STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

March 16, 2015

Addendum No. 2

Contract No.:	C 203609
TIP No.:	R-2250
County:	Pitt
Project Description:	Greenville Southwest Bypass from south of Old NC 11 to US 264

RE: Addendum No. 2 to Final RFP

April 21, 2015 Letting

To Whom It May Concern:

Reference is made to the Final Request for Proposals dated February 24, 2015 recently furnished to you on the above project. We have since incorporated changes, and have attached a copy of Addendum No. 2 for your information. Please note that all revisions have been highlighted in gray and are as follows:

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

Page Nos. 153, 154, 156, 157 and 159 of the *Roadway Scope of Work* have been revised. Please void Page Nos. 153, 154, 156, 157 and 159 in your proposal and staple the revised Page Nos. 153, 154, 156, 157 and 159 thereto.

Page No. 165 of the *Pavement Management Scope of Work* has been revised. Please void Page No. 165 in your proposal and staple the revised Page No. 165 thereto.

Page Nos. 171 and 172 of the *Structures Scope of Work* have been revised. Please void Page Nos. 171 and 172 in your proposal and staple the revised Page Nos. 171 and 172 thereto.

Page No. 229 of the *Utilities Coordination Scope of Work* has been revised. Please void Page No. 229 in your proposal and staple the revised Page No. 229 thereto.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARDS AND DEVELOPMENT UNIT
1591 MAIL SERVICE CENTER
RALEIGH NC 27699-1591

TELEPHONE: 919-707-6900
FAX: 919-250-4119

WEBSITE:
www.NCDOT.GOV

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

Page Nos. 253 and 255 of the *Erosion and Sedimentation Control Scope of Work* have been revised. Please void Page Nos. 253 and 255 in your proposal and staple the revised Page Nos. 253 and 255 thereto.

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

Sincerely,

R.A. Garris, PE
Contract Officer

RAG/btk

cc: Mr. Rodger Rochelle, PE
Mr. John Rouse, PE
Ms. Teresa Bruton, PE
Mr. Zak Hamidi, PE
Mr. David Hering, PE
File

ROADWAY SCOPE OF WORK (3-16-15)

It should be noted that TIP Project R-2250, as referenced throughout this Request for Proposals, represents projects that were formerly designated as TIP Projects R-2250A, B & C. All references to TIP Projects R-2250A, B & C in material provided by the Department shall apply to this project.

Throughout this Request for Proposals, references to the Preliminary Roadway Plans shall include the R-2250A, B & C Preliminary Roadway Plans provided by the Department.

Project Details

- The Design-Build Team shall design and construct a four-lane divided facility from south of Old NC 11 to US 264. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct the -L- Line providing the same or better access, widening, improvements and level of service included in the Preliminary Roadway Plans provided by the Department. The limits of -L- Line construction shall be of sufficient length to tie to existing based upon the current NCDOT guidelines and standards. The mainline shall be designed and constructed to meet a 70 mph design speed for a level terrain freeway designed to interstate standards. The Design-Build Team shall provide all other design criteria, based on the 2040 traffic volumes in the October 2014 *Traffic Forecast Report* and the NCDOT *Functional Classification Maps*, in the Technical Proposal.

- Along the -L- Line, the Design-Build Team shall design and construct minimum 14-foot total outside shoulders (12' useable shoulder width plus two feet), 12-foot of which shall be full depth paved shoulders, including all acceleration, deceleration and auxiliary lanes, and ramps / loops to the back of the gore (12 foot width). Along the -L- Line, the Design-Build Team shall design and construct minimum six-foot median shoulders, four-foot of which shall be full depth paved shoulders. From the beginning of the project to Station 57+75 -L-, the Design-Build Team shall maintain the existing median width along the mainline. Excluding from the beginning of the project to Station 57+75 -L-, the Design-Build Team shall design and construct a minimum 46-foot median along the mainline.

- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct -Y- Lines, ramps, loops, service roads and cul-de-sacs providing the same or better access, widening, improvements and level of service included in the Preliminary Roadway Plans 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.

- The Design-Build Team shall design and construct all -Y- Lines such that the through movement is not required to change lanes through the project limits.

