SECTION 33 32 00 – SANITARY SEWER LATERAL CONNECTIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Work Included:

1. Connection to New Gravity Sewer.
2. Connection to Existing Gravity Sewer.
3. Sanitary Sewer Lateral.

B. Related Sections:

1. Section 31 23 16.13 – Excavation, Trenching, and Backfilling for Utilities
2. Section 33 31 00 – Gravity Sewer for Utilities

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Pipe and Fittings:

1. Basis of Measurement: Individual Connection price for each and Laterals per linear foot.
2. Basis of Payment: Includes excavation, bedding. backfill, pipe, fittings, and restoration, to indicated depth and connection to new or existing gravity sewer.

1.3 REFERENCE STANDARDS

A. All products, installation and testing of force mains and gravity sewers shall meet the requirements of Regulation 61-67, Standards for Wastewater Facility Construction or State Primary Drinking Water Regulations (R61-58).

B. All products, installation and testing of force mains and gravity sewers shall meet the requirements of "Recommended Standards for Wastewater Facilities" (Ten State Standards), latest edition.

C. Any reference to SCDOT standard specifications was obtained from "Standard Specifications for Highway Construction" published by the South Carolina Department of Transportation. Unless otherwise noted, the most current date published applies.

D. American Society for Testing Materials:

1. ASTM A536 - Standard Specification for Ductile Iron Castings.
2. ASTM A240 - Standard Specification for Chromium and Chromium Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

3. ASTM D1784 - Standard Classification System and Basis for Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
4. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
5. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
6. ASTM F1336 - Standard Specification for Poly(Vinyl Chloride) (PVC) Gasketed Sewer Fittings.
7. Additional applicable ASTM standards which are not specifically stated.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer catalog cuts and other information indicating proposed materials, accessories, details, and construction information.

B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

C. Manufacturer Instructions or special procedures required to install specified products.

1.5 COORDINATION

A. Coordinate Work of this Section with utility owners and local authorities.

Notify all appropriate parties at least 72-hours prior to construction.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Stored Materials:

1. Store materials according to manufacturer instructions.
2. Store materials to the best of ability to prevent damage, theft, or vandalism.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Block individual and stockpiled pipe lengths to prevent moving.
3. Provide additional protection according to manufacturer instructions.

1.7 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this Section with a minimum five years of experience.

B. Installer: Company specializing in performing Work of this Section shall have appropriate licensure through South Carolina LLR.

1.8 CLOSEOUT DOCUMENTS

A. RECORD DRAWINGS - Record invert elevations and actual locations of connections, lateral pipe runs, and cleanouts.

B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.9 WARRANTY

A. Provide a two-year materials and workmanship warranty. The contractor shall be responsible for correcting defects in the Work during the warranty period, including defective material and workmanship.

1.10 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

B. Protection of other utilities:

1. Approximate location of certain known underground lines is shown.
2. Existing small lines not shown.
3. Locate small and other possible utility lines using electronic pipe finder, or other approved method.
4. Excavate and expose existing underground utilities ahead of trenching operations.
5. Repair or replace any damaged utility line or structure at no additional cost to Owner.

PART 2 - PRODUCTS

2.1 SEWER LATERALS

A. Pipe:

1. Material: PVC.
2. Comply with ASTM D3034, SDR-35. For depths greater than 10 feet use SDR-26 PVC pipe.
3. Nominal Diameter: 6 inches.
4. End Connections: Bell-and-spigot style, with rubber-ring-sealed gasket joint.
5. Joints:

a. Elastomeric gaskets.

b. Comply with ASTM F477.

B. Fittings:

1. Material: PVC.
2. Comply with ASTM F1336. utilizing SDR 26 PVC fittings at service tap on gravity sewer main and SDR 35 PVC fittings at service connections (near cleanout).
3. Fittings shall be Molded in one piece with elastomeric joints and minimum socket depths as specified in sections 6.2 and 7.3.2 of ASTM D3034.
4. Molded fittings shall be grey in color where specified herein and as indicated on the Drawings.
5. Gaskets shall have a minimum cross-sectional area of 0.20 sq. in. and conform to ASTM F477 specification.
6. PVC material shall have a cell classification of 12454 or 13343 as defined in ASTM D1784.
7. Where possible, use sweep (long) radius bends.
8. Fittings are to be manufactured by The Harrington Corporation in Lynchburg, VA or approved equal.

