

c: Mr. Steve DeWitt, PE (w/)
Mr. Steve Varnedoe, PE
Mr. Ellis Powell, PE
Ms. Deborah Barbour, PE
Mr. Victor Barbour, PE (w/)
Mr. Art McMillan, PE
Mr. Rodger Rochelle, PE (w/)
Mr. Clarence Coleman, PE - FHWA (w/3)

Mr. Neil Lassiter, PE (w/)
Mr. Jay Bennett, PE
Mr. Philip Harris, PE
Mr. Stephen Morgan, PE
Mr. Carl Goode
Mr. Ed Eatmon, PE (w/3)
Mr. Haywood Daughtry, PE (w/)
Mr. Steve Hamilton, PE (w/)
Mr. Steve Kite, PE (w/)
Mr. Ray McIntyre, PE
Mr. Shannon Sweitzer, PE (w/)
Mr. David Harris, PE
Mr. Steve Walker
Ms. Earlene Thomas (w/)
Mr. Brian Yamamoto, PE (w/)
Mr. Robert Memory, (w/)
Ms. Teresa Bruton, PE (w/4)
Mr. Ron Hancock, PE (w/)
Mr. Nathan Phillips, PE (w/)
Mr. Ayman Alqudwah, PE (w/)
Mr. Ron Davenport, PE (w/)
Ms. Virginia Mabry (w/)
Mr. John Emerson, PE (w/)
Ms. Jennifer Brandenburg, PE (w/)

Mr. Marshall Clawson, PE Hydraulics (w/)
Ms. Anne Gamber, PE Hydraulics (w/)
Mr. Chris Rivenbark Environmental Permits (w/)
Ms. LeiLani Paugon On-Site Mitigation (w)
Mr. Randy Griffin, On-Site Mitigation (w)
Dr. K.J. Kim, PE (Div 1-7) – Geotechnical (w/)
Mr. Neal Strickland Right-of-Way (w/)
Mr. Barney Blackburn, PE Erosion & Sed. Cont.
(w/2)
Mr. Roger Thomas, PE Roadway (w/)
Mr. Lonnie Brooks, PE Structures (w/)
Mr. Greg Smith, LG, PE Geo-Environmental (w/)
Mr. Cyrus Parker, (w/)
Mr. Mitch Hendee, PE Traffic Control (w/)
Mr. Murray Howell Utility Coordination (w/)
Mr. Don Chen, PE Pavement Design (w/)
Mr. Tim Williams, PE Signals (w/)
Mr. Neil Avery Signal Communications (w/)
Ms. Michelle Long, PE Public Information (w/)
Mr. David Hinnant Railroad Coordination (w/)
Mr. Tim McFadden Signing (w/)

Mr. Tony Wyatt, PE (w/)
Mr. Wayne Johnson, PE (w/)
Mr. Roger Worthington, PE (w/)
Mr. Brian Mayhew, PE (w/)
Mr. Greg Perfetti, PE (w/)
Mr. Ron Allen, PE (w/)
Ms. Marsha Sample (w/)
Technical Review Committee Members (w/)
File (w/)

6. Maintenance of Traffic and Safety Plan – 10 points***Maintenance of Traffic***

- Describe any traffic control requirements that will be used for each construction phase.
- Describe how traffic will be maintained as appropriate and describe the Design-Build Team's understanding of any time restrictions noted in the RFP.
- Specifically describe how business and residential access will be maintained, if applicable.

Safety Plan

- Describe the safety considerations specific to the project.
- Discuss the Design-Build Team's overall approach to safety.
- Describe any proposed improvements that will be made prior to or during construction that will enhance the safety of the work force and/or travelling public both during and after the construction of the project.

7. Oral Interview – 5 points

- The Design-Build Team's Project Management Team shall present a brief introduction of the project team and design / construction approach.
- Introductory comments shall be held to no more than 30 minutes.
- The Department will use this interview to ask specific questions about the Team's background, philosophies, and approach to the project.
- Presentation, questions, and answers shall not exceed 90 minutes. No more than 10 people from the Design-Build Team may attend.

