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GEOTECHNICAL INVESTIGATION



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**3855 DUNDAS STREET EAST, MISSISSAUGA,
ONTARIO**

Project No. FE-P 18-9089Geo.

Revised October 15, 2021

Issued to: Dymon Group of Companies
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Ottawa, ON K1H 8K3

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Project Name: Proposed Development: Geotechnical Investigation

Project Address: 3855 Dundas Street East, Mississauga, Ontario

Project Number: FE-P 18-9089Geo

Issued on: Revised October 15, 2021

**Project Manager:
(Primary Contact)**

A handwritten signature in black ink, appearing to be 'SF' with a long horizontal stroke extending to the right.

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A handwritten signature in black ink, appearing to be 'CW' with a horizontal line and a vertical stroke.

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A handwritten signature in blue ink, appearing to be 'Frank Fan', next to a circular professional engineer seal. The seal contains the text 'LICENSED PROFESSIONAL ENGINEER', 'M. FAN', '100154673', and 'PROVINCE OF ONTARIO'.

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1. INTRODUCTION

Fisher Engineering Ltd (Fisher) was commissioned by the Dymon Group of Companies to carry out a Geotechnical Investigation at the property municipally addressed as 3855 Dundas Street East, Mississauga, Ontario, hereinafter referred to as the 'Site'.

The purpose of the geotechnical investigation is to provide a report detailing subsurface soil and groundwater conditions and to outline geotechnical parameters and recommendations for the design of the proposed structures.

Discussion of the findings and results of the geotechnical investigation is in accordance with the general terms of reference. This report was prepared specifically and solely for the purpose of assessing geotechnical conditions as they relate to the development of the site with respect to the proposed structures as detailed to Fisher at the time of the investigation.

The report was updated to include the addition of two buildings to the site plan along with associated infrastructure.

2. SITE AND PROJECT DESCRIPTION

Site Settings

The Site is located at the north side of Dundas Street East, approximately 350m west of Highway 403, in a mix use area, and is bounded by Ninth Line to the west, baseball diamonds to the north, undeveloped land to the east, beyond which is HWY403 and Dundas Street East to the south. The property has an approximate area of 8,053m² and is rectangular in shape.

At the time of the investigation, the Site was mainly covered with grass/weeds but appeared to have been graded in the recent past. Access to the property is via an unpaved entrance off Dundas Street East.

Topography

Site grades were generally flat sloping towards drainage ditches. An average ground surface elevation of 171.15m asl was used for this report based on elevations at BH/MW locations.

Proposed Development

It was understood that the proposed development will consist of the construction of three buildings with up to 5-storeys. The buildings will have no underground or basement levels and will cover the western



portion of the Site, adjacent to Ninth Line, and the southeastern quadrant of the property. Finished Floor Elevation (FFE) are 171.40m, 171.55m and 171.55m asl for Buildings 1, 2 and 3 respectively according to the Site Servicing Plan by Crozier Consulting Engineers, dated November 20, 2020 and the updated site drawings. Building areas of 3,471m², 1,248m² and 1,248m² are shown on the architectural plans, prepared by Nicholas Caragianis Architect Inc, dated August 26, 2021, which were provided to Fisher for the updated report.

3. FIELD AND LABORATORY WORK

Subsurface exploration for the initial Geotechnical Investigation was carried out on October 26, 2018 and consisted of the drilling of five (5) boreholes (BH1 to BH5) to depths of 6.55m to 7.80m below prevailing grade. Two (2) of the boreholes were instrumented as monitoring wells (MW2 and MW4). Four (4) boreholes, BH101 to BH104, were drilled to depths of 5.03m bgs on August 19, 2020 for a preliminary hydrogeological investigation. The four (4) boreholes were instrumented as monitoring wells (MW101 to MW104). Seven (7) additional boreholes were drilled on September 13 and 14, 2021 to depths of 5.03m bgs based on the updated site plans which included two additional buildings and associated infrastructure. The seven (7) boreholes were instrumented as monitoring wells (MW201 to MW207). Six additional shallow wells (TH1 to TH6) and four test pits were excavated for infiltration tests. A clean silica sand pack was placed around the well screens and isolated with bentonite to depths below existing grade as shown in the borehole details in Appendix B.

Truck/track mounted drill rigs equipped with solid stem augers, supplied by Terra Firma Services, were used for all drilling work. Soil samples were taken at regular intervals using a split-spoon sampler advanced by means of the Standard Penetration Test (SPT) and was conducted in general accordance with ASTM specification D1586.

All recovered soil samples were placed in clear, sealed plastic bags in the field and were transported to Fisher laboratory for further examination, characterization and laboratory analyses.

Laboratory Analyses

Five (5) representative soil samples, from BH101 were selected and submitted to Fisher Environmental laboratory for grain size distribution and moisture content analyses. Two (2) soil samples from BH102 and BH103 were submitted to ALS Environmental laboratory for grain size and hydrometer analyses. Six (6) soil samples from the shallow boreholes (TH1 to TH6) were submitted for grain size and moisture content



analyses and three (3) samples for hydrometer testing. The laboratory results, which are presented in Appendix C, are consistent with the field descriptions for subsurface soils discussed in Section 4.0.

The soil samples recovered during the investigation will be stored in the Fisher Environmental laboratory for a period of 30 days after submitting this report and will be discarded thereafter unless otherwise instructed by the client.

Site Survey

Elevations at borehole/monitoring well locations were interpolated from a survey plan prepared by Speight, Van Nostrand & Gibson Limited dated September 10, 2018 which was provided to Fisher during the investigation.

4. SUBSOIL CONDITIONS

Surface and subsurface conditions encountered at borehole locations are shown in Appendix B - Log of Boreholes, and are summarized as follows:

- **Fill/Disturbed Soil** – A layer of fill/disturbed soil was encountered in all boreholes at ground surface and extended to depths of 0.30 to 3.00m below prevailing grade. The fill materials generally consisted of reddish brown to grey, silt/clayey silt, with trace of gravel/shale fragments, asphalt and pieces of bricks. Brown to grey silty clay with sand seams followed by black organic silty clay fill was reported in BH2 below the earth fill layer. The encountered layer of fill, which appears to be due to recent earth work, was moist to dry and was in a loose to compact state and was generally deeper in the northern section of the property covered by BH2, BH201 and BH202. A deeper layer of fill/disturbed soil was also encountered in the southeast section covered by BH207.

Depth and elevation of the fill encountered in all boreholes are presented in Table 1.

- **CLAYEY SILT TILL** – Reddish brown to greyish brown, moist to dry clayey silt till with trace gravel and pieces of shale were encountered below the fill and extended to termination depth in most boreholes. The encountered clayey silt till was overlain by a dark brown to grey clayey silt layer in BH102.



- **Suspected Shale** – Reddish brown, dry, hard shale/weathered shale was encountered at 3.2m bgs in BH204. SPT values of over 100 were observed in the shale. Refusal to power auguring occurred at approximately 4.72m bgs in the shale material.

Table 1: Fill depths and Elevations

Borehole No.	BH201	BH202	BH203	BH204	BH205	BH206	BH207	BH101	BH102	BH103	BH104	BH2	BH4
Surface Elevation (m asl)	171.50	171.09	170.98	170.41	171.33	171.42	170.89	171.40	171.22	171.25	171.35	171.09	170.98
Depth of Borehole (m bgs)	5.03	5.03	5.03	4.72	5.03	5.03	4.99	5.03	5.03	5.03	5.03	6.71	6.55
Elevation at Bottom of Borehole (m asl)	166.47	166.06	165.95	165.69	166.30	166.39	165.90	166.37	166.19	166.22	166.32	164.38	164.43
Depth of Fill (m bgs)	3.00	1.98	0.23	1.07	1.07	1.37	2.44	0.76	1.22	0.3	0.61	1.85	0.46
Elevation at Bottom of Fill (m asl)	168.50	169.11	170.75	169.34	170.26	170.05	168.45	170.64	170.00	170.95	170.74	169.24	170.52

5. GROUNDWATER CONDITIONS

The boreholes were observed to be generally dry on completion of drilling. Small quantity of water was observed in the open borehole at the bottom of BH202. Static groundwater levels were measured between 0.49m and 5.10m below existing grade (elevations of 165.99m to 169.92m asl) but were generally at depths greater than 1.2m bgs. Higher groundwater levels were observed in MW204 located towards the eastern boundary of the property. Groundwater levels observed during late September and early October 2021 may be taken as representative of seasonal highwater levels at the site.

Measured groundwater depths and elevations are summarized in Table 2.



Table 2: Groundwater Depths and Elevations

Well No.	Elev. at Ground (m)	Depth of Well/BH		On Completion		02-Nov-18		27-Aug-20		04-Sep-20		17-Sep-21		29-Sep-21		13-Oct-21	
		m bgs	m asl	GW level, m bgs	GW Ele, m asl	GW level, m bgs	GW Ele, m asl	GW level, m bgs	GW Ele, m asl	GW level, m bgs	GW Ele, m asl	GW level, m bgs	GW Ele, m asl	GW level, m bgs	GW Ele, m asl	GW level, m bgs	GW Ele, m asl
MW201	171.50	4.57	166.93	Dry	-	n/a	-	n/a	-	n/a	-	2.89	168.61	2.81	168.69	2.59	168.91
MW202	171.09	4.57	166.52	4.55	166.54	n/a	-	n/a	-	n/a	-	1.43	169.66	1.33	169.76	1.43	169.66
MW203	170.98	4.57	166.41	Dry	-	n/a	-	n/a	-	n/a	-	1.62	169.36	1.53	169.45	1.55	169.43
MW204	170.41	4.57	165.84	Dry	-	n/a	-	n/a	-	n/a	-	1.45	168.96	0.71	169.70	0.49	169.92
MW205	171.33	4.57	166.76	Dry	-	n/a	-	n/a	-	n/a	-	3.94	167.39	3.91	167.42	3.40	167.93
MW206	171.42	4.57	166.85	Dry	-	n/a	-	n/a	-	n/a	-	4.11	167.31	4.03	167.39	3.64	167.78
MW207	170.89	4.57	166.32	Dry	-	n/a	-	n/a	-	n/a	-	3.72	167.17	3.67	167.22	2.83	168.06
MW101	171.40	4.57	166.83	Dry	-	n/a	-	Dry	-	Dry	-	1.83	169.57	1.71	169.69	1.72	169.68
MW102	171.22	4.57	166.65	Dry	-	n/a	-	Dry	-	3.77	167.45	1.46	169.76	1.28	169.94	1.41	169.81
MW103	171.25	4.57	166.68	Dry	-	n/a	-	Dry	-	Dry	-	4.12	167.13	4.10	167.15	3.96	167.29
MW104	171.35	4.57	166.78	Dry	-	n/a	-	4.32	167.03	3.89	167.47	3.38	167.97	3.39	167.96	2.95	168.40
MW2	171.09	6.10	164.99	Dry	-	5.10	165.99	4.12	166.97	3.04	168.05	1.64	169.45	1.62	169.47	1.51	169.58
MW4	170.98	6.10	164.88	Dry	-	1.67	169.31	2.09	168.89	1.40	169.58	1.56	169.42	1.37	169.61	1.26	169.72



6. FOUNDATION CONSIDERATIONS

Based on the updated Site Plan, by Nicholas Caragianis Architect, dated August 26, 2021, the proposed development will consist of: 1x 5-storey and 2 x 2 storey commercial buildings with no underground levels located at the western and southeastern portion of the site; Wilkinson heavy precast fire tank located at the northwest section and onsite sewage system tank located at the north central section along with leaching bed and infiltration facilities and associated infrastructure. FFE are 171.40m, 171.55m and 171.55m asl for Buildings 1, 2 and 3 respectively.

Subsurface soil investigations revealed that native soils at the site are dominated generally by stiff to hard clayey silt till from depths of 0.30 to 3.0m bgs to the maximum investigation depth of 7.80m. Suspected weathered shale was encountered in BH204 at depths of 3.2m bgs (elevation of 167.21m asl). The boreholes were generally dry on completion with static groundwater levels recorded in the installed wells at 0.49m to 5.10m bgs.

The following sections provide general geotechnical recommendations for design and construction of the proposed structures.

6.1 Spread/ Strip Footing Found on Native Soils

The proposed structures, with no underground levels, may be supported on conventional spread/strip footings founded on the native undisturbed very stiff clayey silt till.

For footings placed over undisturbed native soils at/below the approximate minimum depths/elevations factored geotechnical resistance at ULS & geotechnical reaction at SLS are presented in in Table 3.

Footings designed to specified bearing pressure values in Table 3 are expected to settle less than 25mm total and 19mm differential.



Table 3: Foundation Design for Conventional Footings

Proposed Building/Borehole		Existing Grade/Elevation, m	Approx. Footing Depth/Elevation		Recommended Soil Bearing Pressure	
			Depth, m	Elev., m	SLS (kPa)	ULS (kPa)
Building 1	BH101	171.40	2.5	168.90	300	420
	BH102	171.22	3.0	168.22	300	420
	BH103	171.25	2.4	168.85	300	420
	BH104	171.35	2.4	168.95	300	420
	BH2	171.09	2.7	168.39	300	420
	BH4	170.98	2.4	168.58	300	420
Building 2	BH203	170.98	3.1	167.88	300	420
	BH204	170.41	2.5	167.91	300	420
Building 3	BH206	171.42	3.1	168.32	300	420
	BH207	170.89	3.1	167.79	300	420
Fire Tank	BH201	171.50	3.1	168.40	250	350
Sewer Tank	BH202	171.09	2.4	168.69	250	350

6.2 General Comments about Footing Construction

- Adjacent footings founded at different elevations should be stepped at 10 horizontals to 7 verticals.
- For frost protection requirements, all exterior footings must have a minimum soil cover of 1.22m.
- As the designed founding strata are relatively deep, consideration may be given to using trench footings for the building construction.
- The recommended bearing resistance and foundation elevations noted above were calculated from limited borehole information and are intended for design purposes only. More specific information with respect to soil conditions between and beyond the boreholes will be available when the proposed construction is underway. Therefore, the encountered soil/foundation conditions must be verified in the field, and all footings must be inspected and approved by geotechnical personnel from our office prior to placement of concrete.



If a basement/underground parking is introduced, for footings placed over the bedrock at varying depths, below existing grade, increased soil bearing pressure of 1200kPa (SLS) or more will likely be available. Rock coring is recommended to determine higher bearing capacity.

7. EARTHQUAKE CONDITIONS

The 2012 OBC Subsection 4.1.8 stipulates that a building should be designed to meet the requirements of the Earthquake Load and Effects. Site Classification for Seismic Site Response (Table 4.1.8.4.A) is determined from the average Standard Penetration Resistance (N60) and/or the undrained shear strength (Su) of the soils within the upper 30m.

Based on the results of standard penetration tests i.e., “N” values from the current geotechnical investigation, the site designation for seismic analysis applicable for the proposed buildings is "Class C". Site classification for footings placed over bedrock should be determined from shear wave velocity measurements.

Seismic parameters and requirements for analyses are detailed in Subsection 4.1.8 of the 2012 OBC.

8. EXCAVATION AND BACKFILL

No major problems should be encountered for the anticipated depths of excavation for the footings. Excavations for footings or underground services must be carried out in accordance with the latest edition of the Occupational Health and Safety Act (OHSA).

If the excavation is deeper than 1.2m, the sides should be sloped in accordance with requirements of OHSA. If this condition cannot be met, a temporary shoring system/ trench box should be introduced.

In accordance with O. Reg. 213/91, S.226 (1), the Site subsoils within anticipated excavation depths mainly consisted of earth fill, clayey silt till and can be generally classified as Type 3 soils.

Based on static groundwater measurements carried out during early fall groundwater was encountered at depths of 0.49m to 5.10m below prevailing grade. The open boreholes were however dry on completion of drilling. No defined aquifer was encountered and the groundwater may therefore be defined as trapped/perched water in silt/sand seams trapped in the predominantly clayey silt till and fill material. Some amount of seepage/trapped water will be expected for construction depending on the time of year that excavation takes place. Provisions should therefore be made to rid the site of occasional



seepage water from more permeable seams / lenses and/or surface run-off, especially following a heavy rainfall event, by pumping from sump pits.