- If the Design-Build Team elects to build a diamond or partial clover-leaf interchange at NC 102, Forlines Road (SR 1126), and / or US 13 / US 264 Alternate, the Design-Build Team shall adhere to the following:

    - The Design-Build Team shall design and construct a consistent typical section width between ramp terminals.

- The Design-Build Team shall prepare functional horizontal and vertical designs for a future full cloverleaf interchange (ramps and loops in all quadrants). The loops shall be designed for a minimum 30 mph design speed. The minimum loop radius shall be 230 feet, or the length required to adhere to the turn lane length requirements noted elsewhere in this RFP, whichever is greater.

- The Design-Build Team shall design and construct all bridges (at interchanges and grade separations for required future continuous auxiliary lanes, if necessary) to allow / accommodate the aforementioned future full cloverleaf interchange. (Reference the Structures Scope of Work found elsewhere in this RFP)

- The Design-Build Team shall make a determination of, and acquire, the additional right of way required for the aforementioned future full cloverleaf interchange. (Reference the Right of Way Scope of Work found elsewhere in this RFP)

- The Design-Build Team shall relocate / coordinate the relocation of utilities in conflict with the aforementioned future full cloverleaf interchange. (Reference the Utilities Coordination Scope of Work found elsewhere in this RFP)

- The Design-Build Team shall design and construct NC 102 as an arterial with a 50 mph design speed. From NC 11 westward to the furthest Quadrant A or B ramp, the Design-Build Team shall install 2'-6" curb and gutter with a ten-foot berm along both sides of NC 102.

- Beneath all mainline bridges over -Y- Lines that are not otherwise improved, the Design-Build Team shall design and construct a typical section equal to the lane and shoulder widths required by design criteria that is based on the 2040 traffic volumes in the October 2014 *Traffic Forecast Report* and the NCDOT *Functional Classification Maps*. The Design-Build Team will not be required to design or construct a resurfacing grade for the aforementioned -Y- Lines.

- The Design-Build Team shall design and construct one-lane ramps that provide a minimum 16-foot lane width. The Design-Build Team shall design and construct two-lane ramps that provide minimum 12-foot lanes. All ramps shall have 14-foot outside shoulders, four-foot of which shall be full depth paved shoulders and 12-foot inside shoulders, four-foot of which shall be full depth paved shoulders.

- If the end of the taper on an entrance ramp is within 2,500 feet of the beginning of the taper for an exit ramp, the Design-Build Team shall design and construct a continuous auxiliary lane between the entrance and exit ramps.

- Excluding the ramps in Quadrants B and C of the US 264 interchange, the Design-Build Team shall design and construct all directional ramps with a minimum of two 12-foot lanes from back of gore to back of gore (12-foot width). The minimum design speed for all directional ramps shall adhere to the middle range design speed noted in Table 10-1, *Guide Values for Ramp Design Speed as Related to Highway Design Speed* shown in AASHTO's *A Policy on Geometric Design of Highways and Streets* (2011). The Design-Build Team shall design and construct all directional ramp structures with a four-foot outside bridge rail offset and a 12-foot inside bridge rail offset.

- The Design-Build Team shall design and construct loops that adhere to Table 3-29, *Design Widths of Pavements for Turning Roadways,* shown in AASHTO's *A Policy on Geometric Design of Highways and Streets* (2011) - Case II / Condition C for one-lane loops; Case III /

- Excluding two-lane and four-lane roadways crowned at the centerline of pavement, the Design-Build Team shall design and construct all -Y- Lines and service roads with a 0.025 cross slope in normal crown sections.

- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct at-grade intersections with the lane configurations noted in the January 28, 2015 Congestion Management Report provided by the Department,. At all intersections impacted by the Design-Build Team's design and / or construction, excluding resurfacing, the Design-Build Team shall design and construct turn lanes that adhere to the greater of the following:

    - All turn lane lengths shall adhere to the NCDOT minimum turn lane lengths as defined in the NCDOT Roadway Design Manual (Reference Section 9-1, Figure 4).

    - All lengths for the turn lanes required by the January 28, 2015 Congestion Management Report, and as superseded in the March 16, 2015 Congestion Management Report – Addendum No. 1, provided by the Department shall adhere to the NCDOT Recommended Treatment for Turn Lanes. These lengths shall be determined by adding the storage length defined in the aforementioned Congestion Management Report and Addendum; the minimum deceleration length, as defined in the NCDOT Roadway Design Manual (Reference Section 9-1, Figure F-4A); and the approach / departure taper.

