CobbFendley

February 16th 2023

Brandon Pritchett
City of Pflugerville
Public Utility Director

VIA E-MAIL

Re: SUE Services for City of Pflugerville

Dear Mr. Pritchett,

CobbFendley is pleased to provide this scope and fee estimate for the Subsurface Utility Engineering (SUE) investigation services associated with the project referenced above. The proposed Scope of Services and Basis of Compensation are outlined below. It has been revised based on your comments and emails in January 2023

Scope of Services

The purpose of this SUE investigation is to assist in accurately determining the presence and location of subsurface water and sanitary sewer lines in downtown Pflugerville. Please see attached image with scope area highlighted in yellow.

SERVICES TO BE PROVIDED BY COBB FENDLEY

When performing this type of work CobbFendley typically follows ASCE 38-02 "The Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data"- see below.

Utility Quality Levels are defined in cumulative order (least to greatest):

Quality Level D - Existing Records: Utilities are plotted from review of available existing records

Quality Level C - Surface Visible Feature Survey: Quality Level "D" information from existing records is correlated with surveyed surface-visible features.

Quality Level B - Designate: Two-dimensional horizontal mapping. This information is obtained through the application and interpretation of appropriate non-destructive surface geophysical methods. Utility indications may be referenced to established survey control. Additional description of services, methodology and equipment is below.

Quality Level A - Locate (Test Hole): Three-dimensional mapping and other characterization data. This information is obtained through exposing utility facilities through test holes and measuring and recording (to appropriate survey control) utility/environment data.

The city of Pflugerville already has Level D utility information represented in its GIS. CobbFendley therefore anticipates performing Quality Level C, Level B and Quality Level A test holes.

Visible Utility Feature Survey (Quality Level C)

To accurately capture utility surface features the scope for Level C work can be described as follows:

1) Preliminary review of the City's GIS indicates that although many water and sanitary sewer features (hydrants, valves , manholes) have already been incorporated into to the map, they appear in an approximate locations. In order to accurately determine the position of above ground utility features CobbFendley crews will survey these items.

2) Where available, the City will provide as built information or record for water and sewer lines within the scope area. This will assist in determining the presence of utility features and allow a quality check to be made against features identified in the field

3) Crews will capture the horizontal and vertical coordinates of fire hydrants, water valves, water meters and water vaults where present within the scope.

4) Crews will capture the horizontal and vertical coordinates of sanitary sewer manholes. The rim elevation will be recorded. If required pipe sizes and invert depts will also be obtained. A separate cost for this is shown below. Sanitary sewer manholes will be investigated from above ground. Confined space entry is not anticipated, but traffic control may be required.

5) Survey data will be delivered in AutoCad. If required, it can also be provided as a gdb file for an additional fee.

6) Level C data will be used to assist field crews in locating water and sewer lines when designating (see below)

Designate (Quality Level B)

To investigate the horizontal location of buried utilities the scope for Level B work can be described as follows:

1) Coordinate with Client to schedule work. Client will provide permission to access private property or right of entry as required. It is anticipated that any City permits will be waived. TxDOT permission may be required for Pecan -FM 1825. Traffic control may be required to perform designating work depending on locations of water and sewer facilities.

2) Designate means to mark and record the horizontal locations of tone-able buried water utilities using non-destructive geophysical techniques. Tone-able utilities are typically utilities that are conductive, or internally accessible with a traceable fish tape or sonde. CobbFendley anticipates designating where possible, water mains and water service lines. Water vaults can be investigated from above ground. Confined space entry is not anticipated.

3) If water mains are determined to be non-conductive (e.g. they are PVC or AC) CobbFendley crews will attempt to designate water services to determine where they meet the main. This will provide the approximate location of the main, even if the main itself is non-conductive.

4) Under ideal circumstances nonconductive buried lines may also be investigated with Ground Penetrating Radar (GPR). Soil conditions in Texas are however generally not suitable for GPR. CobbFendley has had success using GPR for SUE work but non-conductive features can remain undetected.

5) Level B of Sanitary Sewer is not included. Using a conductive fish tape or rod to designate the horizontal position of sewer lines is not typically necessary, as lines typically follow "line of sight" between manholes. Unless otherwise requested, or required to determine the sanitary sewer layout, Level B will not be performed on these lines, as it often does not provide notable benefits over Level C sewer work. Sanitary sewer manholes and invert information will be captured as part of the Level C work described above.

6) A non-water base paint, utilizing the APWA color code scheme will be used on surface markings of underground features. CobbFendley will provide a field sketch of designated utilities.

7) Survey SUE field markings. City will provide survey control points they wish to be referenced for this project

8) Draft utility data to provide a composite utility plan in AutoCAD. If required at a later date, CobbFendley can also work with Pflugerville Public Utility and GIS personnel to determine what data fields need to be captured to simplify integration of the new information into the existing GIS schema. Utilities for which there are records, but were not designated as Quality Level B, will be represented as Quality Level D using different line styles and symbology.

9) Correlate utility records with designating field work and resolve discrepancies using professional judgment.

Test Holes (Quality Level A)

CobbFendley will complete utility test holes to confirm the horizontal locations and determine the vertical locations of existing utilities. To efficiently perform test holes CobbFendley will first identify the horizontal position of the utility lines in the immediate vicinity of test holes (see Level B above), then use vacuum excavation techniques to uncover the line. Utility test holes can be completed as follows:

1) Coordinate with City to schedule work. City will obtain Right of Entry if required. It is assumed that the need for permits will be waived, although they may be required from TxDOT for Pecan St – FM 1825

2) Comply with regulations, and policies for the prevention of underground utility damage (i.e., one-call system).

