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QL-A REPORT: SUBSURFACE UTILITY ENGINEERING (SUE)

2960 Teston Road

Prepared For:

The Regional Municipality of York
2960 Teston Road

Maple ON, L6A 1S1

Rev No.	Date	Description	Prepared By	Reviewed by
0	April 04, 2022	Issued for Client Review	Nikhil Benny	Youssef CHOULLI , P.Eng.



The engineering stamp on this document is to confirm that the QL-A Subsurface Utility Engineering investigation was performed according to the scope of work in the contract, the industry best practices and ASCI 38-02 Standard.

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1. DEFINITIONS

Ticket	The notification that multiVIEW sends to the utility owner to inform of any conflict and to prompt the utility owner to provide their record data and as built data of their existing utilities in the project limits.
Right-Of-Way (ROW)	Right-Of-Way refers to subsurface land or property acquired for or intended to be occupied by either a street crosswalk, railroad electric transmission line, oil or gas pipeline, water main sanitary, or storm sewer main, shade trees and/or other special private and public utility facilities.
Locate/ Locating	In this scope of work, Locate, refers to leveraging the surface geophysical methods to interpret the presence of a subsurface utility and to mark its approximate horizontal position (designation) on the ground surface. The process of exposing and recording the precise vertical and horizontal location of a utility is not included in this scope of work.
Utility	A privately, publicly, or cooperatively-owned line, facility, or system for producing, transmitting, or distributing communications, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, or any other similar commodity, including any fire or police signal system or street lighting system.

2. ABBREVIATIONS

ASCE	American Society of Civil Engineers	QL-A	Quality Level A
BOC	Bottom of Chamber	QL-B	Quality Level B
CB	Catch Basin	QL-C	Quality Level C
CAD	Computer Aided Design	QL-D	Quality Level D
CCTV	Closed Circuit Television	ROW	Right-of-Way
CI	Construction Institute	SUE	Subsurface Utility Engineering
GPR	Ground Penetrating Radar	SAN	Sanitary
GPS	Global Positioning System	St	Street
INV	Invert	STM	Storm
MH	Maintenance Hole (Man Hole)	T/G	Top of Grate Elevation
Multiview	multiVIEW Locates Inc.		
N/A	Not Applicable		
OBV	Obvert		

3. REFERENCES

Ref #	Document #	Document Title	Revision date
1	CI/ASCE 38-02	Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data	2006
2	Proposal Project # 49505	Estimate for SUE Consulting Services for 2960 Teston Rd, Vaughan, ON L6A 1S1	August, 2021

4 EXECUTIVE SUMMARY

multiVIEW Locates Inc. was contacted by “The Regional Municipality of York” to complete a Subsurface Utility Engineering (SUE) QL-A investigation to designate, capture and plot the inferred spatial position of targeted underground utilities in the project area. multiVIEW Locates Inc. has performed the SUE investigation; fieldwork Quality level A (QL-A) and completed the investigation for the project area: 2960 Teston Road, Vaughan, ON L6A 1S1 that is defined in the map and scope of work, shown in Figure 1.1.

Through a combination of record data analysis, mobilization of personnel and equipment, field verification and professional judgement, this SUE investigation tried to identify and confirm the location of the below ground utilities infrastructure and appurtenances as defined in CI/ASCE 38-02, within the work area and project limits, but without being successful to find the 1800 mm diameter CPP Water main due to the absence of the tracer wire to locate the pipe and trying limited depth about 3m as per the as built drawing estimation.

The QL-A investigation and captured associated data was completed in strict adherence to the CI/ASCE 38-02 standard. This Report outlines the scope of work completed, the equipment and techniques applied, an overview of the collected data and a full photo report that includes utility depth data. For a comprehensive definition of Subsurface Utility Engineering and associated Quality Levels, please refer directly the CI/ASCE 38-02 standard.

The consolidation of the above-mentioned information and investigation results have been integrated into the SUE QL-A Composite CAD Drawing, attached in Appendix -A.

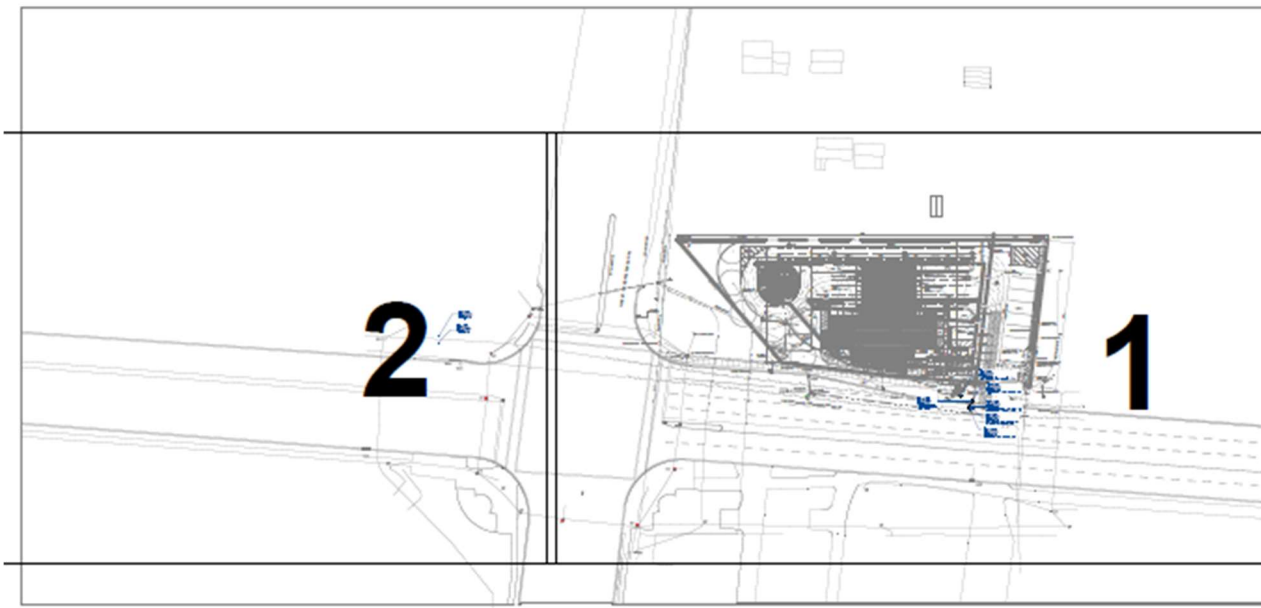


Figure 1.1 2960 Teston Road

The present report and attached composite drawing will support the detailed design of the project (e.g. utility relocation plans), allow more accurate cost estimation, minimize risks, and support any prioritization of utility conflicts.

4.1 PROJECT AREA

The project area is located at 2960 Teston Rd, Vaughan, ON L6A 1S1. Refer to Figure 1.2 for reference to the project area. There were 8 test pits proposed in this site.

