

PROJECT SPECIAL PROVISIONS
Utility Construction

GENERAL CONSTRUCTION REQUIREMENTS

Specifications:

The proposed utility construction shall meet the applicable requirements of the NC Department of Transportation's "Standard Specifications for Roads and Structures" dated January 2002 and the following provisions.

Owner and Owner's Requirements:

The existing water lines belong to the Hoke County Utilities. The Contractor shall provide access for the owner's representatives to all phases of construction. The owner shall be notified two weeks prior to commencement of any work and one week prior to service interruption. The contact person for the Hoke County Utilities is Mr. Michael E. Dean. Mr. Dean can be reached by telephone at (910) 875-6704.

The owner shall be notified in advance of any interruptions of water service with ample time to make arrangements. Interruption of water service on main lines shall be limited to a maximum of 4 hours and at night unless approved by the Engineer.

Utility Locations Shown on the Plans:

The location, size, and type material of the existing utilities shown on the plans is from the best available information. The Contractor will be responsible for determining the exact location, size, and type material of the existing facilities necessary for the construction of the proposed utilities and to avoid damage to existing facilities.

Waterline Installation:

All water pipe, fittings, and appurtenances shown on the plans shall be installed in accordance with Section 1510 of the Standard Specifications or as otherwise directed by the Engineer.

The depth of pipeline installation may vary to achieve minimum clearance of existing or proposed utilities or storm drainage while maintaining the minimum cover specified (whether existing or proposed pipelines, conduits, cables, mains, and storm drainage are shown on the plans or not).

After the installed pipe, fittings, valves, hydrants, corporation stops and end plugs are inserted and secured, the pipeline shall be subjected to a hydrostatic pressure of 150 PSI for a period of 2 hours, by pumping the section full of clean water using an approved pressure pump. Cross connection for flushing and chlorination shall be made by means

of a temporary connection from the supply pipe with an approved backflow prevention device. Taps for the cross connection piping shall be made to the portion of the existing water main that will be removed from service. The proposed water main shall be laid to within one pipe length of the point of final connection prior to flushing and testing. All flushing and chlorination work shall be performed in accordance with AWWA C651-99. All fittings, valves, backflow prevention devices required for chlorination and testing shall be incidental to the cost of the proposed pipe being tested.

Contractor shall make arrangements with the utility owner for measuring and paying for water required for flushing and testing water mains.

Copies of bacterial testing reports shall be provided to the utility owner prior to activating new water mains.

Samples of water shall be taken at representative points along the pipeline by the contractor, in approved containers and submitted to a certified testing laboratory for bacterial and chlorine content.

Any cracked, damaged, or defective pipe, fittings, valves, hydrants, or other attachments discovered as a result of the pressure test, shall be removed and replaced with sound material. The tests shall be repeated until test results are satisfactory.

After the pressure test is complete, the Contractor shall make a leakage test. Such leakage test shall last at least 2 hours at a pressure of 150 PSI. The pressure test and leakage test may be performed concurrently.

All gate valves shall conform to the requirements of ANSI/AWWA 504 and/or 509. The direction of rotation of the handwheel or wrench nut to open the valve shall be to the left or counterclockwise. Valve boxes shall be slip types with a base to fit the valve yoke and removable plug cap with the word "WATER" cast therein.

Existing fire hydrants are to be removed and stock piled. Contractor shall notify the utility owner to pick up the stock piled fire hydrants. Removing and stock piling the existing fire hydrants will be considered incidental work as a part of the installation of the new fire hydrants.

COMPENSATION

No direct payment will be made for utility construction work required by the preceding provisions, which are general requirements applying to utility construction, and all of the requirements stated will be considered incidental work, paid for at the contract unit prices of the various utility items included in the contract.

1. BEDDING MATERIAL:

Bedding material for utility lines shall be installed in accordance with the applicable utility provisions herein, as shown on the utility construction plans, and/or as directed by the Engineer.

Bedding material shall meet the requirements of Article 1016-3 of the Standard Specifications. Bedding material shall be installed in accordance with Articles 300-6 and 300-7 of the Standard Specifications.

Bedding material installed in accordance with the plans and provisions herein and accepted, will be measured and paid for at the contract unit price per ton for "Bedding Material, Utilities Class IV". Such prices and payments shall be full compensation for all materials, labor, equipment, compaction and shaping the bedding material in accordance with Article 300-4 of the Standard Specifications, and incidentals necessary to complete the work as required.

2. DI Restrained Joint Water Pipe Fittings:

Ductile Iron Restrained Joint Water Pipe Fittings shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans and/or as directed by the Engineer.

Ductile Iron Restrained Joint Bends and Tees shall be in accordance with applicable requirements of ANSI A21.10 (AWWA C110). Joints for such bends and tees shall be in accordance with ANSI A21.11 (AWWA C111) and be cement mortar lined with a seal coat in accordance with ANSI A21.4 (AWWA C104). All Restrained Joint Water Pipe Fittings shall have a minimum working pressure of 250 psi.

The quantity of Ductile Iron Restrained Joint Water Pipe Fittings, installed in accordance with the plans and provisions herein and accepted, will be measured and paid for at the contract unit price per pound for "8" Ductile Iron Restrained Joint Water Pipe Fittings, PC 350". Such price and payments will be full compensation for all materials, including pipe accessories, labor, installation, backfilling, and incidentals necessary to complete the work as required.

3. Ductile Iron Restrained Joint Water Pipe:

Ductile Iron Restrained Joint Water Pipe shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans and/or as directed by the Engineer. All restrained glands necessary to connect the new water pipe to the existing pipe will be considered incidental.

Ductile Iron Restrained Joint Water Pipe shall be of the thickness class and pressure rating shown on the utility plans and shall conform to ANSI A21.51 (AWWA C151). Push-on joints for such pipe shall be in accordance with ANSI A21.11 (AWWA C111). Pipe thickness shall be designed in accordance with ANSI A21.5 (AWWA C150) and base on laying conditions and internal pressure as stated on the plans.

Cement mortar lining and seal coating for pipe shall be in accordance with ANSI A21.4 (AWWA C104). Bituminous outside coating shall be in accordance with ANSI A21.51 (AWWA C151).

All Ductile Iron Restrained Joint Water Pipe shall be installed in accordance with laying condition Type 2 as stated in ANSI A21.51 (AWWA C151) unless otherwise shown on the plans.

Restrained retainer glands shall be high strength ductile iron conforming to ASTM A536. Restrained retainer glands shall meet the specifications for ANSI A21.11 (AWWA C111). Restrained retainer glands shall be capable of restraining mechanical joints for a minimum working pressure of 250 psi. The restrained retainer glands shall have a series of machined serrations on the inside diameter of the retainer, which provides a grip on the pipe surface, with 360° contact and support of the barrel. Wedges that bear against pipe wall shall not be used on bell and spigot type installations. Twist-off nuts shall be used to insure proper torturing of retaining devices. The split design allows use on both new and existing pipe installations.

Retainer glands shall restrain the required restrained length. The Contractor shall be responsible for determining the necessary lengths to be restrained. Design of the restrained portion of the new water pipe system shall be approved by a registered professional engineer, and submitted to the Utility Section, Project Services Unit for approval prior to installation.

Ductile Iron Restrained Joint Water Pipe, installed in accordance with the plans and provisions herein and accepted, will be measured along the pipe from end to end, with no deductions for fittings and valves, and paid for at the contract unit price per linear foot for "8" DI Restrained Joint Water Pipe, PC 350". Such prices and payments will be full compensation for all materials, including pipe accessories, restrained retainer glands, excavation, labor, pressure testing, sterilization, backfilling, and incidentals necessary to complete the work as required.

PROJECT: B-4152
COUNTY: HOKE COUNTY

PROJECT SPECIAL PROVISIONS

UTILITIES BY OTHERS:

General:

The following utility companies have facilities that will be in conflict with the construction of this project:

- A. SPRINT TELEPHONE
- B. LUMBEE RIVER ELECTRIC MEMBERSHIP CORPORATION
- C. ADELPHIA CATV

The conflicting facilities of these concerns will be adjusted prior to the date of availability, unless otherwise noted and are therefore listed in these special provisions for the benefit of the Contractor. The utility owners will do all utility work listed herein. All utilities are shown on the plans from the best available information.

The Contractor's attention is directed to Article 105.8 of the Standard Specifications.

Utilities Requiring Adjustment:

- A. SPRINT TELEPHONE
The new telephone/fiber optic cables will be directionally bored the entire length of the project and to a depth of fifteen (15) feet below creek bottom. The existing utility poles and line will be removed by April 17, 2006. See Utilities by Others Plans for details.
- B. LUMBEE RIVER ELECTRIC MEMBERSHIP CORPORATION
The existing lines on the north side of bridge will be dead-ended and de-energized by date of availability. The lines will remain on the utility poles during construction. One existing utility pole located at -L- line station 19+18.36, 28.03 ft. left of centerline shall be relocated outside the cut area adjacent to the proposed right-of-way by June 16, 2006. All other existing utility poles will remain in place and be reused after the bridge project is complete. See Utilities by Others Plans for details.
- C. ADELPHIA CATV
The existing lines will be remain aerial and active on Lumbee River EMC utility poles for the duration of the project construction. See Utilities by Others Plans for details.

NOTE: All other utilities shall remain in place and will be adjusted as necessary.

B-4152**Project Special Provisions
Erosion Control****Hoke County****Seeding and Mulching:**

(East)

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined by the Engineer. All rates are in pounds per acre (kilograms per hectare).

All Roadway Areas:

March 1 - August 31

50# (55kg) Tall Fescue
 10# (12kg) Centipede
 25# (28kg) Bermudagrass (hulled)
 500# (560kg) Fertilizer
 4000# (4500kg) Limestone

September 1 - February 28

50# (55kg) Tall Fescue
 10# (12kg) Centipede
 35# (40kg) Bermudagrass (unhulled)
 500# (560kg) Fertilizer
 4000# (4500kg) Limestone

Waste and Borrow Locations:

January 1 - December 31

75# (85kg) Tall Fescue
 25# (28kg) Bermudagrass (hulled)
 500# (560kg) Fertilizer
 4000# (4500kg) Limestone

75# (85kg) Tall Fescue
 35# (40kg) Bermudagrass (unhulled)
 500# (560kg) Fertilizer
 4000# (4500kg) Limestone

Note: 50# (55 kg) of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars:

Adventure	Adventure II	Amigo	Anthem
Apache	Apache II	Arid	Austin
Brookstone	Bonanza	Bonanza II	Chapel Hill
Chesapeake	Chieftain	Coronado	Crossfire II
Debutante	Duster	Falcon	Falcon II
Finelawn Petite	Finelawn	Finelawn I	Genesis
Grande	Guardian	Houndog	Jaguar
Jaguar III	Kentucky 31	Kitty Hawk	Monarch
Montauk	Mustang	Olympic	Pacer
Phoenix	Pixie	Pyramid	Rebel
Rebel Jr.	Rebel II	Renegade	Safari
Shenandoah	Tempo	Titan	Tomahawk

Trailblazer Tribute Vegas Wolfpack
Wrangler

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre (6 kilograms per hectare) and add 20# (23kg) of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis.

Native Grass Seeding And Mulching

Bermuda

Native Grass Seeding and Mulching shall be performed on the disturbed areas of wetlands, and adjacent to Stream Relocation construction within a 50 foot (16 meter) zone on both sides of the stream(or depression), measured from top of stream bank, (or center of depression). The stream bank of the Stream Relocation shall be seeded by hand, hydroseeder within permit compliance, and/or other method that does not alter the typical cross section of the stream bank. Native Grass Seeding and Mulching shall also be performed in the Permanent Soil Reinforcement Mat section of Preformed Scour Holes.

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined by the Engineer. All rates are in pounds per acre (kilograms per hectare).

March 1 - August 31

September 1 - February 28

25# (28kg) Bermudagrass (hulled)	35# (40kg) Bermudagrass (unhulled)
6# (7kg) Indiangrass	6# (7kg) Indiangrass
8# (9kg) Little Bluestem	8# (9kg) Little Bluestem
4# (5kg) Switchgrass	4# (5kg) Switchgrass
25# (28kg) Browntop Millet	35# (39kg) Rye Grain
500# (560kg) Fertilizer	500# (560kg) Fertilizer
4000# (4500kg) Limestone	4000# (4500kg) Limestone

Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis.

Native Grass Seeding and Mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

All areas seeded and mulched shall be tacked with asphalt. Crimping of straw in lieu of asphalt tack shall not be allowed on this project.

Crimping Straw Mulch:

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet (2 meters) of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8 inches (200 mm).

Temporary Seeding:

Fertilizer shall be the same analysis as specified for "Seeding and Mulching" and applied at the rate of 400 pounds (450 kilograms) and seeded at the rate of 50 pounds per acre (55kg per hectare). Sweet Sudan Grass, German Millet or Browntop Millet shall be used in summer months and Rye Grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

Fertilizer Topdressing:

Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 written approval of the Engineer, a different analysis of fertilizer may be used provided grade and shall be applied at the rate of 500 pounds per acre (560 kg per hectare). Upon the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis.

Fertilizer used for topdressing on slopes 2:1 and steeper and waste and borrow areas shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre (560 kg per hectare). Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis.

Supplemental Seeding:

The kinds of seed and proportions shall be the same as specified for "Seeding and Mulching", with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre (28kg to 85kg per hectare). The actual rate per acre (hectare) will be determined by the Engineer prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre (hectare), total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing

vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

Mowing:

The minimum mowing height on this project shall be 4 inches (100 mm).

Response For Erosion Control:

The 2002 Standard Specifications are revised as follows:

Page 16-40, Section 1675,

Delete Section 1675 and insert the following:

1675-1 Description:

Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of the following work as shown herein, by an approved subcontractor.

- A. Seeding and Mulching
- B. Temporary Seeding and Mulching
- C. Temporary Mulching
- D. Fertilizer Topdressing
- E. Repair Seeding
- F. Supplemental Seeding
- G. Silt Fence Installation or Repair
- H. Installation of Matting for Erosion Control

1675-2 Construction Methods:

Provide an approved subcontractor who performs an erosion control action as described in Form 1675. Each erosion control action may include one or more of the above work items.

1675-3 Measurement And Payment:

Payment for this work shall be included in the contract bid price for "Lump Sum - Roadway Construction." The provisions of Article 104-5 will not apply to the item of work.

Specialized Hand Mowing:

The work covered by this section consists of specialized hand mowing around or under fixed objects, including but not limited to guardrails, signs, barriers and slopes in a method acceptable to the Engineer.

The work of specialized hand mowing shall be completed with mechanically powered trimmers, string trimmers, hand operated rotary mowers, or self-propelled mowers of sufficient size and quality to perform the work timely and efficiently.

The quantity of mowing to be performed will be affected by the actual conditions which occur during the construction of the project. The quantity of mowing may be increased, decreased or eliminated entirely at the direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

Payment for such work shall be included in the contract bid price for "Lump Sum – Roadway Construction."

Minimize Removal Of Vegetation

The Contractor shall minimize removal of vegetation at stream banks and disturbed areas within the project limits as directed by the Engineer.

Stockpile Areas

The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed by the Engineer.

Waste Areas And Borrow Sources:

Payment for temporary erosion control measures shall be included in the contract bid price for "Lump Sum - Roadway Construction" for the devices or measures utilized in borrow sources and waste areas.

No additional payment will be made for erosion control devices or permanent seeding and mulching in any commercial borrow or waste pit. All erosion and sediment control practices which may be required on a commercial borrow or waste site will be done at the Contractor's expense.

Temporary Diversion:

The work by this section for installation, maintenance, and cleanout of temporary diversions shall be in accordance with Section 1630. Payment for installation and cleanout shall be included in the contract bid price for "Lump Sum – Roadway Construction."

Safety Fence:

Description:

The work of "Safety Fence" shall consist of furnishing, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water

boundary located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland or water, and as directed by the Engineer in accordance with the special provisions included herein. The fence shall be installed prior to any land disturbing activities.

Materials:

Fence Material:

Polyethylene or polypropylene fence shall be a preconstructed safety fence approved by the Engineer.

Posts:

Either wood posts or steel posts may be used. Wood posts shall be nominal 2" x 4" (51 mm x 102 mm) or 4" x 4" (102 mm x 102 mm), lengths as required, structural light framing, grade No. 2, Southern Pine. Steel posts shall be at least 5 feet (1.6 m) in length, approximately 1 3/8" (35 mm) wide measured parallel to the fence, and have a minimum weight of 1.25 lb./ft. (1.9 kg/m) of length. The steel post shall be equipped with an anchor plate having a minimum area of 14 square inches (90 square centimeters).

Clearing and Grading:

No additional clearing and grubbing is anticipated for the installation of this fence; however, if any clearing and grubbing is required, it will be the minimum required for the installation of the safety fence. Such clearing shall include satisfactory removal and disposal of all trees, brush, stumps and other objectionable material.

The fence shall be erected to conform to the general contour of the ground. When determined necessary by the Engineer, minor grading along the fence line shall be done to meet this requirement provided no obstructions to proper drainage are created.

Installation:

Posts shall be set and maintained in a vertical position and may be hand set or set with a post driver. If hand set, all backfill material shall be thoroughly tamped. If power driven, wood posts may be sharpened to a dull point. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30 degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence fabric shall be attached to the wood posts with one 2" (51 mm) galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

Basis of Payment:

Payment for the safety fence shall be included in the contract bid price for "Lump Sum - Roadway Construction."

Such payment will be full compensation for the work as described in the above paragraphs, including but not limited to clearing and grading, furnishing and installing fence fabric with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete the work.

Gravel Construction Entrance:**Description:**

The work covered by this section consists of furnishing, installing, and maintaining and removing any and all material required for the construction of a Gravel Construction Entrance.

Materials:

The filter fabric shall meet the requirements of Section 1056 for Type 2 Fabric.

Stone shall be Class A Stone and shall meet the requirements of Section 1042 for Stone for Erosion Control, Class A.

Construction:

The Contractor shall install a Gravel Construction Entrance in accordance with the details in the plans and at locations as directed by the Engineer.

Method Of Measurement:

Gravel Construction Entrance will not be measured for payment under this section.

Basis Of Payment:

Payment for Gravel Construction Entrance shall be included in the contract bid price for "Lump Sum - Roadway Construction."

Such price and payment shall be considered full compensation for all work covered by this provision including all materials, construction, maintenance, and removal of Gravel Construction Entrance as directed by the Engineer.