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PROJECT SPECIAL PROVISIONS
 Utility Construction

All proposed utility construction shall meet the applicable requirements of the NC Department of Transportation's "Standard Specifications for Roads and Structures" dated January 2012.

Division 15 of the Standard Specifications is revised as follows:

Page 15-1, Paragraph 2 of Section 1500-2

Provide access for Department personnel and the owner's representatives to all phases of construction. Notify Department personnel and the utility owner 2 weeks before commencement of any work and one week before service interruption. Keep utility owners' representatives informed of work progress and provide opportunity for inspection of construction and testing.

The water and sewer lines along this project belong to Salisbury-Rowan Utility Department. Below is listed the utility owner with contact information along this project. Any work on these lines must be coordinated through the Engineer and the utility owner before commencement of any work.

Salisbury-Rowan Utility Department – Mr. Jason H. Wilson, P.E. – (704) 216-7553

Page 15-2, Paragraph 3 of Section 1500-7

Provide As-Built plans of the installed utility. The plans shall include notations of the size and type material, installed coordinates of utility controls and horizontal and vertical locations of the piping. Provide 2 copies to the Utility Owner and 2 copies to the Engineer.

Provide the Utility Owner with 2 copies of surveyed As-Builts of both the water and sewer systems constructed.

Page 15-3, Insert New Paragraph After Paragraph 1 of Section 1500-9

Contractor shall notify the Salisbury-Rowan Utility Department 7 business days in advance of performing any tie-in work. Contractor shall notify all affected customers 24

hours in advance of service interruptions. Contractor shall notify all affected critical facilities (i.e. hospitals, schools, medical facilities, etc.) 72 hours or more in advance of service interruption.

Page 15-2, Paragraph 2 of Section 1500-9

Schedule and notify owners and customers in advance of any interruption of water service with ample time to make arrangements. Limit interruption of service to water customers to no more than 8 hours. Provide temporary connections as needed.

The maximum interruption time for the Salisbury-Rowan Utility Department water service is four (4) hours. Any additional time needed shall be approved by the Salisbury-Rowan Utility Department and the Engineer before beginning work.

Page 15-6, Insert New Paragraph After Paragraph 12 of Section 1510-3 Part (B)

Sampling taps shall be provided every 1,000 feet and at the end of each branch. Taps shall be located and constructed so samples may be easily collected without danger to personnel or likelihood of sample contamination.

Sampling taps may be used as blow-offs. The number and location of the taps/blow-offs must be approved by the Utilities Inspector. Hydrants may not be used for bacteriological sampling.

All parts of a potable water system (including service lines) shall be sterilized in accordance with AWWA C601 and these specifications. Preventive and corrective measures during construction (AWWA C601) should be adhered to during construction to ensure success of the sterilization process.

Lines shall be initially chlorinated to 100 mg/l.

Lines must have a minimum free chlorine residual of 24 mg/l after 24 hours.

When the Contractor has determined that the line has been chlorinated to the proper level, he shall request a laboratory confirmation of the free chlorine level. Advance notice shall be given to the Utilities Inspector prior to requesting sampling for chlorine level concentration (on site test) as required in Section 1.80 - Inspection. In lieu of using City resources, the Contractor may use an approved certified testing lab; however City inspection of the test is required.

After the required contact time (24 hours), the Contractor shall have the chlorine residual tested and if the chlorine levels are at least 24 mg/l then the contractor can flush the line and all appurtenances with Salisbury distribution water until completely purged.

No bacteriological samples will be collected at points where the free chlorine residual exceeds the ambient distribution system free residual by more than 0.5 mg/l.

Care must be taken to discharge the chlorinated water in a manner which will not endanger plant or animal life or be unsafe. Chlorinated water must be discharged in an environmentally safe manner and in accordance with all federal, state, and/or local laws and regulations. Chlorinated sterilization water shall not be discharged into the City's sewer or storm drain systems. Contractor must treat the chlorinated water to meet North Carolina Quality Discharge Standards.

Bacteriological testing/sampling shall be requested on the same day the line is flushed. Bacteriological testing will be performed by the City laboratory Monday through Thursday prior to 12:00 p.m. at least 24 hour notice shall be given the Utilities Inspector/lab prior to sampling. The Utilities Inspector will collect and deliver the samples to the lab (testing fee applies).

Each sample shall be marked legibly, identifying with letters or numbers each sampling point.

Page 15-8, Insert New Paragraph After Paragraph 2 of Section 1515-3

Valves shall be field tested as directed by AWWA Specification C500 and C504 as applicable.

(a) During the last stages of the test and without any reduction in pressure, first the hydrant valves will be closed, then progressing in an orderly manner from the end opposite from the test pump, each main line valve will be closed and pressure released to determine if it is holding pressure (minimum 30 minutes).

