

## SECTION 4

### SANITARY SEWER CONSTRUCTION

### GRAVITY MAINS AND FORCE MAINS

### SITework

1. GENERAL: This section includes the clearing and grubbing of all required construction areas together with disposal of materials, site preparation, and clean up as specified herein.

2. SITE PREPARATION:

A. Existing Facilities: The Contractor shall provide protection for all existing structures, buildings, and utilities against all construction activity. The Contractor shall protect and preserve the District harmless against damage and claims resulting from these activities.

B. Streets and Highways: Effective barricades, danger signals and signs on all streets and in other locations where required for the protection of the work and the safety of the public, shall be provided, erected and maintained by the Contractor. Barricades and obstructions that encroach on, or are adjacent to, public rights-of-way shall be properly lighted between the hours of sunset and sunrise. The Contractor shall conform to all South Carolina Department of Transportation laws and local laws and regulations in the use of streets and highways. The Contractor shall be responsible for all damages occurring due to neglect or failure to meet these requirements. When dictated by conditions that might endanger the public, a watchman shall be provided to fulfill the requirements stated herein.

C. Traffic Flow and Continuance of Services: The work shall be arranged in a manner that will cause a minimum of disturbance to vehicular and pedestrian traffic. Adequate egress and ingress to both private and public property shall be provided by the Contractor and/or Developer during all stages of construction. Developer shall receive all easements from private property owners and transfer to the District's name after all construction has been completed at no cost to the District. Without written approval from the District, existing services shall not be interrupted by the construction work.

3. PRELIMINARY WORK:

A. Rights-of-Way: Adequate working space shall be cleared along the pipe lines and space shall be provided for control stakes and hubs. Trees and permanent structures not located within the right-of-way of new streets shall be removed only as directed.

B. Valuable Trees and Shrubs: When the construction work involves the removal of valuable trees and shrubs on existing public rights-of-way, the work shall be done in cooperation with the County's or South Carolina Department of Transportation.

C. Protection of Private Property: The Contractor shall provide protection for privately owned trees and shrubs bordering the right-of-way and shall take full responsibility for any damage that does occur.

4. CLEARING AND GRUBBING: Clearing and grubbing shall be performed in areas indicated and where required for construction. It shall include the complete removal and disposal of all brush, weed, timber, stumps, rubbish, and all other obstructions. All such material shall be removed to a depth of at least one foot below finished grade. In clearing and grubbing areas where excavation is done, all timber, roots, or stumps removed that are exposed by said excavation shall be removed to a depth of one foot below the excavated surface.

5. DISPOSAL OF CLEARED AND GRUBBED MATERIAL: All refuse from the clearing and grubbing operation shall be disposed of either by burning or removal to an approved dump area. The Contractor shall obtain a burning permit from any required local or state agency before any burning is started. Burning, if approved, shall be done in such a manner that it does not create hazards such as damage to existing structures, trees and vegetation, interference with traffic and construction in progress. All disposal by burning shall be kept under constant supervision until all fires have been extinguished and all burning shall comply with all state and local laws relative to the building of fires.

6. PAVEMENT REMOVAL AND REPLACEMENT:

A. Removal: When pipe is to be laid in existing paved streets, the pavement shall be cut to true and neat lines as directed by the District and/or South Carolina Department of Transportation Representative. Power driven cutting saws are preferred; pavement breakers driven by air compressors are acceptable if approved by the District. All broken pavement shall be removed before trenching is started.

B. Replacement: The pipe trench shall be back-filled with granular select material to within 10" of the pavement surface. The trench shall then be filled with ABC stone to the surface and sufficiently compacted. The stone fill shall be maintained in a workmanlike manner until the asphalt surface has been replaced. The edges of the asphalt shall be neatly trimmed to a new face and mopped with asphalt cement. The asphalt surface shall be placed and thoroughly rolled to a smooth, dense surface true to adjacent areas of the street. The asphalt surface course shall consist of Type I-2 bituminous concrete surface course in accordance with South Carolina Department of Transportation Specifications.

Cut areas shall be maintained by the Contractor in a safe, passable condition until paved. Should the area create a dusty condition, the Contractor shall remedy this condition by the use of water or calcium chloride. Special care shall be given to the areas cut in traffic lanes and intersections by placing crushed stone and maintaining in a smooth condition at the Contractor's expense.

C. Sidewalk, Driveway and Curb and Gutter Replacement: Existing sidewalks and paved driveways, including curb and gutters removed, disturbed or destroyed by construction, shall be replaced or repaired. The finished work shall be equal in all respects to the original.

D. State Highway Crossing: All construction related to state highway crossing shall be in full compliance with all requirements of the permit and to the satisfaction of the South Carolina Department of Transportation.

7. WORK IN RAILROAD RIGHTS-OF-WAY: Permits for all construction within the rights-of-way of railroads shall be obtained by the Contractor and shall be approved by the railroad before commencing work in these areas. The Contractor shall notify the railway in advanced notice as required by the railway.

Utility lines shall be installed in full compliance with all requirements of the railroad and to their satisfaction, including any carrier pipe and encasement pipe. The Contractor shall provide all warning and protective measures required by the railroad company.

8. SEDIMENTATION AND EROSION CONTROL: The Contractor is instructed to control sedimentation runoff by methods approved by the Engineer or the Storm Water Management Division of SC DHEC during the course of construction of this project. The contractor is reminded that all work shall meet all applicable requirements of the rules and regulations of the most recent edition of the S.C. Stormwater Management and Sediment Control Handbook for Land Disturbing Activities as published by SC DHEC.

9. METHOD OF MEASUREMENT: The quantities to be measured under this item shall consist of the number of square yards of pavement replacement (sand clay and asphalt). For this contract, the following maximum trench widths shall be used for final measurement:

- A. Gravity Sewers - (0-10' ) 10'
- B. Gravity Sewers - (10'-20' ) 16'
- C. Sewer Force Main - 4'