STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 17, 2008

Addendum No. 2

RE: Contract ID: C201917
TIP Number: R-2823
County: Nash
Project Description: Rocky Mount Northern Connector from Hunter Hill Road (SR 1604) to US 301

May 20, 2008 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:

The first two pages of the TABLE OF CONTENTS have been revised. Please void the first two pages of the TABLE OF CONTENTS and staple the revised first two pages of the TABLE OF CONTENTS thereto.

Page 5 of the SUBMITTAL OF QUANTITIES, FUEL BASE INDEX PRICE AND OPT-OUT OPTION PROJECT SPECIAL PROVISION (PSP) has been revised. Please void Page 5 in your proposal and staple the revised Page 5 thereto.

Page 24 of the TWELVE MONTH GUARANTEE PSP has been revised. Please void Page 24 in your proposal and staple the revised Page 24 thereto.

Page 34 of the PRICE ADJUSTMENTS FOR ASPHALT BINDER PSP has been revised. Please void Page 34 in your proposal and staple the revised Page 34 thereto.

Page 38 of the GENERAL SECTION has been revised. Please void Page 38 in your proposal and staple the revised Page 38 thereto.

Pages 52 – 54 of the ROADWAY SCOPE OF WORK have been revised. Please void Pages 52 - 54 in your proposal and staple the revised Pages 52 - 54 thereto.

Page 58 of the PAVEMENT MANAGEMENT SCOPE OF WORK has been revised. Please void Page 58 in your proposal and staple the revised Page 58 thereto.

Page 86 of the TRAFFIC CONTROL AND PAVEMENT MARKINGS SCOPE OF WORK has been revised. Please void Page 86 in your proposal and staple the revised Page 86 thereto.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
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LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-1
1020 BIRCH RIDGE DRIVE
RALEIGH NC

Pages 101 - 102 of the ITS & SIGNALS SCOPE OF WORK have been revised. Please void Pages 101 - 102 in your proposal and staple the revised Pages 101 - 102 thereto.

Pages 108 - 110 of the EROSION AND SEDIMENTATION CONTROL SCOPE OF WORK have been revised. Please void Pages 108 - 110 in your proposal and staple the revised Pages 108 - 110 thereto.

Page 121 of the UTILITY CONSTRUCTION SCOPE OF WORK has been revised. Please void Page 121 in your proposal and staple the revised Page 121 thereto.

Sincerely,

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

cc:
Mr. Steve Varnedoe, PE
Mr. Jon Nance, PE
Ms. Deborah Barbour, PE
Mr. Victor Barbour, PE
Mr. Art McMillan, PE (w/)
Mr. Clarence Coleman, PE (w/3)
Mr. Phillip Harris, PE
Mr. Ed Lewis
Mr. Ron Hancock, PE
Mr. David Harris, PE
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Mr. Michael McCullough (w/)
Mr. Rodger Rochelle, PE (w/)
Mr. Ellis Powell, PE (w/)
Mr. Jay Bennett, PE
Mr. Andy Gay, PE (w/)
Ms. Betty Rawls (w/)
TRC Members (w/)
Ms. Anne Gamber, PE – Hydraulics (w/)
Dr. K.J. Kim, PE – Geotechnical (w/)
Dr. Clark Morrison, PE - Pavement Design (w/)
Mr. Barney Blackburn, PE - Erosion & Sed. Cont. (w/2)
Ms. Jackie Armstrong, PE – Roadway (w/)
Mr. Mitch Hendee, PE - Traffic Control (w/)
Mr. David Boyd - Utility Coordination (w/)
Mr. Lonnie Brooks, PE - Structures / Railroad (w/)
Mr. Cyrus Parker, PE - Geo-Environmental (w/)
Mr. Tim McFadden – Signing (w/)
Ms. Tammy Stewart - Public Information (w/)
Mr. Neal Strickland - Right-of-Way (w/)
Ms. Elizabeth Lusk - Environmental Permits (w/)
Ms. Leilani Paugh - On-Site Mitigation (w/)
Mr. Tim Williams, PE - Signal Design (w/)
Mr. Jimmy Goodnight, PE – Roadway (w/)
Mr. Roger Worthington, PE – Utility Construction (w/)
Mr. Calvin Leggett, PE
Mr. Doug Allison
Dr. Judith Corley-Lay, PE
Mr. Njoroge Wainaina, PE
Mr. Dave Henderson, PE
Mr. Ron King, PE
Mr. Greg Perfetti, PE
Mr. Don Lee
Ms. Pamela L. Alexander, PE
Mr. Greg Thorpe, PE
Mr. Stuart Bourne, PE
Mr. Tony Wyatt, PE (w/)
Mr. Wayne Johnson, PE (w/)
Mr. Robert Memory, PE (w/)
File

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STANDARD SPECIAL PROVISIONS (YELLOW SHEETS)

SUBMITTAL OF QUANTITIES, FUEL BASE INDEX PRICE AND OPT-OUT OPTION:

(08-21-07) DB1 G43

(A) **Submittal of Quantities**

Submit quantities on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet, located in the back of this RFP, following the Itemized Proposal Sheet.