The material to be used for backfill in service trenches should be suitable for compaction, i.e., free of organics and with moisture content within 2 percent of the optimum moisture value. The backfill material should be compacted in lifts of no more than 200mm in thickness and to at least 98 percent of Standard Proctor Maximum Dry Density (SPMDD) in the upper 1.0m from road subgrade or in settlement sensitive areas. Beyond these zones, a 95 % SPMDD compaction criterion is considered acceptable.

Additionally, onsite excavated fill materials and native soils may be used as backfill in service trenches, provided that the excavated materials are free of organic soils /construction debris and are of suitable moisture content.

For backfill against the subsurface walls and footings it is recommended that backfill materials consist of Granular Class 'B' aggregates. On-site excavated granular material may be acceptable subject to further site inspection.

9. SLAB ON GRADE AND PERMANENT DRAINAGE

For the proposed buildings, the finished floor slab can be constructed as slab on grade supported by competent native undisturbed clayey silt till or engineered fill. Engineered fill may be utilized for the replacement of existing fill (subject to further test pit tests and inspection), especially in the area around BH2/BH201 and BH204.

If engineered fill is required to raise subgrade up for slab construction, the engineered fill must be placed on a thoroughly proof-rolled exposed base and organic soil / topsoil/ fill / construction debris /underside utilities removed and the base approved by engineering staff from Fisher Engineering office before commencing of engineered fill construction.

Furthermore, any soft spots revealed during proof-rolling should be sub-excavated and backfilled with suitable granular materials, compacted to 98% SPMDD.

Engineered fill materials, compaction quality and finished subgrade proof-rolling should be supervised and inspected by engineering staff from our office. Engineered fill must be placed in layers of no more than 200mm and compacted to 98% SPMDD.



Onsite excavated native soils and selected fill materials can be used for engineered fill provided they contain suitable moisture content. Granular Class 'B' aggregates are preferred for subgrade construction for slab on grade especially during the wintertime or wet season.

For backfill against subsurface walls and footings it is recommended that backfill materials consist of Granular Class 'B' aggregates

Upon completion of foundation work, the floor slab should rest on a well compacted bed of size 19mm clear stone at least 200mm thick. The stone bed would act as a barrier and prevent capillary rise of moisture from the subgrade to the floor slab.

No perimeter drainage will be required, if the floor slab is at least 200mm above the exterior grade. The exterior grade should be sloped away from the buildings at an inclination of 1 to 2 percent to prevent ponding of water close to exterior walls. If this condition cannot be met, then a permanent perimeter drainage system as shown on Appendix D is recommended for footing/foundation walls.

10. UNDERGROUND UTILITIES

Pipe bedding and backfill materials specifications and compaction criteria for water and sewer services should be in accordance with the pipe designer's recommendations and/or local municipal requirements.

If the excavation is deeper than 1.2m, the excavation sides should be sloped in accordance with requirements of OHSAA. If this condition cannot be met, a temporary shoring system or trench box should be introduced.

For the subject site, it is expected that the underground services would be founded on the clayey silt till. Granular Class 'B' aggregate is generally considered well suited to be used as bedding material. However, it should be noted, that the recommended type of bedding is to be placed on undisturbed subgrade above the groundwater level. If the construction methods will disturb the subgrade i.e., piping, existing footing, boulder removal etc. or existence of excess hydrostatic pressure, then higher-class bedding may have to be used combined with a geotextile. In some areas, localized dewatering may be required.

Selected onsite excavated fill materials / native soils are considered to be suitable for re-use in trench backfilling, provided that organics / construction debris are sorted out and materials are not allowed to be wet and moisture should be within 2% of the optimum moisture content.



In normal sewer construction practice, the problem of road settlement largely occurs adjacent to manholes, catch basins and service crossings. In these areas, granular materials are generally required for backfill and compaction.

Water lines installed outside of heated areas should be provided with a minimum of 1.5m soil cover or equivalent for frost protection.

11. PAVEMENT

The site development will be associated with asphalt paved driveways and parking areas. Pavement structures can be constructed on the native soils, engineered fill, or possibly fill materials for the site, subject to design grade and further onsite inspection.

Prior to asphalt pavement construction, topsoil/organic soil/ construction debris should be removed. The exposed base should be proof-rolled and supervised / approved by our office. Any soft/ spongy spots detected during proof-rolling should be sub-excavated and replaced with suitable materials and compact to 98% of SPMDD. Engineered fill construction, if any, should be supervised and inspected by engineering staff from our office.

Finished subgrade must be contoured/ graded and finally proof-rolled and approved by our office before placing upper granular materials.

Granular materials will be used in construction of asphalt pavement bases. Compaction for granular bases should reach to 100 % of Standard Proctor Maximum Dry Density. Perforated drains connected to sewer MHs/ CBs should be provided under the entire length of curb and constructed in accordance with required local regulations. Typical flexible pavement designs are shown in Table 4.

Table 4: Flexible pavement design.

PAVEMENT LAYER	COMPACTED THICKNESSES	
	LIGHT DUTY PARKING	DRIVEWAYS & HEAVY DUTY PARKING
Asphalt top course, HL-3	40mm	40mm
Asphalt base course, HL-8	40mm	60mm
Granular 'A' or 20mm crusher run limestone base	150mm	150mm
Granular 'B' or 50mm crusher run limestone sub-base	200mm	300mm



The pavement thickness should also meet the minimum local region Pavement Design Standards.

The asphalt material should meet the OPSS requirements for specified grade and be compacted to at least 92% of their MRD.

12. GENERAL COMMENTS

This report is limited in scope to those items specifically referenced in the text. The discussions and recommendations presented in this report are intended only as guidance for the client named and design engineers.

The information on which these recommendations are based is subject to confirmation by engineering personnel at the time of construction.

Localized variations in subsoil conditions may be present between and beyond the boreholes and must be verified during construction. As more specific subsurface information becomes available during excavation on the subject site, this report should be updated.

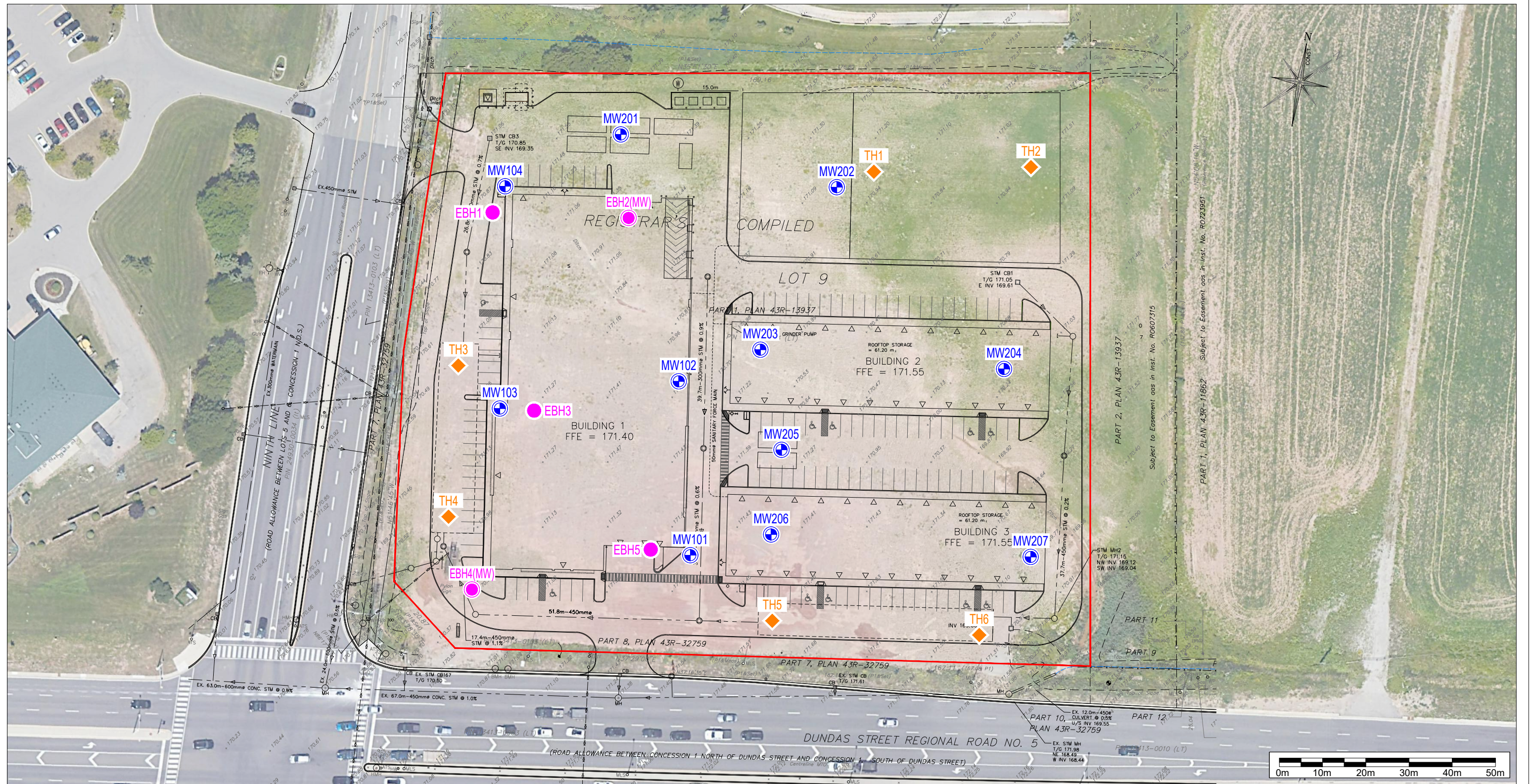
Contractors bidding on or undertaking the work should decide on their own investigations, as well as their own interpretations of the factual borehole results. This concern specifically applies to the classification of the subsurface soil and the potential reuse of these soils on/off site.

Contractors must also draw their own conclusions as to how the near surface and subsurface conditions may affect them.



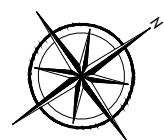
APPENDIX A – SITE AND LOCATION PLANS





400 Esna Park Dr., #15
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 Fax: 905 475-7718

NORTH



LEGEND

- SITE BOUNDARY
- ⊕ BOREHOLE WITH MONITORING WELL LOCATION
- ◆ TEST HOLE LOCATION
- EXISTING BOREHOLE WITH MONITORING WELL LOCATION

PROJECT NAME AND ADDRESS
HYDROGEOLOGICAL & GECOTECHNICAL INVESTIGATIONS
 3855 Dundas Street East,
 Mississauga, ON.

PROJECT NO.
 FE-P 21-11439/40
 DATE
 13 October 2021
 SCALE
 AS SHOWN

FIGURE 1.1:
SITE PLAN WITH TEST HOLE AND MONITORING WELL LOCATIONS

SHEET NO.
A2

TOPOGRAPHIC SURVEY OF
PART OF LOT 9
REGISTRAR'S COMPILED PLAN 1542
 CITY OF MISSISSAUGA
 REGIONAL MUNICIPALITY OF PEEL
 SCALE 1 : 500

SPEIGHT, VAN NOSTRAND & GIBSON LIMITED
 ONTARIO LAND SURVEYORS
 2018

THE REPRODUCTION, ALTERATION OR USE OF THIS PLAN, IN WHOLE OR IN PART, WITHOUT THE EXPRESS PERMISSION OF SPEIGHT, VAN NOSTRAND & GIBSON LIMITED IS STRICTLY PROHIBITED.

ELEVATION NOTE

ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM THE CITY OF MISSISSAUGA BENCHMARK No. 075023031.

LOCATION :
 BRASS CAP SET AT TOP OF CONCRETE CYLINDER LOCATED AT THE NORTH-EAST CORNER OF THE INTERSECTION OF DUNDAS STREET WEST AND VEGA BOULEVARD, 16M EAST OF THE CENTRELINE OF VEGA BOULEVARD AND 27M NORTH OF CENTRELINE OF DUNDAS STREET WEST.

ELEVATION:
 PUBLISHED ELEVATION = 169.073 metres.
 TO OBTAIN GEODETIC ELEVATIONS (1978 G.S.C. RE-ADJUSTMENT) SUBTRACT (0.121 metres) FROM VALUES SHOWN HEREIN.

BEARING NOTE

BEARINGS SHOWN HEREON ARE GRID AND ARE REFERRED TO THE EASTERLY LIMIT OF PART 9, AS SHOWN ON PLAN 43R-32759, HAVING A BEARING OF N54°08'10"W.

METRIC

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

LEGEND

- | | | |
|---|---------|--------------------------------------|
| ■ | DENOTES | SURVEY MONUMENT FOUND |
| □ | WIT | SURVEY MONUMENT PLANTED |
| ○ | SSIB | WITNESS MONUMENT |
| ○ | IB | STANDARD IRON BAR |
| ○ | CC | SHORT STANDARD IRON BAR |
| ○ | N,S,E,W | IRON BAR |
| ○ | OU | CUT CROSS |
| ○ | 950 | NORTH, SOUTH, EAST, WEST |
| ○ | JOB | ORIGIN UNKNOWN |
| ○ | P1 | CUNNINGHAM MCCONNELL LIMITED, O.L.S. |
| | | J. D. BARNES LIMITED, O.L.S. |
| | | PLAN 43R-32759 |
-
- | | |
|------|--------------------------|
| MH | MANHOLE |
| GUY | GUY WIRE |
| WHM | WATER MANHOLE |
| HMH | HYDRO MANHOLE |
| BMH | BELL MANHOLE |
| CB | CATCH BASIN |
| FH | FIRE HYDRANT |
| WV | WATER VALVE |
| GV | GAS VALVE |
| HW | HAND WELL |
| ATS | AUTOMATIC TRAFFIC SIGNAL |
| WHP | WOODEN HYDRO POLE |
| CLS | CONCRETE LIGHT STANDARD |
| MLS | METAL LIGHT STANDARD |
| HB | HYDRO BOX |
| WELL | MONITORING WELL |
| B | BOLLARD |
| ○ | DECIDUOUS TREE |
| ○ | CONIFEROUS TREE |
| ■ | CONCRETE |
| ■ | GRAVEL |

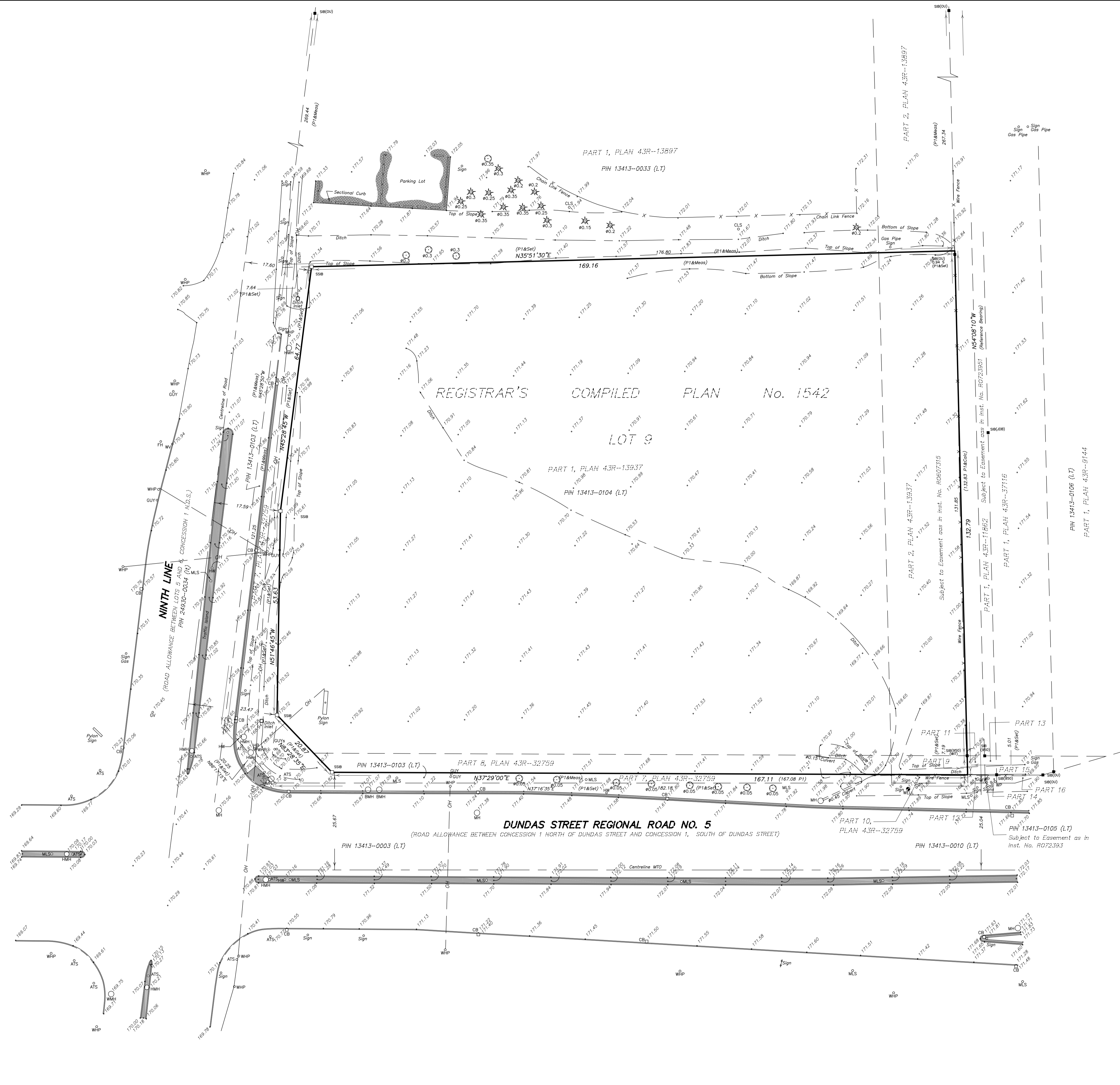
SURVEYOR'S CERTIFICATE

I CERTIFY THAT :
 1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
 2. THE SURVEY WAS COMPLETED ON SEPTEMBER 7th, 2018.