3) Review utility record information and Level B (obtained above) to assist in determining target utility locations. It is assumed that test hole locations are readily accessible by vacuum trucks without the need for clearing, matting, air bridges etc. The cost of these is not included in this proposal. In areas of heavy mud, or susceptible to flooding, vacuum excavation may not be possible.

4) If test hole is in pavement, neatly cut and remove existing paving. Coring can be provided for an additional cost. The pavement area removed shall not typically exceed approximately 1 square foot unless unusual circumstances exist. CobbFendley accepts no responsibility for contaminated soils should they be encountered during excavation. CobbFendley does not take ownership of any excavated material.

5) Expose utilities using non-destructive vacuum excavation. Measure and record the depth of the utility at critical locations; and where possible record utility size, utility material, utility condition and type of soil around the utility as well as pavement type and thickness. Backfill the hole and compact in lifts and repair pavement, with concrete or asphalt patch where necessary. If flowable fill or special surface restoration is required, additional costs will be incurred.

6) Survey of utility test holes and drafting of test hole data will be performed to incorporate utility elevation information into project base file in AutoCAD. Client will provide survey control and base file in AutoCAD format. If the City has existing GIS schema for test hole information, CobbFendley can record data in a format to simplify possible integration into the GIS for an additional fee. CobbFendley will also prepare Test Hole data sheets summarizing the findings.

7) Traffic control is anticipated to be required for some test holes in the Right of Way. Estimated traffic control costs are shown.

Submittals

CobbFendley will perform Level C, B and A SUE using equipment capable of survey grade accuracy (typically Trimble R8 or R 12 GPS antennas) CobbFendley will work with Pflugerville Public Utility and GIS personnel to determine what data fields need to be captured to simplify integration of new SUE information into the existing GIS schema. However, the format of the submittal will be firstly in dwg. Files in gdb format can be provided at a later date.

SUE Limitations

Above ground geophysical techniques cannot guarantee to find all buried utility lines. CobbFendley will perform subsurface utility engineering in accordance with ASCE 38/02 Standard Guidelines for the Collection and Depiction of Subsurface Utility Data. Cobb, Fendley and Associates, Inc. will exercise all reasonable and customary care in the performance of SUE and Survey services, realizing efficient design and ultimately the safety of all personnel is a prime consideration in the detection and mapping of subsurface utility features which may be in conflict with proposed construction. However, a possibility exists that some utilities may not be detected and/or mapped using standard SUE procedures previously described. While uncommon, utilities possessing these characteristics can be missed while using the standard SUE procedures: utilities buried excessively deep, beyond detection limits of standard locating equipment, abandoned utilities, utilities with no apparent surface features and no records available, non-conductive utilities, and utilities buried in soil unsuitable for geophysical detection. Contractor shall call One Call before excavating as required by Texas Law.

Basis of Compensation

CobbFendley can offer SUE services as described above, for the larger old downtown area. The scope limits are shown by the highlighted area in the attached image.

SUE Quality Level C

Estimated cost Level C Visible Utility Feature Survey:	$27,847

In addition to the Level C effort, if any sanitary sewer manholes need to be opened, pipe sizes recorded and invert depths measured, this work can be provided on a daily basis. The rate show below includes field work to obtain the information, processing of the data and submitting a manhole detail. On average 8-12 manholes are typically opened and measured per day, depending on accessibility.

Manhole invert survey $3,307/day. Estimate for 10 days	$33,070

SUE Quality Level B

Estimated cost Level B Designating (water mains)	$70,896

Test Hole Quality Level A

For the purposes of this estimate, a daily rate for vacuum excavation work is provided. Depending on conditions, depth of utility, access and restrictions (eg TxDOT permit requirements) 2 test holes can typically be excavated per day. If trenching is required to locate a nonconductive utility, productivity will be lower. If traffic control is required and restricts work activities, productivity can also be lower. Level A daily rate includes: excavation, coordination, survey and CAD, management and test hole reporting. Traffic control may be required for some locations, estimated costs are shown below. Pavement coring and specialist backfill (e.g. flowable fill) and resurfacing costs are not included.

Estimated cost for SUE Level A (daily rate $5,519) 3 days	$16,557

Permitting and Traffic control

It is assumed that City permits are not required. TxDOT will probably not assess fees on highway SUE work in Travis Co., but they will need to grant approval for work on FM 1825 (Pecan St). Lane closures or mobile surveying operations will need to meet current TxDOT MUTCD standards which typically require an attenuator truck. The cost of traffic control is dependent on location. It is estimated work will require: 1 day for manhole survey, 2 days for Level B work, 3 days for level A test holes

Estimated to cost for traffic control: (daily rate $1800) 5 days	$9000

Summary of estimated cost

SUE Quality Level C	$27, 847
Manhole Surveying (10 days)	$33,070
SUE Quality Level B	$70,896
SUE Quality Level A (3 days)	$16,557
Permitting and Traffic control (5 days)	$ 9,000
Estimated Total	**$157,370**

If this proposal is acceptable, please sign below and return to us. If you have any questions or comments, please do not hesitate to contact us.

Sincerely,

COBB, FENDLEY & ASSOCIATES, INC.

Richard Clarke
Department Manager

This proposal accepted by: City of Pflugerville

_____
Signature Date

_____
Print Name

_____
Title

Approximate areas of SUE investigation shown highlighted in yellow below: