STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 3, 2006

Addendum No. 1

RE: Contract ID: C201269
TIP Number: I-2808A
Yadkin County
Project Description: I-77 from south of SR 1125 (Ashbury Church Road) to US 21

May 12, 2006 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 *TABLE OF CONTENTS* has been revised. Please void the *TABLE OF CONTENTS* and staple the revised *TABLE OF CONTENTS* thereto.

On pages 26, 27 and 28, the *EROSION & SEDIMENTATION CONTROL/STORMWATER CERTIFICATION* special provision has been revised. Please void Pages No. 26, 27 and 28 in your proposal and staple the revised Pages No. 26, 27 and 28 and the new 28A thereto.

Page 29A, the *RECYCLING CONCRETE PAVEMENT* special provision has been added. Please add Page No. 29A in your proposal.

Page 30, the *GENERAL SECTION* has been revised. Please void Page No. 30 in your proposal and staple the revised Page No. 30 thereto.

On pages 42 and 43, the *ROADWAY SCOPE OF WORK* has been revised. Please void Pages No. 42 and 43 in your proposal and staple the revised Pages No. 42 and 43 thereto.

On pages 51-59, the *TRAFFIC CONTROL SCOPE OF WORK* has been revised. Please void Pages No. 51-59 in your proposal and staple the revised Pages No. 51-59 thereto.

On pages 71, 72 and 73, the *EROSION AND SEDIMENTATION CONTROL SCOPE OF WORK* has been revised. Please void Pages No. 71, 72 and 73 in your proposal and staple the revised Pages No. 71, 72 and 73 thereto. Please note that some of the highlights are changes that were made between the issuance of the External and the Final RFP and were omitted in error.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
1591 MAIL SERVICE CENTER
RALEIGH NC 27699-1591

TELEPHONE: 919-250-4128
FAX: 919-250-4119

WEBSITE: WWW.DOH.DOT.STATE.NC.US

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

Sincerely,

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

c:
Mr. Steve DeWitt, PE (w/)
Mr. Steve Varnedoe, PE
Ms. Deborah Barbour, PE
Mr. Victor Barbour, PE (w/)
Mr. Art McMillan, PE
Mr. Clarence Coleman, PE - FHWA (w/3)
Mr. Phillip Harris, PE
Mr. Rodger Rochelle, PE (w/)
Mr. Carl Goode
Mr. Shannon Sweitzer, PE (w/)
Mr. Ron Hancock, PE (w/)
Mr. David Harris, PE
Mr. Ron Davenport, PE (w/)
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Mr. Khaled Al-Akhdar (w/)
Ms. Marsha Sample (w/)
Mr. Ayman Alqudwah, PE (w/)
Mr. James Bridges, PE
Ms. Cheryl Gregory (w/)
Mr. Andy Gay, PE (w/)
Ms. Betty Rawls (w/)
Technical Review Committee Members (w/)
File (w/)
Ms. Brenda Moore, PE - Roadway (w/)
Dr. Clark Morrison, PE - Pavement Design (w/)
Mr. John Pilipchuk, PE - Geotechnical (w/)
Ms. Elizabeth Lusk - Environmental Permits (w/)
Ms. Michelle Long, PE - Public Information (w/)
Mr. Murray Howell - Utility Coordination (w/)
Mr. Stephen Worthy - Utility Coordination (w/)
Mr. Barney Blackburn - Erosion & Sed. Cont. (w/)
Mr. Mitch Hendee, PE - Traffic Control (w/)
Mr. Tim McFadden - Signing (w/)
Ms. Anne Gamber, PE - Hydraulics (w/)
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Mr. Calvin Leggett, PE
Mr. Don Lee
Mr. Ellis Powell, PE
Mr. Jay Bennett, PE
Mr. Dave Henderson, PE
Mr. John Williamson

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STANDARD SPECIAL PROVISIONS (YELLOW SHEETS)

PROPOSAL FORM ITEM SHEET, ETC.

Fully install erosion and sediment/stormwater control work prior to suspension of the work.

Coordinate with NCDOT, Federal, State and Local Regulatory agencies on resolution of erosion and sediment/stormwater control issues due to the Contractor's operations.

Ensure that proper cleanup occurs from vehicle tracking on paved surfaces and/or any location where sediment leaves the Right-of-Way.

Have available an easily understandable updated set of EC plans for review by the project personnel, REU, Field Ops or Regulatory Agencies.

2. Quality Control Program

Maintain a quality control program to control erosion, prevent sedimentation and follow provisions of permits. The quality control program shall:

Follow permit requirements related to the Contractors' and subcontractor(s)' construction activities.

Ensure that all operators and/or subcontractor(s) on site have the proper erosion and sediment/stormwater control certification.

Notify the Engineer when the required certified erosion and sediment/stormwater control personnel are not available on the job site when needed.

Conduct the inspections required by the NPDES permit.

Maintain the NPDES inspection log.

Take corrective actions in the proper timeframe as required by the NPDES permit for problem areas identified during the NPDES inspections.

Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch/seed or vegetative cover on a section-by-section basis.

Maintain temporary erosion and sediment control devices.

Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.

The Contractor's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records at the project site. Make NPDES inspection records available at all times for verification by the Engineer.

3. Requirements set forth under the NPDES Permit

The Department's NPDES permit outlines certain objectives and management measures pertaining to construction activities. The permit references NCG010000, General Permit to Discharge Stormwater under the NPDES, and states that the Department shall incorporate the applicable requirements into its delegated E&SC Program. Some of the requirements are, but are not limited to:

Control project site waste to prevent contamination of surface or ground waters of the state (i.e. construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste).
Inspect E&SC/Stormwater devices at least once every seven calendar days (twice weekly for 303(d) impaired streams) and within 24 hours after a significant rainfall event of 0.5 inches within 24 hours.
Maintain an onsite rain gauge and a record of rainfall amounts and dates
Maintain E&SC/Stormwater inspection records for review by DWQ, DLR, or other authorized agent upon request.
Implement approved reclamation plans on all borrow pits and waste sites.
Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.
Provide secondary containment for bulk storage of liquid materials.
Provide training for employees concerning general E&SC/Stormwater awareness, the NPDES Permit requirements, and the requirements of the General Permit, NCG010000.
Report violations of the NPDES permit to the Department's Lead Engineer so that the DWQ Regional Office can be notified within 24 hours. The Supervisor will immediately notify the Department's Resident Engineer of any violations so that proper notification can be made to DWQ.

Certified Foreman

At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:

Foreman in charge of grading activities

Foreman in charge of bridge or culvert construction over jurisdictional areas

Foreman in charge of utility activities

The contractor, in some instances, may request to utilize the same person as the Supervisor and Foreman. If the contractor wishes to do so, this person shall be required to be onsite whenever construction activities as described above are taking place. This decision must be agreed upon by the Resident Engineer, Roadside Environmental Field Operations Engineer, and the contractor prior to work beginning.

The contractor may request to name a single Foreman to oversee multiple construction activities on smaller Bridge or Culvert replacement projects. This decision must be agreed upon by the Resident Engineer, Roadside Environmental Field Operations Engineer, and the contractor prior to work beginning.

Certified Installers

Provide at least one certified installer for each of the following erosion or sediment/stormwater control crew:

Seeding and Mulching

Temporary Seeding

Temporary Mulching

Sodding

Silt fence or other perimeter erosion/sediment control device installations

Erosion control blanket installation

Hydraulic tackifier installation

Turbidity curtain installation

Rock ditch check/sediment dam installation

Ditch liner/matting installation

Inlet protection

Riprap placement

Stormwater BMP installations (such as but not limited to level spreaders, retention/detention devices)

Pipe installations within jurisdictional areas

PRECONSTRUCTION MEETING

Furnish the names of *the Certified Erosion & Sediment Control Stormwater Supervisor, Certified Foremen,* and notify the Engineer of changes in certified personnel over the life of the contract within 2 days of change.

REVOCATION OR SUSPENSION OF CERTIFICATION

Upon recommendation of the NCDOT Director of Construction to the Certification entity, certification for Supervisor, Certified Foremen, and Certified Installers may be revoked or suspended with the issuance of a Continuing Immediate Corrective Action (Continuing ICA), Notice of Violation, or Cease and Desist Order for erosion and sediment control/stormwater related issues.

The Department of Transportation recognizes the imperative need to have qualified individuals constructing, maintaining, and performing oversight of erosion and sediment control/stormwater components within all transportation facility projects. This accountability and competence is required to assure that the environmental commitments into which the Department has entered are in conformity with the requirements of the approved plans, specifications, and permit conditions. To ensure that candidates are qualified to construct, maintain, and oversee environmental related operations, certification programs have established written and/or proficiency standards. The certification issued jointly by the North Carolina Department of Transportation and North Carolina State University is a privileged certification that should be held in high regard. Should any of the following circumstances occur, the Director of Construction may suspend or permanently revoke such certification.

Failure to adequately perform the duties as defined within the certification program

Issuance of a continuing ICA, NOV, or Cease and Desist Order

Failure to fully perform environmental commitments as detailed within the permit conditions and specifications

Demonstration of erroneous documentation or reporting techniques

Cheating or copying another candidate's work on an examination

Intentional falsification of records

Directing a subordinate under direct or indirect supervision to perform any of the above actions

Dismissal from a company for any of the above reasons

Suspension or revocation of one's certification within another state

Suspension or revocation of a certification will be sent by certified mail to the registrant and the Corporate Head of the company that employs the registrant.

A registrant has the right to appeal any adverse action which results in suspension or permanent revocation of certification by responding, in writing, to the Director of Construction within 10 calendar days after receiving notice of the proposed adverse action.

Director of Construction
1520 Mail Service Center
Raleigh, NC 27699-1520

Failure to appeal within 10 calendar days will result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified will result in a waiver of all future appeal rights regarding the adverse action taken. The registrant will not be allowed to perform duties associated with the certification during the appeal process.

The Director of Construction will hear the appeal and make a decision within 7 days of hearing the appeal. Decision of the Director of Construction shall be final and shall be made in writing to the registrant.

If a certification is temporarily suspended, the registrant must pass any applicable written examination and any proficiency examination, at the conclusion of the specified suspension period, prior to having the certification reinstated.

Any company performing work for the North Carolina Department of Transportation has the ethical responsibility to fully disclose any reprimand or dismissal of an employee resulting from improper testing or falsification of records.

RECYCLING CONCRETE PAVEMENT (3-3-06)

The existing concrete pavement may be recycled into the future concrete pavement provided the Design Build Team utilizes a nationally recognized expert in the field of recycled/reclaimed concrete pavement construction. This individual will be responsible for performing or directly overseeing any testing of the existing concrete materials, to potentially include chemical and structural analysis; mix design; process control and testing. This expert shall also be intimately involved in crushing operations, production and associated process control to ensure that a quality, durable concrete pavement is produced which meets the Contract requirements. This individual shall be accessible to the Department to address any concerns or answer questions, which may arise during design or recycling operations.

If the Design Build Team elects to recycle the existing concrete into the future concrete pavement, the name of the nationally recognized expert, proposed to perform the items detailed above, should be documented in the Technical Proposal.

The Design Build Team should perform any initial evaluation of the existing concrete pavement as deemed necessary prior to bid. The Department does not guarantee the quality or consistency of this concrete pavement, including the concrete's quality for recycling purposes.

SPI

GENERAL

The State will not be bound by oral explanations or instructions given at any time during the bidding process or after award. Only information that is received in response to this RFP will be evaluated; reference to information previously submitted will not suffice as a response to this solicitation.

NO CONTACT CLAUSE

To ensure that information is distributed equitably to all short listed Design-Build Teams, all questions and requests for information shall be directed to the State Contract Officer through the Design-Build e-mail address. This precludes any Design- Build Team Member, or representative, from contacting representatives of the Department, other State Agencies or Federal Agencies either by phone, e-mail or in person concerning the Design-Build Project.

USE OF TERMS

Throughout this Request For Proposals and all manuals, documents and standards referred to in the Request For Proposals the terms Contractor, Bidder, Design-Builder, Design-Build Team, Team, Firm, Company, and Proposer are synonymous. Throughout this Request For Proposals and all manuals, documents and standards referred to in the Request For Proposals, the terms NCDOT, Department, Engineer, and State are synonymous.

DESIGN REFERENCES

Design references developed and published by NCDOT and those developed and published by other agencies and adopted for use by NCDOT which are to be used in the design of this project may be obtained by contacting the Contract Office of the Project Services Unit. Standard prices for materials, which the Department normally sells for a fee, will be in effect. The Design-Build Team is responsible for designing in accordance with the applicable documents and current revisions and supplements thereto.

REVIEW OF SUBMITTALS

Major design milestones and required design submittals shall be identified as activities on a CPM, bar chart, or other scheduling tool. This schedule shall be submitted to the State Alternative Delivery Systems Engineer and Resident Engineer concurrently with the first design submittal, or within 30 days of the contract award, whichever is earlier. The schedule shall be revised and resubmitted as design milestones change or as directed by the State Alternative Delivery Systems Engineer. Submittals will be reviewed within 10 working days (15 days for temporary structures and temporary shoring) from the date of receipt by NCDOT unless otherwise stipulated in the scope of work. All submittals shall be prepared and submitted in accordance with the "*Design-Build Submittal Guidelines*", which by reference are incorporated and made a part of this contract. All submittals shall be made simultaneously to the State Alternative Delivery Systems 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 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.

ROADWAY SCOPE OF WORK (3-3-06)

Project Details

- The Design-Build Team shall design and construct a four-lane divided facility along I-77 from the beginning of the continuously reinforced concrete (CRC) pavement, located approximately 350 feet south of SR 1125 (Asbury Church Road), to the US 21 Interchange. Specifically, the northern terminus will be of sufficient length to tie to existing based on current guidelines and standards but no further south than the beginning of the northbound off-ramp onto US 21. The facility shall be designed and constructed to meet a 70-mph design speed for an interstate, regardless of the posted speed limit. The Design-Build Team shall provide all other design criteria in the Technical Proposal.
- Along the interstate, the Design-Build Team shall design and construct 12-foot median and outside shoulders, ten feet of which shall be full depth paved shoulders. When guardrail is required on the outside shoulder, the guardrail shall be placed 12 feet off the outside edge of the travel lane. This shoulder width and guardrail placement does not require a design exception.
- The vertical profile may be designed to accommodate any of the pavement design options or a combination thereof. Regardless of which pavement design, or combination, is used, grade lines shall be set for the entire project.
- The Design-Build Team shall design and construct the ramps and loops at the I-77 / US 421 Interchange. The Design-Build Team shall design and construct one-lane ramps and loops that provide a minimum 16-foot and 19-foot width, respectively. With the exception of adjacent to the inside edge of pavement along loops, all ramps and loops shall have four-foot full depth paved shoulders.
- Throughout the project limits, the pavement along I-77, and the ramps and loops at the US 421 interchange, shall be constructed in accordance with the Pavement Management Scope of Work. Pavement along the ramps and loops shall be replaced from the tie with I-77 to the gore area of US 421.
- Sliver fills shall be avoided to the greatest extent possible. A sliver fill is defined as adding material beyond the outside shoulder point in existing fill sections. The Technical Proposal shall identify all areas where sliver fills can not be avoided.
- Milled rumble strips shall be provided on the outside and median paved shoulders.
- The vertical clearance beneath all overhead sign structures shall be a minimum of 16 feet. A minimum 16-foot vertical clearance shall be provided for all bridges over I-77. For those existing bridges that currently provide more than a 16-foot vertical clearance, the existing vertical clearance or 17 feet, whichever is less, shall be provided.
- The Design-Build Team shall maintain the existing median width where it is less than or equal to 46', unless the shift is necessary to accommodate the width of the new shoulders. In all other areas, the Design-Build Team shall maintain a minimum median width of 46'.
- The approach slabs at the existing bridges over US 421 need not be replaced.
- All offsets from the face of the guardrail to the shoulder break point shall be a minimum of 3 feet. A 2-foot offset may be used in locations where the existing guardrail is supported by stable shoulders. Locations of 2-foot offsets shall be minimized to the greatest extent possible and approved by the Department prior to installation.