DATE : SEPTEMBER 10th, 2018

D. A. Wilton
 D. A. WILTON
 ONTARIO LAND SURVEYOR

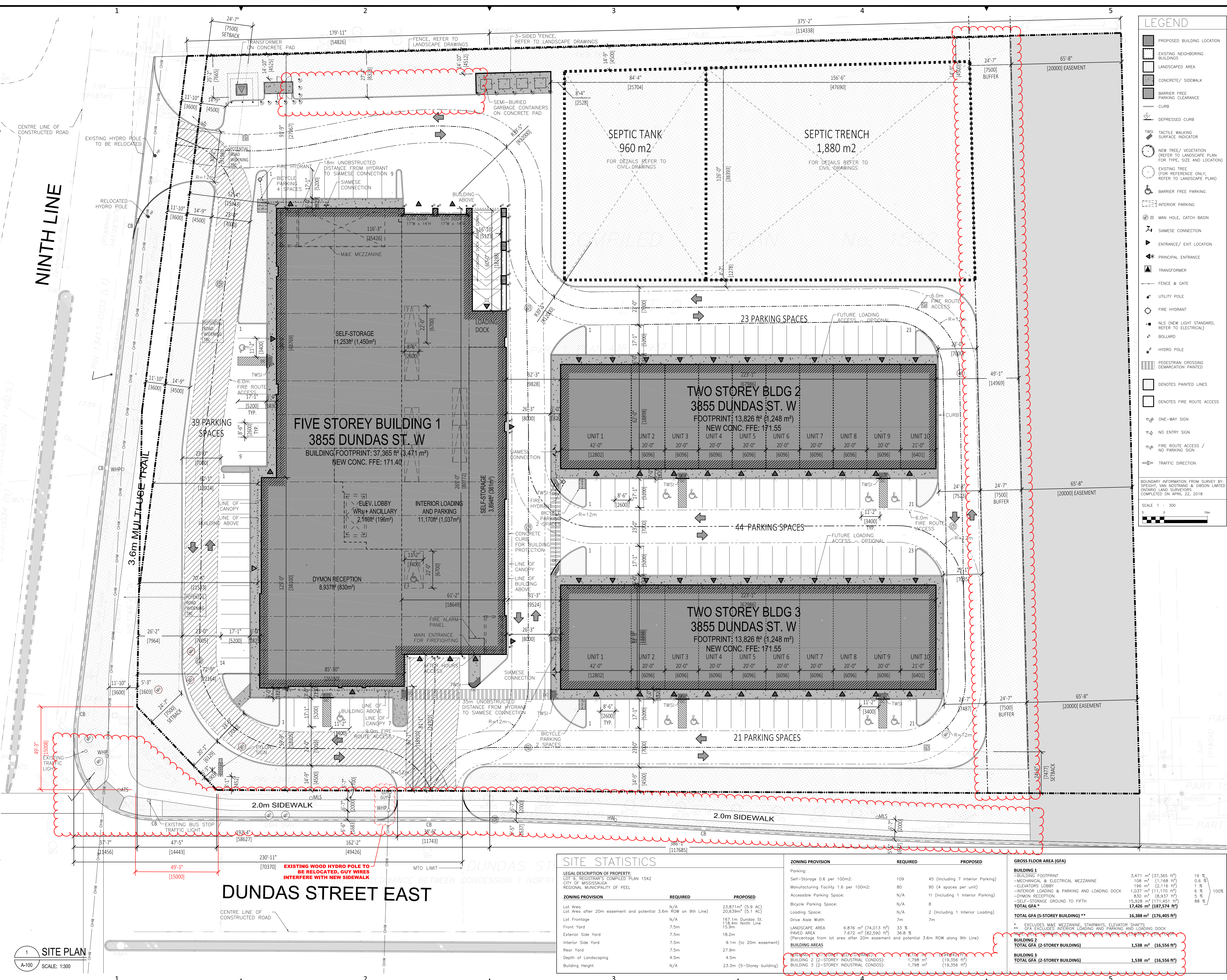
SPEIGHT, VAN NOSTRAND & GIBSON LIMITED ONTARIO LAND SURVEYORS 750 OAKDALE ROAD, Units 65 & 66 TORONTO, ONTARIO M3N 2Z4 TEL. 416 749-SVNG(7864) FAX 416 749-7866 E-MAIL: toronto@svng.on.ca		ASSOCIATION OF ONTARIO LAND SURVEYORS PLAN SUBMISSION FORM 2068653
DRAWN : E. D./F. P. B. CHECKED : D. A. W. REF. No. : 180-0104 JOB No. : 1-RCP 1542 PEEL	FILE NAME : A1800104.DWG PLOT SCALE : MET.1=0.50 PLOTTED : APRIL 25, 2018 UPDATED :	THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR in accordance with Regulation 1026, Section 29(3)



1-RCP 1542 PEEL

Arch D (24836) title block © 2018, Nicholas Caragianis Architect Inc.

V:\DYMOM\18020 Mississauga 3855 Dundas E (9th line)\3.0 DRAWINGS\18020-A-100.SP - JAVIERGU - 2021-09-26



LEGEND

- PROPOSED BUILDING LOCATION
- EXISTING NEIGHBORING BUILDINGS
- LANDSCAPED AREA
- CONCRETE/ SIDEWALK
- BARRIER FREE PARKING CLEARANCE
- CURB
- DEPRESSED CURB
- TWSP TACTILE WALKING SURFACE INDICATOR
- NEW TREE/ VEGETATION (REFER TO LANDSCAPE PLAN FOR TYPE, SIZE AND LOCATION)
- EXISTING TREE (FOR REFERENCE ONLY, REFER TO LANDSCAPE PLAN)
- BARRIER FREE PARKING
- INTERIOR PARKING
- MAN HOLE, CATCH BASIN
- SIAMSESE CONNECTION
- ENTRANCE/ EXIT LOCATION
- PRINCIPAL ENTRANCE
- TRANSFORMER
- FENCE & GATE
- UTILITY POLE
- FIRE HYDRANT
- NLS (NEW LIGHT STANDARD, REFER TO ELECTRICAL)
- BOLLARD
- HYDRO POLE
- PEDESTRIAN CROSSING DEMARCATION PAINTED
- DENOTES PAINTED LINES
- DENOTES FIRE ROUTE ACCESS
- ONE-WAY SIGN
- NO ENTRY SIGN
- FIRE ROUTE ACCESS / NO PARKING SIGN
- TRAFFIC DIRECTION

BOUNDARY INFORMATION FROM SURVEY BY: SPEIGHT, VAN NOSTRAND & GIBSON LIMITED ONTARIO LAND SURVEYORS COMPLETED ON APRIL 22, 2018

SCALE 1 : 300

nicholas caragianis architect inc.

137 Pamilla Street
Ottawa ON K1S 3K9
613 237 6801 ncarchitect.ca

PROJECT NORTH

ARCHITECT'S SEAL

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Notes: Contractor must verify all drawings, dimensions, details and specifications and report any discrepancies to the architect before proceeding with work. All drawings and specifications are instruments of service and the property of the architect, and these must be returned at the completion of the project, and may not be reproduced without the architect's written permission. All drawings are to be read in conjunction with specifications and consultants' documents. Do not scale drawings. Do not use for construction unless both indicated as "For Construction" and bearing the architect's stamp and signature. All construction to meet local, provincial and federal requirements.

PLANNING & URBAN DESIGN
MHC Planning, Urban Design & Landscape Architecture
7050 Weston Road, Suite 230, Woodbridge ON, L4L 8G7
tel: (905) 761-5588 fax: (905) 761-5583 www.mhcbplan.com

CIVIL ENGINEER
C.F. Crozier & Associates Consulting Engineers
211 Yonge Street, Suite 301, Toronto ON, M5B 1M4
tel: (416) 477-3392 cfcrozier.ca

DESIGN ARCHITECT
TACT Architecture Inc
660R College Street (Rear Lane) Toronto ON, M6G 1B8
tel: (416) 516-1949 email: info@tactdesign.ca

NO.	DATE	DESCRIPTION
28	2021/08/26	FOR COORDINATION
27	2020/11/25	FOR COORDINATION
26	2020/11/18	FOR COORDINATION
25	2020/10/08	FOR COORDINATION
24	2020/09/29	FOR COORDINATION
23	2020/09/16	FOR COORDINATION
22	2020/09/09	FOR DISCUSSION
21	2020/08/28	FOR DISCUSSION
20	8/20/2020	FOR DISCUSSION
19	2020/06/27	FOR DISCUSSION
18	2020/03/06	FOR DISCUSSION
17	2020/02/13	FOR DISCUSSION
16	2018-11-21	ISSUED FOR ZBA
ISSUE	YYYYMMDD	ISSUES DESCRIPTION

DYMON STORAGE

CLIENT NAME AND ADDRESS:
DYMON CAPITAL CORP.
2-1830 WALKLEY ROAD
OTTAWA ON, K1H 8K3

PROJECT NAME & LOCATION:
9th LINE & DUNDAS W
3855 DUNDAS ST. W
MISSISSAUGA ON

NCA PROJECT NUMBER: 2018.0020 FILE NUMBER:
OWNER'S CONTRACT NUMBER: OWNER'S PROJECT NUMBER:

CAD FILE NAME: 18020-A-100.SP

SHEET TITLE: **SITE PLAN**

SCALE: 1:300 SHEET ID: **A-100**

DATE CREATED: 2018.03.07

SITE STATISTICS

LEGAL DESCRIPTION OF PROPERTY:
LOT 9, REGISTRAR'S COMPILED PLAN 1542
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEELE

ZONING PROVISION	REQUIRED	PROPOSED
Lot Area	N/A	23,871 m ² (5.9 AC)
Lot Area after 20m easement and potential 3.6m ROW on 9th Line	N/A	20,639 m ² (5.1 AC)
Lot Frontage	N/A	167.1m Dundas St 118.4m Ninth Line
Front Yard	7.5m	18.2m
Exterior Side Yard	7.5m	27.9m
Interior Side Yard	7.5m	9.1m (to 20m easement)
Rear Yard	7.5m	27.9m
Depth of Landscaping	4.5m	4.5m
Building Height	N/A	23.3m (5-Storey Building)

ZONING PROVISION	REQUIRED	PROPOSED
Parking:		
Self-Storage 0.6 per 100m ² :	109	45 (Including 7 Interior Parking)
Manufacturing Facility 1.6 per 100m ² :	80	90 (4 spaces per unit)
Accessible Parking Space:	N/A	11 (Including 1 Interior Parking)
Bicycle Parking Space:	N/A	8
Loading Space:	N/A	2 (Including 1 Interior Loading)
Drive Aisle Width	7m	7m
LANDSCAPE AREA	6,876 m ² (74,013 ft ²)	33 %
PAVED AREA	7,672 m ² (82,590 ft ²)	36.8 %
(Percentage from lot area after 20m easement and potential 3.6m ROW along 9th Line)		
BUILDING AREAS		
BUILDING 1 (5-STOREY INDUSTRIAL CONDOS):	1,798 m ² (19,356 ft ²)	1,798 m ² (19,356 ft ²)
BUILDING 2 (2-STOREY INDUSTRIAL CONDOS):	1,798 m ² (19,356 ft ²)	1,798 m ² (19,356 ft ²)
BUILDING 3 (2-STOREY INDUSTRIAL CONDOS):	1,798 m ² (19,356 ft ²)	1,798 m ² (19,356 ft ²)

GROSS FLOOR AREA (GFA)

BUILDING	EXCLUDES	GFA	%
BUILDING 1			
-BUILDING FOOTPRINT		3,471 m ² (37,365 ft ²)	19 %
-MECHANICAL & ELECTRICAL MEZZANINE		108 m ² (1,168 ft ²)	0.6 %
-ELEVATORS LOBBY		196 m ² (2,118 ft ²)	1 %
-INTERIOR LOADING & PARKING AND LOADING DOCK		1,037 m ² (11,170 ft ²)	6 %
-DYMOM RECEPTION		830 m ² (8,937 ft ²)	5 %
-SELF-STORAGE GROUND TO FIFTH		15,928 m ² (171,451 ft ²)	88 %
TOTAL GFA*		17,426 m² (187,574 ft²)	
TOTAL GFA (5-STOREY BUILDING)**		16,388 m² (176,405 ft²)	
* EXCLUDES MAE MEZZANINE, STAIRWAYS, ELEVATOR SHAFTS			
** GFA EXCLUDES INTERIOR LOADING AND PARKING AND LOADING DOCK			
BUILDING 2			
TOTAL GFA (2-STOREY BUILDING)		1,538 m² (16,556 ft²)	
BUILDING 3			
TOTAL GFA (2-STOREY BUILDING)		1,538 m² (16,556 ft²)	

