



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

August 30, 2007

**Addendum No. 1**

RE: Contract ID: C201840  
WBS# 34440.3.8  
F.A# NHF-0017 (70)  
Beaufort County (R-2510D)  
Bridge Over Tar River on US-17

**September 18, 2007 Letting**

To Whom It May Concern:

Reference is made to the Proposal Form recently furnished to you on this project.

The following revisions have been made to the Proposal:

On Page No. 11, a new sentence has been added to the first paragraph under "Description of Work". Please void Page No. 11 and staple the revised Page No. 11 thereto.

On Page No. 16, a sentence has been added to the second paragraph of the Project Special Provision entitled "Replacement of Steel Grid Floor". On Page No. 17, a revision was made to the first sentence of the same provision under the "Materials" section. On Page No. 18, a word was added in the first paragraph of the Project Special Provision entitled "Replacement of W16X40 Stringers". On Page No. 19, a word was added in the first paragraph of the Project Special Provision entitled "Structural Steel Repairs to Various Bridge Members". On Page No. 20, a sentence was added to the first paragraph of the Project Special Provision entitled "Repair of Sidewalk Bracket Cracks". On Page No. 21, a sentence was added to the first paragraph of the Project Special Provision entitled "Modification to Sidewalk Curbs".

Please void Page Nos. 16 thru 21 in your proposal and staple the revised Page Nos. 16 thru 21 thereto.

On Page No. 26, a revision was made to the third full paragraph (including diagram) under the section entitled "Inspection". Please void Page No. 26 in your proposal and staple the revised Page No. 26 thereto.

Sincerely,

R. A. Garris, PE  
Contract Officer

RAG/jag/blr  
Attachments

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RE: Contract ID: C201840

WBS# 34440.3.8

F.A# NHF-0017 (70)

Beaufort County (R-2510D)

Cc: Mr. W. S. Varnedoe, PE  
Mr. E. C. Powell, PE  
Mr. C. E. Lassiter, PE  
Ms. D. M. Barbour, PE  
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Mr. Ronnie Higgins  
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Project File (2)

**PROJECT SPECIAL PROVISIONS****ROADWAY****SCOPE OF WORK:****LOCATION & DESCRIPTION OF BRIDGE**

Bridge No. 25 Beaufort County is located on US 17 at the Tar River in Washington, NC. The project is limited to the movable swing span portion of the bridge. The swing span is pivoted at its midpoint, dividing the span into two equal spans of 94'-6" each. The bridge has a clear roadway width of 52 feet. The roadway floor is an open steel grid except for a portion over the pivot pier which has the grid floor concrete filled. The bridge consists of four main girders, nine roadway stringers, floorbeams, cantilevered sidewalk and sidewalk brackets.

**DESCRIPTION OF WORK**

Work consists of: providing work platform under the structure; the replacement of the open portion of the steel grid floor with new A572, galvanized steel grid floor; replacement of the nine lines of W16x40 stringers under the open section of the grid floor; structural steel repairs to various bridge members as shown on the plans and as directed by the Engineer; modification of the camber of the four main girders to reduce the sag of the girders while the bridge is being opened; and the complete cleaning and painting of the bridge. Work will include all vehicular traffic control and all coordination of work with the US Coast Guard on navigation channel traffic. **The Contractor shall notify the USCG at least 30 days prior to any stage of construction that will reduce navigational clearances or not allow the bridge to be opened.**

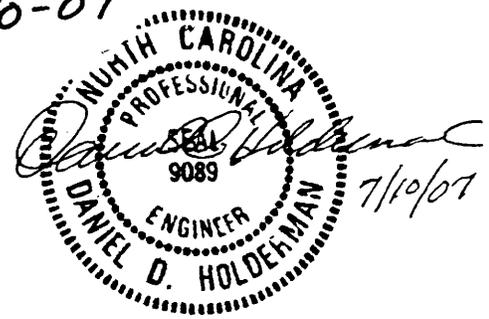
All welding shall be performed in accordance with the applicable requirements of the latest editions of the AASHTO/AWS D1.5M/D1.5 AASHTO Standard Specifications for Highway Bridges. Magnetic and ultrasonic testing of welds will be conducted by NCDOT personnel.

The existing paint system on the bridge is red lead primer overcoated with aluminum paint. All work shall be conducted in accordance with all State and Federal regulations pertaining to the removal and handling of materials containing lead based paint.

NCDOT will assist Contractor by operating bridge as needed in the performance of the work. Contractor shall give the Engineer 48 hours notice that the NCDOT's assistance will be required.

