STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

June 17, 2011

Addendum No. 3

Contract No.:	C 202185
TIP No.:	B-2500
County:	Dare
Project Description:	NC – 12 Replacement of Herbert C. Bonner Bridge across Oregon Inlet from Bodie Island to Hatteras Island
RE:	Addendum No. 3 to Final RFP

July 19, 2011 Letting

To Whom It May Concern:

Reference is made to the Final Request for Proposals Including Addendum #1 and Addendum #2 dated June 7, 2011 recently furnished to you on the above project. We have since incorporated changes and have attached a copy of Addendum No. 3 for your information. Please note that all revisions have been highlighted in gray and are as follows:

The second page of the Table of Contents has been revised. Please void the second page in your proposal and staple the revised second page thereto.

Pages No. 163 and No. 166 of the *Structures Scope of Work* have been revised. Please void Page No. 163 and No. 166 in your proposal and staple the revised Page No. 163 and No. 166 thereto.

Pages No. 223 and No. 224 of the *Environmental Permits Scope of Work* have been revised. Please void Pages No. 223 and No. 224 in your proposal and staple the revised Pages No. 223 and No. 224 thereto.

If you have any questions or need additional information, I can be reached by telephone at (919) 707-6900.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PROGRAM MANAGEMENT
1595 MAIL SERVICE CENTER
RALEIGH NC 27699-1595

TELEPHONE: 919-250-4234
FAX: 919-212-5711

WEBSITE:
WWW.NCDOT.GOV

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-1
1020 BIRCH RIDGE DRIVE
RALEIGH NC

Sincerely,

R.A. Garris, PE
State Contract Officer

RAG/dth

cc: Mr. Victor Barbour, PE
Mr. Rodger Rochelle, PE
Ms. Teresa Bruton, PE
Mr. Jerry Jennings, PE
Mr. Timothy McFadden
File

- Use AASHTO LRFD Bridge Design Specifications Article 5.8.6 for segmental bridge shear and torsion design.

Substructure – Vessel Impact

The structure shall be designed in accordance with the AASHTO LRFD Bridge Design Specifications using the Method II risk acceptance alternative. The vessel type and characteristics including vessel speed shall be as listed in Section II.4 of the 1996 "Method II Vessel Impact Study" by Parsons Brinckerhoff. The flow velocities shall be as shown in Table 10 of the 1997 Hydraulic and Scour Analysis by Parsons Brinkerhoff, and as validated or modified by the Design-Build Team's final 2D Model (including for Load/Scour (2) below). The AASHTO requirement for applying 50% of the vessel impact load to the substructure in the direction longitudinal to the bridge is sufficient. The vessel frequency data, and the light displacement of 1000 tonnes, shall be used for design consistent with Case III (N3) in Section III.5 of the aforementioned study. Case III uses the USACE dredge, the Atchafalaya, as the major design vessel. The Northerly Island vessel is no longer applicable. The Atchafalaya shall be considered a barge for collision force calculations. The Design-Build Team is responsible for verifying the validity of the Atchafalaya specifications and include the most up to date specifications in their vessel impact analyses. Substructure units shall be designed for an extreme Vessel Collision load by a ship simultaneously with scour. Dynamic analysis techniques that take into account force-deformation or other dynamic interaction between vessel and bridge during collision are not permitted. In addition to the requirements of the AASHTO LRFD Bridge Design Specifications, design the substructure to withstand the following two Load/Scour (LS) combinations:

- Load/Scour (1) = Vessel Collision @ Ambient Bed Elevations (Table 16 of the July 1997 Parsons Brinkerhoff scour analysis document)
- Load/Scour (2) = Minimum Impact Vessel @ ½ 100-Year Scour Elevation

  Where Design Collision Velocity of AASHTO LRFD 3.14.6 applies to Load/Scour (1) and is based on the pertinent velocities contained in the aforementioned PB study.

  Where the Minimum Impact Vessel is as defined in LRFD 3.14.1 with related collision Scour.

The additional design requirements reported under the Section entitled "Outside AF Zone" on Page 14 of the 1996 Method Impact Study by Parsons Brinkerhoff are not required, regardless of the difference in the AF Zone defined in the above document and the AF Zone based on the current 2400 ft. navigation zone.

When the length to the width ratio (L/W) is 2.0 or greater for long narrow footings in the waterway, apply the longitudinal force within the limits of the distance that is equal to the length minus twice the width, (L-2W).

No reduction on design loads via pier protection by "island" construction or fender systems is allowed.

- Stainless steel shall be one of the stainless steel alloys listed in Table 2 of ASTM A955-10a, have a minimum yield strength of 60 ksi, and meet all other requirements of ASTM A955-10a. It appears likely that two additional grades of stainless steel may be added to Table 2 of this ASTM specification in the near future (UNS S32205 and UNS S32304). As such, any stainless steel grade listed in Table 2 of the version of ASTM A955 current at the time that Notice to Proceed for construction is issued will be acceptable for use on this project.

In all cases, reinforcing details shall be designed to minimize the potential for adverse reaction between dissimilar rebar materials. All incidental supports for reinforcing steel (i.e. chairs, ties, etc.) shall be non-ferrous.

Structural steel will only be allowed in minor elements such as joints, solar array platforms, access platforms, and supports for such items as signs and navigational lights. Structural steel for miscellaneous components shall be metalized.

The bottom 18” of barge stored aggregate shall not be used in any cast-in-place concrete.

Attachment inserts to remain in place in concrete shall be formed of Grade 316 Stainless Steel regardless of purpose or location.

Regarding external falsework and forms for waterline footings and caps, sacrificial structural steel members will not be allowed. Any falsework or forms left in the waterline footings shall be stainless steel. Precast soffits shall meet all corrosion protection and reinforcing steel requirements

Permanent steel casings are required for all drilled piers. The Design-Build Team should determine and include a minimum of 0.125" of additional sacrificial casing thickness or more as needed to account for corrosion during the design life of the bridge.

Precast concrete stay-in-place panels are permitted provided they meet the corrosion protection measures of this scope of work. Stay in place forms made of other materials are not allowed.

Cathodic protection is not required.

Mass Concrete

See the Mass Concrete Project Special Provision for project requirements.

Maintenance and Inspection Manual

The Design-Build Team shall be responsible for submitting a bridge maintenance and inspection manual for review and acceptance with the final bridge design submittal. The Department will require 30 days to review and comment on this document.

coordinates 35.78008 by 75.54534 to coordinates 35.78082 by 75.54835. In addition, the B-2500 Photogrammetric SAV Survey provided by letter dated June 17, 2011 denotes several areas as "VOID". Of these areas, the only area that crosses the proposed alignment that has been confirmed as lacking SAV habitat is the slough or creek running adjacent to a line extending from coordinates 35.79315 by 75.54697 to coordinates 35.79406 by 75.54869. In addition the marked channel running parallel to the bridge has been confirmed as void of SAV habitat.

Work trestles installed to traverse SAV habitat shall be of an open-grated variety to maximize sunlight to the underlying vegetation. Marine industry standard pans shall be used to protect against spills from equipment into SAV habitat.

Dredging - The Design-Build Team is encouraged to minimize dredging, especially during the spring. Pipeline or clamshell dredging is required for all dredging activities. Hopper dredges are prohibited. Dredging is prohibited in areas where Submerged Aquatic Vegetation habitat is present [Reference 15A NCAC 03I.0101(4)(i) and 15A NCAC 07H.0208(b)(1)]. Disposal of dredged material shall be coordinated with the environmental agencies during the Merger process and resolved prior to the permit application. Unless otherwise approved by the NCDOT and permitting agencies, barge access dredge spoils shall be deposited at new or existing dredge material islands. This requirement does not apply to material resulting from drilled shaft excavation. Additional permits may be required to create a new island. Depending on the disposal location, the material may be subject to beach compatibility and associated sampling rules enforced by the Coastal Resources Commission and conducted by the Design-Build Team. The National Park Service and US Fish and Wildlife Services will not allow the deposition of dredged materials, or a borrow pit, within their respective properties. Unless otherwise approved by the NCDOT and the environmental agencies, any dredging shall be done to a maximum depth of 8 feet.

A moratorium on the disposal of dredged materials to the aforementioned islands is anticipated from April 1st to August 31st of each year. Exceptions to this moratorium will likely be allowed dependent upon nesting activities. The permitting agencies have stated that this moratorium will likely be shortened depending upon the nesting activities occurring at the time. In addition, the Wildlife Resource Commission anticipates that there will be ample areas where nesting is not occurring such that disposal of dredged material can be placed in approved areas throughout the majority of the moratorium period.

Jetting - Jetting of piles shall be done in such a manner as to minimize turbidity and to minimize damage to wetlands and SAVs from jetting and jetting spoils. It is preferred that jetting not be used for work bridge construction. If jetting is intended to be used, the application for the environmental permits shall contain a detailed plan for minimizing disturbance and turbidity that temporarily or permanently results from jetting and/or jetting spoils, a discussion on the need for the jetting and a detailed plan for restoration of jurisdictional areas impacted by jetting or jetting spoils.

Load Test Program – The accepted load test program shall be permitted under a USACE NW#6 and the appropriate DCM authorization and the foundation units to be tested must be removed to the greatest extent practicable and in accordance with all

permit requirements. Coordination with the USCG, including possible permitting will also be the responsibility of the Design-Build Team.

Barge Access - In addition to the constraints outlined in the Project Special Provision, "Construction Access and Staging," barges may not be dragged into place.

Haul Roads - Haul roads will not be permitted to be placed within areas where Submerged Aquatic Vegetation habitat is present or in intertidal marsh areas. Coordination of haul road location, placement, materials, and means to minimize erosion and equipment leakage shall be coordinated with the environmental agencies during the Merger process.

Noise Restrictions – Due to the proximity of the campground at the Cape Hatteras National Seashore, unless otherwise allowed by the Engineer and the National Park Service, no pile strikes shall occur between the hours of 9 pm and 8 am from April 1st to October 10th.

Bridge Demolition and Disposal - Details regarding bridge demolition and disposal shall be included in the Merger 4B and 4C Meeting discussions and in each permit application package. Details regarding the use of haul roads, work bridges, and/or barges for bridge demolition must be included in this application. Jurisdictional areas and areas of Submerged Aquatic Vegetation habitat must be reflected on the bridge demolition plan. Extreme care shall be exercised in demolition in the areas of SAV habitat.

The Department has coordinated with the NC Division of Marine Fisheries (NCDMF) to establish and require the use of all acceptable bridge demolition materials in the Artificial Reef Program. Four sites have been identified as Sites AR-130, AR-140, AR-145, and AR-160 on the Artificial Reefs Off Oregon Inlet map provided by the Department. The Design-Build Team shall coordinate a disposal plan with the NCDMF to utilize these sites for disposal of the existing bridge.

The Design-Build Team shall coordinate with the NCDMF, both during planning and operations, to ensure that the disposal of the bridge conforms to the requirements of the General Permit No. 198500194 as provided by the Department. For the purpose of this permit, the NCDMF is considered the Permittee. No additional permits, including from the Bureau of Ocean Energy, Management, Regulation and Enforcement, are anticipated if the Design-Build Team utilizes sites AR-130, AR-140, and/or AR-145. If Site AR-160 is utilized, the Design-Build Team is responsible for including the bridge disposal details in the CAMA Major Development Permit application. The Design-Build Team will be required for all reporting on disposal as required by the NCDMF.

Sites AR-130 and AR-140 are the top two priorities. Site AR-145 is the next priority site. These three sites are considered to be outside State waters. A minimum of 15% of the structure, measured by deck area, shall go to each of these three sites. The remainder of the structure shall be distributed to the four sites in proportions determined by the Design-Build Team. The NCDMF will also require that a mix of bridge components go to each site.