

**I-77 Widening Design Build – Richland County – P027002**  
**Re: SUE Scope being obtained by SCDOT**

SCDOT is obtaining the attached SUE Scope of Services. The data collected during these services will be provided to the winning Proposer.

## SUBSURFACE UTILITIES ENGINEERING

### Project Description

**CONSULTANT** shall provide Subsurface Utility Engineering (SUE) services for the **SCDOT** on the I-77 Widening (I-20 to Killian Road) project located in Richland County, South Carolina. The general project limits are shown in Figure 1. A digital project limits map will be provided to the **CONSULTANT** for a more detailed description. The corridor width of the utility mapping is to remain within the SCDOT right-of-way.



**Figure 1 SUE Limits**

Reference is made to the preliminary Utility Report (I-77 Widening Design-Build Preparation Percival Road to Killian Road, Richland County SC March 30, 2015) for the following descriptions of the (18) SUE project areas.

1. Exhibit 1
  - a. Survey the 12" ERCPSD (East Richland County Public Service District) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
2. Exhibit 2
  - a. Survey the ERCPSD (East Richland County Public Service District) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
3. Exhibit 3
  - a. Survey the City of Columbia (COC) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
  - b. Designate and Locate (1) Test Hole the 4" SCE&G Gas line.

4. Exhibit 5
  - a. Survey the 21" ERCPSD (East Richland County Public Service District) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
  - b. Survey the 16" ERCPSD (East Richland County Public Service District) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
  - c. Designate and Locate (2) Test Holes the 16" City of Columbia (COC) water line. Test holes will be provided on either side of Windsor Lake Blvd Bridge to provide pipe elevation data to utility member for tie-in relocation design.
5. Exhibit 6
  - a. Survey the 10" ERCPSD (East Richland County Public Service District) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
6. Exhibit 7
  - a. Designate and Locate (1) Test Hole the 12" City of Columbia (COC) water line.
  - b. Designate the Verizon Business Fiber Optic Line.
7. Exhibit 8
  - a. Designate and Locate (1) Test Hole the 6" SCE&G Gas line.
  - b. Designate and Locate (1) Test Hole the 24" City of Columbia (COC) water line.
  - c. Designate and Locate (1) Test Hole the AT&T Telephone Duct Bank
  - d. Survey the City of Columbia (COC) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
8. Exhibit 9
  - a. Survey the ERCPSD (East Richland County Public Service District) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
9. Exhibit 10
  - a. Designate and Locate (1) Test Hole the 12" City of Columbia (COC) water line.
10. Exhibit 11
  - a. Survey the 8" ERCPSD (East Richland County Public Service District) Gravity Sewer Manholes with invert pipe flow line information with connectivity.
  - b. Designate and Locate (1) Test Hole the 4" SCE&G Gas line.
  - c. Designate and Locate (1) Test Hole the 16" City of Columbia (COC) water line.
  - d. Designate the Qwest Fiber Optic Line.
11. Exhibit 14
  - a. Designate and Locate (1) Test Hole the 12" City of Columbia (COC) water line.
  - b. Designate and Locate (1) Test Hole the 6" SCE&G Gas line.

12. Exhibit 16

- a. Survey the 27” (in 52” casing tunnel) Gravity Sewer Manholes with invert pipe flow line information with connectivity.

13. Exhibit 17

- a. Designate the 24” City of Columbia (COC) water line from the water line Tee located on the South side of Killian Road in the Northwestern intersection of I-77 and Killian road running south along the Western side of the South bound onramp. Designating will end where water line leaves the controlled access. (note: water line is assumed to have been relocated within the controlled access due to the construction of an MSE wall for car dealership)

The **purpose** of this work is to provide the **SCDOT** underground utility mapping information and depth of utilities to aid in the preliminary design build process.

1. Sufficient gravity sewer manhole pipe invert information on either side of interstate mainline will be surveyed to determine the approximate percent slope of sanitary sewer pipe.
2. A single Quality Level A test hole for each utility crossing within the designated SUE project areas will be located within the grass median unless otherwise noted.

## Scope of Services

**CONSULTANT** shall perform the following services:

- **Designating** services (Quality Level B) for underground utilities. For the purpose of this *Agreement*, “designate” shall be defined as indicating, by marking, the presence and approximate horizontal position of the subsurface utilities by the use of geophysical prospecting techniques.
- **Location** services (Quality Level A) of proposed drainage and/or roadway improvement conflicts with existing underground utilities as determined by the current Utility Coordinator. This includes obtaining a precise horizontal and vertical position of the existing utility line by excavating a test hole. The test holes shall be done using vacuum excavation or comparable nondestructive equipment in a manner as to cause no damage to the utility line.

