



Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

November 2, 2020

File No. 1-19-0792-02
Brampton Office

Environmental 360 Solutions Ltd.
1815 Ironstone Manor, Unit # 8
Pickering, Ontario
L1W 3W9

Attention: Mr. Joseph Campitelli

**RE: IN-SITU GUELPH PERMEAMETER TESTS
PROPOSED INFILTRATION GALLERY
571 WELHAM ROAD
BARRIE, ONTARIO**

Dear Mr. Campitelli:

This letter presents the result of the in-situ Guelph Permeameter tests carried out in the vicinity of the proposed infiltration gallery to be constructed on the southeast portion of the property for the above noted site.

Terraprobe recently completed several studies for the above noted site. The results of these studies were reported under separate covers. Subsequently, Terraprobe was retained to conduct the in-situ Guelph Permeameter tests in the vicinity of the proposed infiltration gallery and provide soil infiltration rate for the gallery.

Infiltration Rates

The field work was conducted on October 20, 2020 and consisted of Test Pit Excavation and In-Situ Guelph Permeameter Tests. One (1) test pit (TP1) was excavated to about 3.4, 3.9 and 4.4 m depths, respectively, in order to conduct In-Situ Guelph Permeameter Tests on the above noted depths (Elev. 269.60, 269.10 and 268.60 m, respectively). A total of three (3) In-Situ Guelph Permeameter Tests (GP1, GP2 and GP3) were conducted in the vicinity of the proposed infiltration gallery at approximate location shown on Figure 2. The tests were performed using a Guelph Permeameter (Model 2800).

Terraprobe Inc.

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The soil type, estimated hydraulic conductivity and infiltration rate measured at the test locations/depths during the field tests are summarized below:

Test Location	General Soil Type	Test Depth/Elevation Below Existing Ground Level	Estimated Hydraulic Conductivity	Infiltration Rate
GP1	Sand, some silt, trace clay, trace gravel	3.4 m/269.60 m	2.0×10^{-4} cm/sec	50 mm/hr
GP2	Sand, trace silt, trace clay, trace gravel	3.9 m/269.10 m	1.7×10^{-3} cm/sec	75 mm/hr
GP3	Sand, trace silt, trace clay, trace gravel	4.4 m/268.60 m	2.5×10^{-3} cm/sec	75 mm/hr

*Note: Based on the in-situ hydraulic conductivity test result, the infiltration rate is estimated as per the TRCA Low Impact Development Stormwater Management Planning and Design Guide, Table C1.

The design infiltration rates for the site should be evaluated based on applicable safety correction factor(s), as per the above referenced document.

No ground water was encountered within the test depths (up to about 4.4 m depth below existing grade).

We trust the foregoing information is sufficient for your present requirements. If you have any questions, please do not hesitate to contact us.

Yours truly,

Terraprobe Inc.