Q-18041-TJ03 - Appendix 3

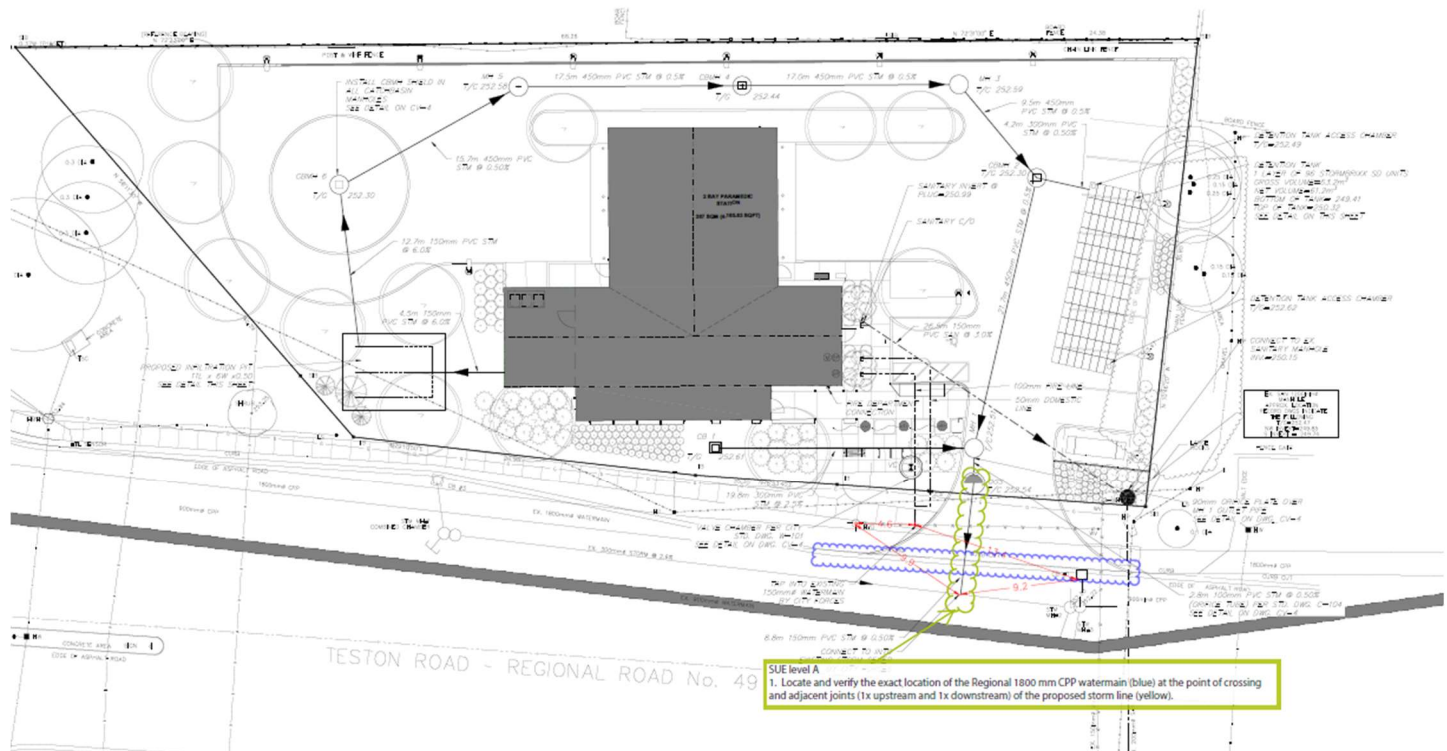


Figure 1.2: Picture depicting the Project Area.

4.2 PROJECT SCOPE OF WORK

A QL-A Investigation was conducted within the limits of the project area to obtain horizontal and vertical information of underground utilities specifically to verify the exact location of the Regional 1800mm CPP watermain at the point of crossing and adjacent joints (1x upstream and 1x downstream) at 2960 Teston Road, Maple ON.

The investigation entailed the following activities to complete fourteen (14) test holes.

- I. Public Utility Notification
- II. Excavation (Utilizing Hydrovac truck and equipment)
- III. Test hole restoration

5.0 EQUIPMENT/TECHNIQUES

multiVIEW uses the latest vacuum excavation equipment and techniques to daylight a variety of subsurface utilities and underground structures. Quality Level A (QL-A) investigations are carried out in strict adherence to the CI/ASCE 38-02 standard guideline for the collection and depiction of existing subsurface utility.

