

**ATTACHMENT B  
SCOPE OF SERVICES**

**I. GENERAL**

The Contractor shall provide test hole, utility locating and designating services per the terms and conditions specified herein. Services must be in accordance with the American Society of Civil Engineers' "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" - CI/ASCE 38-02.

At a minimum, the Contractor shall be responsible for the following:

- A. Coordinate with the County to receive all the necessary information required to provide the services such as location map of the project, the location of the test holes, control points when needed, and limits of the utility locating and designating Services.
- B. Acquiring all the necessary permits from the Arlington County Department of Environmental Services. The application fee for County permits will be waived.
- C. Coordinate with Arlington County Police Department to have officers direct or monitor road users at test hole, utility locating and designating sites whenever the extent of the work and the location warrants it. This shall be done at contractor's own expense. Department to have officers direct or monitor road users at test hole and utility locating and designating sites.
- D. At the Contractor's expense, acquire all the necessary VDOT permits wherever the service request lies within VDOT right of way.
- E. Stake out the area of work, including station and offset as well as accurate northing/easting of the test hole locations.
- F. Electronically designate existing utilities at proposed crossing, including station and offset.
- G. At the Contractor's expense, maintain traffic control in accordance with state and county regulations.
- H. Conduct a review of the collected data with the County project officer as necessary and provide weekly updates on the status of outstanding jobs.
- I. Deliver the findings of the subsurface utility investigation – the results of the test hole, utility locating and designating services to the County in electronic forms acceptable to the project officer and hard copies when required.
- J. The results shall be submitted with a quality level A as described in the ASCE guidelines stated above with a corporate guarantee for the accuracy of the information.

**II. TYPES OF SERVICES**

**A. Test Holes**

The Contractor shall provide the following for test holes:

1. Dig test holes, including the cutting of all pavements. A surcharge will be allowed for holes in pavement over eight inches in thickness and test holes over six feet (6') deep;
2. Investigate, evaluate, measure and record:
  - a. Horizontal and vertical location of top and/or bottom of utility referenced to project datum
  - b. Elevation of existing grade over utility at test hole referenced to project datum
  - c. Outside diameter or width of utility and configuration of non-encased, multi conduit systems
  - d. Utility structure material composition, when reasonably ascertainable
  - e. Benchmarks and/or project control used to determine elevations

- f. Paving thickness and type, where applicable
- g. Such other pertinent information as is reasonably ascertainable from each test hole site.

References to project datum shall maintain vertical tolerances to 0 .1' (ft) based on benchmarks shown provided or agreed up on by the County project officer and horizontal tolerances to applicable surveying standards.

- 3. Record the information mentioned in II.A.2 on a form that provides an accurate plan and profile view.
- 4. This shall include verification of each benchmark elevation (requires at least two benchmarks to be provided by the County) and an accurate coordinate northing/easting of the location of the test holes.
- 5. Backfill and permanent restoration of excavated area in accordance with the procedure described in section no. 5 - Excavated area restoration below.

#### **B. Utility Locating & Designating Services**

The Contractor shall provide the following for Utility Locating & Designating Services:

- 1. Coordinate with utility companies and the appropriate governmental jurisdictions in researching the location(s) of existing utilities. Secure all "as built" plans, plats, and other necessary data as supplied by the utility companies. While obtaining the information from the utility companies or governmental jurisdictions, ascertain the age, the size, the material type, the general condition, etc. of the utility.
- 2. Designate, record and mark the horizontal location of public and private underground utilities within the scope of the County's request (i.e. water, power, gas, telecommunication, reclaimed water, septic, fiber optic, CATV, to include all services, mains, distribution and transmission lines) utilizing appropriate surface geophysical methods such as radio-frequency electromagnetic, magnetic, and/or acoustic emission and terrain conductivity techniques. Gravity flow systems will be depicted at "Quality Level C or D" when prudent. No storm sewers are to be designated unless required on an exception basis.
- 3. If needed: Furnish, install, and color code a permanent above ground marker (i.e. P.K. nail, peg, steel pin, or hub) directly above the centerline of the structure and record the elevation of the marker.
- 4. Prepare appropriate field sketches of marked utilities and survey designating marks, which shall be referenced to project control provided by the County.

