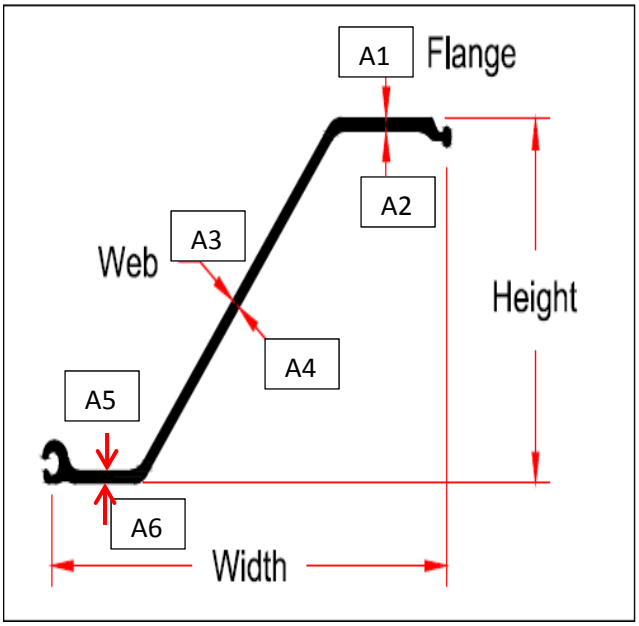


Figure 3
12”-24” Pipe

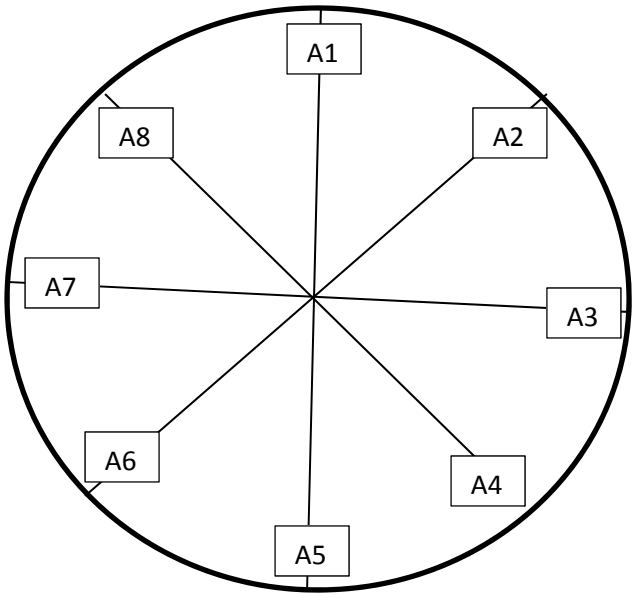


Figure 2
H-Piles

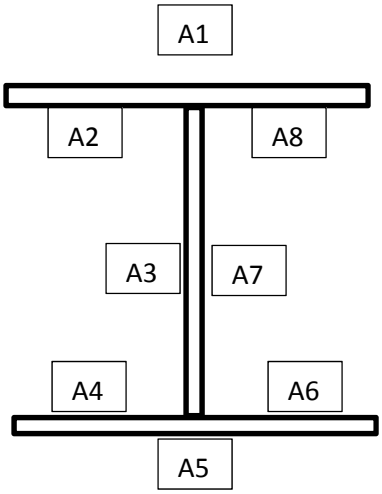


Figure 4
24”-48” Pipe

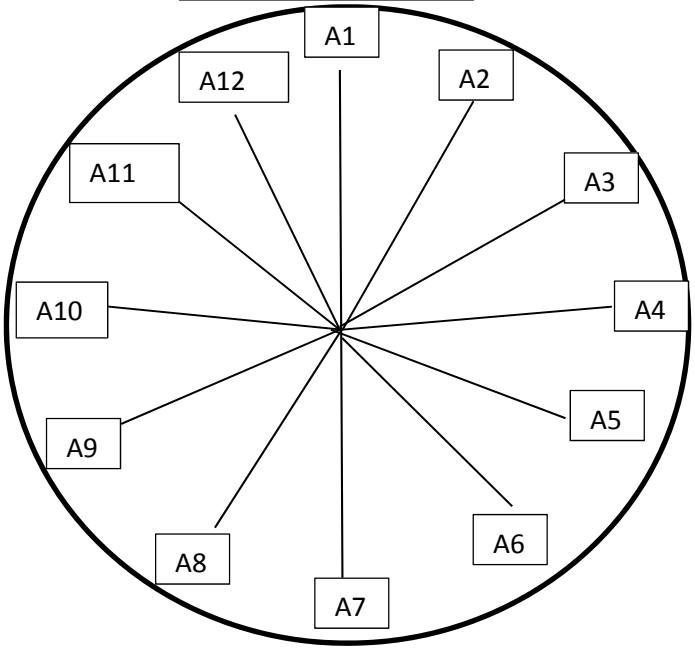


Figure 5
Roll beam or plate girder ≤ 36" in depth

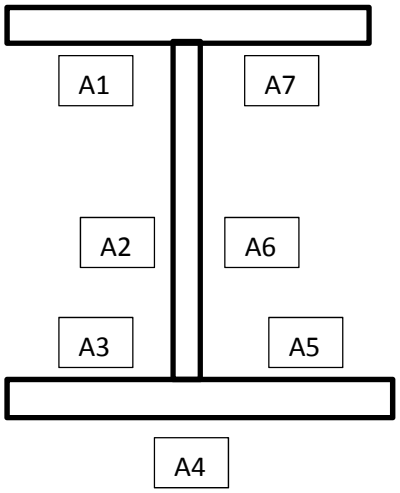
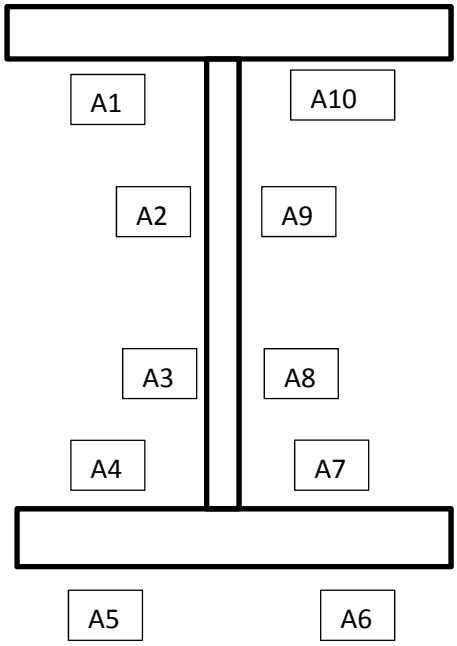


Figure 6
Roll beam or plate girder > 36" in depth and bottom flanges ≥ 15" in width.



REPAIR AREAS

Routine repairs are defined as a single localized area measuring one square foot or less. The Engineer shall be consulted for non-localized and/or multiple areas of repair.

All repairs that are performed on this project must meet the requirements of this paragraph. The applicator shall provide a coating repair procedure to the Engineer prior to starting any surface preparation. The repair procedure shall demonstrate that the proposed work method and equipment used for the repair will meet the quality requirements listed in this program.

Repair procedures are subject to the approval of the Engineer. If the coating has been damaged and bare substrate metal is observed, the coating shall be repaired, including all damaged layers.

If the applicator did not exhibit reasonable conformance to protect the work during application, storage and/or construction, the Engineer may require a finish coat at no additional cost to the Department. The final acceptances of all repairs, to include aesthetics, will be approved at the Engineer's discretion. The repair procedure shall meet all provisions of this document

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS UNIT, STRUCTURAL MATERIALS GROUP

ANNEX 1.

Notification of Beginning Work Form

Date of Notification	
Name & Phone Number of Producer/Coater Contact Person	
Planned Date to Start Work (see note at bottom of page)	
Name of Producer/Coating Contractor	
Location of Producer/Coating Contractor	
Project Number	