(b) All butterfly valves will be tested to 150 psi (or 1.25 times system pressure, if higher) for a minimum of 30 minutes (each) after the pipeline has been successfully tested.

Valves shall be tested on a schedule agreed upon by the Utilities Inspector and the Contractor. City inspection is required during the tests.

Page 15-10, Insert New Paragraph After Paragraph 2 of Section 1520-3 Part (A) Subsection (1)

At completion of work, lines shall be thoroughly cleaned by flushing with water to remove all dirt and debris. Pipeline shall be flushed at a rate of at least 2.5 feet per second for a duration suitable to the Utilities Inspector. City water may be used (when available and a bulk water permit is purchased) to flush sewer lines or an approved source of non-potable water (must be free of any chemicals, silt, or debris) may be used to flush sewer lines. All flush water must be collected in a plugged manhole and pumped out. Sewer flush water shall not be allowed to enter the City's sewer system.

Page 15-11, Paragraph 1 of Section 1520-3 Subsection (2) Item (c)

Instead of hydrostatic testing, sewer lines 24" in diameter or smaller may be air tested in accordance with ASTM C828, ASTM C924 and the following. Securely plug the sewer pipe at the manholes. Fill the pipe with air to 4.0 psi and hold this pressure for 5 minutes. Reduce the pressure to 3.5 psi. Measure the time for the pressure to drop 1.0 psi to the new pressure of 2.5 psi. Exceed the minimum test time in Table 1520-1 for the appropriate nominal pipe diameter.

Low pressure air testing shall be used to test for leakage in sewer lines and laterals. The test shall be in accordance with ASTM F 1417 as modified herein. The pipeline is considered acceptable if when tested at a pressure of 4.0 psi (or greater than the average back pressure of any groundwater that may submerge the pipe) the section under test does not lose more than 0.5 psig within the allotted test time (see appendix B). City inspection of the test is required.

Page 15-11, Insert New Paragraph After Paragraph 1 of Section 1520-3 Subsection (2) Item (d)

The pipe shall be visually inspected from manhole to manhole using lights, mirrors, or other devices (CCTV) for visual inspection. All obstructions shall be removed, and the lines from one manhole to the next shall exhibit a fully circular pattern. Lines which do not exhibit a true line and grade or have structural defects shall be corrected to meet specifications. The Utilities Inspector may require inspection by television camera (CCTV) of any sewer lines or laterals.

The CCTV equipment must provide adequate light for the camera and be of high video quality (including the video tapes or DVD) to properly show the inside of the pipe. Each line and lateral must be marked with an identifying number and shown on the video tape or DVD and a log of any problems found, along with the line number and footage and/or lateral number must be included with the video tapes or DVD. All testing shall be done at no cost to the City.

Page 15-15, Insert New Paragraph After Paragraph 1 of Section 1525-3 Subsection (D)

All testing shall be performed in the presence of the engineer or designated representative. Every manhole shall be checked for air tightness prior to setting of the manhole ring and cover. All manholes, whether with precast base sections or poured-in-place base, shall be vacuum tested. All lift holes shall be plugged with a non-shrink grout. All pipes entering or leaving the manhole shall be plugged, taking care to securely brace the plug from being drawn into the manhole during the test. City inspection of the test is required with a 48 hour minimum notice. All manholes regardless of sewer line size (public or private) shall be tested and inspected to City of Salisbury Uniform Construction Standards and Specifications requirements.

- 1. The vacuum equipment test head shall be placed at the inside of the top of the cone section, the seal inflated in accordance with the manufacture's recommendations.
- 2. A vacuum of 10-inches of mercury shall be drawn and the vacuum pump shut off.
- 3. With the valves closed, the time shall be measured for the vacuum to drop to 9-inches of mercury.

The test time shall be correlated to the manhole as follows:

Manhole Diameter Allowable Time:

48".....60 seconds

60".....75 seconds

- 4. If the manhole fails the initial test, necessary repairs shall be made at the contractor's expense with an approved non-shrink grout on the outside of the manhole while the vacuum is being drawn.
- 5. The re-testing and repairing schedule cycle shall continue until the manhole passes the test.

Division 10 of the Standard Specifications is revised as follows:

Page 10-57, Paragraph 1 of Subsection A of Section 1034-4

Use ductile iron pipe that conforms to ASTM A746 or ANSI/AWWA C151/A21.51.

All ductile iron pipe shall be Class 350 unless otherwise specified and shall be lined with cement mortar not less than 1/16 inch thick conforming to ANSI Specification A21.4.