The Department will use the information presented in the oral interview to assist in the evaluation of the Technical Proposal.

Additional Warranty and/or Guarantee**• The Extra Credit for this project shall be a Maximum of 8 Points**

A twelve-month guarantee as outlined in the *Twelve-Month Guarantee* provision is required for this project. However, the Design-Build Team may provide additional warranties and/or guarantees at their discretion. The Design-Build Team may be awarded additional points as "extra credit" to be added to the technical score.

The Design-Build Team may provide warranties and/or guarantees for major components of the project. Examples of major components are pavements, bridge components, sign structures, and on-site mitigation. If additional warranties and/or guarantees are offered, the Design-Build Team shall indicate in the Technical Proposals the **general terms** of the warranties and/or guarantees, a list of the items covered, performance parameters, notification and response parameters for corrective action, and evaluation periods. The warranties and/or guarantees shall also define how disputes will be handled. **Prior to the first partial payment, the Design-Build Team shall submit a document that provides additional warranty / guarantee specifics in sufficient detail that allows the document to be made a part of the contract through supplemental agreement.**

No direct payment will be made for warranties and/or guarantees. Payment will be considered incidental to the lump sum price for the contract.

Addendum No. 3 November 22, 2005

C 201400 (R-2510B)

Roadway Scope of Work

Beaufort County

- The Design-Build Team shall design and construct one-lane ramps that provide a minimum 14-foot lane width. All ramps shall have four-foot full depth paved outside and inside shoulders.
- The Design-Build Team shall design and construct resurfacing grades for all roadways impacted by construction, excluding haul roads. The Design-Build Team shall design and construct grades that adhere to the design criteria and standards, providing all required pavement wedging.
- The maximum allowable cut slope or fill slope on this project shall be 3:1. The slopes in the interchange area shall follow the requirements set forth in the *Roadway Design Guidelines for Design-Build Projects* located on the Design-Build web site. Note: Inside the interchange quadrants the maximum slope allowed shall be 4:1.
- Milled rumble strips shall be provided on the outside and inside paved shoulders.
- The Design-Build Team shall inform the State Alternative Delivery Systems Engineer of any proposed changes to the NCDOT preliminary design or previously reviewed submittals and obtain approval prior to incorporation.
- The Design-Build Team shall note any proposed deviations to the preliminary design shown on the Revised Preliminary Design Map dated June 2005 in the Technical Proposal. As a minimum, the Design-Build Team shall clearly describe in the Technical Proposal the proposed design modifications to the aforementioned Map required at the project's northern end to completely avoid the Beebe House Historic Property, minimize impacts to properties located along the eastern side of US 17 and tie into the proposed R-2510C design. Specifically, the Design-Build Team shall provide in the Technical Proposal the required alignment changes that prevent encroachment onto, and right of way and easement acquisition from, the Beebe House Historic Property. The Design-Build Team shall itemize the additional property impacts resulting from these proposed design modifications, as well as any associated proposed property owner coordination and / or public involvement in the Technical Proposal. The Design-Build Team shall also indicate in the Technical Proposal the point at which the proposed design modifications tie to the proposed R-2510C alignment.
- The Design-Build Team shall not make any design or construction changes that affect the design or construction of Projects R-2510A and R-2510C without prior written approval from the Department.
- The Design-Build Team shall not impact the existing cemeteries located along the east side of US 17 Business south of Chocowinity and along the west side of US 17 Business south of Cherry Run Road (SR 1001).
- The proposed horizontal and vertical clearances beneath the structure over US 264 shall accommodate the symmetrical widening for a future six-lane roadway, which includes exclusive left turn lanes, with a minimum four-foot concrete median and ten-foot berms. The right of way acquired from the interchange ramp terminals outward should be of sufficient width to make provisions for the future six-lane section to transition back to the existing five-lane section along US 264.
- In proximity to the proposed US 17 Bypass / US 17 Business intersection located north of Washington, the Design-Build Team shall design and construct a proposed grade along the bypass that will accommodate a future compressed interchange design. The future interchange shall be designed with a grade separation along the extension of US 17 Business over the proposed US 17 Bypass. The Design-Build Team shall prepare functional horizontal and vertical designs for the future interchange and make a determination of, and acquire, the additional right of way required by the future