Vacuum excavation is an ideal technique when performing potholing, daylighting, or test pitting to expose and verify the physical characteristics of a utility or structure housing utilities include its geodetic location. The two most popular methods of completing vacuum excavation are pneumatic excavation and hydro excavation. In pneumatic excavation, high speed air flow is used where required to loosen the material covering the target and the soil is sucked away with the vacuum tube. This soil can be used as native back fill as it is not mixed with any other materials. During hydro excavation, a high pressure water jet is used and where required, at high temperatures, to loosen the material covering the target. This method is suitable for any soil type. On hard surfaces such as asphalt, concrete or limestone, a process of keyhole cutting techniques are applied using diamond tip cutting equipment in order to access the soft surface underneath. Depending on the requirements of the project, multiVIEW also offers full site restoration services.

For this project, the process of hydro excavation was applied to complete 5 test pit on the project site. A high-pressure water jet was used to penetrate through the soil that was present within the limits of the project site.

6.0 RESULT/OVERVIEW

Following table provides an overview of the collected data. A full photo report that includes utility depth information is provided in Section 4.0.



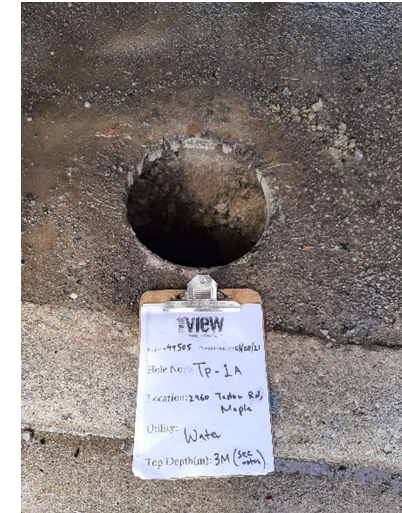
TEST PIT #	UTILITY	LOCATION	COORDINATES		SURFACE	GROUND ELEVATION	COMPOSITION OBSERVATION*	EXCAVATION DIMENSIONS (m)			DEPTH TO UTILITY FROM SURFACE (m)		TOP OF UTILITY ELEVATION	TOP OF UTILITY ELEVATION	COMMENTS
			X	Y				L	W	H	TOP	BOTTOM			
TP-1A	Water	2960 Teston Road	617324.597	4858329.85	Asphalt	252.41	UNABLE TO DEFINE	0.35	N/A	3.0	N/A	N/A	N/A	N/A	Unable to find water. Went down up to 3m. Trenched North and South.
TP-1A Contd	Water	2960 Teston Road	617324.577 4	4858330.03	Asphalt	252.41	UNABLE TO DEFINE	0.35	N/A	5.0	N/A	N/A	N/A	N/A	Couldn't find utility
TP-1B	Water	2960 Teston Road	617325.11	4858328.47	Asphalt and Concrete	252.36	UNABLE TO DEFINE	0.30	N/A	3.0	N/A	N/A	N/A	N/A	Did not find water went down up to 3m. Also trenched North and South.
TP-1C	Water	2960 Teston Road	617324.30	4858328.68	Asphalt and Concrete	252.37	UNABLE TO DEFINE	1.0	N/A	4.20	N/A	N/A	N/A	N/A	Did not find water went down up to 4.2m. Also trenched North and South

TP-1D	Water	2960 Teston Road	617324.50	4858328.03	Asphalt and Concrete	252.39	UNABLE TO DEFINE	1.0	1.0	4	N/A	N/A	N/A	N/A	Did not find water. Went down 4m.
TP-2	Water	2960 Teston Road	617321.39	4858331.46	Soil and Grass	252.58	UNABLE TO DEFINE	1.0	N/A	3.78	N/A	N/A	N/A	N/A	Rocks
TP-3	Water	2960 Teston Road	617192.63	4858304.34	Soil and Grass	252.90	UNABLE TO DEFINE	0.30	N/A	3	N/A	N/A	N/A	N/A	Did not find water. Went down 3m.
TP-4	Water	2960 Teston Road	617192.90	4858302.55	Soil and Grass	252.87	UNABLE TO DEFINE	0.30	N/A	4	N/A	N/A	N/A	N/A	Did not find water. Went down 4m.