#### **C. Utility Locating, Designating and Surveying Services**

The Contractor shall provide the following for the combined service of Utility locating, designating and surveying services:

- 1. Perform a survey of the utilities designated and located. Horizontal surveying of underground utilities shall be accurate to applicable survey standards.
- 2. Compare survey information plotted on base plans/CADD file with information provided from field sketches and evaluate all plotted information in the field for accuracy and reliability.
- 3. Final plot all information to account for any corrections noted from the previous step and review plan sheets against:

- a. Records
  - b. field sketches
  - c. CADD drafting and field notes
  - d. Depict non-design table utilities at least on quality level C or D.
4. The Contractor shall provide the Project Officer a copy of the CADD files in a “.dwg” format, compatible with Arlington County's CADD software program (AutoCAD 2022). All drawing files shall conform to the current Arlington County CADD Standards. A signed and sealed hard copy and PDF shall also be submitted to the Project Officer.
  5. CADD files shall be submitted to the County via FTP site provided by the Contractor, or via e-mail. In addition to the aforementioned elements, the CADD file shall also include survey points used within the drawing, including control points, utility location points and topographic points.
  6. All Survey work shall be performed under the direct supervision of Virginia Licensed Land Surveyor.

#### **D. Pavement Section Core Sampling Services**

The Contractor shall provide the following for Pavement Section Core Sampling:

1. Take pavement core samples for visual inspection from locations specified in a location map to be provided by the project officer.
2. The test specimens shall be obtained in accordance with VDOT standards and as follows:
  - a. Test specimens shall be cut from the pavement with a portable saw or other approved method. If water is used as a cooling agent, then the contractor must have an approved method to dry the core/plug.
  - b. The length of the sides of the sawed specimens shall not be less than 3 in. nor more than 4.5 in. 4 in. diameter cores may be used. The thickness of the specimens shall not be less than 1.0 in.
  - c. Mark out squares of pavement with numbers
  - d. Cool marked area with gas (CO<sub>2</sub>) or dry ice.
  - e. Cut out specimens using the approved method. (It will be necessary to cut out past the marked lines, so that a full-depth cut is obtained.
  - f. Recool marked area with gas sufficiently to pry out specimens without distorting.
3. Obtain and provide the following information for each core:
  - a. Core ID with core number
  - b. Street name / Rout ID
  - c. Direction (northbound, southbound, eastbound, westbound)
  - d. Latitude & longitude
  - e. Pavement type (asphalt, concrete) and thickness
  - f. Base type (concrete, gravel, granular, macadam) and thickness if sampled
  - g. Image of core with measurement using a tape measure/ruler from top to bottom
  - h. Other notable information or comments
4. Backfilling and permanent restoration of excavated area in accordance with the procedure described in section no. 3 Excavated area restoration below.

**E. EXCAVATED AREA RESTORATION:**

The Contractor shall restore the excavated area to the original surface.

1. The Contractor must adhere to the following procedure for restoring test holes in asphalt pavement one foot (1'), or less, in diameter:  
The Contractor shall apply 24 inches of compacted subbase complying with VDOT 21-A, placed on compacted fill, and brought to the surface grade by seven inches (7") of compacted SM-9.5A hot mix asphalt from VDOT approved Material list.
2. The Contractor must adhere to the following procedure for restoring test holes in asphalt pavement in excess of one foot (1') in diameter (or square equivalent measure):  
The Contractor shall apply permanent hot mix patches in accordance with the Arlington County Department of Environmental Services Construction Standards and specification, drawing # M-6.0, Standard Pavement Patching for Utility cuts, with the following exceptions:
  - a. Patches less than two feet (2') in diameter do not require the 12-inch extra widening at the edge of the patch if even.
  - b. SM-9.5A shall be used for the full depth of the required asphalt with compaction applied at 1/2 depth and at final surface.

The Contractor shall guarantee the integrity of all restored areas for three (3) years.

**F. SERVICE REQUIREMENTS**

The Contractor shall be responsible for all printing, transportation, travel, and any other costs associated with completing the Work. Arlington County will not reimburse any expenses related to completing the Work assigned.