    - Right turn lanes / tapers shall be provided in accordance with the NCDOT Right Turn Lane Warrants, as defined in the Roadway Design Manual (Reference Section 9-1, Figure F-4C).

- For all intersection / interchange design modifications, the Design-Build Team shall provide a traffic analysis that adheres to the January 1, 2012 Congestion Management Capacity Analysis Guidelines for the Department's review and acceptance.

- At all intersections with restricted movements impacted by the Design-Build Team's design and/or construction methods, excluding resurfacing, the Design-Build Team shall provide 5-inch keyed-in concrete monolithic channelization islands.

- Within the interchange limits of all three-lane facilities, the Design-Build Team shall design and construct a minimum four foot wide 5-inch keyed-in concrete monolithic channelization island.

- The minimum width of all grass covered islands / medians shall be eight feet, measured face to face from the surrounding mountable concrete curb and gutter or from edge of pavement to edge of pavement, as appropriate. All grass covered islands shall be constructed with topsoil and appropriate cross slope and median drain with pipe to prevent groundwater and surface water infiltration into the subgrade and / or pavement structure. Prior to construction of the grass covered islands and / or median drain with pipe, the Design-Build Team shall submit to the Design-Build Unit, for review and acceptance, the proposed number of drains, drain locations with the typical section, topsoil specifications and construction details. Within

all proposed grass covered island limits, the Design-Build Team shall completely remove and dispose of the existing pavement structure.

- The mainline is a full control of access facility, including but not limited to the section of existing NC 11 between proposed Old NC 11 (-Y5-) and Old Snow Hill Road (SR 1113 / -Y6-). The Design-Build Team shall bring to the Design-Build Unit's attention any deviations from the proposed control of access shown on the Preliminary Roadway Plans provided by the Department. The proposed right of way and / or control of access limits may deviate in proximity to cultural, historic, or otherwise protected landmarks, including cemeteries, to eliminate / minimize impacts. Prior to negotiating right of way, easement and / or control of access with the property owners, the Department shall accept the Right of Way Plans developed by the Design-Build Team.

- Prior to installation, the Design-Build Team shall be responsible for coordinating with, and obtaining approval from, the NCDOT for the control of access fence placement. The Design-Build Team shall be responsible for installation of the control of access fence as noted below:

  - With the exception of within subdivision limits, the Design-Build Team shall install woven wire fence.

  - Within existing subdivision limits, the Design-Build Team shall install 5 foot chain-link fence.

  - Except as required otherwise above, the Design-Build Team shall replace, in kind all control of access fence damaged during construction.

  - Except as required otherwise above, the Design-Build Team shall install all missing control of access fence, matching the adjacent fence type.

- The Design-Build Team shall not impact any cemetery located within the project limits. The proposed right of way, easement and / or control of access limits shall not encroach on any cemetery property.

- Within the project limits, the Design-Build Team shall locate and install metal caps with fiberglass markers for all parcels. The aforementioned markers shall delineate all proposed right of way and permanent easements. The Design-Build Team shall replace all existing right of way and easement markers / monuments damaged and / or relocated during construction. In accordance with the NCDOT Policy, the Department will furnish the metal caps with fiberglass markers.

- Except as required elsewhere in this RFP and / or to eliminate a design exception, the Design-Build Team shall not further impact any cultural, historical or otherwise protected landmark or topographic feature beyond that shown on the Preliminary Roadway Plans provided by the Department, including maintaining the horizontal and vertical alignments on the aforementioned preliminary plans through the Renston Historic District. The Design-Build Team shall not acquire right of way or easements from the aforementioned features unless shown on the Preliminary Roadway Plans provided by the Department.

shoulders with a Type "B" ditch as per the *Roadway Design Manual.* (Note that the Design-Build Team will not be required to design or construct Service Road -SR10- shown on the Design Public Hearing Map & Official Corridor Map south of the Norfolk Southern Railway.)