SUE QL-A PHOTO REPORT

SUE QL-A PHOTO REPORT

Date: August 03, 2021
Hole No. : TP-1A
Location: 2960 Teston Rd, Maple
Utility: Water
Top Depth (m): N/A
Bottom Depth (m): Unable to find water. Went down up to 3M. Trenched North and South.

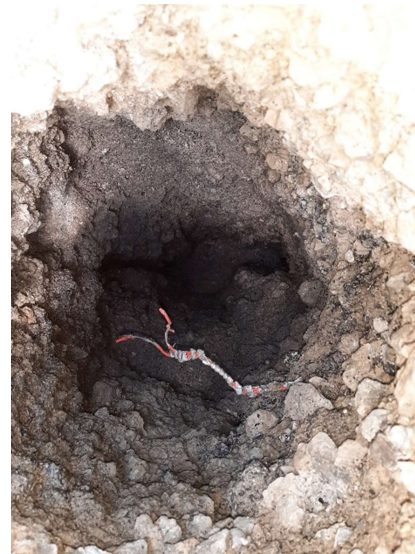


SUE QL-A PHOTO REPORT

Date: September 07, 2021
Hole No. : TP-1A Continued
Location: 2960 Teston Road, Maple
Utility: Water
Top Depth (m): N/A
Bottom Depth (m):N/A
Observation: Couldn't find water went up to 5m.

SUE QL-A PHOTO REPORT

Date: August 03, 2021
Hole No. : TP-1B
Location: 2960 Teston Road, Maple
Utility: Water
Top Depth (m): N/A
Bottom Depth (m): N/A
Observation: Did not find water. Went down up to 3M. Also trenched North and South.



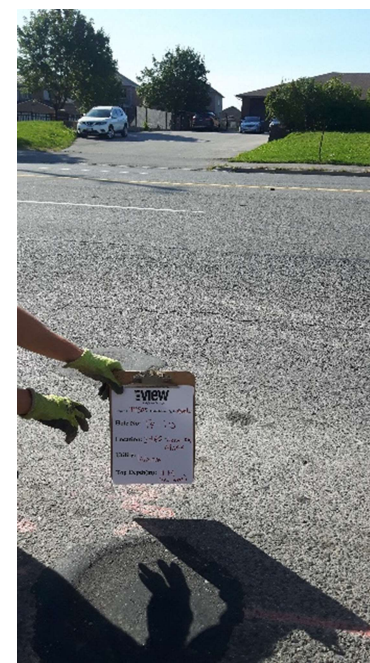
SUE QL-A PHOTO REPORT

Date: September 09, 2021
Hole No. : TP-1C
Location: 2960 Teston Road, Maple
Utility: Water
Top Depth (m): N/A
Observation: Did not find water went down up to 4.2m. Also trenched North and South



SUE QL-A PHOTO REPORT

Date: August 09, 2021
Hole No. : TP-1D
Location: 2960 Teston Road, Maple
Utility: Water
Top Depth (m): N/A
Observation: Did not find water. Went down 4m.



SUE QL-A PHOTO REPORT

Date: September 22, 2021
Hole No. : TP-2
Location: 2960 Teston Road, Maple
Utility: Water
Top Depth (m): N/A
Observation: Rocks



SUE QL-A PHOTO REPORT

Date: November 04, 2021
Hole No. : TP-3
Location: 2960 Teston Road Maple
Utility: Water
Top Depth (m): N/A
Observation: Went down 3 meters. Couldn't find utility





SUE QL-A PHOTO REPORT

Date: November 03, 2021
Hole No. : TP-4
Location: 2960 Teston Road, Maple
Utility: Water
Top Depth (m): N/A
Observation: Went down 4 meters couldn't find utility.



7.0 APPENDIX - COMPOSITE CAD DRAWING LEVEL A + PUBLIC LOCATES FILE

Doc 1	Composite CAD Drawing Level A	 49505-The region of York-HVAC-Comp
Doc 2	Public Locate Package	 Public Utility Locate Package.pdf

