



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

April 27, 2011

**Addendum No. 1**

RE: Contract ID C202722

WBS # 41470.3.2

F.A. # BRNHS-0012(47)

**Dare County (B-5014B)**

Bridge No.11 over the Oregon Inlet on NC-12

**May 17, 2011 Letting**

To Whom It May Concern:

Reference is made to the proposal furnished to you on this project.

The following revision has been made to the proposal form:

Page Nos. 36 and 38 of the project special provision entitled "SCOUR REPAIR AT OREGON INLET FOR BENTS #157 THRU #166" have been revised. Please void Page Nos. 36 and 38 in your proposal and staple the revised Page Nos. 36 and 38 thereto.

Sincerely,

A handwritten signature in black ink, appearing to read "R. A. Garriss".

R. A. Garriss, PE  
Contract Officer

RAG/jjr  
Attachments

cc: Mr. Jon Nance, PE  
Mr. Ron Hancock, PE  
Mr. Jerry Jennings, PE  
Ms. D M. Barbour, PE  
Mr. Art McMillan, PE  
Mr. J V. Barbour, PE  
Mr. D R. Henderson, PE

Mr. Greg Perfetti, PE  
Ms. Natalie Roskam, PE  
Mr. Larry Strickland  
Mr. Ronnie Higgins  
Ms. Lori Strickland  
Project File (2)

**MAILING ADDRESS:**  
NC DEPARTMENT OF TRANSPORTATION  
CONTRACT STANDARDS AND DEVELOPMENT UNIT  
1591 MAIL SERVICE CENTER  
RALEIGH NC 27699-1591

TELEPHONE: 919-250-4128  
FAX: 919-250-4119  
WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

**LOCATION:**  
CENTURY CENTER COMPLEX  
ENTRANCE B-2  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

- 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.

**SCOUR REPAIR AT OREGON INLET FOR BENTS #157 THRU #166** (SPECIAL)

1.0 **GENERAL:**

The work consists of furnishing all labor, materials, equipment, and incidentals required to perform all operations in connection with the installation of concrete armor in accordance within the limits shown in the plans and in this special provision or an equally performing system for scour abatement.

2.0 **CONCRETE ARMOR UNITS:**

The geometry of the concrete armor unit consists of six arms extending from a central hub, each arm extending 2-ft. radially from the center. A complete unit is made up of two identical halves, with each half consisting of a central core with three legs radiating outward at equal spacing. On each half, two fillets are located between adjacent arms. These fillets provide additional structural strength and aid in the proper placement of the armor units.

When the symmetrical halves are interlocked, the resultant unit will have a geometry which exhibits six equally spaced arms, with each arm spaced at 90 degrees from the four adjacent arms. When placed in the most stable configuration, each unit will rest on three of the six arms.

2.2 **Materials**

The 4-ft. concrete armor units will be produced on an acceptable concrete block machine.

2.2.1 **Cementitious Materials - Materials shall conform to the following applicable ASTM specifications:**

- Portland Cements - Specification C 150, for Portland Cement.
- Blended Cements - Specification C 595, for Blended Hydraulic Cements.
- Hydrated Lime Types - Specification C 207, for Hydrated Lime Types.
- Pozzolans - Specification C 618, for Fly Ash and Raw or Calcined Natural Pozzolans for use in Portland Cement Concrete.

2.5 Sampling and Testing. The Engineer or his authorized representative shall be accorded proper access to facilities to inspect and sample the units at the place of manufacture from lots ready for delivery.

### 3.0 ASSEMBLY AND INSTALLATION:

The Contractor shall use reasonable care in the handling, assembly and installation of the concrete armor units to prevent damage. Any material damaged shall be repaired in a manner satisfactory to the Engineer or replaced at no cost to the Department.

The Contractor shall install the concrete units as shown in the plans. Each cluster shall consist of 3 concrete armor units, stable, interlocked and bound together. The units shall be installed so each row of clusters is stable and interlocks with the adjacent cluster. Each cluster shall be bound with 1 wrap of 1/2" diameter galvanized cable with 2 galvanized cable clamps. As clusters are interlocked together to form a single layer, the grouping of clusters shall be bound with 2 horizontal wraps of 1/2" diameter galvanized cable with 3 galvanized cable clamps. A minimum of 2 clusters shall be interlocked and bound together for placement.

Each layer of units shall be installed so the layers are stable and interlock with the adjacent layers and are bound together with 1/2" diameter galvanized cable and 2 galvanized cable clamps. The minimum spacing for binding the layers together shall be the lesser of the following: 20 ft or half the length of the grouping to be placed. The layers shall be bound together on each longitudinal side. The 2 horizontal wraps binding each layer may be bound together with 1/2" diameter galvanized cable with 3 cable clamps or other method as approved by the Engineer.

For Bents 156 through 161, if the natural ground is below elevation -40, an additional layer of concrete units shall be placed (3 units wide) and the 2 layers of concrete units shall then be installed as shown in the plans. For Bents 162 through 166 if the natural ground is below elevation -35, an additional layer of concrete units shall be placed (3 units wide) and the 2 layers of concrete units shall then be installed as shown in the plans. The Contractor shall take care not to damage the existing concrete piles. The alignment of the rows shall maintain a 5' minimum clearance from the piles as shown in the plans or as directed by the Engineer.

### 4.0 SUBMITTALS:

The Contractor shall be required to submit to the Engineer the following items for review prior to placement of the armor units.

1. The Contractor shall submit the Compression Strength Test and the Absorption Test according to ASTM C-140
2. Prior to placement of the concrete armor units the Contractor shall provide a submittal to the Engineer detailing the schedule, method, equipment, personnel, safety, and any other pertinent information for lifting, placing, and bounding the clusters for placement at the bridge site.

The Contractor may submit an equally performing design and/or method for scour abatement for approval.