APPENDIX B – LOG OF BOREHOLES

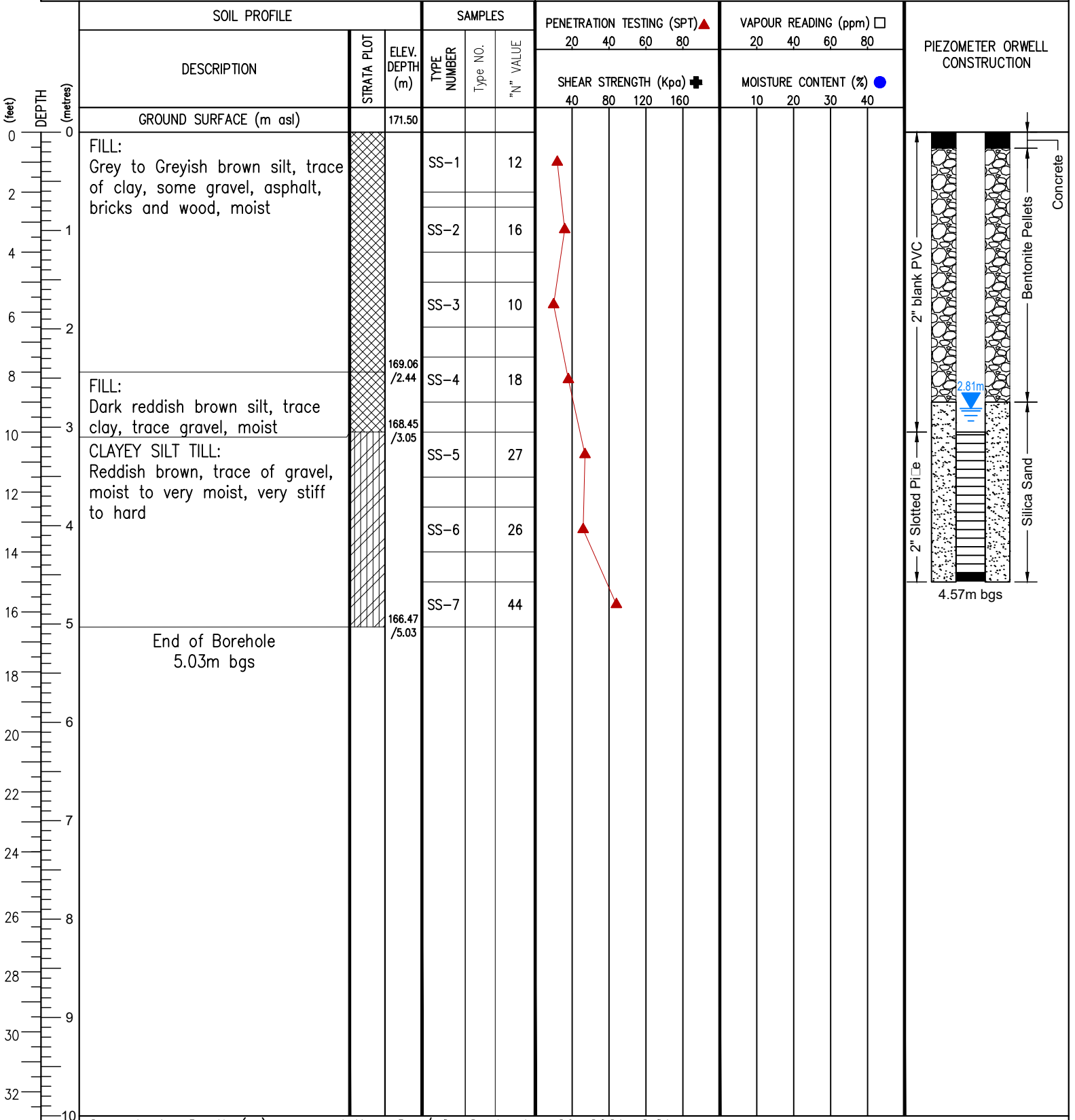


PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 13th, 2021



Groundwater Depth (m): on completion: Dry/ On September 29, 2021: 2.81m

DRAWN: AM

LOGGED: SP

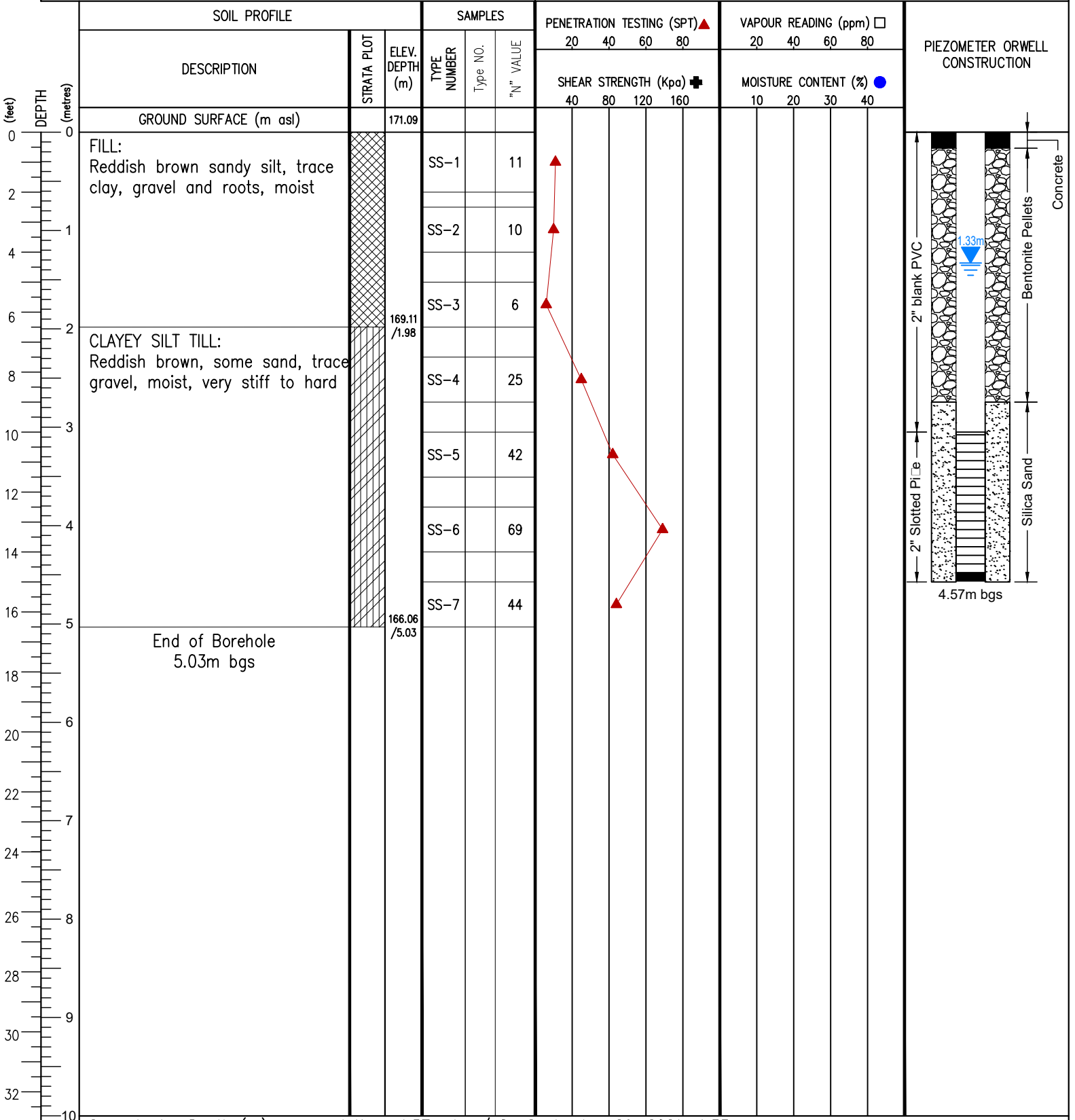
CHECKED: CW

PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 13th, 2021



Groundwater Depth (m): on completion: 4.57m bgs/ On September 29, 2021: 1.33m

DRAWN: AM

LOGGED: SP

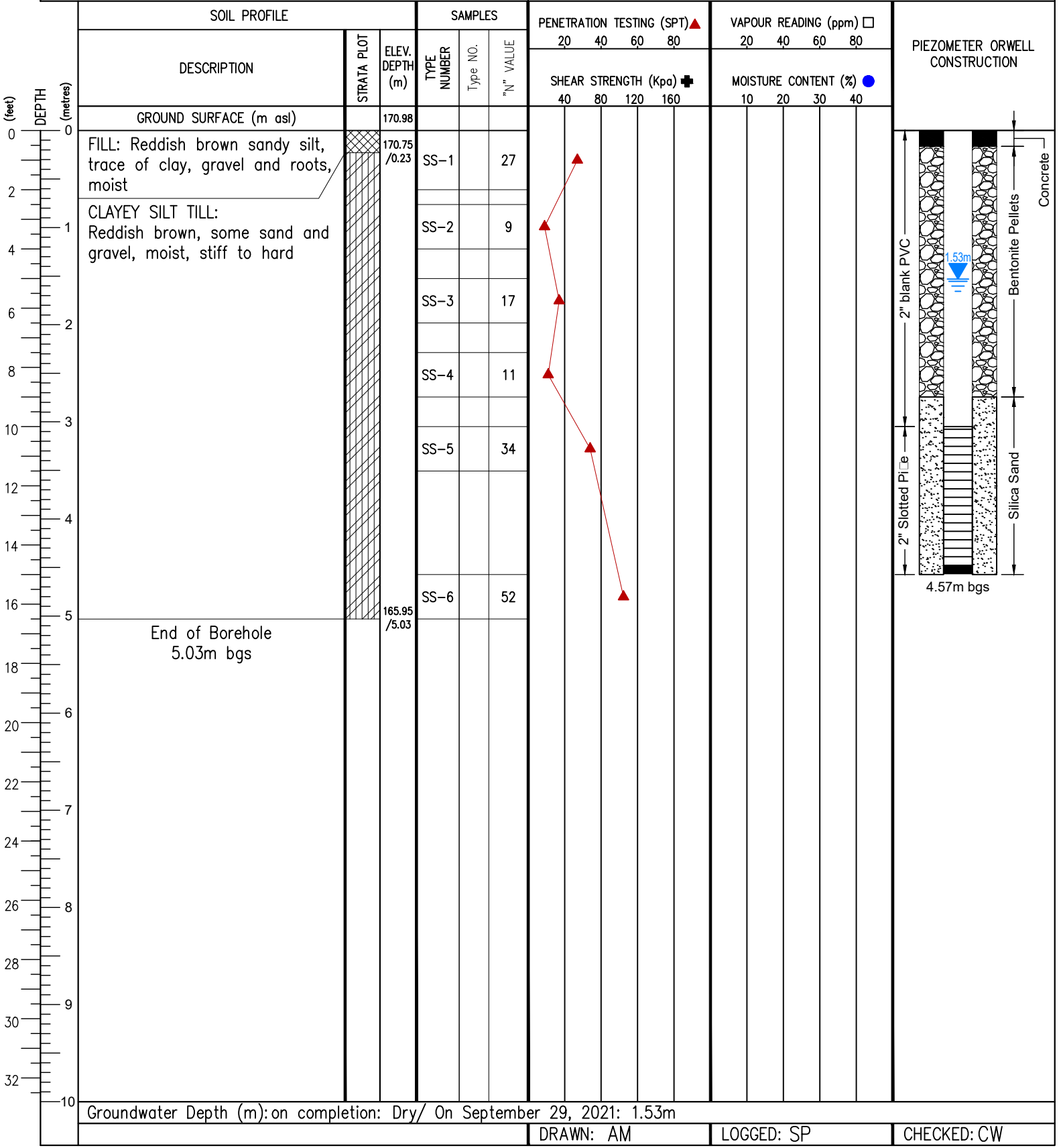
CHECKED: CW

PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 13th, 2021



Groundwater Depth (m): on completion: Dry/ On September 29, 2021: 1.53m

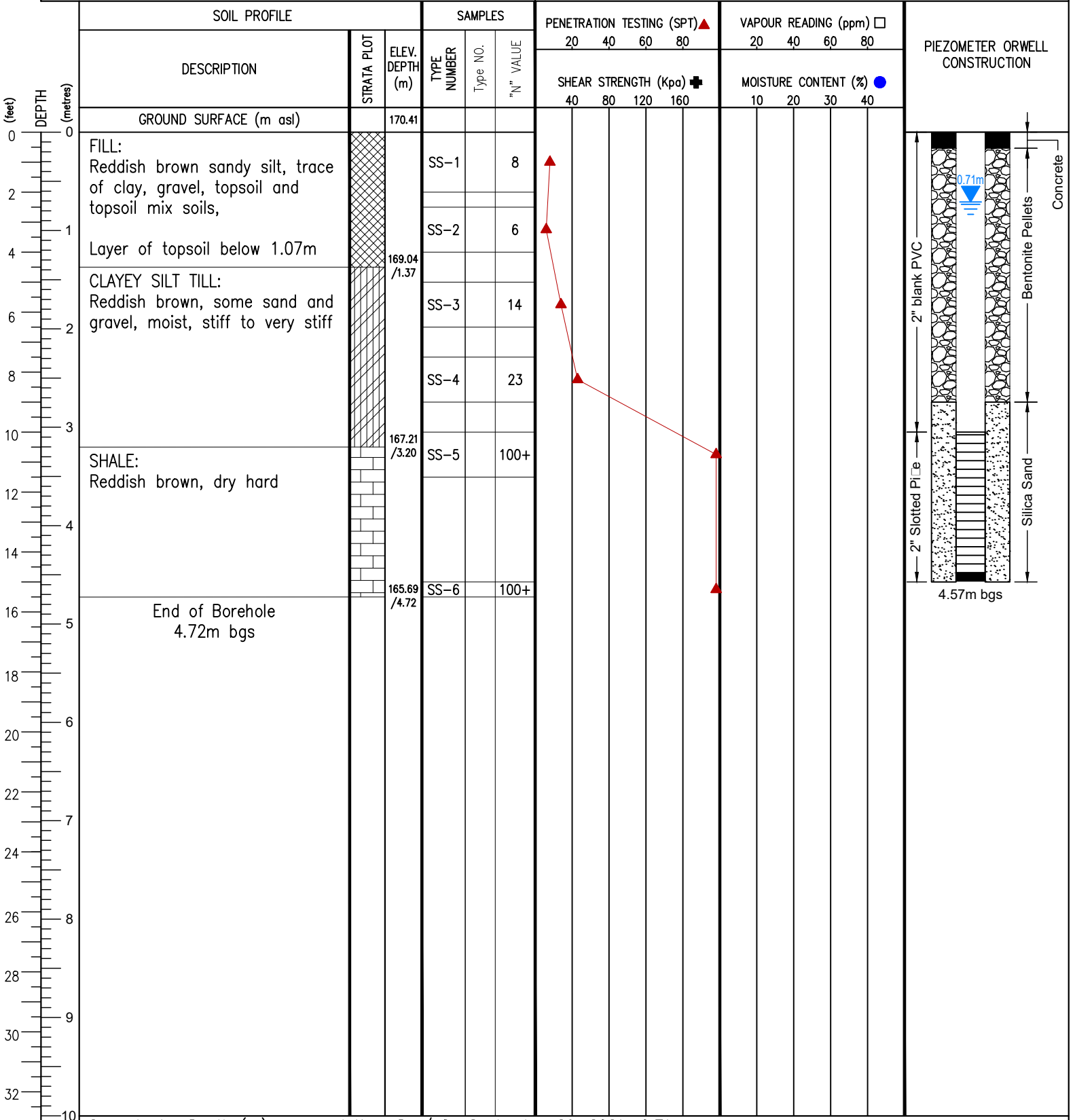
DRAWN: AM LOGGED: SP CHECKED: CW

PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 13th, 2021



Groundwater Depth (m): on completion: Dry/ On September 29, 2021: 0.71m

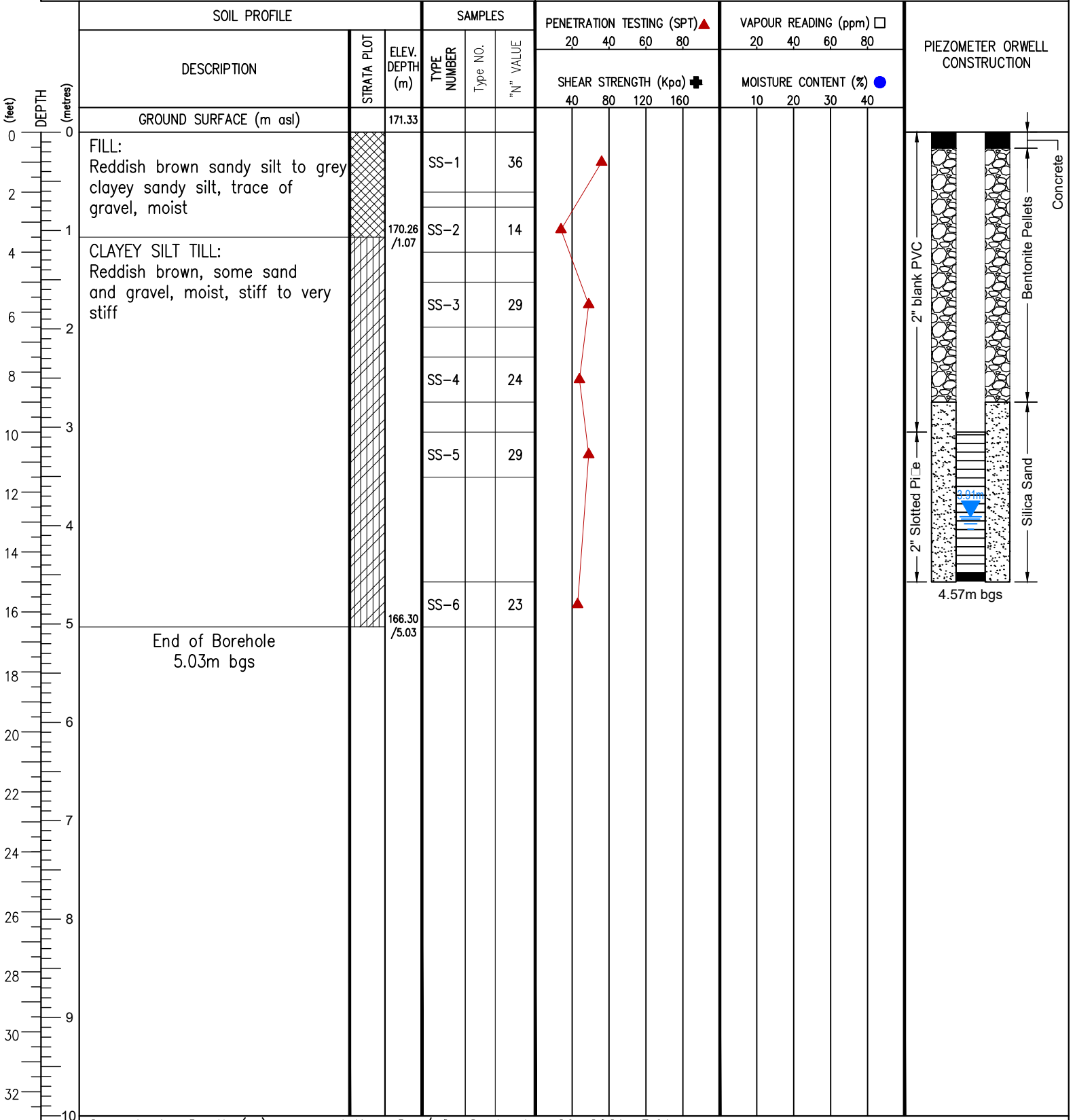
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PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 13th, 2021