- Excluding haul roads and -Y- Lines noted elsewhere in this RFP, the Design-Build Team shall design and construct resurfacing grades for all roadways impacted by construction. All resurfacing grades shall adhere to the design criteria and standards, provide all required pavement wedging (Reference the Pavement Management Scope of Work found elsewhere in this RFP) and adhere to the minimum requirements noted below:

  - The Design-Build Team shall resurface all lanes and shoulders of an undivided facility throughout the limits of proposed widening and construction.

  - 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.

  - Unless noted otherwise elsewhere in this RFP, for both divided and undivided facilities, the Design-Build Team shall resurface all lanes and shoulders within the outermost construction limits of all proposed widening and construction, including any gaps along the facility where construction activities are not required. The aforementioned resurfacing limits will not be required to extend to the four proposed Dynamic Message Sign installations (Reference the ITS Scope of Work found elsewhere in this RFP).

  - The Design-Build Team shall resurface all existing facilities to the limits of pavement marking obliterations / revisions.

- The Design-Build Team shall provide turn-arounds on all roads that are dead-ended.

- The Design-Build Team shall inform the Design-Build Unit, in writing, of all proposed design revisions, including but not limited to the following:

  - The Design-Build Team shall note in the Technical Proposal any proposed deviations to the preliminary design shown on the Preliminary Roadway Plans provided by the Department. The Design-Build Team shall be responsible for all activities, as deemed necessary by the Department, resulting from changes to the NCDOT preliminary design, including but not limited to, public involvement, NEPA re-evaluation and / or coordination with other stakeholders. 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.

  - After the contract has been Awarded, the Design-Build Team shall inform the Design-Build Unit, in writing, of all proposed changes to the design shown in the Technical Proposal.

PAVEMENT MANAGEMENT SCOPE OF WORK (3-16-15)

MAINLINE WIDENING

From the southern project limits to the beginning of new mainline (-L- Line) travel lanes (≈ Sta. 75+46 -L-), the Design-Build Team shall use the following pavement design for construction of the mainline (-L- Line) widening, including outside and median shoulders:

3.0" S9.5C
3.0" I19.0C
5.0" B25.0C

Throughout the limits noted above, the Design-Build Team shall resurface the existing mainline pavement with a minimum 3.0" S9.5C. (Reference the Roadway Scope of Work found elsewhere in this RFP)

From the end of new mainline (-L- Line) travel lanes to the northern project limits (the northern termini of the -Y21RPA- and -Y21RPD ramp tapers), the Design-Build Team shall use one of the following pavement designs for construction of the mainline (-L- Line) widening, including outside and median shoulders:

Alternate 1	Alternate 2
3.0" S9.5C	3.0" S9.5C
3.0" I19.0C	3.5" I19.0C
5.5" B25.0C	10.0" ABC

Throughout the limits noted above, the Design-Build Team shall resurface the existing mainline pavement with a minimum 3.0" S9.5C. (Reference the Roadway Scope of Work found elsewhere in this RFP)

MAINLINE NEW LOCATION

From the beginning of new mainline (-L- Line) travel lanes (≈ Sta. 75+46 -L-) to the end of the project, the Design-Build Team shall use one of the following alternates for construction of the mainline (-L- Line) travel lanes:

Alternate 1	Alternate 2	Alternate 3
3.0" S9.5C	3.0" S9.5C	10.0" Concrete
3.0" I19.0C	3.5" I19.0C	6.0" ABC
5.5" B25.0C	10.0" ABC	

For Alternates 1 and 2 the mainline outside and median paved shoulders shall consist of the mainline travel lane pavement design.

For Alternate 3, the joints shall be uniformly spaced 15 feet apart and the mainline outside and median paved shoulders shall consist of 3.0" S9.5C, 3.0" I19.0C and minimum 4.0" B25.0C.

For the mainline new location section, the pavement alternate chosen for the mainline travel lane and shoulder shall be used for the entire section. If the Design-Build Team choses an asphalt pavement design for the mainline new location pavement, the Design-Build Team shall chose the same pavement design for the northern mainline widening pavement. The Design-Build Team shall specify the mainline travel lane and shoulder pavement alternates chosen in the Technical Proposal.