The Design-Build Team shall prepare an Estimate of Quantities that they anticipate incorporating into the completed project and upon which the Price Proposal was based. The quantity breakdown shall include all items of work that appear in the *Fuel Usage Factor Chart and Estimate of Quantities* sheet. Only those items of work which are specifically noted in the Fuel Usage Factor Chart will be subject to fuel price adjustments. The quantity estimate submitted in the Price Proposal shall be the final total quantity for which fuel price adjustments will be made for each item, regardless of supplemental agreements. The Department will review the Estimate of Quantities to ensure its reasonableness to the proposed design. Agreement of quantities will be a prerequisite prior to execution of the contract.

Submittal The submittal shall be signed and dated by an officer of the Design-Build Team. The information shall be copied and submitted in a separate sealed package with the outer wrapping clearly marked "Fuel Price Adjustment" and shall be delivered at the same time and location as the Technical and Price Proposal. The original shall be submitted in the Price Proposal.

Trade Secret Information submitted on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet will be considered "Trade Secret" in accordance with the requirements of G.S. 66-152(3) until such time as the Price Proposal is opened.

(B) **Base Index Price**

The Design-Build Team's Estimate of Quantities will be used 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. The Design-Build Team shall certify that the quantities are reasonable for the specified period. The base index price for DIESEL #2 FUEL is **$ 3.2404** per gallon.

(C) **Opt Out of Fuel Price Adjustment**

If the Design-Build Team elects not to pursue reimbursement for Fuel Price Adjustments, a quantity of zero shall be entered for all quantities in the *Fuel Usage Factor Chart and Estimate of Quantities* and the declination box shall be checked. Failure to complete this form will mean that the Design-Build Team is declining the Fuel Price Adjustments for this project.

limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Design-Build Team would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, on-site mitigation, existing and proposed water and sanitary sewer lines, to the extent as outlined in the Utility Construction Scope of Work, and sign structures. This provision will not be used as a mechanism to force the Design-Build Team to return to the project to make repairs or perform additional work that the Department would normally compensate the Design-Build Team for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

Appropriate provisions of the payment and / or performance bonds shall cover this guarantee for the project. In addition, failure on the part of the responsible entity(ies) of the Design-Build Team to perform guarantee work within the terms of this provision shall be just cause to remove the responsible entity(ies) from the Department's corresponding prequalified list. The Design-Build Team will be removed for a minimum of 6 months and will be reinstated only after all work has been corrected and the Design-Build Team requests reinstatement in writing.

To ensure uniform application statewide the Division Engineer will forward details regarding the circumstances surrounding any proposed guarantee repairs to the Chief Engineer for review and approval prior to the work being performed.

OUTSOURCING OUTSIDE THE USA

(5-16-06) DB1 G150

All work on consultant contracts, services contracts, and construction contracts shall be performed in the United States of America. No work shall be outsourced outside of the United States of America.

Outsourcing for the purpose of this provision is defined as the practice of subcontracting labor, work, services, staffing, or personnel to entities located outside of the United States.

The North Carolina Secretary of Transportation shall approve exceptions to this provision in writing.

CLEARING AND GRUBBING

(3-22-07) DB2 R01

With the exception of areas with Permanent Utility Easements, perform clearing on this project to the limits established by Method "III" shown on Standard No. 200.03 of the *2006 NCDOT Roadway Standard Drawings*. In areas with Permanent Utility Easements clearing shall extend to the Right of Way.

PRICE ADJUSTMENTS FOR ASPHALT BINDER

(03-22-07) DB6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the *2006 Standard Specifications.*

When it is determined that the monthly selling price of asphalt binder on the first business day of the calendar month during which the last day of the partial payment period occurs varies either upward or downward from the Base Price Index, the partial payment for that period will be adjusted. The partial payment will be adjusted by adding the difference (+ or -) of the base price index subtracted from the monthly selling price multiplied by the total theoretical quantity of asphalt binder authorized for use in the plant mix placed during the partial payment period involved.

The base price index for asphalt binder for plant mix is **$ 406.54** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on April 1, 2008.

FIELD OFFICE (Lump Sum):

(6-1-07) DBI 8-01

Description

This work consists of furnishing, erecting, equipping, and maintaining a field office for the exclusive use of Department Engineers and Inspectors at a location on the project approved by the Engineer. Provide a field office that complies with the current A.D.A. Design and Accessibility Standards, the National Electric Code, local, state, and federal regulations, and the following:

Procedures

The field office and equipment shall remain the property of the Design-Build Team upon completion of the contract. The field office must be separated from buildings and trailers used by the Design-Build Team and be erected and functional as an initial operation. Failure to have the field office functional when work first begins on the project will result in withholding payment of the Design-Build Team's monthly progress estimate. The field office must be operational throughout the duration of the project and be removed upon completion and final acceptance of the project.

Provide a field office that is weatherproof, tightly floored and roofed, constructed with an air space above the ceiling for ventilation, supported above the ground, has a width of at least 10 feet, and the floor-to-ceiling height that is at least 7 feet 6 inches. Provide inside walls and a ceiling that are constructed of plywood, masonite, gypsum board, or other suitable materials. Have the exterior walls, ceiling, and floor insulated.