Groundwater Depth (m): on completion: Dry/ On September 29, 2021: 3.91m

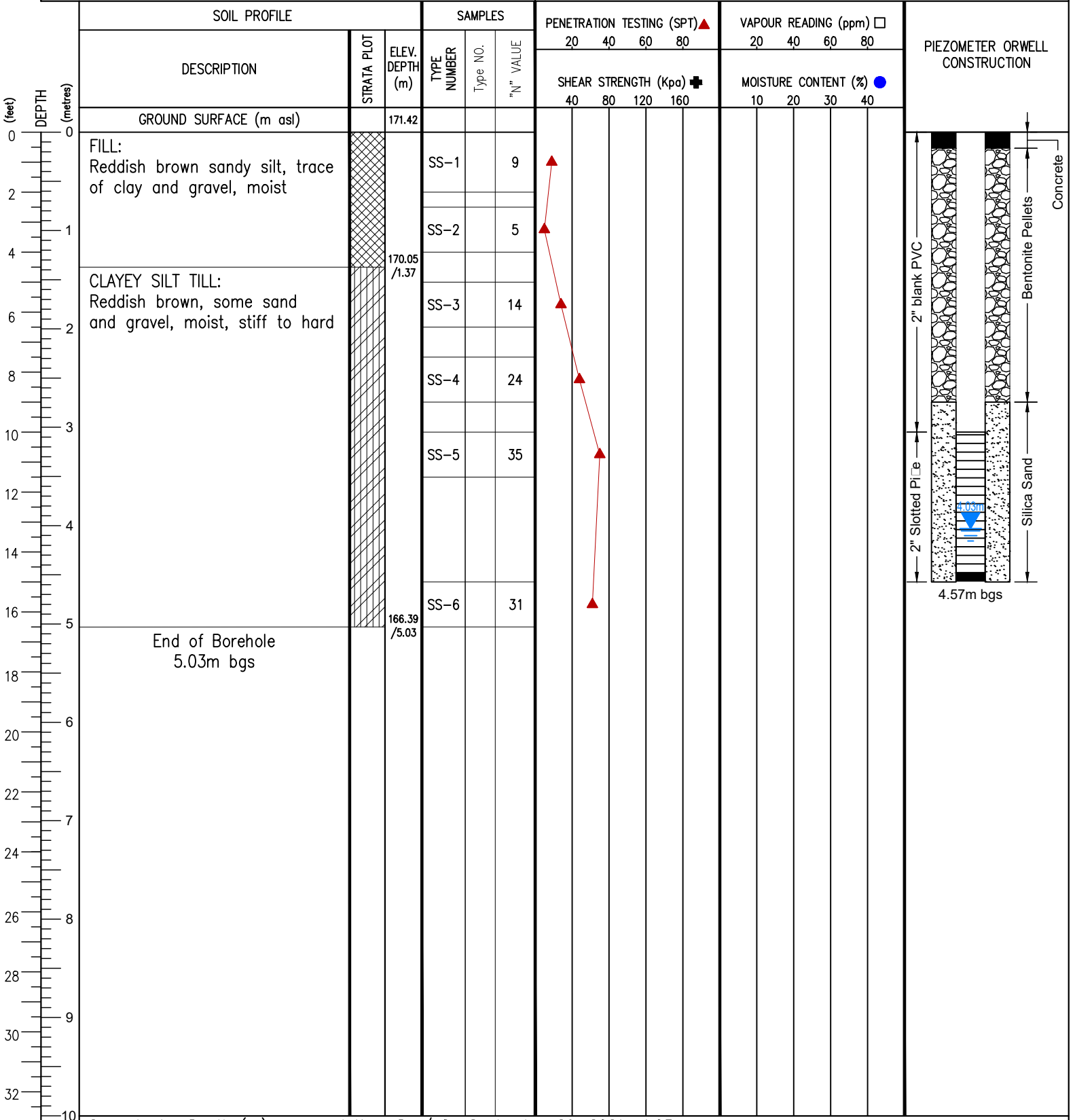
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PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 13th, 2021



Groundwater Depth (m): on completion: Dry/ On September 29, 2021: 4.03m

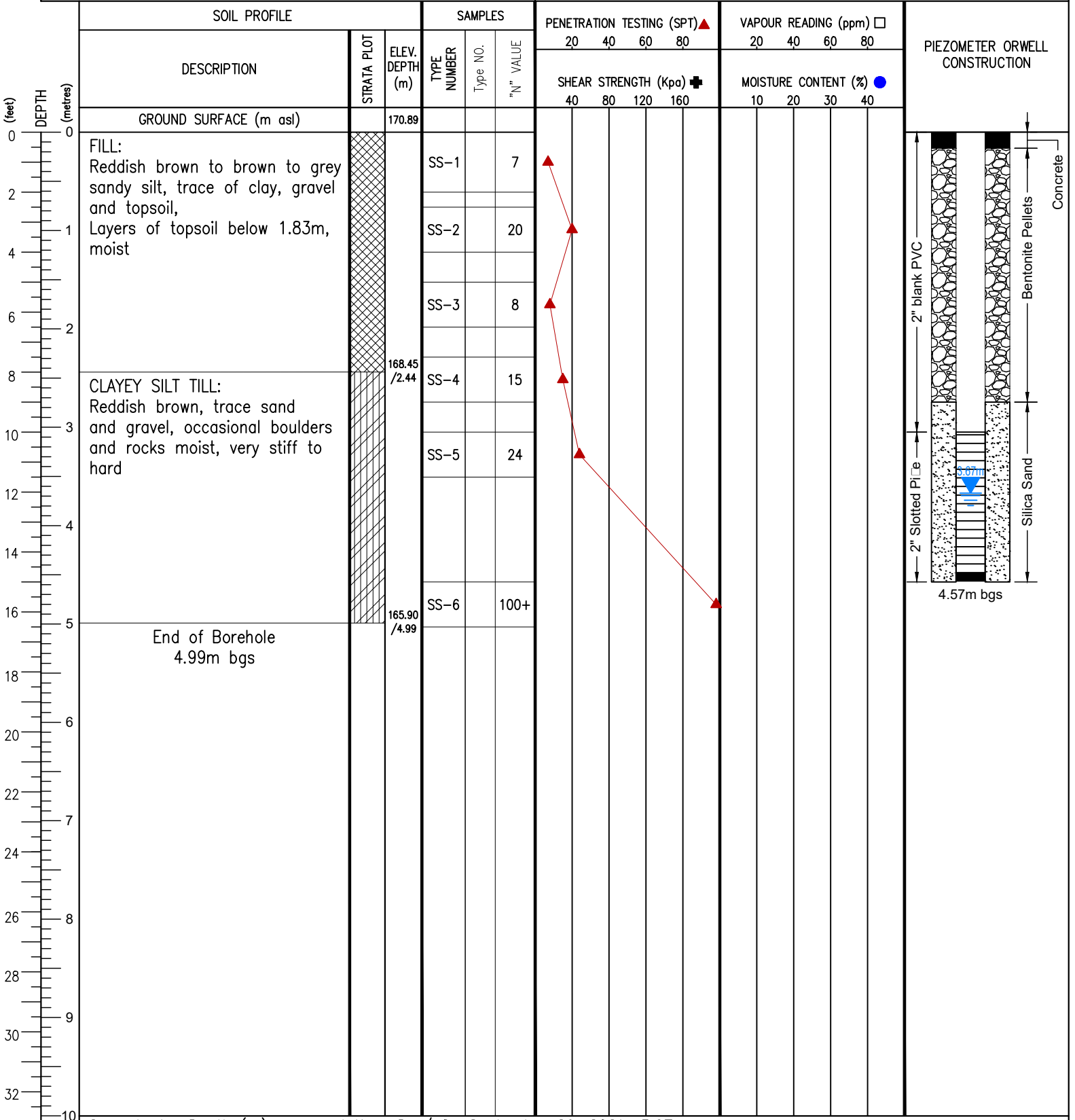
DRAWN: AM LOGGED: SP CHECKED: CW

PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 14th, 2021



Groundwater Depth (m): on completion: Dry/ On September 29, 2021: 3.67m

DRAWN: AM

LOGGED: SP

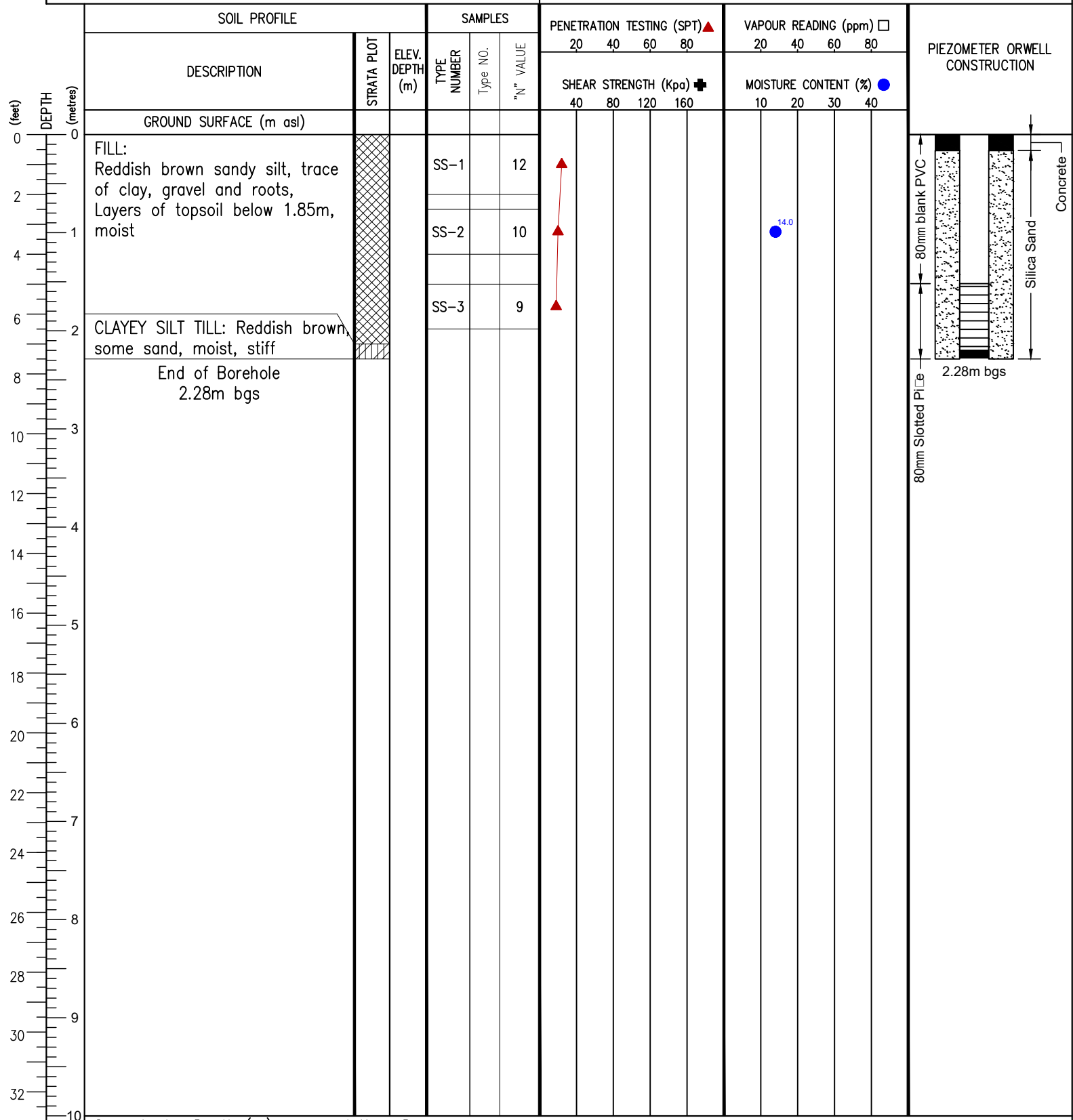
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PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 14th, 2021



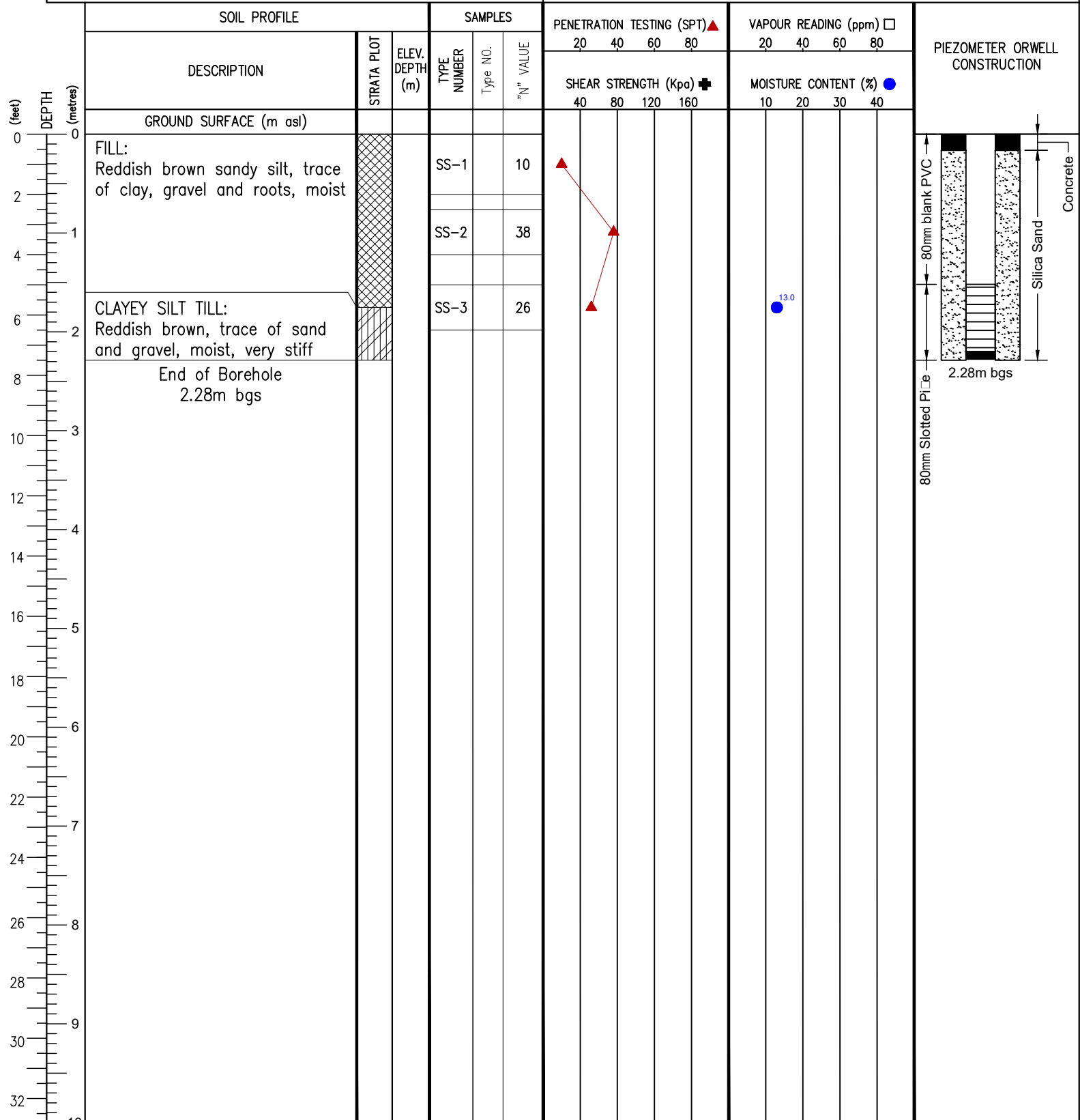
Groundwater Depth (m): on completion: Dry

PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 14th, 2021



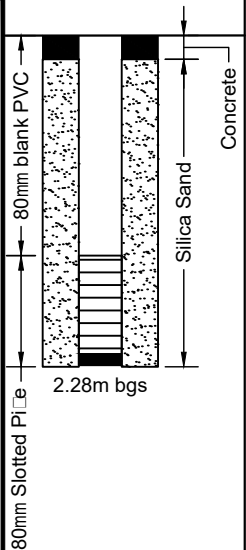
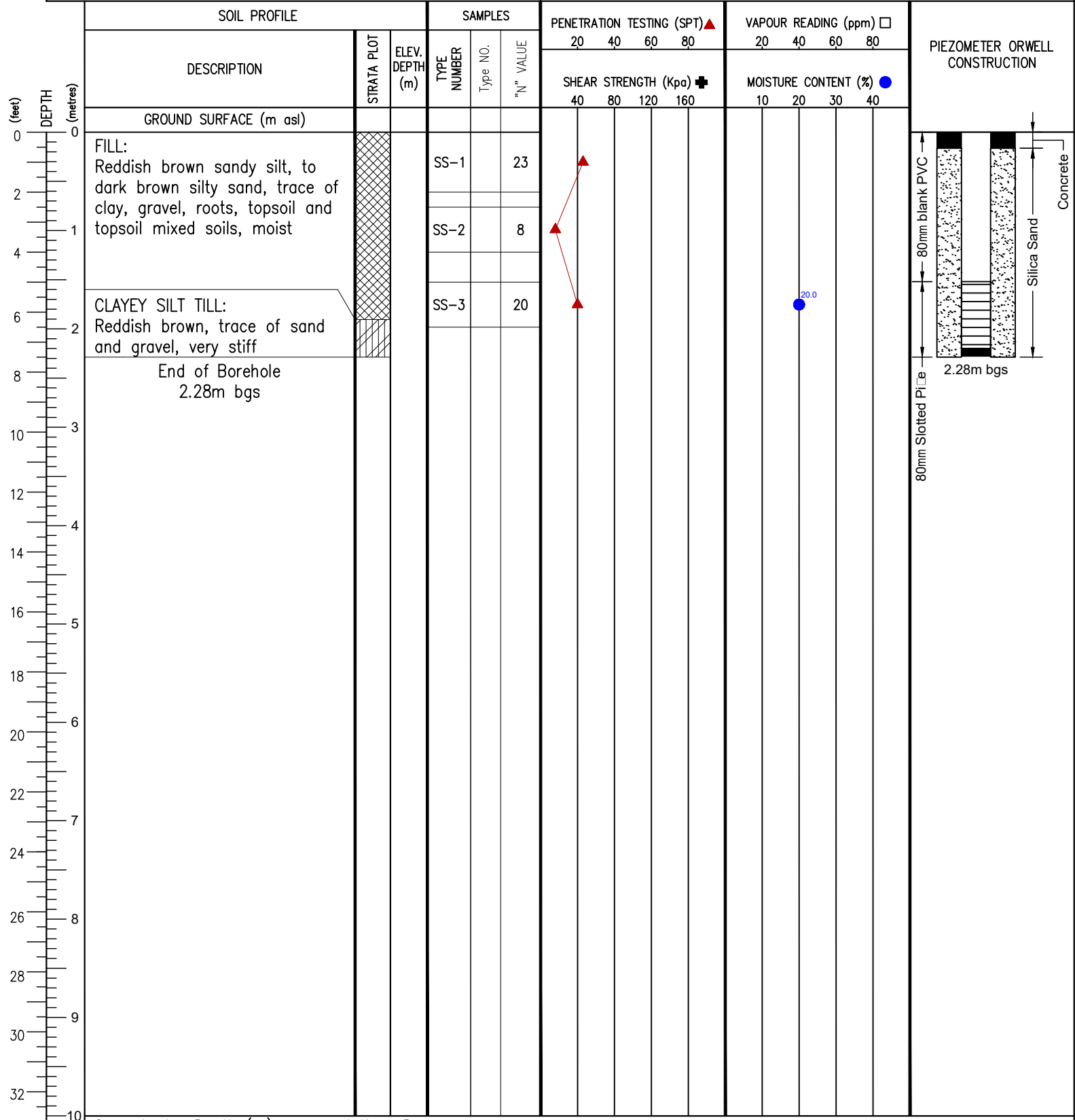
Groundwater Depth (m): on completion: Dry

PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 14th, 2021



Groundwater Depth (m): on completion: Dry



DRAWN: AM LOGGED: SP CHECKED: CW

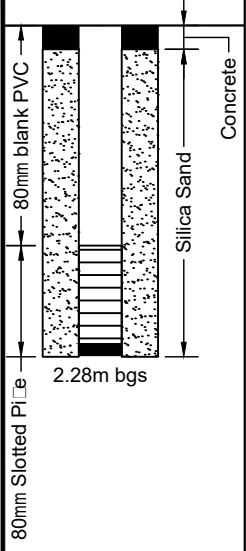
PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 14th, 2021

DEPTH (feet) DEPTH (metres)	SOIL PROFILE			SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER ORWELL CONSTRUCTION
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	TYPE NUMBER	Type NO.	"N" VALUE	SHEAR STRENGTH (Kpa) ▣				MOISTURE CONTENT (%) ●				
							20	40	60	80	20	40	60	80	
							40	80	120	160	10	20	30	40	
0	GROUND SURFACE (m asl)														
0-2	FILL: Reddish brown sandy silt, to dark brown silty sand, trace of clay and gravel, moist			SS-1		7	▲								
2-4				SS-2		16	▲				15.0	●			
4-6	CLAYEY SILT TILL: Reddish brown, trace of sand and gravel, moist, hard			SS-3		32	▲								
6-8	End of Borehole 2.28m bgs														



Groundwater Depth (m): on completion: Dry



LOG OF BOREHOLE NO. TH5 SHEET. 1 of 1

PROJECT NO.: FE-P 21-11439/40

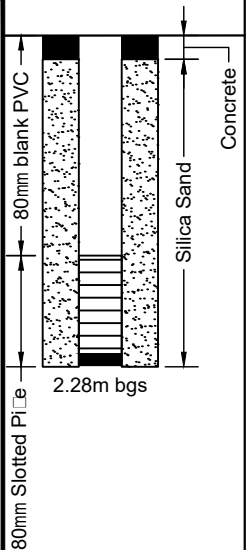
PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 14th, 2021

DEPTH (feet) DEPTH (metres)	SOIL PROFILE			SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER ORWELL CONSTRUCTION
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	TYPE NUMBER	Type NO.	"N" VALUE	SHEAR STRENGTH (Kpa) ✚				MOISTURE CONTENT (%) ●				
							20	40	60	80	20	40	60	80	
							40	80	120	160	10	20	30	40	
0	GROUND SURFACE (m asl)														
0-2	FILL: Reddish brown sandy silt, trace of clay and gravel, moist	[Cross-hatched pattern]		SS-1		15									
2-4				SS-2		9						22.0			
4-6	CLAYEY SILT TILL: Reddish brown, trace of sand and gravel, very stiff	[Vertical line pattern]		SS-3		16									
6-8	End of Borehole 2.28m bgs														
8-10															
10-12															
12-14															
14-16															
16-18															
18-20															
20-22															
22-24															
24-26															
26-28															
28-30															
30-32															
32-34															



Groundwater Depth (m): on completion: Dry

DRAWN: AM LOGGED: SP CHECKED: CW



LOG OF BOREHOLE NO. TH6 SHEET. 1 of 1

PROJECT NO.: FE-P 21-11439/40

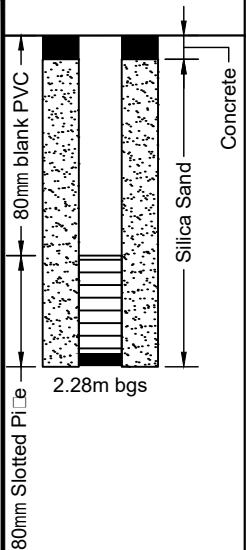
PROJECT NAME: Geotechnical & Hydrogeological Investigation

LOCATION: 3855 Dundas St. East, Mississauga, ON

DRILLING METHOD: Marooka, Solid Stem

DRILLING DATE: September 14th, 2021

DEPTH (feet) DEPTH (metres)	SOIL PROFILE			SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER ORWELL CONSTRUCTION
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	TYPE NUMBER	Type NO.	"N" VALUE	SHEAR STRENGTH (Kpa) ⊕				MOISTURE CONTENT (%) ●				
							20	40	60	80	20	40	60	80	
							40	80	120	160	10	20	30	40	
0	GROUND SURFACE (m asl)														
0-2	FILL: Reddish brown to brownish grey silt, trace, of clay, gravel, shale and top soil, moist	[Cross-hatched pattern]		SS-1		16									
2-4				SS-2		4					12.0				
4-6				SS-3		9									
6-8	End of Borehole 2.28m bgs														
8-10															
10-12															
12-14															
14-16															
16-18															
18-20															
20-22															
22-24															
24-26															
26-28															
28-30															
30-32															
32-34															



Groundwater Depth (m): on completion: Dry

DRAWN: AM LOGGED: SP CHECKED: CW

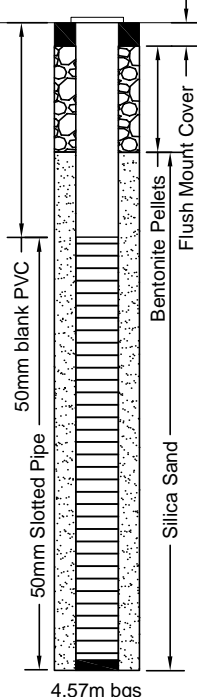
PROJECT NAME: Hydrogeological Investigation

LOCATION: 3855 Dundas St. E., Oakville, ON

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: August 19, 2020

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION		
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID:	TYPE NUMBER	P.I.D. Reading	"N" VALUE	20 40 60 80				20 40 60 80				
								SHEAR STRENGTH (Kpa) +				MOISTURE CONTENT (%) ●				
							40	80	120	160	10	20	30	40		
0	GROUND SURFACE (m asl)		171.40													
0	TOPSOIL/DISTURBED SOIL															
0-1	FILL: clayey silt, trace of gravel, red with grey pieces, moist, stiff.		0.76/ 170.64		SS-1	9										
1-4	CLAYEY SILT TILL: trace of gravel, red brown, moist, firm to hard.				SS-2	6										
4-6					SS-3	23										
6-8					SS-4	36										
8-10					SS-5	39										
10-16					SS-6	56										
16	End of Borehole		5.03/ 166.37													
18-20	BH dry on completion.															
Groundwater Depth (m): on completion: dry																
DRAWN: BL						LOGGED: RR				CHECKED: CW						



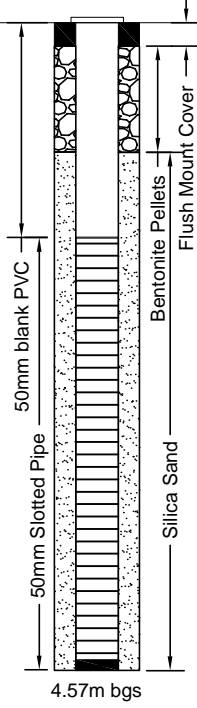
PROJECT NAME: Hydrogeological Investigation

LOCATION: 3855 Dundas St. E., Oakville, ON

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: August 19, 2020

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION	
	DESCRIPTION	STRATA PLOT	LAB ID:	TYPE NUMBER	P.I.D. Reading	"N" VALUE	20 40 60 80				20 40 60 80				
							SHEAR STRENGTH (Kpa) +				MOISTURE CONTENT (%) ●				
0	GROUND SURFACE (m asl)														
0	FILL/DISTURBED SOIL														
0-2	FILL: clayey silt, trace of gravel, some cobbles, red brown, slightly moist, some ash, debris.			SS-1		24									
2-4				SS-2		15									
4-6	CLAYEY SILT: grey to brown, moist, firm to very stiff.	1.22/ 170.00		SS-3		6									
6-8				SS-4		22									
8-10	CLAYEY SILT TILL: trace of gravel, red brown, moist, very stiff to hard.	2.29/ 168.93		SS-5		33									
10-16				SS-6		21									
16-18	End of Borehole	5.03/ 166.19													
18-20	BH dry on completion.														



Groundwater Depth (m): on completion: dry

DRAWN: BL

LOGGED: RR

CHECKED: CW



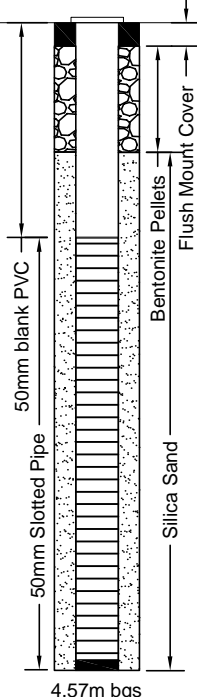
PROJECT NAME: Hydrogeological Investigation

LOCATION: 3855 Dundas St. E., Oakville, ON

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: August 19, 2020

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION		
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID:	TYPE NUMBER	P.I.D. Reading	"N" VALUE	20 40 60 80				20 40 60 80				
								SHEAR STRENGTH (Kpa) +				MOISTURE CONTENT (%) ●				
0	GROUND SURFACE (m asl)		171.25													
0	TOPSOIL/DISTURBED SOIL															
0.30/170.95	FILL: clayey silt, trace of gravel, brown, moist.				SS-1	21										
1					SS-2	18										
2																
4	CLAYEY SILT TILL: trace of gravel, red brown, moist, very stiff to hard.				SS-3	25										
6																
8					SS-4	49										
10																
12					SS-5	29										
14																
16					SS-6	28										
5.03/166.22																
18	End of Borehole															
20	BH dry on completion.															
22																
24																
26																
28																
30																
32																
10																



Groundwater Depth (m): on completion: dry

DRAWN: BL

LOGGED: RR

CHECKED: CW



PROJECT NAME: Hydrogeological Investigation

LOCATION: 3855 Dundas St. E., Oakville, ON

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: August 19, 2020

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION		
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID:	TYPE NUMBER	P.I.D. Reading	"N" VALUE	20 40 60 80				20 40 60 80				
								SHEAR STRENGTH (Kpa) +				MOISTURE CONTENT (%) ●				
0	GROUND SURFACE (m asl)		171.35													
0-2	FILL: sandy silt, brown to grey, slightly moist.		0.61/ 170.74		SS-1	14										
2-4	CLAYEY SILT TILL: trace of gravel, red brown, stiff to hard, occasional sand seams.				SS-2	20										
4-6					SS-3	10										
6-8					SS-4	26										
8-10					SS-5	33										
10-16					SS-6	26										
16-18	End of Borehole		166.37 /5.03													
18-20	BH dry on completion.															
20-22																
22-24																
24-26																
26-28																
28-30																
30-32																
32-10																

Groundwater Depth (m): on completion: dry

DRAWN: BL

LOGGED: RR

CHECKED: CW



LOG OF BOREHOLE NO. 1 SHEET. 1 of 5

PROJECT NO.: FE-P 18-9089

PROJECT NAME: Geotechnical Investigation

LOCATION: 3855 Dundas St East, Mississauga ON

DRILLING METHOD: Solid Stem

DRILLING DATE: 26 October, 2018

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION	
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	"N" VALUE	SHEAR STRENGTH (Kpa) ⊕				MOISTURE CONTENT (%) ○				
							20	40	60	80	20	40	60		80
0	GROUND SURFACE (m asl)		100.00												
0	FILL: Clayey silt, trace shale pieces, sand pockets, coarse loose.		98.15/ 1.52	1	SS	9									
1	SANDY SILT TILL: Trace gravel, limestone, shale pieces, redish brown, moist, stiff to hard.			2	SS	14									
2				3	SS	26									
3				4	SS	31									
4				5	SS	38									
5				6	SS	36									
6				7	SS	26									
7	Grey below 20'		93.11/ 6.56												
8	End of Borehole														

Groundwater Depth (m): On Completion: Dry.

LOGGED: DL

CHECKED: FF



LOG OF BOREHOLE NO. 2 SHEET. 2 of 5

PROJECT NO.: FE-P 18-9089

PROJECT NAME: Geotechnical Investigation

LOCATION: 3855 Dundas St East, Mississauga ON

DRILLING METHOD: Solid Stem

DRILLING DATE: 26 October, 2018

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION	
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	"N" VALUE	SHEAR STRENGTH (Kpa) ⊕				MOISTURE CONTENT (%) ○				
							20	40	60	80	20	40	60		80
0	GROUND SURFACE (m asl)		100.10												
0-1	FILL: Clayey silt, trace shale fragments, reddish brown, moist, loose.			1	SS	7									
1-4	Silty clay, brown to grey, trace sand seams, moist, brown sand layers at 4'			2	SS	5									
4-6	FILL: Silty clay, organics, black, moist, soft.		98.58 / 1.52 98.27 / 1.83	3	SS	3									
6-8	CLAYEY SILT TILL: Trace gravel, limestone, and shale pieces, reddishbrown, moist, very stiff. Gray silty sand, silty clay at 6'.			4	SS	19									
8-10				5	SS	31									
10-16	Greyish brown below 15'.			6	SS	30									
16-20	Redish brown clayey silt with weathered shale complex at 20' very dense.			7	SS	83									
20-22	End of Borehole		93.39 / 6.71												

Groundwater Depth (m): On Completion: Dry. On 2 Nov 2018: 5.10m

LOGGED: DL

CHECKED: FF



LOG OF BOREHOLE NO. 3 SHEET. 3 of 5

PROJECT NO.: FE-P 18-9089

PROJECT NAME: Geotechnical Investigation

LOCATION: 3855 Dundas St East, Mississauga ON

DRILLING METHOD: Solid Stem

DRILLING DATE: 26 October, 2018

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION	
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	"N" VALUE	20 40 60 80				20 40 60 80				
							SHEAR STRENGTH (Kpa) +				MOISTURE CONTENT (%) ○				
							40	80	120	160	10	20	30		40
0	GROUND SURFACE (m asl)		100.40												
0	FILL: Clayey silt, trace shale fragments, reddish brown, moist, compact.		99.64/ 0.76	1	SS	14									
2	CLAYEY SILT TILL: Trace gravel, shale pieces, reddish brown, moist, stiff to hard. Dark brown clayey silt at 2.5'. Trace grey shale fragments at 16'. Mottened with greyish brown boulder at 21'. Clayey silt, weathered shale complex at 25', very dense.			2	SS	17									
4				3	SS	18									
6				4	SS	30									
8				5	SS	30									
10															
12															
14															
16				6	SS	31									
18															
20															
22				7	SS	98									
24															
26	End of Borehole		92.63/ 7.77	8	SS	100+									
28															
30															
32															
10															

Groundwater Depth (m): On Completion: Dry.

LOGGED: DL

CHECKED: FF



LOG OF BOREHOLE NO. 4 SHEET. 4 of 5

PROJECT NO.: FE-P 18-9089

PROJECT NAME: Geotechnical Investigation

LOCATION: 3855 Dundas St East, Mississauga ON

DRILLING METHOD: Solid Stem

DRILLING DATE: 26 October, 2018

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION	
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	"N" VALUE	SHEAR STRENGTH (Kpa) +				MOISTURE CONTENT (%) ○				
							20	40	60	80	20	40	60		80
0	GROUND SURFACE (m asl)		100.35												
0-1.5	FILL: Clayey silt, trace gravel, shale pieces, reddish brown silty sand, sand pocket below 1.5', compact		99.89 / 0.46	1	SS	28									
1.5-2.5				2	SS	13									
2.5-4.5	CLAYEY SILT TILL: trace shale fragments, reddish brown, moist, gray at uper 2', stiff to hard.			3	SS	15									
4.5-8.5	Boulder at 8.5'			4	SS	30									
8.5-11.0	Greyish brown at 11'			5	SS	29									
11.0-20.0	Greyish brown below 20'			6	SS	31									
20.0-22.0				7	SS	32									
22.0	End of Borehole		94.80 / 6.55												

Groundwater Depth (m): On Completion: Dry. On 2 Nov 2018: 1.67m.

LOGGED: DL

CHECKED: FF



LOG OF BOREHOLE NO. 5 SHEET. 5 of 5

PROJECT NO.: FE-P 18-9089

PROJECT NAME: Geotechnical Investigation

LOCATION: 3855 Dundas St East, Mississauga ON

DRILLING METHOD: Solid Stem

DRILLING DATE: 26 October, 2018

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES			PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION	
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	"N" VALUE	SHEAR STRENGTH (Kpa) ✚				MOISTURE CONTENT (%) ○				
							20	40	60	80	20	40	60		80
0	GROUND SURFACE (m asl)		100.05												
0	FILL: Clayey silt, trace gravel, shale pieces, reddish brown silty sand, sand pocket below 1.5', compact.		99.89/ 0.46	1	SS	28									
2				2	SS	13									
4															
6	CLAYEY SILT TILL: trace shale fragments, reddish brown, moist, stiff to hard. Gray at upper 2'.			3	SS	15									
8				4	SS	30									
10	Boulder at 8.5'														
12				5	SS	29									
14															
16				6	SS	31									
18															
20	Greyish brown at 11'														
22				7	SS	32									
24	Greyish brown below 20'														
26															
28															
30															
32															
10	End of Borehole		94.80/ 6.55												

Groundwater Depth (m): On Completion: Dry.

LOGGED: DL

CHECKED: FF

APPENDIX C– MOISTURE CONTENT ANN GRAIN SIZE ANALYSIS





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Client: Dymon Group of Companies
Address: 2-1830 Walkley Road
Ottawa, ON
K1H 8K3
Tel.:
Email:
Attn.:

F.E. Job #: 21-7241A
Project Name: Infiltration Tests
Project ID: FE-P 21-11439
Date Sampled: 14-Sep-2021
Date Received: 17-Sep-2021
Date Reported: 24-Sep-2021
Location: 3855 Dundas Street East

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Moisture Content	Soil	6	N/A	17-Sep-21	Support Procedures F-99	Carter (1993)
Grain Size	Soil	6	N/A	21-Sep-21	Grain Size F-28	ASTM D6913-04

Fisher Environmental Laboratories is accredited by CALA (the Canadian Association for Laboratory Accreditation Inc.) for specific parameters as required by Ontario Regulation 153/04. All analytical testing has been performed in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act published by Ontario Ministry of the Environment.

Authorized by: 
Roger Lin, Ph. D., C. Chem.
Laboratory Manager



Certificate of Analysis

Analysis Requested:	Moisture Content, Grain Size					
Sample Description:	8 Soil Sample(s)					
Parameter	<i>21-7241-1</i> TH1 0.75-1.20m	<i>21-7241-3</i> TH2 1.50-1.95m	<i>21-7241-4</i> TH3 1.50-1.95m	<i>21-7241-5</i> TH4 0.75-1.20m	<i>21-7241-6</i> TH5 0.75-1.20m	<i>21-7241-8</i> TH6 0.75-1.20m
Geo Moisture Content (%)	14	13	20	15	22	12

QA/QC Report

Parameter	Blank	RL	LCS	AR	Duplicate	AR
	Recovery (%)			RPD (%)		
Geo Moisture Content (%)	<0.1	0.1	100	70-130	4.9	0-20

LEGEND:

- RL - Reporting Limit
- LCS - Laboratory Control Sample
- AR - Acceptable Range
- RPD - Relative Percent Difference

Certificate of Analysis

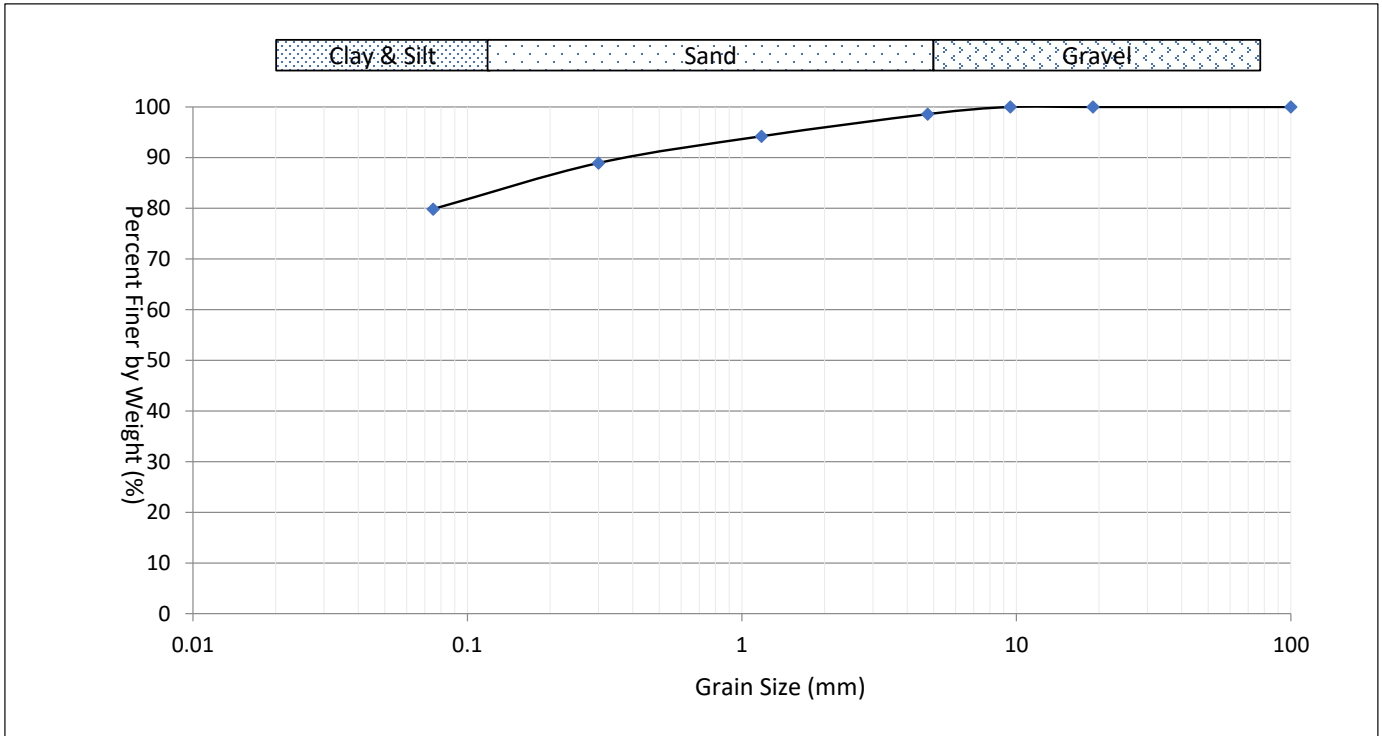
Analysis Requested:	Moisture Content, Grain Size
Sample Description:	8 Soil Sample(s)

Parameter	21-7241-1 TH1 0.75-1.20m	21-7241-3 TH2 1.50-1.95m	21-7241-4 TH3 1.50-1.95m	21-7241-5 TH4 0.75-1.20m	21-7241-6 TH5 0.75-1.20m	21-7241-8 TH6 0.75-1.20m
Grain Size (%)						
>19mm	0.0	0.0	0.0	0.0	0.0	0.0
9.5mm-19mm	0.0	0.0	2.3	0.0	0.0	2.3
4.75mm-9.5mm	1.4	4.2	4.2	2.2	0.7	4.2
1.18m-4.75mmm	4.4	3.2	2.3	2.5	0.6	8.5
300um-1.18mm	5.3	4.1	2.4	3.1	1.9	9.6
75um-300um	9.1	7.8	5.6	6.3	4.5	12.7
<75um	79.9	80.8	83.2	85.9	92.3	62.8
Clay & Silt	80	81	83	86	92	63
Sand	19	15	10	12	7	31
Gravel	1	4	7	2	1	6