STRUCTURES SCOPE OF WORK (3-16-15)

Project Details

The Design-Build Team shall be responsible for all structures necessary to complete the project, including at the following locations:

- Bridge(s) at NC 11 southbound (-FLYBY7_2) and the -L- Line
- Bridge(s) at Old Snow Hill Road (SR 1113) and the -L- Line
- Bridge(s) at NC 102 and the -L- Line
- Dual bridges on the -L- Line over Abbott Farm Road (SR 1117)
- Dual bridges on the -L- Line over NC 903
- Bridge(s) at Pocosin Road (SR 1125) and the -L- Line
- Bridge(s) at Forlines Road (SR 1126) and the -L- Line
- Bridge(s) at Davenport Farm Road (SR 1128) and the -L- Line
- Bridge(s) at US 13 / US 264 Alternate and the -L- Line
- Bridge(s) at Froglevel Road (SR 1127) and the -L- Line
- Bridge(s) on the -L- Line over Carolina Coastal Railroad (Service Road -SR10- has been deleted)
- Bridge(s) at Stantonsburg Road (SR 1200) and the -L- Line
- Replacement of the existing 60" RCP on Bell Arthur Road with a reinforced concrete box culvert and all other reinforced concrete box culverts required by the Design-Build Team's design
- Sound barrier walls required by the Design-Build Team's design (Reference the Roadway Scope of Work found elsewhere in this RFP)

If the Design-Build Team elects to construct a bridge on NC 102 over the -L- Line, the Design-Build Team shall design and construct a bridge that carries three 12-foot travel lanes and a minimum four-foot wide concrete monolithic island. The Design-Build Team shall also design and construct 5'-6" sidewalks, that are offset two feet from the edge of the travel lanes, and 3-bar metal rails on both sides of an NC 102 bridge over the -L- Line. (Reference the Roadway Scope of Work found elsewhere in this RFP)

If the Design-Build Team elects to construct a bridge on Forlines Road over the -L- Line, the Design-Build Team shall design and construct a bridge wide enough to carry three 12-foot travel lanes and a minimum four-foot wide concrete monolithic island, with appropriate bridge rail offset. (Reference the Roadway Scope of Work found elsewhere in this RFP)

At the following locations, the outside bridge barrier shall be per Standard Drawing BMR3 and BMR4; and the median barrier rail shall be per Standard Drawing CBR1. All other proposed bridge barrier rails shall be per Standard Drawing CBR1.

- Dual bridges on the -L- Line over Abbott Farm Road (SR 1117)
- Dual bridges on the -L- Line over NC 903

If the Design-Build Team elects to construct a diamond or partial cloverleaf interchange at NC 102, Forlines Road (SR 1126) and / or US 13 / US 264 Alternate, the Design-Build Team shall design and construct bridges at the aforementioned interchanges that have 1) a minimum horizontal length that accommodates a future full cloverleaf interchange (ramps and loops in all quadrants) without design exceptions or additional construction to lengthen the bridges and 2) a minimum vertical clearance that will allow the bridges to be widened in the future to

accommodate a full cloverleaf interchange without design exceptions. The Design-Build Team shall also design and construct all grade separations impacted by the future full cloverleaf interchanges, including but not limited to structures that will accommodate future continuous auxiliary lanes that have 1) a minimum horizontal length that accommodates a future full cloverleaf interchange without design exceptions or additional construction to lengthen the bridges and 2) a minimum vertical clearance that will allow the bridges to be widened in the future to accommodate a full cloverleaf interchange without design exceptions. (Reference the Roadway Scope of Work found elsewhere in this RFP)

The following locations shall have standard spill through end bents with concrete slope protection. No retaining walls, including but not limited to any combination of a retaining wall, concrete barrier and slope protection, will be allowed in lieu of the aforementioned concrete slope protection. The exposed end bent cap height, from the top of the concrete slope protection berm to the highest bridge seat, shall not exceed three feet.

- Dual bridges on the -L- Line over Abbott Farm Road (SR 1117)
- Dual bridges on the -L- Line over NC 903

The minimum vertical clearance for bridges constructed over all interstates, freeways and arterials shall be 17'-0". The minimum vertical clearance for bridges constructed over all local roads and collector roads shall be 15'-6". The minimum vertical clearance for bridges constructed over a railroad shall be 23'-0".

End bents and end bent slopes at each end of a bridge shall have the same appearance.