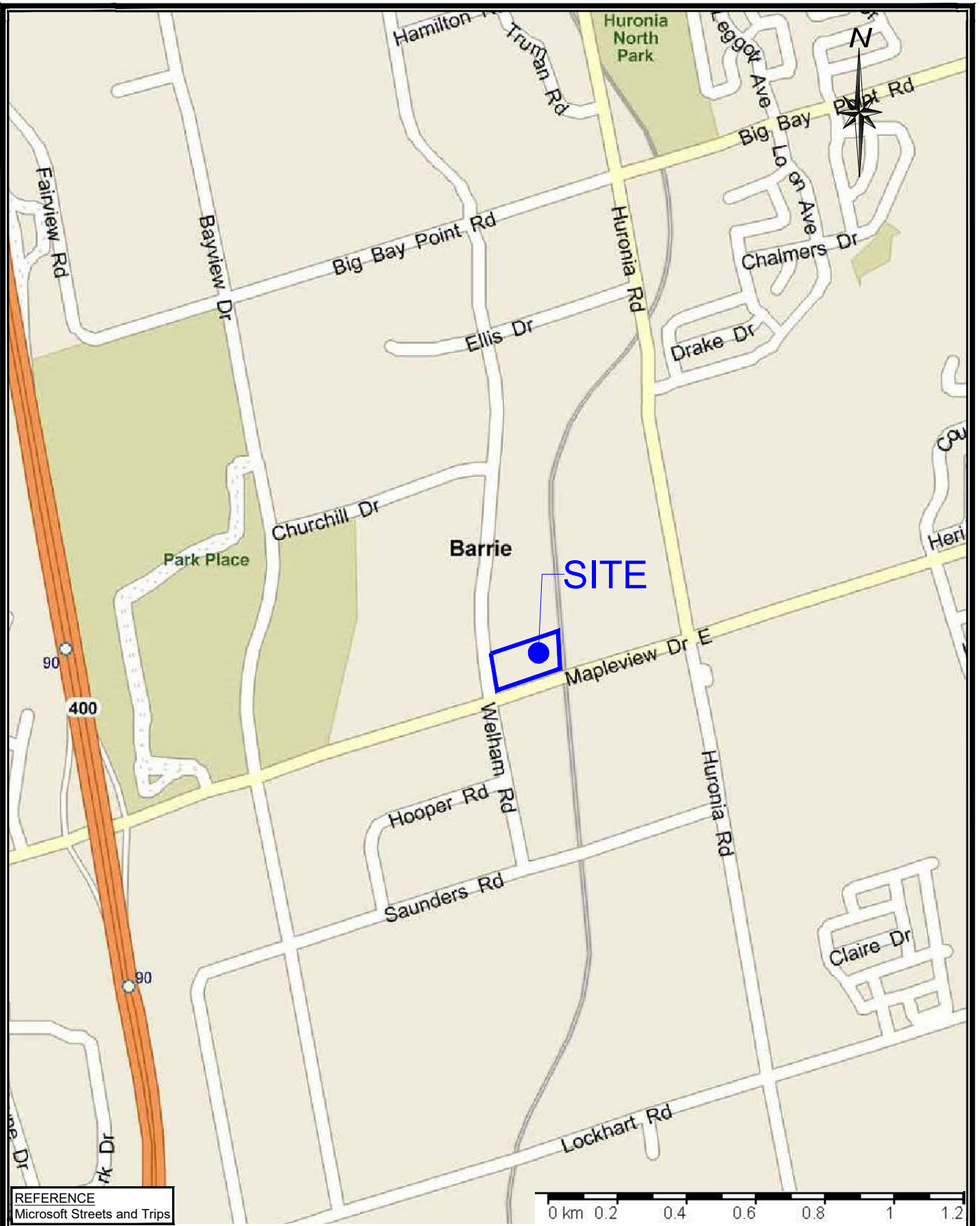
Abdus Sobahan, M. Eng., P. Eng.
Geotechnical Engineer



A handwritten signature in black ink that reads "M. Talukdar".

Madan Talukdar, P. Eng.
Associate

encls. Figure 1 - Site Location Plan
Figure 2 - Guelph Permeameter Test Location and Site Features Plan



REFERENCE
Microsoft Streets and Trips



Terraprobe

11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title:

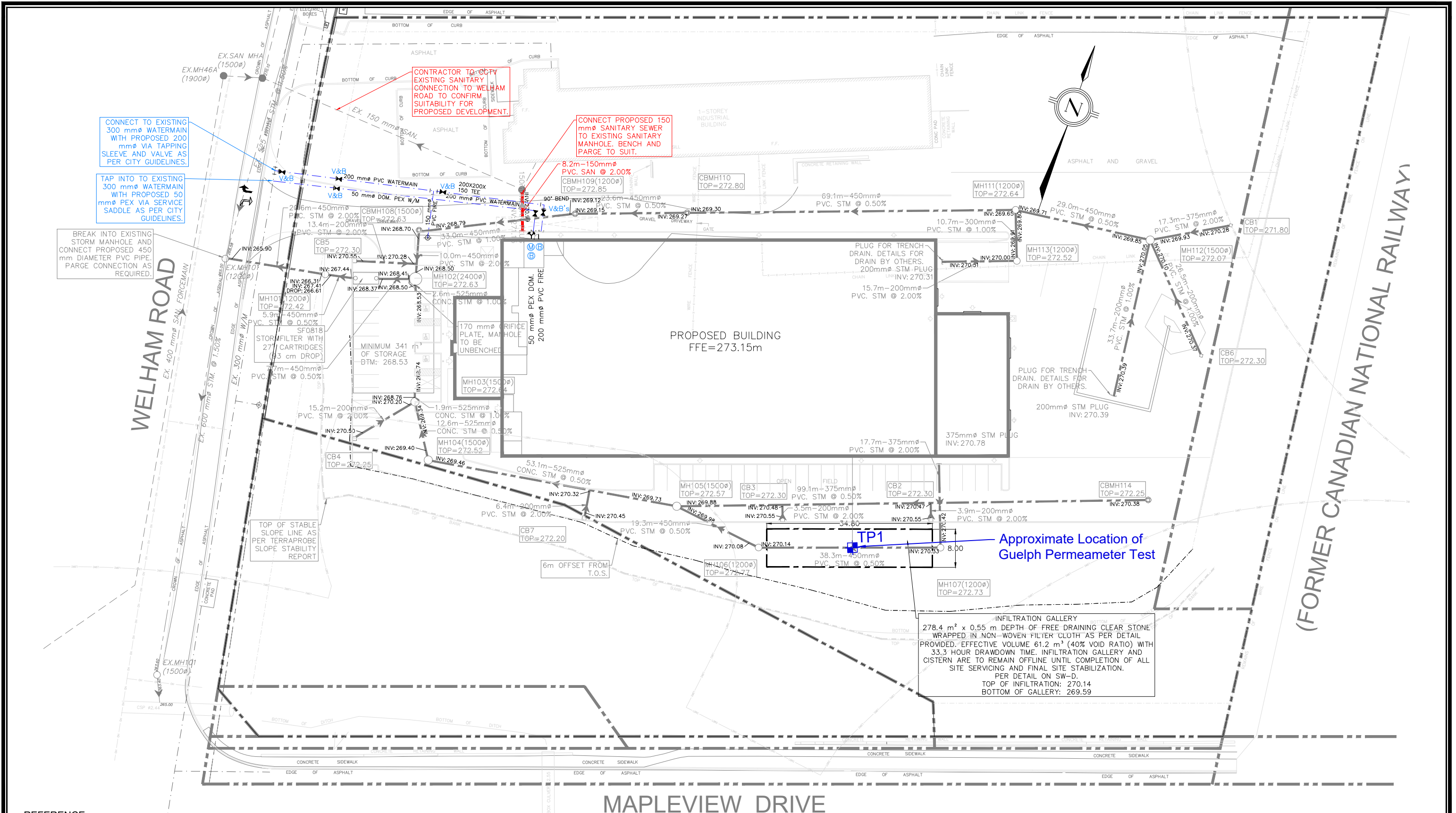
SITE LOCATION PLAN

File No.:

1-19-0762-01

FIGURE :

1



CONTRACTOR TO COPY EXISTING SANITARY CONNECTION TO WELHAM ROAD TO CONFIRM SUITABILITY FOR PROPOSED DEVELOPMENT.

CONNECT PROPOSED 150 mm ϕ SANITARY SEWER TO EXISTING SANITARY MANHOLE. BENCH AND PARGE TO SUIT.

CONNECT TO EXISTING 300 mm ϕ WATERMAIN WITH PROPOSED 200 mm ϕ VIA TAPPING SLEEVE AND VALVE AS PER CITY GUIDELINES.


TAP INTO TO EXISTING 300 mm ϕ WATERMAIN WITH PROPOSED 50 mm ϕ PEX VIA SERVICE SADDLE AS PER CITY GUIDELINES.

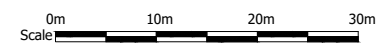
BREAK INTO EXISTING STORM MANHOLE AND CONNECT PROPOSED 450 mm DIAMETER PVC PIPE. PARGE CONNECTION AS REQUIRED.

Approximate Location of Guelph Permeameter Test

INFILTRATION GALLERY
 278.4 m² x 0.55 m DEPTH OF FREE DRAINING CLEAR STONE WRAPPED IN NON-WOVEN FILTER CLOTH AS PER DETAIL PROVIDED. EFFECTIVE VOLUME 61.2 m³ (40% VOID RATIO) WITH 33.3 HOUR DRAWDOWN TIME. INFILTRATION GALLERY AND CISTERN ARE TO REMAIN OFFLINE UNTIL COMPLETION OF ALL SITE SERVICING AND FINAL SITE STABILIZATION. PER DETAIL ON SW-D.
 TOP OF INFILTRATION: 270.14
 BOTTOM OF GALLERY: 269.59

REFERENCE
 Title: Site Location Plan
 Project no.: 20005
 Drawing No.: SW-S
 Date: January 2020
 By: Counterpoint Engineering Inc.

LEGEND
 Approximate Test Pit Location




Terraprobe
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Title: **GUELPH PERMEAMETER TEST LOCATION AND SITE FEATURE PLAN**
 File No. 1-16-0456-03

FIGURE:
2

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 DWG TOP PLOT: Kamaal, Kamal
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