Guidelines", which by reference are incorporated and made a part of this contract. All submittals shall be made simultaneously to the State Alternative Delivery Engineer and the Resident Engineer. The Department will not accept subsequent submittals until prior submittal reviews have been completed for that item. The Design-Build Team shall inform the State Alternative Delivery Engineer in writing of any proposed changes to the NCDOT preliminary designs, Technical Proposal and / or previously reviewed submittals and obtain approval prior to incorporation. The Design-Build Team shall prioritize submittals in the event that multiple submittals are made based on the current schedule. All submittals shall include pertinent Special Provisions. No work shall be performed prior to Department review of the design submittals.

OVERVIEW

The Design-Build Project, R-2823, is the Rocky Mount Northern Connector in Nash County. The project extends from Hunter Hill Road (SR 1604) to US 301 on new location. The total project length is approximately 4.6 miles. The proposed improvements consist of a four-lane divided facility with partial control of access.

Project services shall include, but are not limited to:

- **Design Services** – completion of construction plans, including Record Drawings
- **Construction Services** – necessary to build and ensure workmanship of the designed facility
- **Permit Preparation / Application** - development of all documents for required permits
- **Right of Way** – acquisition of right of way necessary to construct project

The EA / Draft Section 4(f) Evaluation was approved on October 4, 2006
The FONSI was approved on October 5, 2007

Construction Engineering Inspection will be provided by the NCDOT Division personnel.

GENERAL SCOPE

The scope of work for this project includes design, construction and management of the project. The design work includes all aspects to construct approximately 4.6 miles of a four-lane divided facility. The designs shall meet all appropriate latest versions of *AASHTO Policy on Geometric Design of Highways and Streets*, *AASHTO LRFD Bridge Design Specifications, Manual of Uniform Traffic Control Devices,* and all NCDOT design policies that are current as of the Technical and Price Proposal submission date or the Best and Final Offer submission date.

Construction shall include, but not be limited to, all necessary clearing, grading, roadway, drainage, structures, water and sanitary sewer line coordination, relocation and construction, utility coordination of private facilities, and erosion and sediment control work items for the proposed four-lane facility and installation of the control of access fence. Construction engineering and management shall be the responsibility of the Design-Build Team. Construction shall comply with 2006 *NCDOT Standard Specifications for Roadways and Structures* and any special provisions.

- The western leg of the intersection shall incorporate a single through lane in each direction, an exclusive eastbound left turn lane, and an exclusive eastbound right turn lane. The median width, including the offset left turn lane, shall be 23 feet wide at the intersection throat. A concrete monolithic island shall be provided.

- The eastern leg of the intersection shall incorporate a single through lane in each direction, an exclusive westbound right turn lane and an exclusive westbound left turn lane. The right turn lane shall be 14 feet wide. Throughout the aforementioned turn lane limits, the median width, including the offset left turn lane, shall be 23 feet wide. A concrete monolithic island shall be provided.

- The northern leg of the intersection shall incorporate dual through lanes in each direction, an exclusive southbound right turn lane and dual exclusive southbound left turn lanes. Access to the inside southbound left turn lane shall be prohibited through the installation of tubular markers. (Reference the Traffic Control and Pavement Markings Scope of Work.) The median width, including the dual left turn lanes, shall be 30 feet wide. A concrete monolithic island shall be provided.

- The southern leg of the intersection shall incorporate dual southbound and northbound through lanes, an exclusive northbound left turn lane and an exclusive northbound right turn lane. The outside northbound and southbound lanes shall be 14 feet wide. The outside southbound through lane shall extend a minimum of 500 feet beyond the intersection, then transition into a lane drop that adheres to current NCDOT guidelines and standards. The median width, including the left turn lane, shall be 30 feet wide with adjacent 2'-6" mountable curb and gutter.

- The Design-Build Team shall design and construct 2-6" curb and gutter (10-foot berm, 14-foot berm with guardrail) through the sections of full typical section along the southern leg of Winstead Avenue and through the sections of full typical section along the eastern leg of Hunter Hill Road (north side only). Sidewalk is not required on Winstead Avenue or Hunter Hill Road.

- For those parcels that require right of way / easement acquisition as part of this project, the Design-Build Team shall be responsible for acquisitions that accommodate the U-3621 and U-4019 improvements and relocate utilities accordingly. (Reference the Right of Way, Utilities Coordination and Utility Construction Scopes of Work.)

- The Design-Build Team shall design and construct US 301 to adhere to the Department's standard divided facility requirements.

- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct –Y– Lines, providing access, widening and improvements as indicated on the R-2823 Design Public Workshop Map and the U-3621 and U-4019 Design Public Hearing Maps provided by the Department. The limits of –Y– Line construction shall be of sufficient length to tie to existing based upon the current NCDOT guidelines and standards.

- To the extent possible without impacting existing underground utilities, the Design-Build Team shall completely remove the existing roadway and drainage structures within the entire length of the proposed abandoned sections of Woodruff Road and Fenner Road.

- The Design-Build Team shall be responsible for designing and removing the first existing median opening along US 301 located south of the proposed Rocky Mount Northern Connector / US 301 intersection. The Design-Build Team shall restore the median to match the adjacent typical section.

- Along the –L– Line, the Design-Build Team shall design and construct minimum nine-foot outside shoulders, four-foot of which shall be full depth paved shoulders. Along the –L- Line, the Design-Build Team shall design and construct either 2'-6" or 2'-9" mountable curb and gutter, in accordance with the special details provided by the Department, along a grass median. The total median width shall be 30 feet.