The following applies to the proposed bridge on US 17 over Tar River:

1. In preliminary design, USCG has indicated that minimum navigation clearances of 45 feet vertical from the mean high water elevation and 60 feet horizontal will be required. The Design-Build Team shall coordinate with USCG to verify these clearances. The Design-Build Team is responsible for all work necessary to obtain a Coast Guard Permit and obtain necessary approval prior to and during construction of the structure. Reference Environmental Permits Scope of Work.
2. The Design-Build Team shall design the river-crossing substructure for Vessel Impact. Method I or Method II analysis may be used. The preliminary indication is that the USACOE vessel Snell is the design vessel for the Tar River. The Design-Build Team shall verify this information or otherwise determine the appropriate design vessel. The structure(s) shall be designed so as to negate the need for a fender system. The U.S. Coast Guard has determined that they will not require a fender system on this bridge provided the structure is designed for vessel impact.
3. At the Norfolk Southern Railway, the Design-Build Team shall provide a minimum vertical clearance of 23 feet. If designing without crashwalls, a minimum horizontal clearance from the centerline of existing or future tracks is 25 feet. See Theoretical Section for Norfolk Southern Railway. The bridge spans shall accommodate one future track located 14 feet, center to center, to the north of the existing main track. The horizontal clearance need not accommodate a future maintenance roadway.
4. The Design-Build Team shall design the bridge and/or appurtenances to not allow direct discharge into the Tar River and for a distance of 150 ft. extending into the wetlands beyond each bank of the river and its tributaries. Reference the Hydraulics Scope of Work.
5. Cored slab, box beam, and deck girder bridges will not be allowed.
6. The Design-Build Team shall design and construct spans of at least 100 feet, minimize the number of evazote joints, and maximize continuity. Armored evazote joints must be used. A custom armored evazote joint is permitted for concrete decks on concrete girders subject to the following design criteria:
 - 60% maximum compression at T_{max} design of 105 °F
 - 10% maximum tension at T_{min} of 30 °F
 - Thermal design range of 75 °F
 - Maximum joint opening at T_{min} of 4"
 - Maximum uncompressed seal width of 3 ¾"
 - Seal must be installed with minimum of 15% compression
7. The Design-Build Team shall provide corrosion protection measures as follows:
 - Drilled Pier Concrete in drilled piers. Class AA concrete shall be used in all other cast-in-place concrete.
 - Epoxy coated rebar shall be used in cast-in-place concrete for all footings, all columns, barrier rail, and for those bent caps located within 15 ft. above mean high tide. Incidental rebar and bar supports in the cast-in-place substructure units noted above shall also be epoxy coated. For the bridge deck, epoxy coated rebar is only required for the top mat of reinforcing steel.
 - Increased concrete cover shall be provided in columns, footings, and drilled piers as per NCDOT policy.

