

MEMORANDUM

To: File
From: Elissa Roselyn, Project Manager
Date: 12/20/18
RE: SUE Memo
 I-70 Floyd Hill to Veterans Memorial Tunnels Project (21912)

The purpose of this memorandum is to document the assumptions and findings related to the Subsurface Utility Engineering (SUE) investigation for the I-70 Floyd Hill to Veterans Memorial Tunnel Project conducted by SAM for Goodbee & Associates, Inc. in Summer/Fall 2018.

1. Background

- SAM, LLC was hired by Goodbee to do a QLB investigation along the project corridor.
- On 8/10/18, SAM was given NTP and started work soon thereafter at the east end of the corridor.
- On 8/21/18, CDOT provided Atkins with a CAD file containing utility survey from a previous CDOT work effort during which Woolpert surveyed locate markings by Diversified Underground in 2016/2017.
 - On 8/22/18, Goodbee contacted Diversified, asked if they would certify/seal their data to ASCE 38 standards, and was told they'd look into the matter. No response was received.
 - When Diversified was not able to verify that their utility investigations were completed to ASCE 38, it was decided in collaboration with CDOT utility staff to have SAM shift to the western end of the corridor where most of the roadway improvements are planned.
 - Goodbee, Atkins and CDOT met on 9/6/18 and it was agreed to limit SAM's work to west of MM 245 and to use the Diversified/Woolpert data as QLC/QLD to the east to avoid duplication of effort. The intent was that SAM could complete additional SUE investigations at a future time, if and when the design was revised to include on the eastern end of the corridor.
- On 10/16/18, SAM provided a preliminary set of plans which Goodbee checked against key maps. Goodbee also completed a limited field check.
- On 11/13/18, SAM provided a CAD file and a final sealed set of plans.
- Goodbee used the CAD file from SAM and added Diversified/Woolpert data to create an existing utility base file. Quality levels shown in SAM's file were maintained; and buried and surface utilities from the Diversified/Woolpert file were depicted as QLD and QLC, respectively.

2. Assumptions

- QLB data would not be obtained where the new tunnel north of I-70 is planned because the steep rocky hillside makes the presence of buried utilities unlikely.
- QLB data would not be obtained east of MM 245 because the current design was not anticipated to result in greater than two feet of excavation or utility borings.

3. Findings

- SAM's sealed plans show buried utilities along I-70 between roughly MM 242.4 and 244.8 and at the Beaver Brook/Floyd Hill Interchange.
- SAM's sealed plans show the vast majority of buried utilities depicted as QLB, as well as some utilities attached to structures.
- SAM obtained QLC data where utilities were attached to structures.
- SAM was unable to investigate a few areas due to traffic and/or lack of access. These areas are clearly shown on SAM's plans.
- SAM's means and methods for geophysical investigations are included in the plan notes.

4. Recommendations

- The QLB investigation area should be extended if design changes result in additional areas with greater than two feet of excavation or utility borings (soil nails).
- QLA test holes should be undertaken at potential utility conflicts.