- Functional classifications that have a defined usable shoulder width shall have the appropriately wider overall shoulder width.

- The Design-Build Team shall design and construct a minimum of two dual-direction median U-Turn bulb-outs not shown on the R-2823 Design Public Workshop Map. One U-Turn bulb-out shall be located between NC 43 (Benvenue Road) and Peele Road and the other shall be located between NC 48 and relocated Fenner Road. The additional U-Turn bulb-outs shall not impact jurisdictional areas. The Design-Build Team shall indicate in the Technical Proposal the number, location and impacts of the proposed additional median U-Turn bulb-outs.

- Milled rumble strips will not be required.

- The Design-Build Team shall design and construct bridge rail offsets as indicated in the NCDOT *Roadway Design Manual* or that are equal to the approach roadway paved shoulders, whichever is greater. Bridge rail offsets for long bridges may be reduced from the aforementioned requirement in accordance with the NCDOT *Roadway Design Manual.*

- Concurrence Point 4A, Avoidance and Minimization, has been reached with the Environmental Agencies. Any variations in the Department's proposed design and / or construction methods that nullify Concurrence Point 4A and / or require additional coordination with the Environmental Agencies shall be the sole responsibility of the Design-Build Team. The Department shall not allow any contract time extensions associated with this additional coordination. (Reference Environmental Permits Scope of Work).

- The Design-Build Team shall design and construct resurfacing grades for all roadways impacted by construction, excluding haul roads. At a minimum, the Design-Build Team shall resurface all lanes and shoulders of an undivided facility throughout the limits of all proposed widening and construction. At a minimum, the Design-Build Team shall resurface each one-way roadway of a divided facility throughout the limits of the one-way roadway widening and construction, allowing varying resurfacing limits for the opposing directions of travel. Additionally, the Design-Build Team shall resurface all existing facilities to the limits of pavement marking obliterations / revisions. The Design-Build Team shall design and construct grades that adhere to the design criteria and standards, providing all required pavement wedging. (Reference the Pavement Management Scope of Work)

- The maximum allowable permanent cut and fill slope shall be 3:1 unless noted otherwise elsewhere in this RFP.

- The Design-Build Team shall inform the State Alternative Delivery Engineer, in writing, of any proposed changes to the NCDOT preliminary design, previously reviewed submittals or the Design-Build Team's Technical Proposal and obtain approval prior to incorporation. The Design-Build Team shall note in the Technical Proposal any proposed deviations to the R-2823 Design Public Workshop Map provided by the Department. The Design-Build Team shall be responsible for any activities, as deemed necessary by the Department or the FHWA, resulting from changes to the NCDOT preliminary design, including but not limited to, public involvement and NEPA re-evaluation. The Department shall not honor any requests for additional contract time or compensation for completion of the required activities resulting from changes to the NCDOT preliminary design.

- No Design Exceptions shall be allowed for the proposed four-lane divided facility. NCDOT prefers not to have design exceptions for the –Y– Lines. 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 into the Final Plans, the Design-Build Team must obtain prior conceptual approval from the State Alternative Delivery Engineer 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 for all parcels, as directed by the 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 developed by the Design-Build Team. The Design-Build Team shall develop Structure Recommendations that adhere to the format noted in the March 25, 2003 and September 1, 2004 memos from Mr. Jay Bennett, PE, State Roadway Design Engineer.

- The Design-Build Team shall be responsible for the sound barrier wall design and construction for the walls listed in the approved Final Design Noise Report, including all geotechnical investigations necessary to design the foundations. The sound barrier walls shall be located on the right of way line. The Design-Build Team shall be responsible for the wall envelope details. 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 Final Design Noise Report will be provided to the Design-Build Team to assist in their determination of anticipated additional noise impacts on current receptors due to a design change. If adjustments to, or addition of, sound barrier walls are required as a result of design deviations, the Design-Build Team shall be responsible for all costs associated with the adjustments and / or additions.

pavement designs are selected, the Design-Build Team shall stay with the selected option throughout the project. The Design-Build Team shall specify the pavement options to be used in the Technical Proposal.

The Design-Build Team shall resurface the existing mainline pavement with a minimum 3.0" S9.5B. The Design-Build Team shall resurface the existing -Y- Lines pavement with a minimum pavement depth that equals the full thickness of surface course as provided in the table above. As an alternate to the –Y- Line resurfacing requirement noted above, the Design-Build Team may mill and replace 1.5" of surface course through the sections of -Y2- (NC 43) that require only pavement marking obliteration / revision. (Reference Roadway Scope of Work).

In areas where the existing paved shoulder is proposed to be incorporated into a permanent travel lane, the Design-Build Team shall be responsible for evaluating the existing paved shoulder regarding its suitability for carrying the projected traffic volumes. In the event that the existing paved shoulder is found to be inadequate, the Design-Build Team shall be responsible for upgrading the existing paved shoulder to an acceptable level or replacing the existing paved shoulder. The Design-Build Team shall submit their evaluation and proposed use of existing paved shoulders to the State Alternative Delivery Engineer for review and acceptance or rejection.

The Design-Build Team shall pave from the edge of the proposed paved shoulder to the face of guardrail with 6" of ABC (or 4" B25.0B) and at least one lift of S9.5B surface course. The ABC pavement design shall require a split seal or a prime coat at the normal application rates. In these areas, the Design-Build Team's installation of ABC or Black Base shall be consistent with the pavement type chosen for the specific roadway.

All driveways, up to the radius point, shall be constructed with the full-depth pavement design of the intersecting roadway. The entire impacted length of all non-concrete driveways with a 10% or steeper grade shall be constructed with 1.5" S9.5B and 8" ABC. Unless otherwise noted above, the Design-Build Team shall adhere to the following for all driveway construction:

For existing gravel and soil driveways, use 8" ABC
For existing asphalt driveways, use 1.5" S9.5B and 8" ABC
For existing concrete driveways, use 6" jointed concrete reinforced with woven wire mesh

The Design-Build Team shall be responsible for the design of all temporary pavements and for the evaluation of existing shoulders, roadways and haul roads regarding their suitability for carrying traffic during construction, if necessary. In the event that the existing shoulders and roadways are found to be inadequate for the proposed temporary traffic volumes and durations, the Design-Build Team shall be responsible for upgrading the pavement to an acceptable level. Temporary pavements shall be designed in accordance with the most recent version of the North Carolina DOT Pavement Design Procedure. Temporary pavement designs are to be submitted for review and comment using the contract submittal process. The expected duration for traffic on temporary pavement must be included as part of the submittal. (Reference Roadway Scope of Work)

Additional traffic control devices shall be required when hauling occurs across roadways.

The Design-Build Team shall include details in the Traffic Control Plans on how hauling will be conducted.

B. Lane and Shoulder Closure Requirements

The Design-Build Team shall not install more than 2.0 miles of lane closures on any roadway within the project limits, measured from the beginning of the merge taper to the end of the lane closure.

Within the project limits, the Design-Build Team shall not install more than one lane closure, in any one direction, on any roadway. For two-lane, two way roadways, a lane closure may be installed in opposing directions (maximum of one in each direction) as long as a minimum distance of four miles is maintained between the lane closure limits. For divided facilities, lane closures in opposing directions do not require the aforementioned separation.

The Design-Build Team shall remove lane closure devices from the lane when work is not being performed behind the lane closure or when a lane closure is no longer needed.

When personnel and / or equipment are working within 40 feet of an open travel lane, the Design-Build Team shall close the nearest open shoulder using Roadway Standard Drawing No. 1101.04, unless the work area is protected by an approved temporary traffic barrier or guardrail.

When personnel and / or equipment are working on the shoulder adjacent to an undivided facility and within 5 feet of an open travel lane, the Design-Build Team shall close the nearest open travel lane using Roadway Standard Drawing No. 1101.02, unless the work area is protected by an approved temporary traffic barrier or guardrail.

When personnel and / or equipment are working on the shoulder adjacent to a divided facility and within 10 feet of an open travel lane, the Design-Build Team shall close the nearest open travel lane using Roadway Standard Drawing No. 1101.02, unless the work area is protected by an approved temporary traffic barrier or guardrail.

When personnel and / or equipment are working within a lane of travel of an undivided or divided facility, the Design-Build Team shall close the lane using the appropriate roadway standard drawing from the NCDOT July 2006 Roadway Standard Drawings. The Design-Build Team shall conduct the work so that all personnel and / or equipment remain within the closed travel lane.

The Design-Build Team shall not perform work involving heavy equipment within 15 feet of the edge of travelway when work is being performed behind a lane closure on the opposite side of the travelway.

Traffic signal designs for the intersections of the Northern Connector at US 301, and Hunter Hill Road (SR 1604) at Woodruff Road (SR 1613) / Winstead Avenue shall incorporate the use of **PEEK equipment**, and the use of metal strain poles with spanwire as the signal supports. Traffic signal designs for the intersections of the Northern Connector at NC 43 (Benvenue Road), and the Northern Connector at NC 48 shall incorporate the use of **2070L equipment** including base adapters and use metal strain poles with spanwire as the signal supports.

The Design-Build Team shall be responsible for providing the safest and most economical design for the public. The Design-Build Team shall be responsible for ensuring that all plans and designs conform to the current design standards of the Intelligent Transportation Systems & Signals Unit. All plans and associated design material and specifications must be reviewed and accepted by NCDOT before installation.

No construction related to the installation, revision or removal of the traffic signals shall begin until NCDOT has accepted the RFC Plans and Specifications.

II. COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS

Overview

The Design-Build Team shall be responsible for routing **single** mode Fiber Optic Communications Cable **(24-fiber**) to interconnect the following two (2) new signals along the Northern Connector into a new standalone 2070L closed loop traffic signal system. The Design-Build Team shall be responsible for interconnecting the following two (2) CCTV cameras back to the Rocky Mount central traffic control facility.

New Signals installed on the Northern Connector, Standalone 2070L Closed Loop Traffic Signal System:

1. Northern Connector at NC 43 (Benvenue Road) - (04-1348)
2. Northern Connector at NC 48 – (04-1350)

New CCTV Cameras:

1. Hunter Hill Road (SR 1604) at Woodruff Road (SR 1613) and Winstead Avenue
2. Northern Connector at US 301

The Design-Build Team shall be responsible for routing SMFO (24-fiber) communications cable along the corridor starting at North Winstead Avenue from Curtis Ellis Road to Hunter Hill Road (SR 1604) at Winstead Avenue / Woodruff Road (SR 1613) and then continue routing cable along the Northern Connector, up to and including, the intersection of the Northern Connector at US 301. All communications cable installed along the above listed corridor shall be installed in an underground conduit system. The conduit system shall consist of one - 2" conduit and oversized junction boxes with tracer wire. The 24-fiber cable shall be installed in two (2) 12-fiber buffer tubes. Two (2) fibers from the first buffer tube shall be used to interconnect the signals in the new standalone closed loop traffic signal system. Two (2) fibers from the second buffer tube shall be used to interconnect one (1) new CCTV camera at the intersection of the Northern Connector and Hunter Hill Road. All fibers (used and spare) from the City's existing multimode fiber at the existing PEEK signal cabinet at Hunter Hill Road (SR 1604) at Woodruff Road (SR 1613) / Winstead Avenue shall be used as they currently exist. Spare fibers shall not be used for interconnection to the new system and shall remain as spares for the City's use. Coil and store 20 feet of spare SMFO (24-fiber) communications cable, after removal of outer sheath for termination, in each of the new / existing signal cabinets. Also, install 100 feet of spare SMFO (24-fiber) communications cable in junction boxes at each new / existing intersection

location. Install an additional 100 feet of spare SMFO (24-fiber) communications cable in junction boxes at each new CCTV camera location.

The Design-Build Team shall be responsible for acquiring telephone service at the intersection of the Northern Connector at NC 43 (Benvenue Road) to be used for dial up service from the Rocky Mount central traffic control facility to the new standalone closed loop traffic signal system.

The Design-Build Team shall also be responsible for routing SMFO (24-fiber) communications cable along US 301 from the intersection of Jeffreys Road to the Northern Connector. If existing utility pole lines are available, all communications cable installed along this section of roadway may be installed on them, otherwise the cable shall be installed underground. The 24-fiber cable shall be installed in two (2) 12-fiber buffer tubes. Two (2) fibers from the first buffer tube shall be used for future interconnection of existing signals along US 301 from Jeffreys Road to the Northern Connector, currently including Church Street and Instrument Drive. Two (2) fibers from the second buffer tube shall be used to interconnect one (1) new CCTV camera at the intersection of the Northern Connector and US 301. Coil and store 20 feet of spare SMFO (24-fiber) communications cable, after removal of outer sheath for termination, in each of the existing signal cabinets. Also, install 100 feet of spare SMFO (24-fiber) communications cable on storage racks or in junction boxes at each existing intersection location. Install an additional 100 feet of spare SMFO (24-fiber) communications cable on storage racks or in junction boxes at each new CCTV camera location. The Design-Build Team shall be responsible for installing a CCTV camera in the **southwest** quadrant of the intersection of the Northern Connector at US 301. The Design-Build Team shall be responsible for installing a CCTV camera in the **southeast** quadrant of the intersection of Hunter Hill Road (SR 1604) at Woodruff Road (SR 1613) and Winstead Avenue. The Design-Build Team shall mount each CCTV camera on the existing 40-foot metal strain signal poles, if possible. Otherwise the cameras shall be mounted on new 40-foot metal strain poles provided and installed by the Design-Build Team. The Design-Build Team shall install a new equipment cabinet on either the existing or new 40-foot poles, whichever is appropriate, to house the CCTV equipment.

The Design-Build Team shall be responsible for crossing obstructions associated with bridges (i.e. railroads, highway overpasses, and / or bodies of water) by either attaching a conduit system to the bridge structure or by installing a conduit system under the obstruction. As a minimum, the conduit system shall consist of providing a 4-inch outer duct conduit with four 1-inch innerduct conduits where it will be attached to the bridge structure. Should the conduit system be installed underground (i.e. railroads, highway overpasses, and / or bodies of water), the Design-Build Team shall provide a minimum of four (4), 1-inch conduits (including an outer duct conduit if necessary). These conduits shall be provided for routing the fiber optics communications cable (24-fiber) and spare conduits for future ITS expansion. The Design-Build Team shall be responsible for coordinating, locating and installing the conduit system around these obstructions with the appropriate entities that will be affected.

Utility Make-Ready Plans

In conjunction with the development of the Communications Cable and Conduit Routing Plans and Traffic Signal Plans, the Design-Build Team shall also develop a set of Utility Make-Ready Plans.

Under TIP project U-4019, the widening of Winstead Avenue from SR 1604 to Curtis Ellis Drive is likely to be under construction at the same time as construction of this Design-Build Project.

11. Skimmer Basins shall provide adequate silt storage for 1800 cubic feet per disturbed acre with surface area equal to 325 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using the 25-year peak rainfall data (*NCDENR - Erosion and Sediment Control Planning and Design Manual*). A Sediment Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit (REU) upon request.
12. The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively.
13. Coir Fiber Baffles shall be installed in all silt basins and sediment dams at drainage outlets. For silt basins with a 20-foot or longer length, three Coir Fiber Baffles shall be installed with a spacing of 1/4 the basin length. For silt basins with a length less than 20 feet, a minimum of two Coir Fiber Baffles shall be installed, with a spacing of 1/3 the basin length. The exception to the baffle spacing requirement shall be the spacing provided in an erosion control device detail (e.g. Tiered Skimmer Basin). The Design-Build Team will not be required to show the individual baffles on the Erosion Control Plans, but shall be required to incorporate the Coir Fiber Baffle Detail on the Erosion Control Plans.
14. Include any culvert and / or pipe construction sequence plan sheets in the Clearing & Grubbing Erosion Control Plans; all pipes 48" or larger, or any combination of pipes that total 48" or more require a construction sequence. Prior to installation of pipes smaller than 48" in jurisdictional areas, the Design-Build Team shall submit a Phasing Plan for managing the watercourse to the Resident Engineer for review and acceptance. The Phasing Plan shall be in accordance with the Best Management Practices for Construction and Maintenance Activities.

B. Final Grade Phase

1. Use correct NCDOT symbology
2. Protect existing and proposed drainage structure inlets with RIST-A, RIST-C, PIST-A, etc.
3. Utilize adequate perimeter controls (TSD, TSF, etc.)
4. Utilize TRSC-B's to reduce velocity in existing and proposed ditches with spacing of 250 feet divided by percentage of ditch grade. Also utilize TRSC-B's in proposed TSD's and TD's
5. Utilize temporary slope drains and earth berms at top of fill slopes 8 feet or higher and a fill slope grade of 3:1 or steeper, or where there are superelevations above 0.04 and fills are greater than 5 feet. Maximum slope drain spacing shall be 200 feet.
6. Utilize rock energy dissipater and / or silt basin at outlet of slope drain
7. Devices at all drainage turnouts shall utilize skimmers or sediment control stone (TRSD-B, TRSC-A, etc.)
8. Provide adequate silt storage for 3600 cubic feet per disturbed acre and sediment basins shall be sized with surface area equal to 435 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using 25-year peak rainfall data *(NCDENR- Erosion and Sediment Control Planning and Design Manual*) A Sediment Basin Designer Spreadsheet will be provided by NCDOT REU upon request
9. Provide matting for erosion control in all ditch lines where the velocity is greater than 2.0 ft./s, and the shear stress is 1.55 psf or less. For ditch lines with a shear stress above 1.55 psf, Permanent Soil Reinforcement Mat or Rip Rap shall be utilized
10. Design Riser Basins to the following standards:
    a. Surface Area shall be determined by Equation A(sq. feet) = Q25(cfs) * 435
    b. Volume requirement shall be 1800 cubic feet per disturbed acre draining to the riser basin

c. Riser Pipe shall have a cross-sectional area 1.5 times that of the barrel pipe
d. Perforations in the riser pipe shall be reduced to increase dewatering time to twenty-four (24) hours
e. See *NCDENR- Erosion and Sediment Control Planning and Design Manual* for additional design criteria

11. Skimmer Basins shall provide adequate silt storage for 1800 cubic feet per disturbed acre with surface area equal to 325 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using the 25-year peak rainfall data (*NCDENR - Erosion and Sediment Control Planning and Design Manual*). A Sediment Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit (REU) upon request
12. The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively
13. Coir Fiber Baffles shall be installed in all silt basins and sediment dams at drainage outlets. For silt basins with a 20-foot or longer length, three Coir Fiber Baffles shall be installed with a spacing of 1/4 the basin length. For silt basins with a length less than 20 feet, a minimum of two Coir Fiber Baffles shall be installed, with a spacing of 1/3 the basin length. The exception to the baffle spacing requirement shall be the spacing provided in an erosion control device detail (e.g. Tiered Skimmer Basin). The Design-Build Team will not be required to show the individual baffles on the Erosion Control Plans, but shall be required to incorporate the Coir Fiber Baffle Detail on the Erosion Control Plans

C. Intermediate Phase

Intermediate Erosion Control Plans shall only be required if design modifications and / or site conditions require additional erosion control design or design revisions to the RFC Clearing and Grubbing and / or RFC Final Grade Erosion Control Plans. Intermediate Plans shall be submitted for review and shall be accepted prior to construction of any aspect impacted by the revised erosion control design. For any intermediate phase, comply with Section B, "Final Grade Phase" above.

II. Detail Sheets and Notes

A. Provide project specific special notes and details such as temporary rock silt check type B, coir fiber baffle, skimmer basin, etc.
B. Provide matting summary sheet(s): matting for erosion control and permanent soil reinforcement mat
C. Provide reforestation sheet(s): regular, wetland, streambank and / or buffer showing appropriate species

III. Title Sheet

A. Show correct notes: HQW, ESA, clearing and grubbing, etc.
B. Show correct standards for project
C. List of standard NCDOT symbology

IV. Special Provisions

A. Erosion Control Special Provisions are available at the following website:
http://www.ncdot.org/doh/operations/dp_chief_eng/roadside/soil_water/special_provisions/

B. References in Erosion Control Special Provisions from the aforementioned website to Method of Measurement, Basis of Payment, or any other statement regarding direct payment for Erosion & Sediment Control measures shall be disregarded.
C. Erosion Control / Stormwater Certification found elsewhere in this RFP.