- Calcium nitrite shall be used in all footings and piles. Calcium nitrite shall be used in all precast concrete panels and girders located within 15 ft. above mean high tide.
 - Fly ash shall be used in all footings and all mass concrete members
 - Water/cement ratio in piles shall not exceed 0.4
 - All metallized surfaces shall receive a seal coat
 - Metal stay-in-place forms are permitted
 - The allowable tension in the precompressed tensile zone for girders and panels is $3\sqrt{f'_c}$
 - If an NCDOT standard drawing is not available for proposed precast piles, the minimum cover over mild rebar or spiral steel shall be 2" and the minimum cover over strands shall be 2 ½".
 - The Design-Build Team shall indicate in their Technical Proposal any additional measures proposed to create a longer service life for the structure(s).
8. Painted steel girders may be used in portions of the bridge where the bottom flange is located at least 15 feet above the normal water elevation. Painting shall be in accordance with System 1, Section 442 of the Standard Specifications.
 9. The Design-Build Team shall design and construct a bridge length and height that accommodates a minimum 12-foot wide greenway located under the north end of the bridge and outside the wetland boundary. A minimum vertical clearance of eight feet shall be provided for the greenway.
 10. Vertical clearance gages will be required over the navigational channel. The Design-Build Team shall install vertical clearance gages 30 days prior to erecting the girders over the navigational channel.
 11. The Design-Build Team shall provide and install a metallized steel solar array platform and a 1" diameter galvanized conduit for connecting the solar array system to the navigational lighting. The solar system, navigational lighting will be provided and installed by the Department. Apply an 8 mil thick 1350 Aluminum (W-A1-1350) thermal sprayed coating with a 0.5 mil thick seal coat to the solar array platform in accordance with the Thermal Sprayed Coatings Special Provision and Section 442 of the Standard Specifications.
 12. Steel piles may be used for interior bents if metallized and coated in accordance with #11 above. Metallization of these steel piles shall extend to a minimum of 10 feet below the mud line. Steel pile tips embedded in concrete shall be painted in accordance with policy. Steel piles for end bents need not be metallized, coated, or painted.
 13. Soffits or other falsework that will remain attached or a part of the permanent structure shall have corrosion protection measures consistent with the structural member that it supports or adjoins. Galvanization or metallization will be required for permanent falsework for substructure units. Likewise, concrete in permanent falsework shall for substructure units shall contain admixtures as specified for the surrounding concrete.
 14. Capacity of overhang falsework hangers placed at the edge of thin top flange concrete girders (such as bulb tee girders) is limited to 75% of the manufacturer's safe working load. Use of Meadow Burke HF-42 and HF-43 hangers is not allowed.

15. When using bridge deck slab overhang falsework systems that transmit torsion to the exterior girders, bracing will be required. Bracing shall limit the magnitude of torsional stresses (concrete girders) or lateral flange bending (steel girders) in the exterior girders caused by falsework system loads and limit the magnitude of stresses in the component elements, welds, or connections.

The sizing, spacing and details of the bracing elements shall be sufficient to meet the design requirements stated below. Design calculations and working drawings submitted for review should consider the horizontal force effects of the falsework on the girder and on the bracing elements themselves.

For concrete girders, torsional stresses in girders resulting from falsework and other dead loads shall not exceed one quarter of the cracking torque. Torsional stresses due to all dead loads and live loads shall not exceed one half of the cracking torque. Cracking torque of prestressed concrete girders shall be computed in accordance with ACI 318-02, Section 11.6.1. For steel girders, lateral flange bending stresses shall not exceed 2000 psi.

Bracing shall be installed prior to any application of loads from screed equipment or work platform bridges. Bracing shall be removed after the deck is cured.

16. Alternative details for permanent intermediate diaphragms for prestressed concrete girders may be used in accordance with recently revised NCDOT policy, regardless of the policy effective date. This policy, which allows steel intermediate diaphragms, may be extended to other concrete girder shapes. Diaphragms and associated hardware shall be metallized or galvanized in accordance with the Standard Specifications.
17. Measures for reducing heat and cracking in mass concrete members shall be used.
18. NCDOT bridge deck rideability requirements apply to this bridge.
19. The Design-Build Team may attach sign structures to the bridge on US 17 over the Tar River by designing the bents for the sign attachments or by designing the superstructure for the sign attachments. The Design-Build Team shall indicate in the Technical Proposal the type and number of overhead sign structures to be attached to the bridge and describe the attachment method.
20. Access facilities (walkways, ladders, etc.) are not required on this bridge.

REQUIRED SUBMITTALS

Sufficient data, including items previously approved by other NCDOT Units (Roadway, Geotechnical, Hydraulics, Traffic, etc.) shall be submitted with (or prior to) all submittals to facilitate review. All submittals shall be in accordance with the Design-Build Submittal Guidelines available on the Design-Build website.