- The Design-Build Team shall be responsible for the evaluation of the algebraic difference in rates of cross slope (rollover) 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.
- 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.
- All guardrail/guiderail placement shall be in accordance with *NCDOT Standard Drawings* and/or approved details in lieu of standards, regardless of existing conditions. The Design-Build Team shall remove and replace all guardrail, excluding guardrail attachments to existing bridge barrier rail and guardrail protecting existing overhead sign assemblies that meets NCDOT Standards. All guiderail that is damaged on or before April 1, 2006 as inventoried by the Department, is removed or damaged during construction activities and/or does not meet NCDOT Standards shall be removed and replaced. Guiderail or a single row of single post, double-faced guardrail shall be used wherever possible. The proposed guardrail/guiderail design shall be included in the Technical Proposal.
- It is anticipated that all construction will be performed within the existing right of way. Any design or construction methods that require additional right of way and/or easements, including but not limited to planning, public involvement, hydraulic recommendations and traffic control measures, shall be the responsibility of the Design–Build Team. Parcel names and deed research and descriptions shall be the responsibility of the Design-Build Team to acquire and process. If required, the Design-Build Team shall be responsible for the installation of all right of way monuments and woven wire fence according to the NCDOT Standard Drawings and Standard Specifications where existing fence is removed.
- Single face concrete barrier shall be installed in front of all retaining walls and all elements acting as a retaining wall that have the potential for vehicular impact.
- The project shall be designed and constructed such that an US Army Corps of Engineers Section 404 permit (other than NWP #3) and a North Carolina Department of Natural Resources (DENR), Division of Water Quality (DWQ) Section 401 Water Quality Certification are not required.
- The Design Build Team shall be responsible for replacing all lighting components affected by construction activities in accordance with Division 14 in the Standards Specifications for Roads and Structures.
- There are no known contaminated sites nor underground storage tanks on this project.

General

- The design shall be in accordance with the *2004 AASHTO A Policy on Geometric Design of Highways and Streets, January 2002 NCDOT Roadway Standard Drawings, NCDOT 2002 Roadway Design Manual, Roadway Design Policy and Procedure Manual, Roadway Design Guidelines for Design-Build Projects, January 2002 North Carolina Standard Specifications for Roads and Structures, and the AASHTO Roadside Design Guide 2002.*
- If the NCDOT Roadway Design Manual, the 2004 AASHTO A Policy on Geometric Design of Highways and Streets, the January 2002 Roadway Standard Drawings and/or

TRAFFIC CONTROL SCOPE OF WORK (2/28/06)

I. Traffic Control Plans

A. Design Parameters

The Design Build Team shall prepare the Traffic Control and Pavement Marking Plans for this project following the parameters listed below:

1. On I-77 and US 421, maintain a minimum of two 12-foot lanes in each direction at all times unless otherwise noted herein. Also, maintain a minimum of 12-foot wide lane for all ramps and loops, unless otherwise noted herein.
2. On I-77 maintain a minimum of one 12-foot lane in each direction during the time restrictions listed in section II.
3. On I-77, maintain a minimum 4-foot offset from edge of travel lane to guardrail, a minimum 6-foot offset from the edge of travel lane to cable guiderail and a minimum 2-foot offset from edge of travel lane to any traffic control device. Temporary paved shoulders within 500' north and south of the bridges over US 421 shall have no less than 2' paved shoulders. All other temporary shoulders shall be no less than 3' paved. If the outside shoulder is less than 10' paved, follow the requirements for a motorist breakdown lane, see sections II., F. of this scope.
4. Temporary crossovers may be used on I-77 to place traffic in a two lane / two way temporary traffic pattern only if the following conditions are met:
   - Follow the time restriction in Section II, A below.
   - Crossover shall be designed for the current posted speed limit of 70 mph following *NCDOT Roadway Design Manual* and *2004 AASHTO A Policy on Geometric Design of Highways and Streets*.
   - Crossover lanes shall be a minimum of 12-foot wide.
   - An approved Temporary barrier system will be required to safely divide the two lane, two way traffic. Maintain a minimum of 2-foot offset from inside edge of travel lane to the approved temporary barrier system and 10-foot offset from the outside edge of travel lane to any traffic control device, guardrail, guiderail or permanent obstruction. The 10-foot outside shoulder shall be of constant cross slope and a minimum of 6-foot paved.
   - Crossover shall not affect existing interchange operation.
   - Only one temporary crossover can be used at a time.
   - Provide Motorist breakdown areas when required. See Section II, F. below.
   - Existing guiderail and guardrail shall be modified or an approved barrier system will be required.
5. Temporary pavement markings and markers shall be required for any temporary traffic pattern that will be in place longer than the lane closure and narrowing time restrictions listed for I-77 part 1.) of Section II., A., 1., a. below (4 days, 9 hours). Temporary traffic patterns in place less than this time period shall adhere to the following requirements:
   - Where an approved temporary portable barrier system is required, markers shall be placed a minimum of 2' from face of the barrier to edge of travel lane. Barrier delineators shall be spaced no more than 50' apart.

- Where an approved barrier system is not required, a minimum of drums are required and shall be placed 2' offset from the edge of travel lane. Markers along the edge of the travel lane may be used in lieu of or in conjunction with drums.
- Markers may be used when skip lines are required.
- Drums shall be spaced a maximum of 75 feet apart.

6. If a speed reduction is deemed necessary by the Department, a speed reduction to 60 mph ordinance will be written that will apply during a lane closure or crossover.
7. All temporary alignments shall be designed for 70 mph. Roadway Standard Drawings 1101.11 can be used for merge and shift tapers. All other temporary designs need to follow *NCDOT Roadway Design Manual, 2004 AASHTO A Policy on Geometric Design of Highways and Streets* and most current *Highway Capacity Manual.* Any temporary ramp / loop alignments shall meet or exceed design requirements and expected traffic volumes. In no circumstances will stop signs be utilized on acceleration ramps.
8. Provide a towing contractor that is available 24 hours a day, 7 days a week for the duration of the project.
9. For I-77 and US-421, a minimum of two changeable message boards shall be required for each direction of travel when temporary traffic control devices are required. Messaging will need to be reviewed by the Department prior to use.
10. The Technical Proposal and Final Traffic Control plan shall provide a contingency plan on what procedures will be followed if construction can not be completed within the time restrictions listed in section II.
11. No splitting of traffic in the same direction is allowed, (i.e. separation by any type of barrier, bridge piers, existing median).
12. Maintain all access to rest area at all times.

Construction shall not begin until the first phase submittal meets the requirements of the RFP. The Staging Concept and preliminary Final Pavement Marking Plans shall meet the RFP requirements before the first phase submittal can be submitted. Construction shall not begin on subsequent phase submittals until they meet the requirements of the RFP, the "Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design-Build Projects", and the "Design-Build Submittal Guidelines". If a temporary traffic barrier system will be used, the Technical Proposal and Staging Concept shall identify the proposed type of barrier system.

B. Traffic Control and Final Pavement Marking Plan requirements:

The Design Build Team shall select a Private Engineering Firm (PEF) that has experience designing and sealing Traffic Control and Pavement Marking plans for projects comparable to this project. The Technical Proposal shall list projects, including description and similarity, to the subject project.

The development of Traffic Control and Pavement Marking Plans shall adhere to the "Design-Build Submittal Guidelines" and the "Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design-Build Projects", which by reference are incorporated herein and made a part of the contract. These documents are available on the Design-Build website.

The Work Zone Traffic Control Website will also have information that may be required during the design process.

http://www.ncdot.org/dot/construction/wztc/

II. Project Operations Requirements

The following are Time Restrictions and notes that shall be included with the Traffic Control Plans General Notes:

A. Time Restrictions

1. Intermediate Contract Time for Lane Narrowing, Closure, Holiday and Special Event Restrictions.

a. The Design-Build Team shall maintain existing traffic patterns as a minimum and shall not close or narrow a lane during the times below:

Road name		Times
US 421	1.)	From 6:00 a.m. Friday to 9:00 p.m. Sunday (all year)
I-77	1.)	Between Memorial Day and Labor Day, and between Thanksgiving and New Years: From 6:00 a.m. Friday to 9:00 p.m. Sunday Also follow holiday and special event restrictions below
	2.)	Between New Years and Memorial Day and between Labor Day and Thanksgiving: Follow holiday and special event restrictions listed below, no additional time restrictions will be required for closing or narrowing lane.

The Design-Build Team shall not install or remove any traffic control device required for narrowing or closing a lane during the times listed above.

During holidays, holiday weekends, special events, or any other time when traffic is unusually heavy on any of the roadways listed above, the Design-Build Team shall not close or narrow a lane of traffic, detain the traffic flow or alter the traffic flow. As a minimum, these requirements / restrictions apply to the following schedules:

(a) For New Year's between the hours of 6:00 a.m. December 31st to 9:00 p.m.. January 3rd. If New Year's Day is on a Friday, Saturday or a Sunday, then from 6:00 a.m. the Friday before to 9:00 p.m. the following Tuesday.

(b) For Easter, between the hours of 6:00 a.m. Friday and 9:00 p.m. Tuesday.

(c) For Memorial Day, between the hours of 6:00 a.m. Friday to 9:00 p.m. Wednesday.

(d) For Independence Day, between the hours of 6:00 a.m. July 3rd and 9:00 p.m. July 6th. If Independence Day is on a Friday, Saturday or Sunday, between the hours of 6:00 a.m. the Thursday before Independence Day and 9:00 p.m. the Tuesday after Independence Day.

(e) For Labor Day, between the hours of 6:00 a.m. Friday to 9:00 p.m. Wednesday.

(f) For Thanksgiving, between the hours of 6:00 a.m. Tuesday to 9:00 p.m. Tuesday.

(g) For Christmas, between the hours of 6:00 a.m. the Friday before the week of Christmas Day and 9:00 p.m. the following Tuesday after the week of Christmas.

(h) For NASCAR NEXTEL Cup events at Lowes Motor Speedway in Charlotte, NC. For Southbound I-77 traffic, 24hrs before the event and for Northbound I-77, 24hrs after the event.

b. Temporary Traffic Patterns utilizing a crossover can be used on I-77 after the New Years restrictions listed above, until 6:00am the Friday before Memorial Day and after 9:00p.m. the Wednesday after Labor day until 6:00a.m. the Tuesday before Thanksgiving. In addition, a crossover shall not be in use during Holiday and special event time restrictions within these time periods.

Failure to meet any of the crossover requirements in this contract could result in this option being disallowed for the remainder of the contract.

The Department prefers to eliminate or reduce the use of crossovers on this project. If the Design-Build Team chooses to use crossovers, the Technical Proposal shall address how crossovers will be used and for what duration. The Technical Proposal shall also provide explanation of the benefit for using crossovers including, but not limited to, time and relative cost savings (in general terms or percentages) to the Department and safety to the traveling public. The Technical Proposal shall identify any congestion mitigation measures that will be used to ensure safe traffic movement while crossovers are in use.

Liquidated Damages for the above lane narrowing, lane closure, holiday, special event time and crossover restrictions for I-77 and US 421 are $5,000.00 per hour for this Intermediate Contract Time.

2. Intermediate Contract Time for Road Closure Restrictions for Construction Operations.

The Design-Build Team shall maintain the existing traffic pattern as a minimum for all roadways and follow the road closure restrictions listed below. When a road closure is used, the Design-Build Team shall reopen the travel lanes by the end of the road closure duration to allow the traffic queue to deplete before re-closing the roadway.

In the Technical Proposal, the Design-Build Team shall address the road closure durations for the roads and respective operations listed in the time restrictions

provided below. The Design-Build Team shall provide a traffic control concept on how traffic will be maintained in the Technical Proposal. A percentage of the Technical Proposal evaluation will be dependent on this information.

a) The Design-Build Team shall not close either direction of I-77 or US 421 during the times listed below. Road Closures shall only be allowed for the operations and durations listed below the time restrictions.

> Monday through Thursday between the hours of 6:00 a.m. and 12:01 a.m. and from 6:00 a.m. Friday to 12:01 a.m. Monday.
>
> Do not close I-77 or US 421 during the holiday and special event time restrictions listed in section II., A., 1., a.

Maximum road closure duration of **30 minutes** will be allowed for the following operations:

- Traffic shifts, including tie-in work and placement of pavement markings and markers
- Installation or adjustment of Overhead Sign Structures
- Any work to overhead structures that would require a road closure to safely perform the work.

b) The Design Build Team shall not close a ramp or loop at the I-77 / US 421 or the I-77/US 21 Interchange except as noted below:

- Do not close any I-77/ US 421 ramp or loop during the holiday and special event time restrictions listed in section II., A., 1., a.
- US 421/I-77 Ramps may each be closed one (1) time, between 12:01 a.m. Monday to 6:00 a.m. Friday the following week.
- US 421/I-77 Loops may each be closed three (3) times, between 12:01 a.m. Monday to 6:00 a.m. Friday the following week.
- The exit and entrance ramp/loop in any one direction of I-77 traffic shall not be closed at the same time.
- The Technical Proposal shall address ramp and loop closures and how traffic will be maintained during the ramp closures.

Liquidated Damages for the above road and ramp closure time restrictions on I-77 and US 421, are $1,250.00 per 15 minute period or any portion thereof for this Intermediate Contract Time.

3. Hauling Restrictions

The Design-Build Team shall adhere to the hauling operations noted in the *2002 NCDOT Standard Specifications for Roads and Structures.*

Hauling vehicles shall not travel less than 55 mph while in an open travel lane. Hauling vehicles shall not accelerate or decelerate in an open travel lane.

Hauling during the holiday and special events listed in II., A., 1., a. shall be between 9:00 p.m. and 6:00 a.m. each day.

The Design-Build Team shall address how hauling will be conducted in the Technical Proposal, including but not limited to hauling of any materials to and from the site and hauling of materials to and from the concrete plant if placed within NCDOT right of way.

The Design-Build Team shall not conduct any hauling operations against the flow of traffic of an open travelway unless the work area is protected by approved temporary traffic barrier or guardrail.

B. Lane, Shoulder and Ramp Closure Requirements

The Design-Build Team shall not install more than 3.0 miles of lane closures in any one direction on any roadway within the project limits, measured from the beginning of the merge taper to the end of the lane closure except as follows:

- One lane closure may be used from ¼ mile north of the US 421/I-77 interchange ramp limit to a maximum of one mile north of the northern project limits.
- One lane closure may be used from ¼ mile south of the US 421/I-77 interchange ramp limit to a maximum of one mile south of the southern project limits.
- In no case shall a lane closure begin or end within ¼ mile of the limits of the US 421/ I-77 interchange ramp limits.
- In no case shall more than one lane closure be in place in the same direction.

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 NCDOT 2002 *Roadway Standard Drawings* No. 1101D04, unless the work area is protected by approved temporary traffic barrier or guardrail. Drawing can be found on the Work Zone Traffic Control Website. Traffic Control Devices shall be placed a minimum of 2’ from the edge of travel lane.