V. Miscellaneous

A. Plan submittals shall include all pertinent design information required for review, such as design calculations, drainage areas, etc.
B. The NCDOT REU will provide a sample set of Erosion and Sedimentation Control Plans (including any special details or special provisions used by the NCDOT REU) and MicroStation Erosion Control Workspace to the Design-Build Team for reference upon request.
C. Plans shall address any environmental issues raised during the permitting process.
D. Sufficient time shall be allowed for the Design-Build Team to make any changes to the Erosion and Sedimentation Control Plans deemed necessary by the NCDOT REU.
E. Temporary access and haul roads, other than public roads, constructed or used in connection with the project shall be considered a part of the project and addressed in the Erosion and Sedimentation Control Plans.
F. Borrow or waste areas that are part of the project shall require a separate Erosion and Sedimentation Control Plan, unless the borrow or waste activity is regulated under the *Mining Act of 1971*, or is a landfill regulated by the Division of Solid Waste Management (NCDENR). The Design-Build Team shall submit the permit number for waste / borrow sites covered by the Mining Act or regulated by DSWM (DENR) concurrently to the State Alternative Delivery Engineer and the Resident Engineer.
G. Whenever the Engineer determines that significant erosion and sedimentation continues despite the installation of approved protective practices, the Design-Build Team shall be required to and shall take additional protective action.
H. An accepted Erosion and Sedimentation Control Plan does not exempt the Design-Build Team from making every effort to contain sediment onsite.
I. Any Erosion Control Design revisions made during the construction of the project shall be submitted to NCDOT REU by the 15th of the month via the State Alternative Delivery Engineer. At anytime requested by the Engineer or the Roadside Environmental Unit, the Design-Build Team shall provide an updated version of the Erosion and Sedimentation Control Plans for distribution to all parties involved in the construction process.
J. The Design-Build Team shall comply with the *North Carolina Administrative Code Title 15 A Department of Environment and Natural Resources Chapter 4, Sediment Control*.
K. A pre-design meeting shall take place between the NCDOT REU Soil & Water Engineering Section, the Design Build Team, and any other pertinent NCDOT personnel before any Erosion and Sedimentation Control Designs are submitted to NCDOT REU. Erosion and Sedimentation Control Plan submittals shall only be reviewed and accepted by NCDOT REU after the Erosion Control Pre-Design Meeting.
L. All RFC Erosion and Sedimentation Control Plans, including any red line revisions, shall be kept on site at all times throughout the duration of the project.
M. Erosion Control / Stormwater Certification shall be required according to the Project Special Provision found elsewhere in this RFP.
N. Prior to installation of any erosion control devices, the Design-Build Team shall verify all jurisdictional area boundaries and delineate the boundaries with Safety Fence.

Unless noted otherwise, the Design-Build Team shall locate the new utility facilities as far from the roadway as possible, while remaining within the Department's right of way. Except for crossings, tie-ins and transitions from existing lines, utility lines shall be beyond a 1V: 1H distance and a minimum of five feet from edge of pavement.

All station references associated with this Scope of Work are locations as defined by the Department's preliminary design.

The Design-Build Team shall guarantee all materials and workmanship associated with this Scope of Work, including the structural adequacy of all existing water and sanitary sewer facilities within the construction limits, for a period of twelve months following the date of final acceptance of the project. (Reference the Twelve Month Guarantee Project Special Provision found elsewhere in this RFP.)

Description of Existing Facilities

The City has existing water lines and sanitary sewer lines within the project.

Description of Proposed Facilities

The Design-Build Team shall design and construct all necessary water and sanitary sewer line relocations required for the project construction. To the extent the Design-Build Team deems necessary, the Design-Build Team shall analyze all existing water and sanitary sewer facilities to ensure the facility's ability to support the proposed roadway and all construction activities. The Design-Build Team shall replace all structurally deficient water and sanitary sewer lines. In accordance with the NCDOT *Policies and Procedures for Accommodating Utilities on Highway Rights or Way*, April 1, 1993, the Design-Build Team shall replace all water and sanitary sewer lines constructed of unacceptable material.

For those water and sanitary sewer lines along Hunter Hill Road and along Winstead Avenue, south of Hunter Hill Road, that require relocation / replacement as part of this project, the Design-Build Team shall relocate / replace the facility to accommodate the future improvements associated with Projects U-4019 and U-3621.

The Design-Build Team shall design and construct a new 12" water line along the new western Woodruff Road right of way from the end of the existing water line, located approximately 300 feet south of Goose Branch to 50 feet north of Goose Branch. The water line shall be terminated with a 12" valve and plug and a new fire hydrant. At the new right of way line, water services (3/4" lines with curb stop and meter boxes) shall be provided to each parcel that the new water line passes.

The Design Build Team shall design and construct a new 8" gravity sanitary sewer along Woodruff Road from the existing sanitary sewer manhole located at the eastern property line of Mr. Clyde M. Keen (DB 1072, PG 220), to inside of the Woodruff Road eastern right of way line, thence splitting into two lines with one proceeding north along the eastern right or way line, thence crossing Woodruff Road approximately perpendicularly and ending in a manhole near the northern property line of Mr. Richard Minor (DB 1463 PG 495) and the other proceeding south along the Woodruff Road eastern right of way line, ending in a manhole at the northern property line of Sharon B. Landis (DB 1252 PG 845). The sanitary sewer line shall be built with a 0.4% grade, beginning at the existing manhole invert and continuing throughout the entire length. On both sides of Woodruff Road, sanitary sewer services (4" lines with clean-out) shall be provided to the right of way line for each parcel the new sanitary sewer lines passes.