Regardless of wall height, sound barrier walls shall be designed in accordance with AASHTO LRFD Bridge Design Specifications. The traffic side of all sound barrier walls shall be form lined with a pattern to be determined by the Engineer. All ground-mounted sound barrier walls shall be detailed in accordance with Structure Standards SBW1 and SBW2, and concrete piles shall be used. Unless otherwise approved by the Department, the top of all sound barrier walls shall be constructed to provide a continuous elevation transition in increments no greater than one-foot. (Reference the *Sound Barrier Wall* and *Architectural Concrete Surface Treatment* Project Special Provisions, and the Roadway Scope of Work found elsewhere in this RFP)

The number of expansion joints for each structure shall be kept to a minimum. Structures shall be integral if the criteria listed in the NCDOT *Structures Management Unit Manual* is met. When required by the criteria in Section 6.2.3.2 of the NCDOT *Structures Management Unit Manual*, the Design-Build Team shall use expansion joints, except Bullets 3 and 4 in the aforementioned Section shall apply to all roadways.

All bridges shall meet approved roadway typical sections and grades. Bridge geometry (width, length, skew, span arrangement, etc.) shall be in accordance with the accepted Structure Recommendations prepared by the Design-Build Team.

A live load rating chart for proposed girders shall be included with the highway bridge plans and shall state design assumptions and methodology used in the load rating calculations. The load rating shall be in accordance with the NCDOT *Structures Management Unit Manual* (including policy memos) and AASHTO's *Manual for Bridge Evaluation.*

A live load rating chart for reinforced concrete box culverts shall be included in the culvert plans.

Utility Owner	Utility Type	Typical Cost Responsibility
Greenville Utilities Commission	Power	NCDOT
Greenville Utilities Commission	Gas	NCDOT
Sudden Link	Cable	Utility Owner
Century-Link Telephone	Fiber Optic Cable	Utility Owner / NCDOT
MCNC	Fiber Optic Cable	Utility Owner / NCDOT
Greenville Utilities Commission	Water and Sewer	Utility Owner
Bell Arthur Water Corporation	Water	NCDOT
Neuse Regional Water & Sewer Authority *	Water & Sewer	NCDOT
Town of Ayden	Water & Sewer	NCDOT
Town of Ayden	Power	NCDOT
Town of Farmville	Water	NCDOT
Piedmont Natural Gas	Gas	Utility Owner / NCDOT
Contentnea Metropolitan Sewerage District	Sewer	NCDOT

*The Neuse Regional Water & Sewer Authority membership consists of separate entities that shall individually review plans for their facilities.

Utility Conflicts

Cooperating with the utility owners, the Design-Build Team shall identify all conflicts between the existing utility facilities and the project design and / or construction. At a minimum, the Design-Build Team shall adhere to the following utility location / relocation criteria:

1. Excluding the utilities noted below, all utilities shall be relocated / located outside of the full control of access limits:
    a. Utilities crossing a full control of access roadway that are located within the normal right of way of a roadway with no control of access
    b. The existing Neuse Regional Water & Sewer Authority 30” water line along existing NC 11, provided all the other requirements listed below are met
    c. The existing Contentnea Metropolitan Sewerage District 36” gravity sanitary sewer located along existing NC 11, provided all the other requirements listed below are met
2. Utilities shall be accessible and serviceable without access from roadways and / or ramps / loops that are within full control of access limits.
3. Proposed and relocated utilities will be allowed within the outer limits of the right of way of a partial control of access roadway at five-foot increments. Existing utilities along partial control of access roadways will be allowed to remain in place if they are structurally adequate.
4. Utilities that are not structurally adequate for all anticipated loads, including but not limited to construction loads, earthen dead loads, operational traffic and impact loads, shall be replaced / relocated.
5. All above ground utilities shall be relocated / located outside of the vehicle recovery area.
6. Excluding paved shoulders, proposed and relocated water lines and sanitary sewer lines shall be encased when located under pavement. Existing utilities located under pavement that are structurally adequate do not require encasement.