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 NCDOT 2002 *Roadway Standard Drawing* No. 1101.02, unless the work area is protected by 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 NCDOT 2002 *Roadway Standard Drawings* No. 1101.02. If the work cannot be completed to the point where the pavement edge

dropoff requirements are met prior to inactivity in that area, then **an approved temporary barrier system must be used in lieu of drums**.

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.

C. Pavement Edge Drop off Requirements

The Design-Build Team shall backfill at a 6:1 slope up to the edge and elevation of existing pavement in areas adjacent to an opened travel lane that has a drop-off as follows:

- Backfill drop-offs that exceed 2 inches on roadways with posted speed limits of 45 mph or greater.
- Backfill drop-offs that exceed 3 inches on roadways with posted speed limits less than 45 mph.
- Backfill drop-off with acceptable material and compact at no expense to the Department.
- Do not exceed a difference of 1.5 inches in elevation between open lanes of traffic. Install advance warning "UNEVEN LANES" signs (W8-11) 500 feet in advance.

OR

Do not exceed a difference of 2.0 inches in elevation between open lanes of traffic. If the difference between open lanes is between 1.5 inches to 2.0 inches, provide a 1:1 slope at edge of pavement separating the lanes of travel. Install advance warning "UNEVEN LANES" signs (W8-11) 500 feet in advance and a minimum of once every ½-mile throughout the uneven area.

D. Traffic Pattern Alterations

The Design-Build Team shall notify the Engineer twenty-one (21) calendar days prior to any traffic pattern alteration. Reference the Public Involvement Scope of Work for providing information to the public.

E. Signing

The Design-Build Team shall install advance work zone warning signs when work is within 100 feet from the edge of travel lane and no more than three days prior to the beginning of construction.

When no work is being conducted for a period longer than one week, the Design-Build Team shall remove or cover all advance work zone warning signs, as directed by the Engineer, at no cost to the Department.

The Design-Build Team shall be responsible for all detour signing. The Design-Build Team shall provide detailed information on the route, devices required and why they are needed in the Staging Concept. Possible detour needs could include, but are not limited to, road / ramp / loop closures; limited horizontal (less than 17' clear width) or vertical clearance limits; grade changes in tie in areas; and oversize and / or overweight limits.

The Design-Build Team shall cover or remove all detour signs within and off the project limits when a detour is not in operation.

The Design-Build Team shall ensure that all necessary signing is in place prior to altering any traffic pattern.

The Design-Build Team shall maintain all Guide Signs throughout the life of the project and remove any Guide Signs when they are no longer applicable.

F. Traffic Barrier

The Department will not provide any moveable barrier or transfer vehicles for this project.

The Design-Build Team shall install an approved temporary traffic barrier system a maximum of two (2) weeks prior to beginning work in any location. Once the approved temporary traffic barrier system is installed at any location, the Design-Build Team shall proceed in a continuous manner to complete the proposed work in that location.

Once the approved temporary traffic barrier system is installed and no work has been performed behind the approved temporary traffic barrier system for a period longer than one (1) month, the Design-Build Team shall remove / reset the approved temporary traffic barrier system at no cost to the Department unless barrier is protecting a hazard.

The Design-Build Team shall protect the approach end of the approved temporary traffic barrier system at all times during the installation and removal of the barrier. If the system requires installation of a temporary crash cushion, a truck mounted impact attenuator can be used for a maximum of 72 hours until the temporary crash cushion can be installed.

The Design-Build Team shall offset the approach's end of the approved temporary traffic barrier system a minimum of 40 feet from oncoming traffic or protect at all times by a temporary crash cushion if the approved temporary traffic barrier system requires a temporary crash cushion.

The Design-Build Team shall install approved temporary traffic barrier system with the traffic flow, beginning with the upstream side of traffic. The Design-Build Team shall remove the approved temporary traffic barrier system against the traffic flow, beginning with the downstream side of traffic.

The Design-Build Team shall install and space drums no greater than twice the posted speed limit (mph) to close or keep closed the section of the roadway until the barrier can be placed or after the barrier is removed.

Motorist Break Down areas shall be required for interstates that have interchanges more than one mile apart and when less than 10' paved outside shoulder can be provided for more than one mile. The break down area shall be paved 500 feet long and a minimum of 14 feet wide and shall be provided every two miles. Contact the Design-Build Section for the required special sign design and layout.

The Design-Build Team shall be responsible for providing a safe area (lateral offset behind barrier to work area) behind the approved temporary barrier system in accordance with the NCHRP-350 deflections from crash tests. If the safe area can not be maintained, an anchored barrier system shall be required.

G. Traffic Control Devices

The Design-Build Team shall use traffic control devices that conform to all NCDOT requirements and must be listed on the Department's Approved Products List as shown on the NCDOT's Work Zone Traffic Control Unit Website. Use of devices not shown on the Approved Product List shall require approval from the State Alternative Delivery Systems Engineer.

All drums shall meet the requirements of the Drum Standard Detail found on the Work Zone Traffic Control Web page.

The Design-Build Team shall space channelizing devices in work areas no greater than twice the posted speed limit (mph) unless otherwise notes herein. Places drums 10 feet on-center in radii, and 10 feet off the edge of an open travelway, when lane closures are not in effect.

The Design-Build Team shall place Type III barricades, with "ROAD CLOSED" sign R11-2 attached, of sufficient length to close entire roadway. The Design-Build Team shall stagger or overlap barricades to allow for ingress or egress.