NCDOT will be responsible for maintaining the bridge components until the time the Contractor begins work on the individual components, after which time the Contractor will assume responsibility for the components until final acceptance of the work.

All work shall be conducted so as not to damage any bridge components not a part of this project.



## UNDER STRUCTURE WORK PLATFORM

### Description

Prior to any work on the structure, the Contractor shall design and install an understructure work platform which will be used to provide access to the structural work to be done, as well as serve as containment for the cleaning and painting of the bridge. The contractor shall determine the capacity of the platform which will be required, but the capacity shall not be less than that required by State or Federal regulations. The platform shall remain in place until all work is completed. Platform shall be constructed of materials capable of withstanding damage from any of the work required on this project. The platform shall be fireproof. Drawings of the platform and loads supported by the platform shall be sealed by a North Carolina Registered Professional Engineer. Submit drawings to the Engineer for approval prior to beginning work on the platform. Platform shall be cleaned after each work day to prevent materials from falling or washing into the river.

### Measurement and Payment

There will be no measurement for payment.

Payment shall be at the lump sum price bid for the item *Under Structure Work Platform*. This price shall be full compensation for the design, installation, maintenance, and removal of the platform.

## REPLACEMENT OF STEEL GRID FLOOR

### Description

This work involves: the removal of the existing steel grid floor; grinding smooth of all existing welds attaching the grid floor to the main girders; and installing the new floor, including any necessary shimming. The new steel grid floor shall be A572, galvanized. The floor shall have studs welded to the grid, as shown on the plans, for skid resistance. All welds and areas of galvanizing damaged during the installation of the new steel grid floor shall be repaired in accordance with Section 1076 of the Standard Specification. E7018 electrodes shall be used. Grid shall be designed for HS20-44 loading. Plans and calculations shall be sealed by a Professional Engineer, registered in North Carolina, and shall be submitted for approval to the Engineer prior to beginning fabrication.

There is approximately 7625 square feet of steel grid flooring to be replaced. The Department desires to salvage panels of the existing steel grid floor equal to an area 26' x 30'. Sections of steel grid floor to be salvaged shall be stockpiled by the Contractor for pickup by NCDOT.

### Quality Assurance

Manufacturer of the steel grid decking shall conform to the following minimum codes and standards:

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1. Manufacturer must be a current member of the Bridge Grid Flooring Manufacturers Association. BGFMA shop practices and fabrication tolerances for grid bridge floors shall apply.
2. Manufacturer must have American Institute of Steel Construction (AISC) certification for Simple Steel Bridges.
3. All welding is to meet AWS D1.5 Bridge Welding Code.
4. Manufacturer must have an AWS certified welding inspector present during manufacturing.

Contractor's representative must take field measurements prior to the preparation of shop drawings.

### Submittals

Submit shop drawings showing product detail, bridge deck layout, dimensions, joining details including cross-sections, fastening details, adjacent construction interface, and all other fabrication and installation details for approval, prior to beginning fabrication.

### Handling

Store fabricated grid and materials in a dry, protected, and well ventilated area, blocking grid and materials to maintain any prefabricated camber and/or design flatness.

### Materials

The steel grid decking shall be 5" 4-way modified open steel grid. The decking shall consist of panels fabricated from A572 steel, in standard width of 7'-8". Narrower widths at the floor ends may be accepted with approval.

The steel grid decking shall consist of the following elements:

1. Main bars: 5-3/16" deep spaced at 7-1/2", and weigh 5.3 lbs./lf.
2. Cross bars: 2 1/2" x 1/4" spaced at 3-3/4" c-c
3. Supplemental bars shall be 1" x 1/4", one between the main bars.
4. Diagonal bars shall be 1" x 1/4", two between the main bars.
5. Bottom "C" bars shall be 5/8" round bars.
6. 5/16" diameter, 3/8" high studs shall be welded to the panels at the crossing as shown on the plans, prior to galvanizing.
7. End trim shall be provided at both ends of the span and where the new decking abuts the existing concrete filled grid.
8. Steel grid decking shall be galvanized according with ASTM A-123.
9. All steel shall be A-572, Grade 50.
10. Steel grid decking shall have a minimum section modulus of:  
Stop = 4.038 inches cubed, S bot = 4.321 inches cubed

All elements shall be serrated on their top surfaces. Serration pattern shall be at maximum of 1" c-c. The grid deck shall provide a skid resistance number (S/N) of 53 at 30 mph (prior to stud installation) when tested in accordance with ASTM E274. Cost of testing shall be included in the bid price for the steel grid decking. The decking shall be assembled such that the top of all elements are in the same plane and notching (other than serrations) of the main beam grid beams at the top flange of main girders and roadway stringers will not be permitted. Notching of the bottom cross bars will not be permitted. The grid shall be welded at all intersections.