2.2 SEWER SADDLES

A. Ductile Iron gland complying with ASTM A536 coated with black e-coat epoxy.

B. Strap: Type 304 stainless steel 3” wide strap and 1/2 inch UNC threaded bolts complying with ASTM A240.

C. Referenced Manufacturer is Ford Meter Box Sewer Saddle or approved equal.

2.3 CLEANOUTS

A. At each Sewer Lateral, provide cleanout located at property line.

B. Provide 6” cleanout with screwed PVC plug.

C. Cleanout shall be flush with finished grade and be located outside of driveways, roadways, and sidewalks.

D. No cleanouts shall be located within pavement surfaces.

E. Comply with the latest adopted version of the International Plumbing Code or local codes where applicable.

2.4 ADAPTERS

A. Adapters shall be rubber coupling with stainless steel clamps or shall utilize compressible donut designed for the purpose.

B. Adapters shall be Fernco or approved equal.

2.5 MISCELLANEOUS MATERIALS

A. As required, provide all other materials for a complete and proper installation for products and installation as described here within.

PART 3 - EXECUTION

3.1 GENERAL

A. Determine depth and location of all service lines prior to installation of new sewer service lateral

B. Coordinate each location with property owners and utility owner's representative.

C. Locate laterals to avoid conflicts with other utilities and structures.

3.2 CONNECTION TO NEW GRAVITY SEWER

A. Install Tee with 6" branch and 45 degree bend, grey in color (or otherwise approved by Engineer and Owner), at 45 degrees at each lateral location.

B. Install service in accordance with Sanitary Sewer Lateral Connection to New Gravity Main.

3.3 CONNECTION TO EXISTING GRAVITY SEWER

A. Install Sewer Saddle and 45 degree bend, grey in color (or otherwise approved by Engineer and owner), at each at lateral location.

B. Install service in accordance with Sanitary Sewer Lateral Connection to Existing Gravity Main.

3.4 TERMINATION OF SERVICE

A. Where possible, service connection shall terminate at property line/right-of-way with the installation of a 6" wye. Provide an 18" minimum section of 6" pipe after the upstream bell of the way. Install a plug on upstream side of this 18" pipe section (future customer's side) and properly block for pressure testing of service.

B. At this location, a 6" cleanout shall be installed from top of the wye to finished grade.

C. Where applicable, cleanouts shall be located between 2' and 5' from common property line.

3.5 INSTALLATION

A. Correct over-excavation with crushed stone.

B. Remove large stones or other hard materials that could damage pipe or impede consistent backfilling or compaction.

C. Protect and support existing sewer lines, utilities, and appurtenances.

D. Bedding:

1. Excavate pipe trench as specified in Section 31 23 16.13 – Excavation, Trenching, and Backfilling for Utilities.
2. Excavate to lines and grades as indicated on Contract Drawings.

E. Sanitary Sewer Laterals:

1. Connect pipe to gravity sewer.
2. Lay pipe to slope gradients as indicated on Drawings.
3. Begin at downstream end of system and progress upstream.
4. Lay bell-and-spigot pipe with bells upstream.
5. Backfill and compact as specified in Section 31 23 16.13 – Excavation, Trenching, and Backfilling for Utilities.
6. Do not displace or damage pipe when compacting.
7. Install watertight plug, braced to withstand pipeline test pressure thrust, at termination of lateral.
8. Install temporary marker stake extending from end of lateral to 12 inches above finished grade. Paint top 6 inches of stake with fluorescent orange paint.
9. Repair or replace damaged sewer laterals at no additional cost to the Owner.

F. Backfilling:

1. Comply with Section 31 23 16.13 – Excavation, Trenching, and Backfilling for Utilities

3.6 FIELD QUALITY CONTROL

A. Request inspection prior to backfilling. In the event that the contractor backfills a required sewer inspection area before approval is granted, the Contractor will be required to uncover the sewer line for inspection at no additional cost to the Owner.

3.7 PROTECTION

A. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

B. Contractor shall be responsible for keeping the pipelines clean from dirt and debris. Should any foreign materials enter the pipe, remove and clean pipe. Cap open ends of piping during periods of Work stoppage.

END OF SECTION 33 32 00