Page 10-58, Paragraph 1 of Section 1036-5

Use ductile iron pipe that conforms to ANSI/AWWA C151/A21.51.

All ductile iron pipe shall be Class 350 unless otherwise specified and shall be lined with cement mortar not less than 1/16 inch thick conforming to ANSI Specification A21.4.

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.

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PROJECT: U-3459

COUNTY: Rowan

PROJECT SPECIAL PROVISIONS

Utility

UTILITIES BY OTHERS:

General:

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

- A. Duke Energy Corporation – Transmission
- B. Duke Energy Corporation – Substation
- C. Duke Energy Corporation – Distribution
- D. AT&T – Telephone
- E. Windstream Communications -- Telephone
- F. Piedmont Natural Gas – Gas
- G. City of Salisbury (Fibrant) – Fiber Optic
- H. Time Warner – 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. All utility work listed herein will be done by the utility owners. All utilities are shown on the plans from the best available information. For utility relocations, see the Utilities By Others Plans.

The Contractor's attention is directed to Article 105-8 of the Standard Specifications.

Utilities Requiring Adjustment:

A) Duke Energy – Power Transmission

1. The 44KV Transmission line at the East end of the proposed RR detour at the location shown on the UBO plans must be relocated prior to that area being available for the RR detour construction. This relocation is scheduled for completion by January 31, 2013. For this date to be met the permit submitted to the Rail Road Authorities by Duke for this relocation must be received back to Duke no later than November 1, 2012.

The tower carrying the 100 KV Transmission line located in the Southeast corner of the intersection of New Klumac and MLK will be relocated to the Southwest corner of this intersection. The existing tower will have to be

protected by temporary means until it is relocated. This protection can either be physical or a delay of grading next to it. The proposed schedule for completing the relocation of the tower by Duke Energy is April 1, 2013.

The 100 KV lines on one side of the circuitry closest to the western end of the new RR bridge can be deactivated with at least two weeks notice to accommodate pile driving operations on that end of the new bridge.

2. Contact is Mr. Larry Morris, 704-382-6299
3. See Utilities By Others Plans for details.

B) Duke Energy Corporation -- Substation – Substation relocation and construction

1. Substation construction will be internal to the substation property and will not impact roadway or rail construction but will have to be coordinated with the contractor to insure that the area next to Avenue A has been cleared of all substation needs and the required fencing has been installed. This property will be available to the roadway contractor in 150 days after official conveyance of the newly acquired property next to the existing substation from NCDOT to Duke Energy.
2. Contact is Mr. Larry Morris, 704-382-6299
3. See Utilities By Others Plans for details.

C) Duke Energy Corporation -- Power Distribution

1. All distribution power relocations will be completed by approximately March 15, 2013. This date and subsequent dates of completion for other utilities attached to Duke Energy poles are completely reliant upon Duke Energy's receipt of a permit to relocate the pole at the existing Klumac Rd. railroad grade crossing from the Rail Road Authorities by no later than November 1, 2012.
2. Contact is Mr. Larry Morris, 704-382-6299
3. See Utilities By Others Plans for details

D) AT& T – Telephone

1. AT& T relocations will be on joint use poles with Duke Energy Distribution Existing underground cables are not in conflict but should be marked and caution exercised in their vicinity. On poles shared with Duke Energy Distribution and Fibrant, AT&T will complete relocation within 120 calendar days of the Duke Energy completion.
2. Contact is Mr. Steve Mode, Telics., 800-686-9188
3. See Utilities By Others Plans for details.

E) Windstream -- Telephone

1. Windstream relocations will be on joint use poles with Duke Energy Distribution (along existing Main Street) and will be accomplished within 120 calendar days after the Duke Power distribution relocations are complete.
2. Contact is .Mr. Jim Foley, 704-722-2822
3. See Utilities By Others plans for details.

F) Piedmont Natural Gas

1. Existing gas lines shown on the plans shall be adjusted as necessary. Where adjustments are necessary, Piedmont Natural Gas shall be given 14 days notice prior to when they can begin work, and 21 days to complete their work.
2. Contact is Mr. Kevin Sell, 704-797-2210
3. See Utilities by Others plans for details.

G) City of Salisbury (Fibrant) - Multi-use Fiber Optic Cable

1. Fibrant relocations will be on joint use poles with Duke Energy Distribution and will be accomplished within 90 calendar days after the Duke Power distribution relocations are complete. Existing underground cables are not in conflict but should be marked and caution exercised in their vicinity.
2. Contact is .Mr. Keith Storm, 704-216-7585
3. See Utilities by Others plans for details.

H) Time Warner -- CATV

1. All TWC conflicts have been cleared from the project
2. Contact is Mr. Michael Connell, 704-378-2624