EROSION AND SEDIMENTATION CONTROL SCOPE OF WORK

The NCDOT REU shall approve all Erosion and Sedimentation Control Plans. Release for Construction (RFC) Erosion Control Plans shall be submitted to all NCDOT Personnel listed in the Design-Build Submittal Guidelines before **any** land disturbing activities can commence. If the Design-Build Team chooses to perform the work in discrete sections, then a complete set of RFC plans shall be submitted, accepted, and distributed as noted above prior to land disturbing activities commencing in that section. No land disturbing activities shall occur in any section that does not have accepted RFC plans.

Erosion and Sedimentation Control Plans shall at a minimum address the following:

I. Complete Set of Plans
   A. Clearing and grubbing phase
      1. Use correct NCDOT symbology
      2. Protect existing drainage structure inlets with Rock Inlet Sediment Trap Type 'A' (RIST-A), Rock Inlet Sediment Trap Type 'C' (RIST-C), Rock Pipe Inlet Sediment Trap Type 'A' (PIST-A), etc.
      3. Utilize adequate perimeter controls (temporary diversions, silt fence, etc.)
      4. Utilize rock measures w/ sediment control stone @ drainage outlets (Temporary Rock Sediment Dam Type 'B' (TRSD-B), Temporary Rock Silt Check Type 'A' (TRSC-A), etc.)
      5. Take into account existing topography and show contour lines
      6. Utilize Temporary Rock Silt Checks Type 'B' (TRSC-B) to reduce velocity in existing ditches with spacing of 300 ft. divided by % ditch grade
      7. Protect existing streams
      8. Provide adequate silt storage for 1800 cubic feet per disturbed acre and sediment basins shall be sized with surface area equal to .01 times the peak inflow rate, Q10, using 10-year peak runoff 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)
      9. Design Riser Basins to the following standards:
         a. Surface Area shall be determined by Equation A(sq. ft.) = Q10(cfs) * 435.6
         b. Riser Pipe shall have a cross-sectional area 1.5 times that of the barrel pipe
         c. Perforations in the riser pipe shall be reduced to increase dewatering time to twenty-four (24) hours
         d. See *NCDENR- Erosion and Sediment Control Planning and Design Manual* for additional design criteria

   B. Intermediate and final grade phases
      1. Use correct NCDOT symbology
      2. Protect existing and proposed drainage structure inlets with RIST-A, RIST-C, PIST-A, etc.
      3. Utilize TRSC-B's to reduce velocity in existing and proposed ditches with spacing of 300 ft. divided by % ditch grade

4. Utilize temporary slope drains and earth berms at top of fill slopes 8 ft or higher and a fill slope grade of 3:1 or steeper, or where there are super elevations above .04 and fills are greater than 5 ft. Maximum slope drain spacing shall be 200 feet
5. Utilize rock energy dissipater and / or silt basin at outlet of slope drain
6. Devices at all drainage turnouts shall utilize sediment control stone (TRSD-B, TRSC-A, etc.)
7. Provide adequate silt storage for 1800 cubic feet per disturbed acre and sediment basins shall be sized with surface area equal to .01 times the peak inflow rate, Q10, using 10-year peak runoff data *(NCDENR- Erosion and Sediment Control Planning and Design Manual*) A Sediment Basin Designer Spreadsheet will be provided by NCDOT REU
8. Provide Matting for Erosion Control in all ditch lines where Shear Stress is greater than 0.15 psf, but less than or equal to 1.55 psf. For ditch lines with a Shear Stress above 1.55 psf, Permanent Soil Reinforcement Mat or Rip Rap shall be utilized
9. Design Riser Basins to the following standards:
   a. Surface Area shall be determined by Equation A(sq. ft.) = Q10(cfs) * 435.6
   b. Riser Pipe shall have a cross-sectional area 1.5 times that of the barrel pipe
   c. Perforations in the riser pipe shall be reduced to increase dewatering time to twenty-four (24) hours
   d. See *NCDENR- Erosion and Sediment Control Planning and Design Manual* for additional design criteria
10. Provide the overall erosion control plan for period between Clearing & Grubbing and Final Grade if needed

II. Detail Sheets and Notes
   A. Provide construction entrance detail
   B. Provide project specific special details and notes
   C. Provide reforestation sheet(s): regular, wetland, streambank 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 web site 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 proposal

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. ** NOTE ** Revised and Relocated Bullet E.
F. 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.
G. 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).
H. 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.
I. The RFC Plans shall be revised as necessary to accommodate any changes made to the roadway design, hydraulic design, or other aspect of the project affecting the original RFC plans. Revisions shall be submitted for review and shall be accepted prior to construction of any aspect of the revised design.
J. An approved Erosion and Sedimentation Control Plan does not exempt the Design-Build Team from making every effort to contain sediment onsite.
K. Any Erosion Control Design revisions made during the construction of the project shall be submitted to NCDOT REU by the 15th of the month. 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.
L. 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*.
M. 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 Erosion Control Design begins. Erosion and Sedimentation Control Plan submittals shall only be reviewed and approved by NCDOT REU after the Erosion Control Pre-Design Meeting.
N. All RFC Erosion Control Plans, including any red line revisions, shall be kept on site at all times throughout the duration of the project.
O. Erosion Control/Stormwater Certification shall be required according to the Project Special Provision found elsewhere in this proposal.