The steel grid decking shall be fabricated in accordance with Bridge Grid Flooring Manufacturer's Association tolerances. Tolerances between sections shall provide for no more than ¼" clearance between adjacent sections.

### **Installation**

Install the steel grid decking in accordance with the drawings, specifications, approved shop drawings, and manufacturer's installation standards.

### **Measurement and Payment**

There will be no measurement for payment for this item.

Payment shall be at the lump sum price bid for the item *Replacement of Steel Grid Floor*. This price shall be full compensation for the removal of the old steel grid floor, grinding of the existing welds, preparing the existing steel to accept the new steel grid floor, and the design, fabrication, and installation of the new steel grid floor.

## **REPLACEMENT OF W16x40 STRINGERS**

### **Description**

This work involves the replacement of the nine lines of W16x40 roadway stringers (72 stringers) under the open sections of the grid floor. Replacement stringers shall be A572 or A588. They shall be installed with replacement A325 **galvanized** bolts. Where their flanges are coped at the floorbeams, the cope shall be carefully cut to the radius shown on the plans and be ground smooth. Lead abatement procedures in accordance with all State and Federal regulations and the Special Provision *Cleaning and Painting of Structure*, shall be performed prior to any work included in this item.

### **Measurement and Payment**

There will be no measurement for payment for this item.

Payment shall be made at the lump sum price bid for the item *Replacement of W16x40 Stringers*. This price shall be full compensation for the removal of existing stringers, and fabrication and installation of the new stringers, including bolts and washers. Payment for lead abatement

procedures in preparation of the existing stringer removal and painting of the new stringers shall be included in the pay item *Cleaning and Painting Existing Structure*.

### **STRUCTURAL STEEL REPAIRS TO VARIOUS BRIDGE MEMBERS**

#### **Description**

This work involves repairs to various bridge members by cutting out deteriorated sections of the members and replacing with new sections, plating over holes in members, and adding stiffener plates to sidewalk brackets and modification to the 1" diameter lateral bracing hangers. Repairs shall be made with A36 steel, unless shown otherwise on the plans. Welding shall be completed using E7018 low hydrogen electrodes. Lead abatement procedures in accordance with all State and Federal regulations and the Special Provision *Cleaning and Painting of Structure*, shall be performed prior to any work being undertaken on this item. Any bolts required shall be A325 galvanized.

#### **Measurement and Payment**

Measurement for payment for this item shall be the number of pounds of steel repair plates and steel sections installed. It shall include the stiffener plates required at the sidewalk brackets and any A325 bolts used in the repairs. Weld material will not be measured for payment but will be included in payment for repair plates.

Payment shall be at the unit price bid per pound for *Structural Steel Repairs to Various Bridge Members*, which shall be payment for all labor, equipment, and materials to cut out deteriorated areas to be repaired, preparation for installing repairs plates and sections, and installation of the repair plates and sections. Payment for lead abatement procedures in preparation of the repairs and painting of the repaired areas shall be included in the pay item *Cleaning and Painting Existing Structure*.

### **CAMBER MODIFICATION OF MAIN GIRDERS**

#### **Description**

This work involves modifying the camber of the four main girders of the bridge by "Vee" heating (or other approved methods) of the girders to reduce the sag of the ends of the girders as shown on the plans. The Contractor shall submit to the Engineer for approval the procedure he intends to use to do the work. Being that the sag of the girders is somewhat temperature related, a procedure to monitor and correct for temperature effects, shall also be submitted for approval. Lead abatement procedures shall be performed prior to heating in accordance with all State and Federal regulations and the Special Provision *Cleaning and Painting of Structure*.

#### **Qualifying to Perform Work**

Only contractors who have successfully<sup>1</sup> completed at least three similar projects within the 24 months prior to this bid may perform this work. Contractor shall submit proof of meeting these requirements for approval, prior to beginning this work.

**Heating Requirements**

1. The heating patterns and torch paths will be laid out prior to application of heat. The heating steel temperature shall not exceed 1100 degrees F (590C). Monitoring of heating will be by heat sticks. Torch operator must be skilled and experienced to produce the results that are free of wrinkles, cracks, bulges, and poor alignment.
2. Cold Mechanical Straightening shall not be permitted on these girders. Minimal auxiliary force such as jacks and come-alongs may be used in conjunction with heating.
3. The opening width of "Vee" heats should be between 3" and 12" wide, and simultaneous "Vee" heats shall have a minimum spacing of 12 inches.