**** Note ** Only the exceptions noted above will be granted for existing and proposed utilities within full control of access limits.**

Water and Sewer

If the Design-Build Team's design and / or construction requires the relocation and / or encasement of existing water or sewer facilities, designs shall be coordinated with the NCDOT Utilities Unit. All costs associated with the design and construction for relocation and / or encasement of these existing water and / or sewer facilities shall be the responsibility of the Design-Build Team and shall be included in the lump sum bid for the project. The Design-Build

d. The riser pipe shall be non-perforated with a skimmer attached to the bottom of the pipe, one-foot from the bottom of the basin.
e. See NCDENR- *Erosion and Sediment Control Planning and Design Manual* for additional design criteria.

13. The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively.
14. 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 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.
15. Include any culvert and / or pipe construction sequence plan sheets in the Clearing & Grubbing Plans; all pipes 48 inches or larger, or any combination of pipes that total 48 inches or more shall require a construction sequence. Prior to installation of pipes smaller than 48 inches 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.
16. During construction, provide temporary sediment basins that dewater from the surface at all permanent stormwater devices.
17. Utilize Coir Fiber Wattles with Polyacrylamide (PAM) and / or TRSC-As with Matting and PAM in temporary and permanent, existing and proposed ditches at a spacing of 50 feet in areas where sediment basins are not feasible at drainage outlets and in areas where sediment basins at drainage outlets with sediment traps (i.e. PIST-A, RIST-A, etc.), cannot be properly sized to surface area and / or sediment storage requirements due to safety concerns, right of way restrictions, utility conflicts, or other construction limitations approved by the Roadside Environmental Unit.
18. Place a device utilizing PAM at all sediment basin inlets.
19. At a maximum spacing of 200 feet and as directed, utilize Coir Fiber Wattle drainage breaks in silt fence.
20. Do not place erosion control devices that require excavation (i.e. sediment basins, silt ditches, etc.) in wetlands or buffer zones.
21. Within the entire project limits, provide disturbed and undisturbed drainage areas in MicroStation Format.
22. For all drainage outlets where the runoff cannot be treated with a sediment basin and / or the sediment basin cannot be constructed to the required sediment storage or surface area requirements, provide a written explanation.
23. Excluding perimeter Sediment Basins that will function only during Clearing and Grubbing operations, all perimeter Sediment Basins shall be placed outside of fill slopes.

d. The riser pipe shall be non-perforated with a skimmer attached to the bottom of the pipe, one-foot from the bottom of the basin.
e. See NCDENR- *Erosion and Sediment Control Planning and Design Manual* for additional design criteria.

12. Provide matting for erosion control in all ditch lines, including but not limited to temporary ditch lines (TDs) utilized to divert offsite runoff around construction areas, where the velocity is greater than 2.0 feet / sec, 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.
13. Unless otherwise approved by the Roadside Environmental Field Operations Engineer, provide matting for erosion control on all slopes (cut and fill) that are 3:1 or steeper and a height of five feet or higher.
14. Along all slopes (cut and fill) that are 30 feet or higher, place parallel rows of 12-inch Excelsior Wattles at a spacing height of 15 feet.
15. The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively.
16. 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 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.
17. During construction, provide temporary sediment basins that dewater from the surface at all permanent stormwater devices.
18. Utilize Coir Wattles with Polyacrylamide (PAM) and / or TRSC-As with matting and PAM in temporary and permanent, existing and proposed ditches at a spacing of 50 feet in areas where sediment basins are not feasible at drainage outlets, and in areas where sediment basins at drainage outlets with sediment traps (i.e. PIST-A, RIST-A, etc.) cannot be properly sized to surface area and / or sediment storage requirements due to safety concerns, right of way restrictions, utility conflicts, or other construction limitations approved by the NCDOT Roadside Environmental Unit.
19. Place device utilizing PAM at all sediment basin inlets.
20. At a maximum spacing of 200 feet and as directed, utilize Coir Fiber Wattle drainage breaks in silt fence.
21. Do not place erosion control devices that require excavation (i.e. basins, silt ditches, etc.) in wetlands or buffer zones.
22. Within the entire project limits, provide disturbed and undisturbed drainage areas in MicroStation Format.
23. For all drainage outlets where the runoff cannot be treated with a sediment basin and / or the sediment basin cannot be constructed to the required sediment storage or surface area requirements, provide a written explanation.
24. All perimeter Sediment Basins shall be placed outside of fill slopes.