Due to the presence of anadromous fish, no in-water work in the river or tributaries will be permitted from February 15 to June 15. During periods of the adjacent floodplain's inundation, the North Carolina Wildlife Resource Commission has adjusted the moratorium. Specifically, no in-water work within the floodplain, that is actively connected to the river or its tributaries, will be permitted from February 15 to May 31 of any year. The areas applicable to the moratoria include the main channel, tributaries to the main channel and the inundated floodplain that is actively connected to the main channel. It is understood that all containment measures used to isolate the construction area shall be in place and fully functional prior to February 15, and maintained throughout construction. Further clarification of the moratorium will likely be discussed at the 4B and 4C Merger Meetings.

Any temporary construction measures, including de-watering, construction access, etc. shall be addressed in the permit application. Impacts that result from so-called temporary measures may not be judged to be temporary impacts by the agencies. These issues shall be addressed and reviewed by PDEA-NEU prior to the 4B and 4C meetings and resolved with the agencies during the 4B and 4C meetings.

The Design-Build Team shall clearly indicate the location of and impacts of haul roads and utility relocations on jurisdictional areas. The Design-Build Team shall also identify all proposed borrow and waste sites. These details shall be included in the permit application data. Further, the Design-Build Team shall describe the methods of construction of all structures. The description of the temporary impacts (haul roads, utility relocations, work bridges, etc.) shall include restoration plans, schedules, and disposal plans. This information shall be included in the permit application. This information shall also be part of the data presented at the 4B and 4C meetings. There shall be particular emphasis on minimizing impacts during the construction of the bridge over Tar-Pamlico River and adjacent wetlands and floodplain.

The NCDOT hereby commits to ensuring, to the greatest extent possible, that the footprint of the impacts in areas under the jurisdiction of the federal Clean Water Act shall not be increased during the Design-Build effort. All fill material shall be immediately stabilized and maintained to prevent sediment from entering adjacent waters or wetlands. The Design-Build Team shall be responsible for ensuring that the design and construction of the project will not impair the movement of aquatic life.

The Design-Build Team should be aware that DCM permits are for the entire R-2510B project. Receipts of notification to landowners under DCM jurisdiction shall be required as part of the Major Development Permit application process.

The Design-Build Team shall submit one permit application for the entire project. The Design-Build Team shall not submit multiple applications to develop a "staged permitting" process to expedite construction activities in a phased fashion.

Requests made for modifications to the permits obtained by the Design-Build Team shall only be allowed if the Engineer determines it to be in the best interest of the Department and will be strongly discouraged. The Design-Build Team shall not take an iterative approach to hydraulic design issues. The design shall be complete prior to permit modification application.

Major Permit Timeframe

With the exception of the US Coast Guard Permit, the Design-Build Team should expect it to take up to 12 months to accurately and adequately complete all designs necessary for permit application, submit application request to the Department, and obtain approval for the permits

whether the proposed PDA locations are for production or non-production piles. Test piles in accordance with *ASTM D 4945-89, Standard Test Method for High Strain Dynamic Testing of Piles* and this scope of work.

Use current NCDOT inspection forms for drilled piers available on the Geotechnical Engineering Unit's webpage. The Design-Build Team shall provide an inspection device to inspect the bottom of each drilled pier just prior to placing concrete. The inspection device shall be a Mini-SID made by GPE, Inc. or an equivalent device approved by the Engineer. Perform SID testing in accordance with the Drilled Piers Special Provision and provide personnel to conduct the testing and document results. In addition to completing the NCDOT SID inspection form, take video and audio recordings of each test and save this information in a manner that can be reviewed if needed.

Install Crosshole Sonic Logging (CSL) tubes in all drilled piers. CSL testing will be required for up to 25% of the drilled piers for each bridge. If a CSL test identifies defect in the drilled pier, then CSL testing more than 25% of drilled piers may be required at the discretion of the Engineer. The NCDOT and/or the construction engineering inspection (CEI) firm will determine which piers will be CSL tested. The Geotechnical Engineering Unit will determine if the CSL results are acceptable.

Verify bearing on rock for spread footings in the field during construction.

Provide field quality control for all bridge foundations, including pile driving records and drilled pier inspection forms. Provide field quality control for all retaining wall and sound barrier foundations including verifying subsurface conditions for drilled piers and bearing for shallow foundations.