Contract Number	
County	
Bridge Number	
Shop Job Number	

Details of Work to Begin

Completed form should be submitted to the Metals Engineer, Welding Engineer & Coating Engineer (electronically or by mail) at:

Randy Porter **Metals Engineer** **NCDOT Materials and Tests Unit** **1563 Mail Service Center** **Raleigh, NC 27699** **srporter@ncdot.gov**	**Eddie Shelar** **Welding Engineer** **NCDOT Materials and Tests Unit** **1350 Jammie Court** **Winston Salem, NC 27106** **gshelar@ncdot.gov**	**Aaron Dacey** **Coating Engineer** **NCDOT Materials and Tests Unit** **1563 Mail Service Center** **Raleigh, NC 27699** **ahdacey@ncdot.gov**

NOTE: According to Article 1072-7(A), Materials & Test Unit requires 72 hours (3 days) notice for in-state producers and 192 hours (8 days) notice for producers out-of-state

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
			ROADWAY ITEMS			
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0030000000-N	SP	TYPE II MODIFIED APPROACH FILL, STATION ******* (42+68.00)	Lump Sum	L.S.	
0004	0043000000-N	226	GRADING	Lump Sum	L.S.	
0005	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUB-BING	1 ACR		
0006	0199000000-E	SP	TEMPORARY SHORING	200 SF		
0007	0335300000-E	305	18" DRAINAGE PIPE	16 LF		
0008	0448300000-E	310	18" RC PIPE CULVERTS, CLASS IV	72 LF		
0009	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	140 LF		
0010	0995000000-E	340	PIPE REMOVAL	81 LF		
0011	1121000000-E	520	AGGREGATE BASE COURSE	30 TON		
0012	1220000000-E	545	INCIDENTAL STONE BASE	130 TON		
0013	1330000000-E	607	INCIDENTAL MILLING	333 SY		
0014	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	1,700 TON		
0015	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	150 TON		
0016	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	2,225 TON		
0017	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	235 TON		
0018	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	40 TON		
0019	2209000000-E	838	ENDWALLS	7 CY		