**Effect of Heating**

Contractor shall perform work in a manner which will not allow possible girder failure or adverse deformations.

**Measurement and Payment**

There will be no measurement for payment for this item.

Payment shall be made at the lump sum price bid for the item *Camber Modification of Main Girders*. This price shall include all labor, equipment, and materials to raise the ends of the four main girders by heating methods.

<sup>1</sup> Successfully: Work completed in accordance with contract specifications, free of citation from safety or environmental agencies. Payment for lead abatement procedures required prior to the heating process and painting of the heated areas shall be paid for under the item *Cleaning and Painting of Structure*.

**REPAIR OF SIDEWALK BRACKET CRACKS****Description**

This work includes the repair of cracks in the sidewalk brackets by gouging out the crack, preparing the crack for welding, and welding the prepared crack. Lead abatement procedures in accordance with all State and Federal regulations and the Special Provision *Cleaning and Painting of Structure*, shall be performed prior to any work included in this item. Welding shall be completed using E7018 low hydrogen electrodes. The Contractor shall provide a proposed repair and welding procedure to the Engineer for approval.

**Measurement and Payment**

Measurement shall be made for the number of inches of cracks satisfactorily repaired.

Payment at the unit price per inch for the item of *Repair of Sidewalk Bracket Cracks* shall be full compensation for all labor, equipment, and materials needed to make the crack repairs. Payment

for lead abatement procedures required prior to the crack repairs, and painting of the repair areas shall be included in payment for the item *Cleaning and Painting of Structure*.

### **MODIFICATION TO SIDEWALK CURBS**

#### **Description**

This work includes the removal of 3" of the bottom of the existing sidewalk curb, as shown on the plans. Work includes the removal of the curb material, grinding of the cut edge smooth, and welding the new steel grid floor to the modified curb, as shown on the plans. Work includes chipping away the concrete of the concrete filled grating to allow welding and patching back the removed concrete with an approved epoxy mortar. Lead abatement procedures in accordance with all State and Federal regulations and the Special Provision *Cleaning and Painting of Structure*, shall be performed prior to any work included in this item. Welding shall be completed using E7018 low hydrogen electrodes. The Contractor shall provide a proposed modification and repair procedure to the Engineer for approval.

#### **Measurement and Payment**

Measurement shall be made for the number of linear feet of curb satisfactorily modified.

Payment at the unit price bid for the item *Modification to Sidewalk Curbs* shall include all labor, equipment, and materials needed to modify the existing curbing. Payment for lead abatement procedures required prior to the work, and painting of the modified area shall be included in payment for the item *Cleaning and Painting of Structure*.

of the work. The contractor illuminates the surfaces to be inspected to a minimum of 50-foot candles of light.

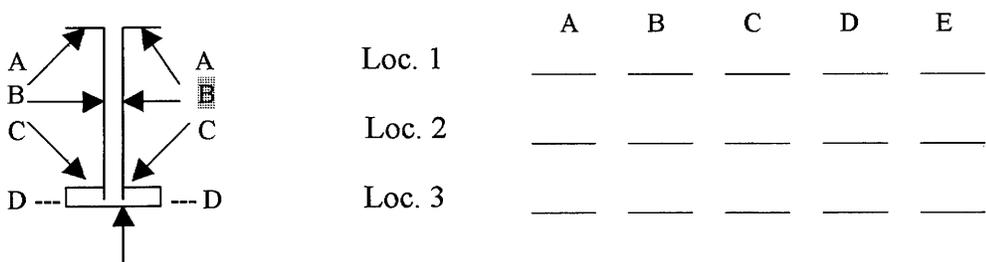
The contractor informs the Engineer of all scheduled and unannounced inspections from SSPC, OSHA, EPA and/or others that come on site.

Inspection Instruments - The Contractor furnishes the following calibrated instruments at site 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 <sup>A</sup>
- Solvent Rub Test Kit – ASTM D-4752
- Adhesion Test Kit – ASTM D-3359 <sup>B</sup>

The contractor maintains a daily quality control record in accordance with Section 442-12 and such records must be available at the job site for review by the inspector and be submitted to the Engineer as directed. In addition to the information required on M&T-610, the Contractor shall submit all DFT readings as required on M&T611.

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



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

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