



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 1, 2005

Addendum No. 1

RE: Contract ID: C201400
TIP Number: R-2510B
Beaufort County
Project Description: US 17 from South of SR 1149 (Price Road.)
to US 17 North of SR 1509 (Springs Road.)

December 15, 2005 Letting

To Whom It May Concern:

Reference is made to the Request for Proposal recently furnished to you on the above project. The following revisions have been made to the Request for Proposal:

On Page 1, *Contract Time and Liquidated Damages* has been revised. Please void Page No.1 in your proposal and staple the revised Page No.1 thereto.

On Page 6, *Fuel Price Adjustment* has been revised. Please void Page No.6 in your proposal and staple the revised Page No.6 thereto.

On Page 42 and Page 45, the *Roadway Scope of Work* has been revised. Please void Page No.42 and Page No.45 in your proposal and staple the revised Page No.42 and Page No.45 thereto.

On Pages 48-51, the *Structures Scope of Work* has been revised. Please void Pages No. 48-51 in your proposal and staple the revised Pages No. 48-52 thereto. Also the current Page 52 (Railroad Coordination) should be re-numbered as Page 52A.

On Pages 55-56, the *Hydraulics Scope of Work* has been revised. Please void Pages No. 55-56 in your proposal and staple the revised Pages No. 55-56 thereto.

On Pages 57-63, the *Environmental Permits Scope of Work* has been revised. Please void Pages No. 57-63 in your proposal and staple the revised Pages No. 57-63 thereto.

On Pages 79-81, the *Geotechnical Scope of Work* has been revised. Please void Pages No. 79-81 in your proposal and staple the revised Pages No. 79-81 thereto.

On Page 104, the *Utilities Coordination Scope of Work* has been revised. Please void Page No.104 in your proposal and staple the revised Page No.104 thereto.

On Page 219, *Section 107-03* has been revised. Please void Page No.219 in your proposal and staple the revised Page No.219 thereto.

On Pages 242-247, *Section 109-03* has been revised to correct some typographical errors. Please void Pages No.242-247 in your proposal and staple the revised Pages No.242-247 thereto.

The *Fuel Usage Factor Chart and Estimate of Quantities* sheet, located behind the Itemized Proposal Sheet, has been revised. Please void this page in your proposal and staple the revised page thereto.

Sincerely,

R.A. Garris, P.E.
Contract Officer

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 Paugh, - 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, LG (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/)

***** PROJECT SPECIAL PROVISIONS *******CONTRACT TIME AND LIQUIDATED DAMAGES**

The date of availability for this contract is **February 6, 2006**, except that work in jurisdictional waters and wetlands shall not begin until a meeting between the DOT, Regulatory Agencies, and the Design-Build Team is held, and the permits acquired, as stipulated in the Environmental Permits Scope of Work contained elsewhere in this proposal. The Design-Build Team shall consider this factor in determining the proposed completion date for this project.

The completion date for this contract is defined as the date proposed in the Design-Build Package by the proposer who is awarded the project. The completion date thus proposed shall not be later than **October 1, 2010**.

The actual completion date proposed by the Design-Build Team is (to be filled in by NCDOT after award).

When observation periods are required by the special provisions, they are not a part of the work to be completed by the completion date and/or intermediate contract times. Should an observation period extend beyond the final completion date, the acceptable completion of the observation period shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Ten Thousand Dollars (\$10,000)** per calendar day. As an exception to this amount, where the contract has been determined to be substantially complete as defined in Section 105-18 contained elsewhere in this package, the liquidated damages will be reduced to **Two Thousand Dollars (\$2,000)** per calendar day.

Where the Design-Build Team who is awarded the contract has proposed a completion date for the contract as required above, but also has proposed an earlier date for substantial completion, then both of these proposed dates will become contract requirements.

Liquidated damages of **Ten Thousand Dollars (\$10,000)** per calendar day will be applicable to the early date for substantial completion proposed by the bidder. Liquidated damages of **Two Thousand Dollars (\$2,000)** per calendar day will be applicable to the final completion date proposed by the bidder where the Design-Build Team has proposed an earlier date for substantial completion.

DB1 G04

OTHER LIQUIDATED DAMAGES AND INCENTIVES (9/21/05)**Traffic Control:**

Liquidated Damages for the lane narrowing, lane closure, holidays and special event time restrictions for existing US 17 and proposed US 17 are \$500.00 per hour for this Intermediate Contract Time.

Liquidated Damages for the lane narrowing, lane closure, holidays and special event time restrictions for US 264 are \$500.00 per hour for this Intermediate Contract Time.

Liquidated Damages for the lane narrowing, lane closure, holidays and special event time restrictions for 15th St. (SR 1402 / SR 1403) are \$500.00 per hour for this Intermediate Contract Time.

$$S = (A - B)(\Sigma QF)$$

Where: S = Fuel Price Adjustment for partial payment
 B = Base Index Price
 A = Average terminal price
 Q = Partial payment quantity for contract item
 F = Fuel factor for contract item

The average terminal price in effect on the first day of the month in which the partial payment period ends will be used to make payment adjustments for fuel whether or not more than one price fluctuation has occurred within a single partial payment period.

The fuel price adjustment for the specified item will be determined by multiplying the cumulative fuel price adjustment made for that specified item for the previous estimate period(s) by the adjusted quantity for that specified item and divided by the total quantity of work paid for the previous estimates for the specified item.

The Design-Build Team shall prepare, and present with their Price Proposal, an Estimate of Quantities of which they anticipate incorporating into the completed project and upon which the Price Proposal was based. The quantity breakdown shall include all items of work, which appear in the Fuel Usage Factor Chart. This chart is found in the back of this RFP following the Itemized Proposal sheet. The quantity estimate submitted in the Price Proposal is the final total quantity for which fuel price adjustments will be made for each item, regardless of actual quantities or supplemental agreements. The Department shall review the Estimate of Quantities to insure its reasonableness to the proposed design. Agreement of quantities is a prerequisite prior to execution of the contract.

The Design-Build Team's Estimate of Quantities shall be utilized on the various partial payment estimates to determine fuel price adjustments. The Design-Build Team shall submit a payment request for quantities of work completed based on the work completed for that estimate period. The quantities requested for partial payment shall be reflective of the work actually accomplished for the specified period. A licensed Professional Engineer shall sign and seal that the quantities are reasonable for the specified period. Only those items of work which are specifically noted in the Fuel Usage Factor Chart will be subject to fuel price adjustments.

If the Design-Build Team elects **not** to pursue reimbursement for Fuel Price Adjustments, a quantity of zero should be entered for all quantities in the Fuel Usage Factor Chart (found immediately after the Item Proposal Sheet) and the declination box checked. Failure to complete this form will be taken as declining Fuel Price Adjustments for this project.

The base index price for DIESEL #2 FUEL is **\$ 2.1137 per gallon.**

ROADWAY SCOPE OF WORK**Project Details**

- The Design-Build Team shall design and construct a four-lane divided facility with a 46-foot median, unless indicated otherwise, from south of SR 1149 (Price Road) to north of SR 1509 (Springs Road). The Design-Build Team shall design and construct the –L- Line providing access, widening and improvements as indicated on the Revised Preliminary Design Map dated June 2005. The limits of –L- Line construction shall be of sufficient length to tie to existing based upon the current guidelines and standards. Along the existing alignment, US 17 shall be designed and widened to a four-lane facility that meets a 60-mph design speed for a flat rural expressway. Along new alignment, the proposed new location facility shall be designed and constructed to meet a 70-mph design speed for a flat rural freeway. The freeway limits shall begin at the proposed spiral to tangent (ST) of the spiral curve – horizontal curve – spiral curve alignment extending through the southern US 17 Bypass / US 17 intersection. The freeway limits shall end at the proposed tangent to spiral (TS) of the spiral curve – horizontal curve – spiral curve alignment extending through the northern US 17 Bypass / US 17 intersection. The Design-Build Team shall provide all other design criteria in the Technical Proposal.
- South of the beginning of the proposed bridge over the Tar River, the US 17 Bypass 46-foot median shall be reduced to ten feet if a single structure is proposed. The ten-foot median width shall not extend more than 500 feet south of the beginning of the bridge.
- South of the US 17 Bypass / US 264 interchange, the US 17 Bypass median shall be a consistent width, no narrower than ten feet, through the limits of the southbound on-ramp and northbound off-ramp. The Design-Build Team shall provide supporting information that verifies that the merging and geometric design of the US 17 Bypass / US 264 interchange operates at a LOS C or better, under the 2030 projected traffic volumes, and meets design criteria, respectively, with a median width less than 46 feet through the aforementioned limits. Otherwise, the 10-foot median shall be increased to 46 feet prior to the aforementioned ramps. The median shall be widened to the full 46-foot width a minimum of 500 feet south of the beginning of the proposed US 264 bridges.
- Glare screen will not be required on the median concrete barrier across the Tar River Bridge.
- The Design-Build Team shall design and construct at-grade intersections with directional crossovers along the mainline at SR 1149 (Price Road), US 17 Business north of Washington, and at SR 1509 (Springs Road). The directional crossovers shall be designed, constructed and signed to prevent a U-Turn maneuver. Offset left-turn access shall be provided along the mainline as shown on the Revised Preliminary Design Map dated June 2005. The design vehicle for the bulb-outs shall be a WB-62.
- The Design-Build Team shall design and construct interchanges at NC 33 and US 264.

- interchange. The Design-Build Team shall develop a traffic analysis for the proposed interchange design for review by the Department.
- NCDOT prefers not to have design exceptions for the –L- Line, –Y- Lines, service roads and ramps. If the Design-Build Team anticipates any design exceptions, they shall be clearly noted in the Technical Proposal. Prior to requesting / incorporating a design exception, the Design-Build Team must obtain prior approval from the Department and FHWA. If approval is obtained, the Design-Build Team shall be responsible for the development and approval of all design exceptions.
- The Design-Build Team shall place rebar and caps with carsonite posts for right of way monument locations as directed by the Resident Engineer. The Department shall furnish the caps and carsonite posts in accordance with Department policy.
- The Design-Build Team shall submit Structure Recommendations and Design Criteria for NCDOT and FHWA review and acceptance prior to submittal of the preliminary plans.
- There are no noise walls required on this project as currently designed. If the Design-Build Team revises the horizontal and / or vertical alignments such that greater noise impacts are possible on surrounding receptors, the Design-Build Team shall re-analyze and complete a revised noise report, if necessary, for NCDOT and FHWA review and acceptance. The original noise report (and subsequent correspondence between the Department and FHWA) will be provided to the Design-Build Team to assist in determination of anticipated additional noise impact on current receptors due to a design change. If noise walls are required as a result of design deviations, the Design-Build Team shall be responsible for all costs associated with the walls, including, but not limited to, public involvement, geotechnical investigation, shaft and wall designs and construction.
- This is a control of access facility. The Design-Build Team shall bring to the Department's attention any deviations from the proposed control of access shown on the Revised Preliminary Design Map dated June 2005. The section of Partial Control of Access shall provide one access point per parcel. Properties with 2000 feet or more of road frontage may be considered for one additional access point. Access to US 17 may be eliminated for those properties that have alternative access points, via a –Y- Line. Along the east side of the mainline, Full Control of Access shall extend from the proposed tangent to spiral (TS) of the spiral curve – horizontal curve – spiral curve alignment extending through the southern US 17 Bypass / US 17 intersection to the existing southern right of way limits of Springs Road (SR 1509). Along the west side of the mainline, Full Control of Access shall extend from the northern edge of the existing driveway located at approximately Station 222+80 –L- to the southern property line of the Joseph A. Beebe House Historic Property. Along both sides of the mainline, Full Control of Access shall be provided at all median U- turn bulb-outs. No access will be allowed in the sections of Full Control of Access. The Design-Build Team shall be responsible for coordination with and approval by the NCDOT of the woven wire fence placement and access control break locations. The Design-Build Team shall be responsible for installation of the woven wire fence.
- The Design-Build Team shall be responsible for the evaluation of the algebraic difference in rates of cross slope (roll-over) between existing shoulders and roadways and the associated suitability for carrying traffic during construction, if necessary. In the event that the rollover is found to be unacceptable for the proposed temporary traffic patterns, the Design-Build Team shall be responsible for providing cross slopes that meet design standards and eliminate rollover concerns.

STRUCTURE SCOPE OF WORK**General**

The Design-Build Team's primary design firm shall be on the Highway Design Branch list of firms qualified for Structure Design and maintain an office in North Carolina.

Design shall be in accordance with the Seventeenth Edition AASHTO Standard Specifications for Highway Bridges, NCDOT Structure Design Manual (including policy memos), and NCDOT Bridge Policy Manual. Construction and Materials shall be in accordance with the 2002 NCDOT Standard Specifications for Roadways and Structures, NCDOT Structure Design Unit Project Special Provisions, and NCDOT Structure Design Unit Standard Drawings.

The Design-Build Team is permitted to design the bridges on this project using software that accounts for the structural effects of soil / pier interaction.

Bridge geometry (width, length, skew, span arrangement, typical section, grade, alignment, etc.) shall match approved Bridge Survey Reports, Roadway Plans, and Structure Recommendations developed by the Design-Build Team. Bridges shall meet all hydraulic design requirements for drainage.

Where allowed, cored slab or box beam type bridges will require a reinforced, cast in place, 4" class AA concrete wearing surface. Modified Bulb Tee Girders that are designed using draped strands shall be fabricated with draped strands debonded in accordance with Article 1078-12 of the 2002 NCDOT Standard Specifications for Roads and Structures.

If required, sound barrier walls should be in accordance with standards SBW1 & SBW2.

Monotube sign support structures will not be allowed.

Anticipated Structures

- Bridge(s) on Proposed US 17 over NC 33
- Bridge on US 17 over the Tar River: includes the crossing of existing US 17, SR 1171 (Packing House Road), Norfolk Southern Railway, SR 1165 (Sand Hole Road), the Tar River and wetlands adjacent to the Tar River. The Department is not opposed to pursuing dual bridges at this site. However, a single bridge was incorporated in preliminary design and the 4A meeting. Therefore, the Design-Build Team shall be fully responsible for gaining agency acceptance for dual structures through the Merger '01 and permitting processes. There are no guarantees that such a design change will be permitted by the agencies. The Design-Build Team is fully responsible for providing a structure(s) that the agencies will accept and permit, at no additional cost to the Department and without a contract time extension, regardless of assumptions made in the Technical Proposal.
- Bridge(s) on Proposed US 17 over US 264. See Roadway Scope of Work for clearance requirements.
- Bridge(s) on US 17 over 15th Street
- Three reinforced concrete box culverts at locations shown on the Revised Preliminary Design Map dated June 2005. Precast concrete box culverts shall not be allowed.

Bridge Rail Specific Requirements

Jersey shaped bridge rails shall be used for all bridges except the bridge over the Tar River. For the Tar River Bridge, four outside rail options exist as noted below:

- Option #1: The North Carolina standard 2-bar metal rail may be used for the entire length of the bridge.
- Option #2: The Minnesota Combination Design #3 rail may be used for the entire length of the bridge.
- Option #3: The 32" Vertical Concrete Parapet as shown on page 452 of Appendix B7 of the May 30, 1997 FHWA Memo (http://safety.fhwa.dot.gov/roadway_dept/docs/appendixb7d.pdf) may be used for the entire length of the bridge except for the portion of the bridge that spans from a point 250 feet south of the southern river bank to 250 feet north of the northern river bank. Through the limits noted above that cross the river, the North Carolina 2-bar metal rail shall be used. The 32" Vertical Concrete Parapet shall be widened by 1" (9" at base, 11" at top). A concrete cover of 2 ½" shall be used for the vertical steel.
- Option #4: The vertical parapet above may be used within the same limits above but the Minnesota Combination Design #3 rail may be substituted for the NCDOT standard 2-bar metal rail.

The Design-Build Team shall indicate in their Technical Proposal which rail option they have included in their lump sum price bid for the entire project. See Special Provision for "Bridge Rail Alternate Bids."

Provided that the Design-Build Team (1) provides reinforcing in the vertical parapet and Minnesota rail that is equivalent or greater than that specified in the crash-tested version of these rails; and (2) the transition between different rail types does not create any snag points, then no crash testing or justification of crash test equivalence will be required.

All concrete rails shall have grooved contraction joints and standard expansion joints as specified by the Department for New Jersey shape rails. If used, the Minnesota rail shall include a revised base plate bolt pattern that utilizes A449 bolts.

If dual bridges are constructed over the Tar River, the median barrier rail shall be the 32" Vertical Concrete Parapet the full length of both bridges.

Other Bridge Specific Details:

Shoulder Piers will not be allowed on the proposed bridges on US 17 over NC 33, on US 17 over US 264, and on US 17 over 15th Street. MSE walls in front of end bents are allowed provided the horizontal clearance at these sites allow for the width of the US 264 future typical section as described in the Roadway Scope of Work.

The proposed horizontal and vertical clearances beneath the proposed structure over US 264 shall accommodate a future 6-lane roadway, configured as specified in the Roadway Scope of Work.

Attachment of sign structures to bridges on US 17 over NC 33, on US 17 over US 264 and on US 17 over 15th Street will not be allowed.

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 all cast-in-place concrete. Incidental rebar and bar supports in the cast-in-place substructure shall also be epoxy coated.
 - 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.

Addendum No.1 November 1, 2005
Structures Scope of Work

C 201400 (R-2510B)

Beaufort County

- 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 if metallized and coated in accordance with #11 above. Metallization of steel piles for interior pile bents 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.
 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. This policy, which allows steel intermediate diaphragms, may be extended to other concrete girder shapes.
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.

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.

HYDRAULICS SCOPE OF WORK

- The Design-Build Team shall hold a pre-design meeting with the NCDOT Hydraulics Unit upon acceptance of the Preliminary Roadway Plans.
- The Design-Build Team shall develop all drainage designs in accordance with criteria provided in the North Carolina Division of Highways “*Guidelines for Drainage Studies and Hydraulics Design-1999*” and the addendum “*Handbook of Design for Highway Drainage Studies-1973*”
- The Design-Build Team shall conduct the 4B and 4C meetings. All work associated with and resulting from the hydraulics and permit reviews shall be the responsibility of the Design-Build Team. The Design-Build Team shall provide hydraulics plans and permit impact sheets to the State Alternative Delivery Systems Engineer a minimum of five weeks prior to the respective meetings. The Design-Build Team shall take minutes of the above meetings and provide them to the Department within three business days.
- Ditches shall not be allowed in wetlands.
- The minimum allowable ditch grade is 0.3%.
- The minimum roadway grade is 0.3%. A grade of zero percent is allowable on the Tar River Bridge providing the spread from a 4" / hour storm is contained within the shoulder and does not encroach into the travel lane. For additional vertical grade design parameters see the Roadway Scope of Work.

The following items shall be required of the Design-Build Team:

- In Technical Proposal, address Pre and Post Analysis methodology for increases in discharge. The Design-Build Team shall be responsible for taking the appropriate action, in accordance with the above referenced guidelines, to make sure additional drainage is adequately handled. Design-Build Teams are not responsible for addressing the adequacy of pipe systems outside of the proposed right-of-way.
- The Design-Build Team shall be responsible for all costs associated with providing bridge drainage features that prevent direct discharge into the Tar River; into any water surface contiguous to the Tar River; and into the wetlands extending 150 ft. landward from the normal high water elevation of the Tar River and all water surfaces contiguous to the Tar River. Areas of allowable direct discharge from the Tar River Bridge will be decided during the Merger '01 Process (4B and 4C meetings). Should direct discharge restrictions more stringent than those noted above be decided during this Process, the Design-Build Team shall be compensated for the design and construction of the additional bridge drainage features and associated basins through a Supplemental Agreement.
- Bridge Survey Report for the bridge over the Tar River and associated wetlands.

- Storm drainage design and installation in accordance to the Tar-Pamlico Buffer Rules.
- 2D Flow Model for the Tar River to determine velocities for scour and the velocity of the 5 year event for vessel impact.. The Design-Build Team must be experienced in 2D Flow Modeling and clearly indicate past experience in the Technical Proposal. The 2D Flow Model shall include the following:
 1. Cross-sections, soundings, etc.
 2. Water velocities and elevation survey for 2D Flow Model calibration info
 3. Field reconnaissance and supplemental surveys
 4. Boundary condition determination
 5. 2D Flow Model to determine velocities for bridge scour calculations
 6. Report of facts, findings and conclusion of 2D Flow Model
- Culvert Survey Reports for all culverts, providing conveyance greater than a 72” pipe, that are extended, replaced, or rehabilitated
- Approved FEMA compliance for all crossings that are in the FEMA detailed studies
- Avoidance of lateral encroachment into Maple Branch Tributary 1
- FEMA’s HEC2 Model
- Stormwater Management Plan
- State Stormwater Permit

ENVIRONMENTAL PERMITS SCOPE OF WORK

Note: It is the Department's intention that whenever this scope references permit "application" this would include permit application or modification of existing permits depending on the situation.

General

The Department will allow no direct contact between the Design-Build Team and representatives of the environmental agencies. No contact between the Design-Build Team and the environmental agencies will be allowed either by phone, e-mail or in person, without representatives of the Department's PDEA Branch and/or the DEO present. A representative from Alternative Delivery Systems shall be included on all correspondence.

The Department has applied for a 404/401 permit for the project corridor. This permit application, provided to the short-listed teams, requests a final design permit for R-2510A, and a phased or preliminary permit for R-2510B and R-2510C. The Design-Build Team shall be responsible for preparing all designs and documents needed to obtain a final design permit for R-2510B.

The Design-Build Team shall be responsible for preparing all documents necessary for the Department to obtain the environmental permits or modification of existing permits for this project. Permit applications will be needed for: US Army Corps of Engineers Section 404 Permit and the NC Department of Natural Resources (DENR), Division of Water Quality (DWQ) Section 401 Water Quality Certification, DWQ State Stormwater Permit, Division of Coastal Management (DCM) Major Development Permit, US Coast Guard Bridge Permit, and a DENR Division of Water Resources Central Coastal Plain Capacity Use Area Permit (CCPCUA). The Design-Build Team should be aware that this project is subject to the Tar-Pamlico Riparian Buffer Rules. The Design-Build Team shall acquire a riparian buffer certification from DWQ for this project. The Design-Build Team shall not begin ground-disturbing activities, including utility relocation, until the required permits have been issued (this does not include permitted investigative borings covered under a Nationwide Permit #6). The Design-Build Team may work on the project outside the limits of the Tar River Bridge prior to the issuance of the USCG Permit.

The Department has reached concurrence point 4A in the Merger 01 Process used by the environmental agencies and the Department to obtain environmental permits for projects. The Design-Build team shall participate and present information in steps 4B and 4C that are necessary to complete the Merger 01 process. The Design-Build Team shall follow the appropriate details in the document titled "Merger 01 Implementation Team – Merger 01 Process Information" which will be provided to the short-listed firms.

Unless the Design-Build Team proposes earlier dates in their Technical Proposal, the Department will schedule the 4B and 4C meetings for June and September of 2006, respectively. The Design-Build Team shall clearly identify in their Technical Proposal what months they would like the Department to schedule these meetings. Failure on the part of the Design-Build Team to meet the dates, as identified in their Technical Proposal, places all responsibility for associated delays solely in the hands of the Design-Build Team.

The Design-Build Team is bound by the terms of all signed planning documents and approved minutes and commitments of all concurrence meetings and is held accountable for meeting all

permit conditions. The Design-Build Team is required to staff any personnel necessary to provide permit compliance.

Major Permit Application Process

It shall be the Design-Build Team's responsibility to acquire information and prepare permit drawings that reflect the impacts and minimization efforts resulting from the Merger 01 Process and as designed. Further it shall be the Design-Build Team's responsibility to provide these permit impact sheets (drawings) depicting the design and construction details to the Department as part of the permit application. The Design-Build Team shall be responsible for developing the permit application for all jurisdictional impacts. The permit application shall include all utility relocations. The permit application shall consist of, at a minimum, the following:

- Cover Letter
- Minutes from the 4B and 4C meetings
- Permit drawings
- Half-size plans
- Completed forms (CAMA, ENG 4345, Section 404, etc.) appropriate for impacts

The Design-Build Team shall re-verify and update, as needed, the required environmental data that expires prior to the completion of the activity causing the impact in the jurisdictional areas. These include, but are not limited to, federally protected species, re-verification of wetland jurisdictional areas, historic and archaeological sites, and 303d (impaired) streams. The Design-Build Team shall draft a letter, for the Project Development & Environmental Analysis Branch's (PDEA) signature, requesting concurrence from the United States Fish and Wildlife Service to document compliance with Section 7 of the Endangered Species Act for those species requiring such concurrence. The original dates of verification / concurrence are listed below:

- Dates of verification for streams (March and April, 2004)
- Dates of verification for wetlands (February 28, 2000)
- USFWS concurrence on species (December 7, 2001)

The re-verification for wetlands is currently underway and will be complete prior to the date of availability.

The PDEA-Natural Environment Unit (NEU) has surveyed the entire R-2510 corridor for red-cockaded woodpecker, bald eagle, and rough-leaved loosestrife, all with a finding of "No Effect." The Department performed an additional survey of the corridor for sensitive joint-vetch on August 22, 2005 and the conclusion remains "Not Likely to Adversely Affect."

Direct coordination between the Design-Build Team, the Department's Alternative Delivery Systems Engineer, Resident Engineer, and the Office of Natural Environment (PDEA-NEU) shall be necessary to ensure proper permit application development. Upon completion of the permit application package, the Design-Build Team shall forward the package to the Alternative Delivery Systems Engineer, Resident Engineer, Division Environmental Officer (DEO) and PDEA-NEU concurrently for review and approval. The Department will subsequently forward the package to the appropriate agencies to have the permit application placed on public notice to reflect the details.

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, and 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. No construction activities shall be undertaken in the Tar River or adjacent, inundated wetlands unless the area has been contained by a silt fence prior to the start of the moratorium. 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

from the environmental agencies. Agency review time will be approximately 120 days from receipt of a “complete” package. No requests for additional contract time or compensation will be allowed if the permits are obtained within this 12-month period. With the exception of location and survey work and permitted investigative borings covered under a Nationwide Permit #6, no mobilization of men, materials, or equipment for site investigation or construction of the project shall occur prior to obtaining the permits, excluding the USCG Permit (either within the 12-month period or beyond the 12-month period). This limitation does not preclude the off-site fabrication of bridge members or equipment. The Department will not honor any requests for additional contract time or compensation, including idle equipment or mobilization or demobilization costs, for the Design-Build Team mobilizing men, materials (or ordering materials), or equipment prior to obtaining all permits, excluding the USCG Permit. The Department will consider requests for contract time extensions for obtaining the permits only if the Design-Build Team has pursued the work with due diligence, the delay is beyond their control, and the 12-month period has been exceeded. If time were granted it would be only for that time exceeding the 12-month period. This 12-month period is considered to begin on the Date of Availability as noted in the contract.

The Design-Build Team needs to be aware that the timeframes listed above for review by PDEA, NCDWQ, NCDCM, the US Army Corps of Engineers, and the US Coast Guard to review any permit applications begin only after a fully complete and 100% accurate submittal.

The Design-Build Team shall meet with DOT personnel, field representatives from the DCM, and other interested agencies, around the time of the 4C meeting in order to review the project and project commitments. The Design-Build Team shall contact PDEA-NEU in order to schedule this field review. Every effort shall be made to have this meeting prior to submitting the permit application.

US Coast Guard Permit

The Design-Build Team should expect it to take a minimum of 7 months for the issuance of a US Coast Guard permit after the CAMA Major Development Permit has been received. No requests for additional contract time or compensation will be allowed if the USCG Permit is obtained within this 7-month period. The Design-Build Team may work on the project outside the limits of the Tar River Bridge prior to the issuance of the USCG Permit.

Prior to submitting the application for the USACE Section 404 Permit, the Design-Build Team shall meet with the Coast Guard and representatives of the Department to coordinate the requirements associated with the project’s construction activities and schedule. The Design-Build Team shall be required to continue coordination activities with the Coast Guard throughout the project’s duration. As a minimum, the coordination requirements will include the following three distinct phases:

Permit Acquisition – Prior to, or concurrent with, submitting the US Coast Guard Permit, the Design-Build Team shall have submitted the US Army Corps of Engineers Section 404 Permit; the NC Department of Natural Resources, Division of Water Quality, Section 401 Water Quality Certification and the Division of Coastal Management Major Development Permit. At the Design-Build Team’s risk, the Coast Guard Permit application may be submitted simultaneously with the US Army Corps of Engineers Section 404 Permit, the NC Department of Natural Resources (DENR), Division of Water Quality (DWQ) Section 401 Water Quality Certification and the Division of Coastal Management Major Development Permit. The Design-Build Team is cautioned that comments / conditions of the 404, 401 and / or CAMA Permits may require

modifications to the Coast Guard Permit application, resulting in potential delays. No request for additional contract time or compensation will be allowed as a result of these delays. All construction impacts, including but not limited to those associated with work bridges, falsework, staging areas and plans for the existing US 17 bridge, shall be clearly noted and itemized in the US Coast Guard Permit. The Design-Build Team shall develop one US Coast Guard Permit application for the Tar River Bridge. Specifically, Advance Approval will not be considered or obtained, or separate US Coast Guard Permit applications required, for the tributary crossings. The US Coast Guard Permit application shall be submitted to the State Alternative Delivery Systems Engineer. The Department will require 15 business days to review and comment on the application. Once all comments are resolved, the Department will submit the permit application. No work on the bridge over the Tar River and associated wetlands may begin prior to receipt of the US Coast Guard Permit.

Construction Phase – Prior to beginning any construction activities on the Tar River Bridge, the Design-Build Team shall provide the Coast Guard a construction schedule for the entire bridge. During construction, the Design-Build Team shall adhere to all Federal Bridge Statutes Governing Bridges. These Statutes include, but are not limited to the requirement that the Design-Build Team shall obtain written approval from the Coast Guard for any and all waterway closures, partial closures, or potential obstructions 30 days prior to closure or obstruction. It shall be the Design-Build Team’s responsibility to accommodate all possible navigational access and obtain the aforementioned written approval. The Design-Build Team shall notify, and coordinate with, the Coast Guard regarding all closures or obstructions as early as possible. The Design-Build Team shall concurrently submit all correspondence, including but not limited to closure requests, to the US Coast Guard, the State Alternative Delivery Systems Engineer and the Resident Engineer.

Regulatory – The Design-Build Team shall be responsible for ensuring that construction occurs in a safe and orderly manner. The Design-Build Team shall be solely responsible for criminal penalties, regulatory fines and liability associated with negligence and / or failure to adhere to the Federal Bridge Statutes Governing Bridges.

Other Permits

NCDOT has completed the application for a Nationwide Permit #6. Any additional geotechnical investigations or test pile installations the Design-Build Team desires to complete prior to, or during, construction shall be permitted under a new or modified Nationwide Permit #6. It is the Design-Build Team’s responsibility to prepare the permit application and obtain approval from PDEA. NCDOT will then submit the permit application to the agencies as needed.

As noted in the “Hydraulics Scope of Work”, the Design-Build Team shall obtain a State Stormwater Permit.

As noted in the Project Special Provisions, the Design-Build Team shall be responsible for coordinating all permanent and temporary construction activities with the FAA and Warren Field Airport and obtaining all required permits.

Mitigation Responsibilities of the Design-Build Team

The Design-Build Team shall be responsible for examining and possibly providing on-site mitigation for R-2510B. See the “On-Site Mitigation Scope of Work” for details.

The Department has acquired compensatory mitigation for unavoidable impacts to wetlands and surface waters due to project construction from the Ecosystem Enhancement Program. This mitigation was based on the impacts identified in the planning process.

Any changes proposed by the Design-Build Team to any design or construction details provided to the team by the Department shall be approved by the Department prior to being submitted to the resource agencies for their approval.

Should additional jurisdictional impacts result from revised design / construction details, suitable compensatory mitigation for wetlands and/or streams shall be the sole responsibility of the Design-Build Team. Therefore, it is important to note that additional mitigation shall be approved by the agencies and such approval will require, at a minimum, the preparation and approval of a mitigation plan before permit modification(s) is / are approved and before construction commences.

The Design-Build Team shall analyze any new areas to be impacted that have not been analyzed during the NEPA process and preparation of permit applications. This analysis shall include performing all environmental assessments. These assessments shall require the Design-Build Team to engage the services of a competent environmental consultant to conduct a full environmental investigation to include, but not be limited to, Federally Listed Threatened and Endangered Species, wetlands, streams, avoidance and minimization in jurisdictional areas, compensatory mitigation, FEMA compliance, CAMA consideration and historical, archaeological, and cultural resources surveys in these areas. The environmental consultant shall obtain concurrence through PDEA-NEU from the United States Fish and Wildlife Service to document compliance with Section 7 of the *Endangered Species Act* for those species requiring such concurrence. In addition the Design-Build Team shall identify additional mitigation required, identify the amount of time the modification will take beyond the 16 month period, and the fulfillment of any other requirements that may be imposed by the permitting agencies to obtain the permit modification. Any contract extensions resulting from additional environmental assessments required by the Design-Build Team's design and /or construction details impacting areas outside those previously analyzed through the NEPA process shall be solely at the discretion of the Department.

If any staging areas are located outside the project right-of-way, the Design-Build Team shall engage the services of a competent environmental consultant to conduct a full environmental investigation to include, but not be limited to, Federally Listed Threatened and Endangered Species, wetlands, streams, avoidance and minimization in jurisdictional areas, compensatory mitigation, FEMA compliance, CAMA consideration and historical, archaeological, and cultural resources surveys in these areas.

Commitments

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize wetland impacts and to provide full compensatory mitigation of all remaining wetland impacts. Avoidance measures were taken during the planning and NEPA phases and minimization measures were incorporated as part of the preliminary project design. The Design-Build Team shall incorporate these avoidance and minimization features plus any minimization identified during the 4B and 4C process into the design.

All work by the Design-Build Team shall be accomplished in strict compliance with the plans submitted with the Section 404, 401, DCM, and US Coast Guard permit applications and in compliance with all conditions of the permits and certifications issued by the agencies. The

Design-Build Team shall provide each of its contractors and / or agents associated with the construction or maintenance of this project with a copy of the permits.

The Design-Build Team shall strictly adhere to these commitments, as well as others, including but not limited to, those made as part of the FEIS, ROD, all permits, and Merger 01 meetings.

Please specifically note Section 106 Project Commitments including, but not limited to:

- Tree removal along the right of way in front of the historic Joseph A. Beebe House shall be minimized and a tree-protection fence shall be erected during construction of the project.

Archaeology

According to the Project Commitments (i.e., Green Sheets, ROD, December 2004), the following archaeological commitments were made for the entire length of the R-2510 project corridor (specific sections have been noted):

- An underwater archaeology survey will be conducted prior to construction of the project (**R-2510B**). Fieldwork for an underwater archaeology survey has been completed. A final report will be provided to all short-listed teams.
- An intensive archaeological survey was conducted for the preferred corridor for Alternative B. Site 31BF340, a Middle Woodland limited activity location was determined eligible for listing in the National Register under Criterion D – Data. Data recovery will be conducted by the Department at this site prior to construction (**R-2510B**). Construction activities of any kind shall not take place within this location until all data recovery efforts have been completed by either the NCDOT Archaeology Unit, or one of their consultants. Every effort shall be made by the Design-Build Team to purchase as early in the process as possible the right-of-way (ROW) required to conduct said data recovery. Once ROW has been acquired, the NCDOT Archaeology Unit shall be notified in order to initiate data recovery efforts. After ROW acquisition, and notification of such acquisition, a minimum of six (6) months and a maximum of nine (9) months will be required for said data recovery efforts. The Department will not be held responsible for any delays attributable to this data recovery provided the data recovery efforts are completed prior to the nine (9) month timeframe. Notification of ROW acquisition should be made to individuals listed below.
- Six archaeological sites (cemeteries) located within the proposed right of way (31BF327, 31BF329, 31BF362, 31BF365, 31BF367, and 31BF378) are not considered eligible for the National Register but contain burials that shall be avoided during construction activities. Sites 31BF327 and 31BF329 are located on **R-2510A**. Sites 31BF362, 31BF365, 31BF367, and 31BF378 are located on **R-2510C**, with Site 31BF362 specifically located at the juncture of the **R-2510B** and **R-2510C** segments. Site 31BF337 (historic cemetery), located on **R-2510B**, shall be avoided during construction activities.

If the Design-Build Team discovers any previously unknown historic or archeological remains while accomplishing the authorized work, they will immediately notify NCDOT Staff Archaeologist and / or NCDOT Project Development Engineer, as listed below, who will initiate the required State / Federal coordination. A representative from Alternative Delivery Systems shall also be notified. All questions regarding these sites should be addressed to Mr. Matthew Wilkerson, NCDOT Archaeology (919) 715-1561, Mr. Paul J. Mohler, NCDOT Staff Archaeologist (919) 715-1555, or Mr. Brian Yamamoto, PE, NCDOT Project Development Engineer (919) 733-7844, ext. 265.

to the back of the cap, or on a double row of plumb piles or drilled piers. Do not consider lateral support from any fill placed around drilled piers behind abutment retaining walls when analyzing end bent stability. If fill is required around piles or drilled piers, install foundations before placing any fill.

D. Temporary Structures

Design temporary retaining structures, which include earth retaining structures and cofferdams, in accordance with the current allowable stress design AASHTO *Guide Design Specifications for Bridge Temporary Works* and the NCDOT Temporary Shoring for Maintenance of Traffic Special Provision. If Contractor chooses to use the NCDOT Standard Shoring, then submit the "Standard Shoring Selection Form" to the Resident Engineer for approval.

Design and construct temporary retaining walls in accordance with the applicable NCDOT *Project Special Provision*. For temporary retaining walls, do not place a barrier within 5 feet of the face of the wall. If the barrier is between 5 and 9 feet from the face of the wall, anchor the barrier in accordance with Roadway Standard Detail No. 1170.01.

III. CONSTRUCTION REQUIREMENTS

All construction and materials must be in accordance with the current NCDOT *Standard Specifications* and NCDOT *Project Special Provisions*. The D/B team is responsible for investigating and proposing remedial measures for any construction problems related to foundations, retaining walls, subgrades, settlement, slopes, and construction vibrations. The Geotechnical Engineering Unit will review these proposals.

The Design-Build Team is responsible for any damage or claim caused by construction, including damage caused by vibration (see Article 107-15 *NCDOT Standard Specifications for Roads and Structures*). The Design-Build Team is responsible for deciding what, if any, pre and post-construction monitoring and inventories need to be conducted to satisfy their liability concerns. Any monitoring and inventory work shall be performed by a qualified private engineering firm experienced in the effects of construction on existing structures.

Conduct proof rolling in accordance the *NCDOT Standard Specifications for Roads and Structures*, except use 35-ton proof roller.

To ensure proper subgrade stability, the Department will conduct the dynamic cone penetrometer (DCP) test after the subgrade is compacted and graded to within ½ inch of the final subgrade elevation. DCP testing does not replace density test requirements. The Department will conduct DCP testing within 2 weeks prior to placement of the base layer and after density requirements have been met. DCP tests will be conducted every 200 ft to a depth of 32". If the number of blows needed to reach the 32" depth equals or exceeds 30, the subgrade stability is acceptable. If the blow count is less than 30, submit a plan view of the failed area refined by the Department's decreased DCP test spacing of 50 ft. Include test locations and results on the plan view. Undercut and backfill with select granular material to meet the minimum blow count of 30. Soil stabilization fabric is required at the bottom of the undercut. The Design-Build Team may propose

alternative treatments for failed subgrade areas. Alternative treatments shall be submitted to the Geotechnical Engineering Unit for review and approval. If alternate treatments are not approved, the method of treatment will be undercut and backfill with select granular material.

The DCP testing will be performed in accordance with the specifications and procedures available through the following website:

<http://www.ncdot.org/doh/preconstruct/highway/geotech/supportserv/geopavement/>

In the event that subgrade that has passed DCP testing is used for hauling prior to placement of the base layer, the Department has the right to conduct additional DCP tests in these areas at no additional cost to the Department.

The prequalified geotechnical firm that did the foundation designs (foundation design firm) shall review the embankment monitoring data a minimum of once a month. Waiting periods may not be ended until less than 0.1 inches of settlement is measured over a period of four weeks.

The foundation design firm shall review and approve drilled pier construction sequences and all pile driving hammers before submitting for acceptance by the Geotechnical Engineering Unit.

Perform hammer approvals with GRLWEAP Version 2002 or later and in accordance with the latest edition of the *NCDOT Standard Specifications*. Provide pile driving inspection charts or tables for all approved pile hammers. A minimum of 30 blows per foot is required to verify the design bearing capacity with a minimum factor of safety of two. Stresses during driving may not exceed the limits outlined in the FHWA manual "*Design and Construction of Driven Pile Foundations*".

Perform Pile Driving Analyzer (PDA) testing to develop pile driving inspection charts or tables and to verify pile bearing capacity for each pile type and size and hammer to be used for pile installation. Provide PDA testing, and pile driving inspection charts or tables by a NCDOT pre-approved company. Meet the guidelines for NCDOT PDA reports from the Geotechnical Engineering Testing Contract for PDA test reports. To obtain a list of pre-approved Geotechnical Engineering Testing Contract companies to perform PDA testing and guidelines for PDA test report, contact the Geotechnical Engineering Unit Contract Administrator at 919-250-4088. PDA Testing Engineer must be a professional engineer registered in the State of North Carolina. Submit a complete PDA report sealed by the professional engineer who performed the test to the foundation design firm. The foundation design firm shall develop pile driving inspection charts or tables for approval by the Geotechnical Engineering Unit prior to pile installation.

For every 600 ft. of bridge length that includes pile bents or pile footings, perform a minimum of one (1) PDA test (dual bridges are counted as one structure) for each pile size, pile type or pile driving hammer. These PDA locations shall be spaced at approximately equal spaces throughout the portion of the bridges using such foundations. Provide additional PDA testing for any revisions to pile type, size or hammer previously approved. The locations of PDA test piles must be approved by the Geotechnical Engineering Unit prior to any PDA test. In addition, this correspondence shall note

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 drilled pier inspection forms. Pile driving records will be maintained by the Department. 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

UTILITIES COORDINATION SCOPE OF WORK**• Overview**

The Design-Build Team shall obtain the services of a Private Engineering Firm (PEF) knowledgeable in the NCDOT Utility Coordination Process, involved with utility relocation / installation and highway construction. The Design-Build Team shall be responsible for coordinating all utility relocations. Coordination shall include any necessary utility agreements when applicable. The NCDOT will be responsible for non-betterment utility relocation costs when the utility company has prior rights of way / compensable interest. The utility company will be responsible for the relocation costs if they can not furnish evidence of prior rights of way or a compensable interest in their facilities. The Design-Build Team will be responsible for determining the cost responsibility for the utility relocations. The Design-Build Team shall be responsible for all costs associated with utility relocations due to haul roads and / or any other temporary conditions resulting from the Design-Build Team's methods of operation or sequence of work. NCDOT will be the approving authority for all utility agreements and utility plans.

• Preparation for Relocating Utilities within the Existing or Proposed Highway Rights of Way

- I. The Design-Build Team will be required to use the guidelines as set forth in the following:
 - (A) *NCDOT Utility Manual - Policies & Procedures for Accommodating Utilities on Highway Rights of Way*
 - (B) *Federal Aid Policy Guide- Subchapter G, Part 645, Subparts A & B*
 - (C) *Federal Highway Administration's Program Guide, Utility Adjustments & Accommodations on Federal Aid Highway Projects*
 - (D) *NCDOT Construction Manual Section 105-8*
 - (E) *NCDOT Right of Way Manual - Chapter 16 Utility Relocations*
 - (F) *NCDENR Public Water Supply - Rules governing public water supply*
 - (G) *NCDENR Division of Water Quality - Title 15A - Environment and Natural Resources*
- II. The Design-Build Team shall be responsible for confirming the utility locations, confirming the type of facilities, identifying the utility owners and determining the cost responsibilities in order to coordinate the relocation of any utilities in conflict with the project.

SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY
TO PUBLIC

107-1 LAWS TO BE OBSERVED.

The Design-Builder shall keep himself fully informed of all Federal and State laws, all local laws, ordinances, and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority which may in any manner affect those engaged or employed in the work, or which in any way affect the conduct of the work. He shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall indemnify and hold harmless the Board of Transportation and the Department of Transportation and their agents and employees from any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, by the Design-Builder or by his agents and employees.

107-2 ASSIGNMENT OF CLAIMS VOID.

In accordance with G.S. 143-3.3, the Department will not recognize any assignment of claims by any Design-Builder.

107-3 PERMITS AND LICENSES.

The Design-Builder shall procure all permits and licenses except as otherwise specified; pay all charges, fees, and taxes; and give all notices necessary and incident to the due and lawful prosecution of the work.

For asphalt plants and concrete batch plants located on Department rights-of-way, apply for and obtain all environmental permits and licenses, including stormwater permits, for plants prior to placement within the project limits or elsewhere on NCDOT rights-of-way. Use proven Best Management Practices and equip all plants with such pollution control equipment and devices as is necessary to meet all applicable local, State, and Federal pollution requirements. Conduct compliance monitoring and report findings to each applicable environmental regulatory agency according to their required frequency.

107-4 PATENTED DEVICES, MATERIALS, AND PROCESSES.

If the Design-Builder employs any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. The Design-Builder and his surety shall indemnify and save harmless the Department from any and all claims for infringement by reason of the use of such patented design, device, material, process, trademark, or copyright, and shall indemnify and save harmless the Department from any costs, expenses, and damages which it may be obligated to pay at any time during the prosecution or after the completion of the work by reason of any infringement.

107-5 ENCROACHMENT ON RIGHT OF WAY.

Any individual, firm, or corporation wishing to encroach on highway right of way shall secure a written permit from the Department. The Design-Builder is not authorized to allow any individual, firm, or corporation to perform any work within the limits of the project unless such work has been authorized in writing by the Engineer.

When so directed by the Engineer, the Design-Builder shall make any repairs necessary due to such encroachments and such work will be paid for as extra work.

107-6 FEDERAL PARTICIPATION.

When the United States Government pays all or any portion of the cost of the work, the Federal laws authorizing such participation and the rules and regulations made pursuant to such laws shall be observed by the Design-Builder. The work will be subject to the inspection of the representative of such Federal agencies as are created for the administration of these laws. The Design-Builder shall have no right to make the Federal Government a party to any court action

cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the specifications.

109-03 FORCE ACCOUNT WORK

DESIGN

The actual costs for labor will be paid.

CONSTRUCTION

All force account work shall be performed as directed by the Engineer including the numbers and types of equipment, the numbers and classifications of labor and foremen, and material requirements.

All work to be paid for on a force account basis shall be paid for in the following manner:

- A) Labor.** For all authorized labor and foremen in direct charge of the specific operations, the Design-Build Team will receive the rate of base (actual) wages (or scale) actually being paid by the Design-Build Team for each hour that the labor and foremen are actually engaged in the specific force account work.

In addition to reimbursement for each hour that the labor and foremen are actually engaged in the specific force account work, the Design-Build Team may receive compensation for travel time to and from the project if and only if the labor and foremen needed are outside a 75 mile radius as included in Section 109-3(B). The base location will be established and approved by the Engineer prior to performing the specific force account work. If the approved labor and foremen travel to another project upon completion of the specific force account work, payment for travel time may not exceed the travel time that would have been required to return to the point of origin in accordance with Section 109-3(B). When travel time is approved by the Engineer, it shall be included in the total hours approved and worked for that specific week. The Engineer will approve the mode of travel.

Prior to beginning the specific force account work, the Design-Build Team shall submit in writing for the Engineer's approval a list of all wage rates applicable to the work. Approval will not be granted where these wage rates are not actually representative of wages being paid elsewhere on the project for comparable classes of labor performing similar work.

Payment for overtime will be allowed when approved by the Engineer prior to performing the specific force account work. Overtime for labor and foremen will be paid based on the company's policy for overtime payment. Verification of such payment will be tracked by submission of weekly payrolls as required on federal projects and as requested on all other projects. Failure to submit payrolls as required or requested shall act as a bar to the Design-Build Team for payment of overtime for labor and foremen. If the labor or foremen is employed partly on specific force account work and partly on other work, the amount of overtime to be reimbursed will be prorated based upon the number of hours worked on the specific force account work during the payroll period.

An additive amount equal to the Design-Build Team's actual labor burden rate, up to a maximum of 60 percent, will be paid to the Design-Build Team for all base (actual) wages paid to labor and foremen for the specific force account work. No additive will be provided for overtime payments. The labor burden rate(s) will include costs associated with the employee's actual base wages benefits, including FICA, unemployment contributions, Social Security and Medicare taxes and company fringe benefits. Company fringe benefits are the actual costs paid to, or on behalf of, workmen by reason of health and welfare benefits, pension fund benefits, or other benefits, when such amounts are required by prevailing wage laws generally applicable to the classes of labor employed on the work. The Design-Build Team's actual labor burden rate(s) shall be submitted to and approved by the Engineer prior to beginning the work. When the Design-Build Team cannot verify actual labor burden rate(s), an amount equal to 35 % percent of the total base (actual) wage paid for labor and foremen will be added to the total base wages paid to the Design-Build Team. These percentage additives will be full compensation for overhead, benefits, contingencies, and all other costs associated with labor for the specific force account work.

- (B) Subsistence and Travel Allowances.** The Design-Build Team may receive payment for actual costs paid to, or on behalf of, labor and foremen by reason of subsistence and travel allowances under certain circumstances. When the Design-Build Team is required to mobilize a crew for specific operations, the Engineer may approve reimbursement of subsistence, including meals and overnight lodging, if the specific force account work is determined to be outside of the scope of the original contract and the distance from the Design-Build Team's base location to the project is more than 75 miles. Should the Design-Build Team utilize forces currently working at the location of the specific force account work, the Engineer may approve the payment of subsistence, including meals and overnight lodging, if the work is determined to be outside of the scope of the original contract, the forces currently working at the location have routinely stayed overnight during the life of the project, and the distance from the Design-Build Team's base location to the project is more than 75 miles. The Engineer will approve the mode of travel.

Payment will be made to the Design-Build Team for subsistence, including meals and overnight lodging, paid in accordance with the Design-Build Team's usual policy for authorized labor and foremen in direct charge of the specific operations.

Subsistence will be limited to the lesser of actual amount paid or the current maximum in-state rate for State employees. Verification of such costs paid to, or on behalf of, labor and foremen shall be submitted to the Engineer. If the labor or foremen are partly employed on specific force account work and partly on other work, the amount of subsistence to be reimbursed will be prorated based upon the number of hours worked on the specific force account work during the payroll period.

- (C) Materials.** For materials authorized and accepted by the Engineer and used, the Design-Build Team will receive the actual cost of such materials, including sales tax and transportation charges paid by him (exclusive of equipment rentals as hereinafter set forth), to which costs 15% percent will be added. The Design-Build Team shall furnish records to the Engineer to verify the quantities of materials used in the specific force

account work, prices of the materials, sales tax, and costs of transportation for the materials.

If materials used in the specific force account work are not specifically purchased for such work but are taken from the Design-Build Team's stock, the Design-Build Team shall furnish an affidavit certifying that such materials were taken from his stock, the quantity was actually used in the specific force account work, and the price and transportation cost claimed represent the actual cost to the Design-Build Team.

- (D) Equipment.** For all equipment authorized by the Engineer to be used on the specific force account work the Design-Build Team will receive rental payment. Hourly rental rates paid for equipment in use, which is Design-Build Team owned or rented from another Design-Build Team, will not exceed 1/176th of the monthly rate listed in the *Rental Rate Blue Book for Construction Equipment* that is current at the time the specific force account work is performed.

In determining the hourly rate, the regional adjustment factor and the rate adjustment factor for equipment age, as set forth in the current *Blue Book*, will both be applied to the basic rate. An additive payment equal to 100% percent of the *Blue Book* estimated operating cost per hour will also be paid for all hours equipment is in use. This additive payment will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling, and oiling), small tools, and other incidentals.

If rental rates for the equipment actually being used in the work are not listed in the *Blue Book*, the Design-Build Team will receive the prevailing rental rates being paid for such equipment in the area where the project is located. An additive payment equal to 15 percent of the prevailing rental rate will also be paid for all hours equipment is in use. This additive payment will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling, and oiling), small tools, and other incidentals.

Hourly rental rates for equipment held in ready as directed by the Engineer will be 50 percent of the rate paid for equipment in use. An additive payment will not be made for equipment held in ready. When equipment is in use less than 40 hours for any given week and is held in ready as directed by the Engineer, payment for held in ready time will be allowed for up to 40 hours, less hours in use. When payment is made for equipment held in ready as directed by the Engineer, the payment for held in ready time will be allowed for up to 8 hours in a day less hours in use.

Hourly rental rates for idle equipment held in ready in accordance with Article 104-4 will be 50 percent of the rate paid for equipment in use. Hourly rental rates for idle equipment held in ready in accordance with Article 104-4 which that is rented from a commercial rental agency will be paid for in accordance with the invoice rate for the equipment. An additive payment will not be made for idle equipment. When equipment is in use less than 40 hours for any given week and is held in ready as idle equipment in accordance with Article 104-4, payment for idle equipment time will be allowed for up to 40 hours, less hours in use. When payment is made for idle equipment held in ready in accordance with Article 104-4, the payment for idle equipment time held in ready will be allowed for up to 8 hours in a day less hours in use.

In the event the Design-Build Team does not possess or have readily available such equipment necessary for the performance of the work and such equipment is rented from a commercial rental agency, the Design-Build Team will receive payment based on the approved invoice rate for the equipment.

An additive payment equal to 15 percent of the calculated hourly invoice rate will also be paid for all hours equipment is in use. This additive payment will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling and oiling), small tools, and other incidentals. The commercial rental agency shall not be the Design-Build Team or an affiliate of the Design-Build Team.

No compensation will be made for the use of equipment not authorized by the Engineer.

The Design-Build Team will be reimbursed for the actual transportation costs for equipment which the Design-Build Team is directed to furnish. Such payment will be limited to transportation costs from the nearest source of available equipment. If equipment is not returned to the point of origin, but is transported to another location, transportation costs will not exceed the cost of return to the point of origin. Rental for such equipment will not be paid when the equipment is being transported. The Design-Build Team shall furnish records to the Engineer to verify the actual transportation costs for equipment.

The Design-Build Team shall provide to the Engineer for approval a listing of all equipment and attachments to be utilized in the prosecution of the work. The list shall include the manufacturer's name, type, model, serial number, and year of manufacture. The list shall also include the invoice rate for equipment rented from a commercial rental agency. It shall be the Design-Build Team's responsibility to verify the age of the equipment in a manner acceptable to the Engineer. Where such verification is not available, the rate adjustment factor used will be for the oldest equipment listed in the Blue Book.

The above prices and payments will be full compensation for fuel, lubricants, cutting edges, all repairs, and all other operating and maintenance costs other than operator's wages.

- (E) Owner-Operated Equipment.** For all owner-operated equipment authorized by the Engineer to be used on the specific force account work, the Design-Build Team will receive rental payment equal to the existing contract rate(s) with no additive as provided in Items 109-3(A), 109-3(B), 109-3(D) and 109-3(H). When existing contract rate(s) have not been established, the Design-Build Team shall submit the proposed rate(s) for the owner-operated equipment with sufficient documentation as deemed necessary by the Engineer for approval.

For fully maintained and operated trucks used for the specific force account work, the Design-Build Team will receive rental payment equal to the existing contract rate(s) with no additive as provided in Items 109-3(A), 109-3(B), 109-3(D) and 109-3(H). When existing contract rate(s) have not been established, the prevailing industry rate(s) for fully maintained and operated trucks will be used for the specific force account work with approval of the Engineer.

For the purposes of force account work, owner-operated equipment, including fully maintained and operated trucks, will be considered subcontractors. No additional additives other than those allowed under Item 109-3(G) will be allowed.

- (F) Miscellaneous.** No additional allowance will be made for general superintendence, the use of manually powered tools, or other costs for which no specific allowance is herein provided.
- (G) Subcontracting.** For administrative costs of the Design-Build Team in connection with approved subcontract work at any level and the use of owner-operated equipment at any level, the Design-Build Team will receive an additive amount in accordance with the rate schedule shown below of the total cost of such subcontracted work. The total cost of such subcontracted work will include applicable labor and additive, bond and insurance, materials, and equipment costs incurred by the subcontractor; overhead and profit computed in accordance with Items 109-3(A) through 109-3(D), 109-3(F), 109-3(H) and 109-3(I); and costs for owner-operated equipment, including fully maintained and operated trucks in accordance Item 109-3(E). No additional additives will be allowed.

<u>Total Cost of Subcontract Work</u>	<u>Rate Schedule</u>
\$0 - \$10,000	10%
Above \$10,000	\$1,000 + 5% Above \$10,000

- (H) Overhead and Profit.** An additive payment equal to 10 percent of the specific force account total will be paid to the Design-Build Team. This specific force account total is exclusive of the portion of the work included with Item 109-3(C), Materials, Item 109-3(E), Owner-Operated Equipment and Item 109-3(G), Subcontracting. This payment will be full compensation for all costs including but not limited to home office and field overhead, burdens, and profit associated with the specific force account work.

An additive payment equal to 10 percent of the specific force account total for approved subcontract work will also be paid to the subcontractor for overhead and profit. This specific force account total for subcontract work is exclusive of the portion of the work included with Item 109-3(C), Materials and Item 109-3(E), Owner-Operated Equipment. This payment will be full compensation for all costs including but not limited to home office and field overhead, burdens, and profit associated with the specific force account subcontracted work. No additional additives will be allowed.

- (I) Bond and Insurance.** For property damage and liability insurance premiums and bond premiums on the specific force account work, the Design-Build Team will receive the actual cost. The Design-Build Team shall furnish satisfactory evidence to the Engineer of the rate or rates paid for such insurance and bond.

An annualized composite percentage may be used to determine the cost for bond and insurance. Insurance costs will be limited to the direct costs associated with the specific force account work. The Design-Build Team shall furnish satisfactory evidence to the Engineer of the annualized composite percentage for the bond and insurance.

- (J) General.** The Engineer will maintain the payment records of work performed on a force account basis. The Design-Build Team shall compare records of work with the Engineer at the end of each day on which such work is in progress.

Any contention the Design-Build Team may have for an extension in the completion date, intermediate completion date, or intermediate completion time, due to performance of specific force account work will be considered as provided in Article 108-10.

109-4 PARTIAL PAYMENTS.

(A) General:

Partial payments will be based upon progress estimates prepared by the Engineer at least once each month on the date established by the Engineer. Partial payments may be made twice each month if in the judgment of the Engineer the amount of work performed is sufficient to warrant such payment. No partial payment will be made when the total value of work performed since the last partial payment amounts to less than \$10,000.00. Partial payments will be approximate only and will be subject to correction in the final estimate and payment.

Partial payments for the lump sum design-build price shall be based on a certified Schedule of Payments submitted by the successful Design-Build proposer and approved by the Engineer. The certification shall indicate the Design-Build proposer has reviewed the information submitted and the information accurately represents the work performed for which payment is requested. The certified Schedule of Payments shall be submitted not less than 30 calendar days after the date of award. Each item on the certified Schedule of Payments shall be assigned a cost and quantity and shall be identified as an activity on the project schedule. A revised certified Schedule of Payments shall be submitted with each update of the CPM of Record as described in Article 108-2 or when requested by the Engineer. A certified copy of the Table of Values shall also be submitted with each payment request. The certification of the Table of Values shall indicate the Design-Builder has reviewed the information submitted and the information accurately represent the materials for the work performed for which payment is requested. The certification for the Table of Values shall also indicate the Design-Builder has performed material sampling and testing in accordance with the contract requirements.

The Engineer will withhold an amount sufficient to cover anticipated liquidated damages as determined by the Engineer.

109-5 PAYMENT FOR MATERIAL TO BE USED IN THE WORK.

(A) Material Delivered on the Project:

When so authorized by the Engineer, partial payments will be made up to 90 percent of the delivered cost of materials on hand that are to be incorporated in the work, provided that such materials have been delivered on or in close proximity to the project and stored in an acceptable manner. Material payments will be allowed when 90 percent of the accumulated costs of unpaid invoices are equal to or greater than \$10,000.00, materials have been inspected and approved by the Engineer, and the documents listed in Subarticle 109-5(C) have been furnished to the Engineer.

(B) Material Stored at Fabricator's Facilities or Design-Build Team's Facilities:

FUEL USAGE FACTOR CHART AND ESTIMATE OF QUANTITIES

<u>Description of Work</u>	<u>Units</u>	<u>Fuel Usage Factor Diesel #2</u>	<u>Estimate of Quantities</u>
Unclassified and Borrow Excavation	Gal/CY	0.29	_____ cy
Aggregate Base Course	Gal/Ton	0.55	_____ tons
Aggregate for Cement Treated Base Course			
Portland Cement for Cement Treated Base Course			
Asphalt Concrete Base Course	Gal/Ton	2.90	_____ tons
Asphalt Concrete Intermediate Course			
Asphalt Concrete Surface Course			
Open-Graded Asphalt Friction Course			
Sand Asphalt Surface Course, Type F-1			
Portland Cement Concrete Pavement	Gal/CY	0.98	_____ cy
Structural Concrete			
Concrete Shoulders Adjacent to Pavement			

The above quantities represent a reasonable estimate of the total quantities anticipated, for each item, as pertaining to fuel price adjustments, and is representative of the design proposed in the Technical Proposal submitted under separate cover.

or

The Design-Build Team elects not to pursue reimbursement for Fuel Price Adjustments on this project.