County : Dare

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0020	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	3 EA		
0021	2352000000-N	840	FRAME WITH GRATE, STD 840.**** (18 OR 27)	1 EA		
0022	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E, F OR G)	2 EA		
0023	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	220 LF		
0024	2556000000-E	846	SHOULDER BERM GUTTER	21 LF		
0025	2591000000-E	848	4" CONCRETE SIDEWALK	260 SY		
0026	3030000000-E	862	STEEL BEAM GUARDRAIL	25 LF		
0027	3215000000-N	SP	GUARDRAIL ANCHOR UNITS, TYPE III	2 EA		
0028	3288000000-N	SP	GUARDRAIL END UNITS, TYPE TL-2	2 EA		
0029	3420000000-E	SP	GENERIC GUARDRAIL ITEM (WOODEN PEDESTRIAN RAILING)	200 LF		
0030	3628000000-E	876	RIP RAP, CLASS I	4 TON		
0031	3635000000-E	876	RIP RAP, CLASS II	100 TON		
0032	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	190 SY		
0033	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	248 SF		
0034	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	81 SF		
0035	4430000000-N	1130	DRUMS	35 EA		
0036	4435000000-N	1135	CONES	20 EA		
0037	4445000000-E	1145	BARRICADES (TYPE III)	96 LF		
0038	4455000000-N	1150	FLAGGER	6 DAY		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0039	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	2 EA		
0040	4490000000-E	1170	PORTABLE CONCRETE BARRIER (ANCHORED)	405 LF		
0041	4500000000-E	1170	REMOVE & RESET PORTABLE CONC-RETE BARRIER	770 LF		
0042	4600000000-N	SP	GENERIC TRAFFIC CONTROL ITEM (TEMPORARY PORTABLE TRAFFIC SI GNAL SYSTE M)	1 EA		
0043	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	12,000 LF		
0044	4686000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	400 LF		
0045	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	12,000 LF		
0046	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	100 LF		
0047	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	12,000 LF		
0048	4870000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (24")	18 LF		
0049	6000000000-E	1605	TEMPORARY SILT FENCE	15,120 LF		
0050	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	75 TON		
0051	6012000000-E	1610	SEDIMENT CONTROL STONE	70 TON		
0052	6015000000-E	1615	TEMPORARY MULCHING	1.5 ACR		
0053	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	100 LB		
0054	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEED-ING	0.5 TON		
0055	6024000000-E	1622	TEMPORARY SLOPE DRAINS	200 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0056	6029000000-E	SP	SAFETY FENCE	200 LF		
0057	6036000000-E	1631	MATTING FOR EROSION CONTROL	3,000 SY		
0058	6037000000-E	SP	COIR FIBER MAT	100 SY		
0059	6048000000-E	SP	FLOATING TURBIDITY CURTAIN	285 SY		
0060	6070000000-N	1639	SPECIAL STILLING BASINS	3 EA		
0061	6071012000-E	SP	COIR FIBER WATTLE	540 LF		
0062	6084000000-E	1660	SEEDING & MULCHING	1.2 ACR		
0063	6087000000-E	1660	MOWING	1.2 ACR		
0064	6090000000-E	1661	SEED FOR REPAIR SEEDING	50 LB		
0065	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.25 TON		
0066	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	50 LB		
0067	6108000000-E	1665	FERTILIZER TOPDRESSING	0.75 TON		
0068	6111000000-E	SP	IMPERVIOUS DIKE	360 LF		
0069	6114500000-N	1667	SPECIALIZED HAND MOWING	10 MHR		
0070	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	25 EA		
0071	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	1 EA		
0072	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (42+68.00)	Lump Sum	L.S.	
0073	8065000000-N	SP	ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0074	8112730000-N	450	PDA TESTING	2 EA		
0075	8121000000-N	412	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION ******** (42+68.00)	Lump Sum	L.S.	

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0076	8175000000-E	420	CLASS AA CONCRETE (BRIDGE)	97 CY		
0077	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ********** (42+68.00)	Lump Sum	L.S.	
0078	8224000000-E	425	EPOXY COATED REINFORCING STEEL (BRIDGE)	9,465 LB		
0079	8328000000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** PRESTRESSED CONCRETE PILES (12")	16 EA		
0080	8329000000-E	450	12" PRESTRESSED CONCRETE PILES	640 LF		
0081	8393000000-N	450	PILE REDRIVES	8 EA		
0082	8430000000-E	452	SHEET PILE RETAINING WALLS	930 SF		
0083	8475000000-E	460	TWO BAR METAL RAIL	55.25 LF		
0084	8505000000-E	460	VERTICAL CONCRETE BARRIER RAIL	62.75 LF		
0085	8517000000-E	460	1'-**"X *****" CONCRETE PARA-PET (2", 3'-6")	62.75 LF		
0086	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	117 TON		
0087	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	99 SY		
0088	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0089	8763000000-E	430	3'-0" X 2'-0" PRESTRESSED CONC CORED SLABS	879 LF		