### *Task 1- Designating*

- Provide all equipment, personnel and supplies necessary for the completion of **Quality Level B** information for approximately **6,000** LF of underground utilities.
- Provide all equipment, personnel and supplies necessary for the completion of **Quality Level C** information for approximately **3,000** LF of underground utilities.

- Provide all equipment, personnel and supplies necessary for the accurate recording of information for approximately **20** sanitary sewer manhole utilities.
- Conduct appropriate records and as-built plans research and investigate site conditions.
- Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow **CONSULTANT** personnel to work within the existing streets, roads and rights-of-way.
- Designate the approximate horizontal position of existing utilities by paint markings in accordance with the APWA Uniform Color Code scheme along the utility and at all bends in the line in order to establish the trend of the line.
- All utilities shall be designated as well as their corresponding lateral lines up to the point of distribution, existing right-of-way limits, or whichever is specifically requested and scoped for each individual project.
- Service lines are excluded from this scope.
- Survey designating marks, which shall be referenced to project control provided by the surveyor of record.
- The **CONSULTANT** is completely responsible for the safety procedures and the safety of its employees. SCDOT Work Zone Safety Manual and the USDOT Manual on Uniform Traffic Control Devices for Streets and Highways (Current Revision) should be used as references for appropriate work zone safety.

#### *Task 2 - Location*

- Provide all equipment, personnel and supplies necessary for the completion of Quality Level 'A' information for an estimated **13** test holes.
- Conduct appropriate records and as-built plans research and investigate site conditions.
- Obtain all necessary permits from city, county, state or any other municipal jurisdictions to allow **CONSULTANT** personnel to work within the existing streets, roads and rights-of-way.
- Perform electronic sweep of the proposed conflict and other procedures necessary to adequately "set-up" the test hole.
- Excavate test holes to expose the utility to be measured in such a manner that insures the safety of excavation and the integrity of the utility to be measured. In performing such excavations, the **CONSULTANT** shall comply with all applicable utility damage prevention laws. The **CONSULTANT** shall schedule and coordinate with the utility companies and their inspectors, as required, and shall be responsible for any damage to the utility during excavation.
- Provide data to the **SCDOT** concerning:
  - a) The horizontal and vertical location of the top and/or bottom of the utility referenced to the project survey datum.
  - b) The elevation of the existing grade over the utility at a test hole referenced to the project survey datum.
  - c) The outside diameter of the utility and configuration of non-encased, multi-conduit systems.
  - d) The utility structure material composition, when reasonably ascertainable.
  - e) The benchmarks and/or project survey data used to determine elevations.

- f) The paving thickness and type, where applicable.
  - g) The general soil type and site conditions.
  - h) Such other pertinent information as is reasonable ascertainable from each test hole site.
- Provide permanent restoration of pavement within the limits of the original cut. When test holes are excavated in areas other than roadway pavement, these disturbed areas shall be restored as nearly as possible to the condition that existed prior to the excavation.
  - The CONSULTANT is completely responsible for the safety procedures and the safety of its employees. SCDOT Work Zone Safety Manual and the USDOT Manual on Uniform Traffic Control Devices for Streets and Highways (Current Revision) should be used as references for appropriate work zone safety.

In the performing of Designating and Location services under this *Agreement*, the **SCDOT** shall,

1. When requested, provide reasonable assistance to the **CONSULTANT** in obtaining plans showing the project limits, alignment, centerline, rights-of-way limits (existing and proposed), project controls and other data for selected projects.
2. Provide notification to key **SCDOT** District personnel concerning the upcoming SUE services to be provided by the **CONSULTANT**.
3. Provide **CONSULTANT** with a more detailed project limit in an electronic Microstation CADD format.

## Specifications

Unless specifically stated otherwise, the Consultant shall adhere to the ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02).

## SUE Deliverable Schedule

Within **30** days of the Notice to Proceed for the work order, the **CONSULTANT** will provide SCDOT with the completed deliverables as detailed in this Scope of Services.

## Deliverables

### *Task 1- Designating*

- Draft survey information using **SCDOT** CADD guidelines for Subsurface Utility Engineering (latest version).
- Final review and seal of all appropriate work by a professional engineer and/or land surveyor licensed in South Carolina in responsible charge of the project.

*Task 2 - Location*

- Draft horizontal location on the project plans using CADD standards as outlined above. A station and offset distance and/or northing and easting coordinates (State Plane) with elevations shall be provided with each test hole.
- Test hole information shall be formatted and presented on **CONSULTANT's** certification form and listed in a test hole data summary sheet.
- Certification form shall be reviewed and sealed by a professional engineer or land surveyor licensed in South Carolina and in responsible charge of the project.