The pre-qualified geotechnical firm that did the original design shall perform any changes to the foundation designs. All changes must be based upon additional information, subsurface investigation and/or testing. Drilled pier tip elevations may not be changed during construction unless the prequalified geotechnical firm that did the bridge foundation design redesigns the drilled pier from an SPT/rock core or CPT boring in accordance with ASTM standards at the subject pier location or observations of the drilled pier excavation. If a drilled pier is designed based on a boring, do not drill a boring inside an open drilled pier excavation. Locate the boring within three pier diameters of the center of the subject pier and drill to a depth of two pier diameters below the revised tip elevation. If a drilled pier is redesigned based upon observations of the drilled pier excavation, the geotechnical engineer of record must be present during the excavation to determine the actual subsurface conditions. Send copies of revised designs including additional subsurface information, calculations and any other supporting documentation sealed by a professional engineer registered in the State of North Carolina to the Geotechnical Engineering Unit. Also, send copies of any inspection forms related to foundations, settlement or retaining walls to the Geotechnical Engineering Unit.

IV. **INFORMATION PROVIDED BY NCDOT**

- A. NCDOT *Geotechnical Unit Guidelines and Procedure Manual*
- B. Geotechnical Engineering Unit *Roadway and Structure Foundation Guidelines*
- C. NCDOT Project Special Provisions
- D. Standard Settlement Plate Detail

shown in accordance with the RFC - Traffic Control and Final Pavement Marking Plans, unless otherwise directed by the Engineer. The devices required to remain on the project at its completion will become the property of the Department.

G. Pavement Markings and Markers

Placement of Final pavement markings and markers can proceed only if the Final Pavement Marking Plan meets the requirements of the RFP, the “Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design-Build Projects”, and the “Design-Build Submittal Guidelines”.

The Design-Build Team shall use pavement marking and marker products that conform to all NCDOT’s requirements and specifications, as listed on the Department’s Approved Products List located on the NCDOT’s Traffic Control Website.

<http://www.doh.dot.state.nc.us/construction/wztc/>

The Design-Build Team shall install pavement markings and markers in accordance with NCDOT’s 2002 *Standard Specifications for Roads and Structures*, and in accordance with the manufacturer’s procedures and specifications.

The Final Pavement Marking Plan shall address any changes to markings outside the project limits as a result of the proposed construction of this project. The Design-Build Team shall be responsible for installing such markings and markers.

The Design-Build Team shall install pavement markings and pavement markers on the final surface as follows:

Road	Marking	Marker
US17	Thermoplastic or Polyurea	Snowplowable
Proposed Structures	Cold Applied Plastic or Polyurea	Permanent Raised
All Other Roads	Thermoplastic or Polyurea	Permanent Raised

When using Polyurea marking, black skips are not required on concrete surfaces.

Refer to the Polyurea Special Provision, which is available on the Traffic Control Website.

All US routes require 50% wider markings, i.e., lane lines, edge lines and skips shall be 6" in width.

The Design-Build Team shall install temporary pavement markings and temporary pavement markers on the interim surface or temporary pattern as follows:

Road	Marking	Marker
All Roads, Ramps and Existing Structures.	Minimum of Paint	Temporary Raised
Proposed Structures	Temporary Tape	Temporary Raised

Trace the edge of proposed monolithic islands with the proper color pavement marking prior to installation of a proposed monolithic island.

LISTING OF DBE SUBCONTRACTORS				
				Sheet _____ of _____
FIRM NAME AND ADDRESS	ITEM NO.	ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM
CONTRACT NO.	COUNTY	FIRM		

COST OF CONSTRUCTION WORK ONLY

\$ _____

(*) The Dollar Volume Shown In This Column Shall be Actual Price Agreed Upon by the Prime Contractor and the DBE Subcontractor, and These Prices Will Be Used to Determine The Percentage of the DBE Participation in this Contract.

**Dollar Volume of DBE Subcontractor \$ _____

Percentage of Total Construction Cost _____%

**MUST HAVE ENTRY EVEN IF FIGURE TO BE ENTERED IS ZERO.