Grain Size Distribution

Sample ID: 21-7241-1 TH1 0.75-1.20m

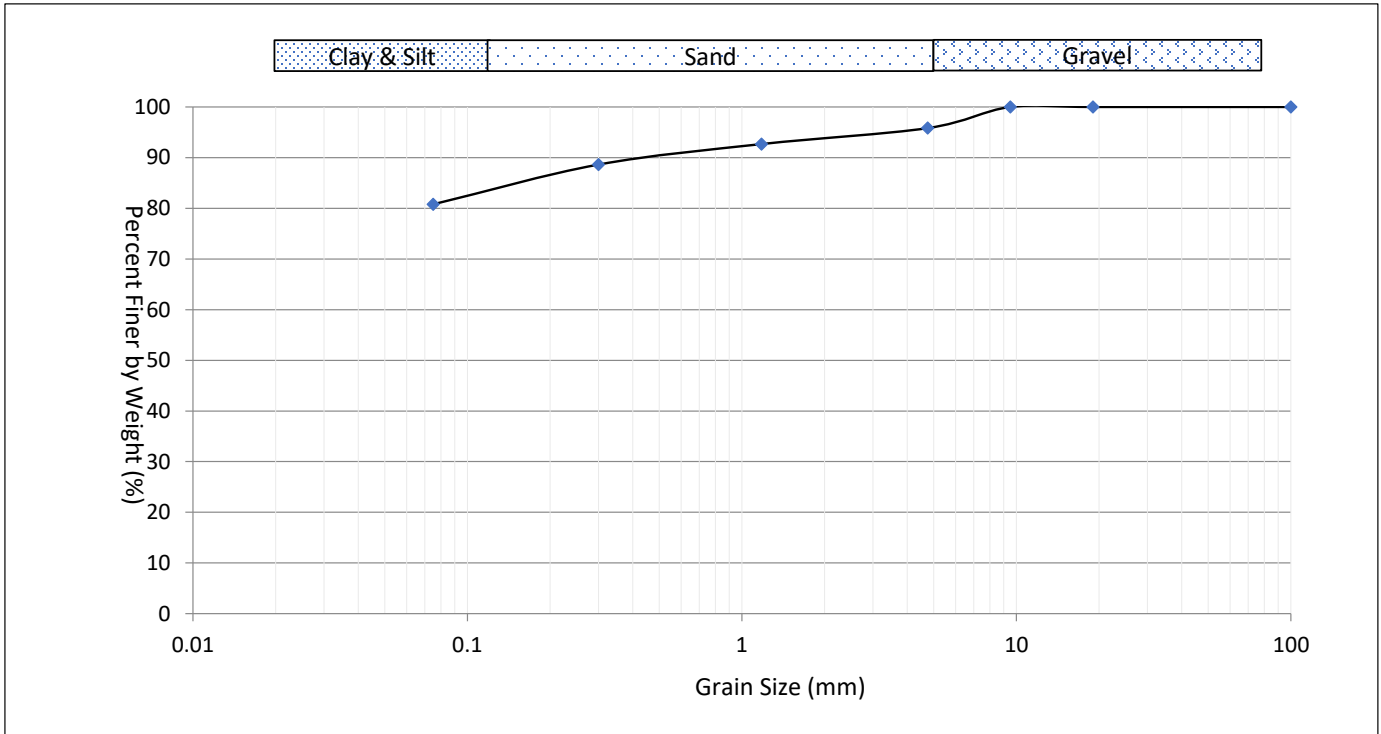
Clay & Silt: 80% Sand: 19% Gravel: 1%



Grain Size Distribution

Sample ID: 21-7241-3 TH2 1.50-1.95m

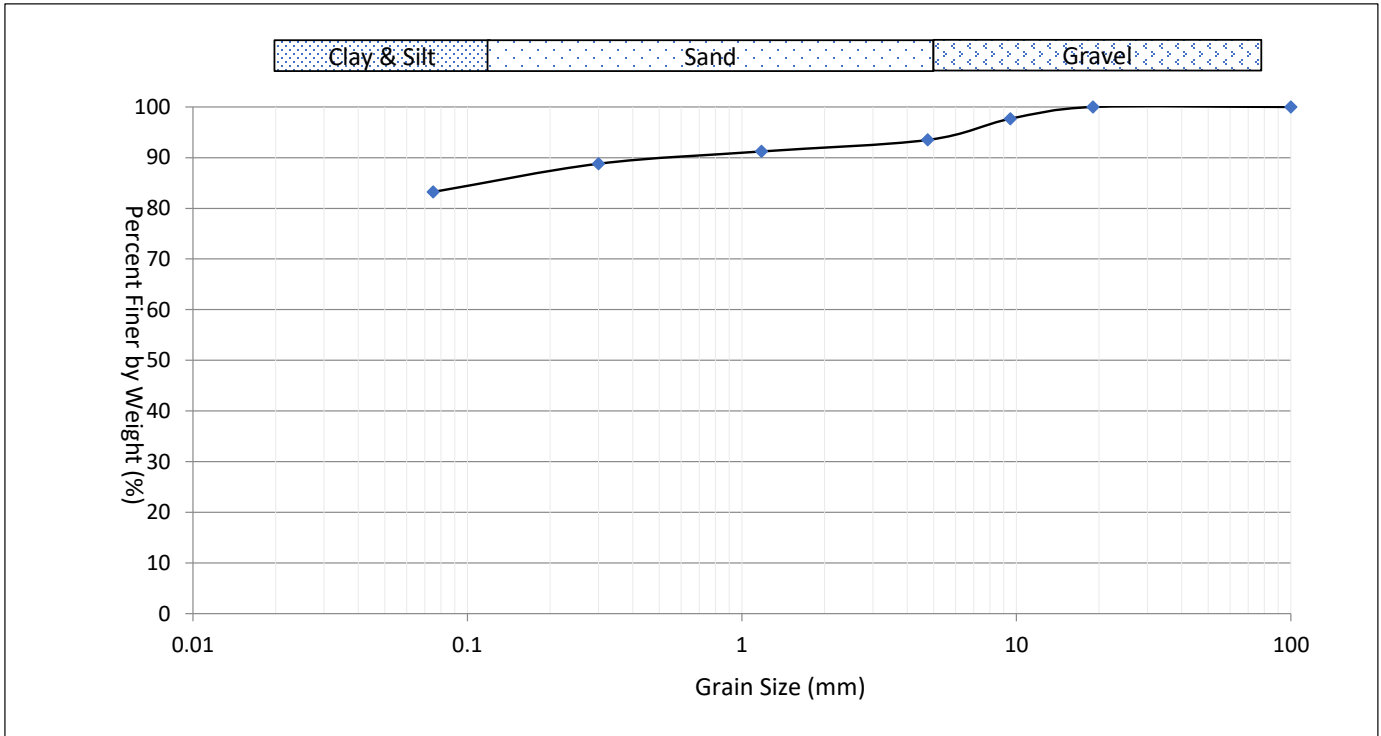
Clay & Silt: 81% Sand: 15% Gravel: 4%



Grain Size Distribution

Sample ID: 21-7241-4 TH3 1.50-1.95m

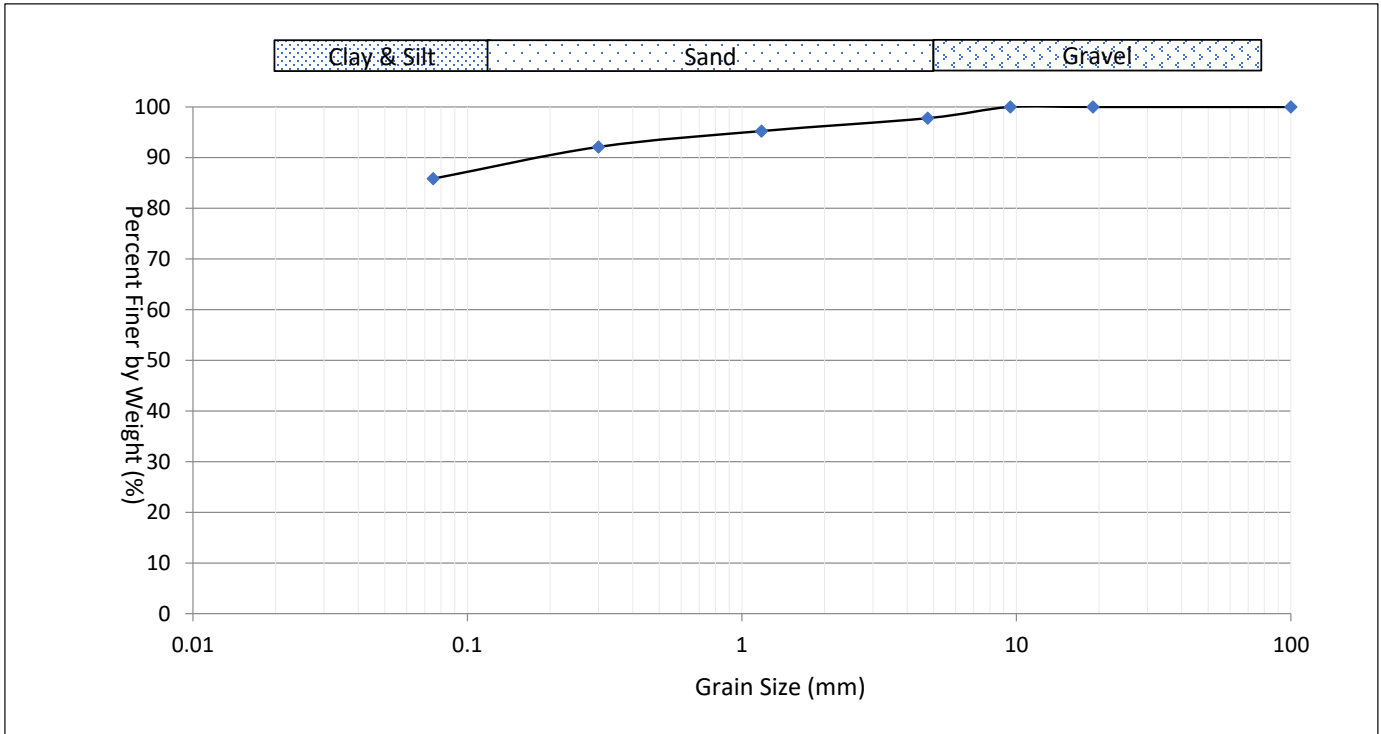
Clay & Silt: 83% Sand: 10% Gravel: 7%



Grain Size Distribution

Sample ID: 21-7241-5 TH4 0.75-1.20m

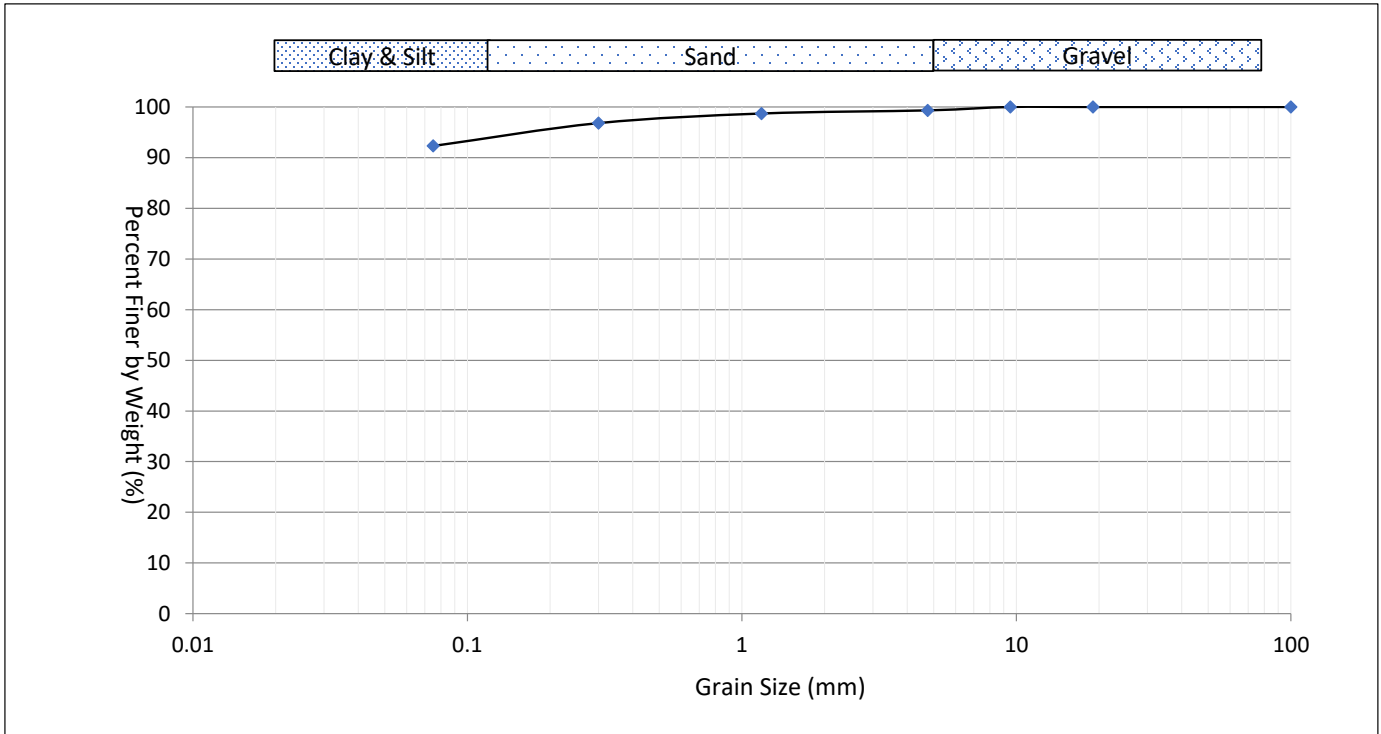
Clay & Silt: 86% Sand: 12% Gravel: 2%



Grain Size Distribution

Sample ID: 21-7241-6 TH5 0.75-1.20m

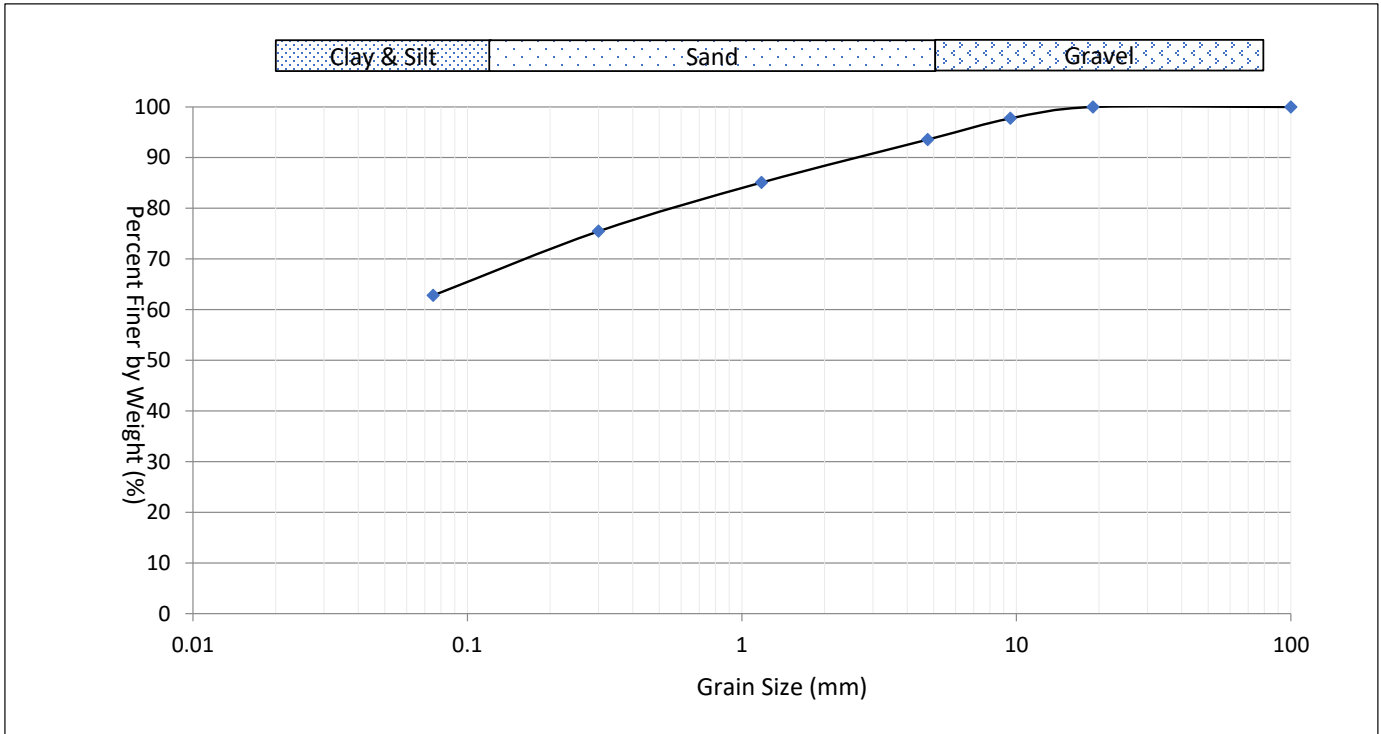
Clay & Silt: 92% Sand: 7% Gravel: 1%



Grain Size Distribution

Sample ID: 21-7241-8 TH6 0.75-1.20m

Clay & Silt: 63% Sand: 31% Gravel: 6%





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Client: Dymon Group of Companies
Address: 2-1830 Walkley Road
Ottawa, ON
K1H 8K3
Tel.:
Email:
Attn.:

F.E. Job #: 21-7241B
Project Name: Infiltration Tests
Project ID: FE-P 21-11439
Date Sampled: 14-Sep-2021
Date Received: 17-Sep-2021
Date Reported: 24-Sep-2021
Location: 3855 Dundas Street East

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Hydrometer	Soil	3	N/A	22-Sep-21	Hydrometer SOP	ASTM D7928-17

Fisher Environmental Laboratories is accredited by CALA (the Canadian Association for Laboratory Accreditation Inc.) for specific parameters as required by Ontario Regulation 153/04. All analytical testing has been performed in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act published by Ontario Ministry of the Environment.

Authorized by:

Roger Lin, Ph. D., C. Chem.
Laboratory Manager



Certificate of Analysis

Analysis Requested:	Hydrometer
Sample Description:	3 Soil Sample(s)

Parameter	21-7241-2 TH1 1.50-1.95m	21-7241-5 TH4 0.75-1.20m	21-7241-7 TH6 1.50-1.95m			
Grain Size (%)						
>19mm	0.0	0.0	0.0			
9.5mm-19mm	0.0	0.0	2.3			
4.75mm-9.5mm	3.8	2.2	4.2			
1.18mm-4.75mm	2.4	2.5	8.5			
300um-1.18mm	4.0	3.1	9.6			
75um-300um	14.0	6.3	12.7			
5um-75um	36	36	29			
2um-5um	8	11	10			
<2um	32	39	24			
Clay	40	50	34			
Silt	36	36	29			
Sand	20	12	31			
Gravel	4	2	6			

Grain Size Distribution

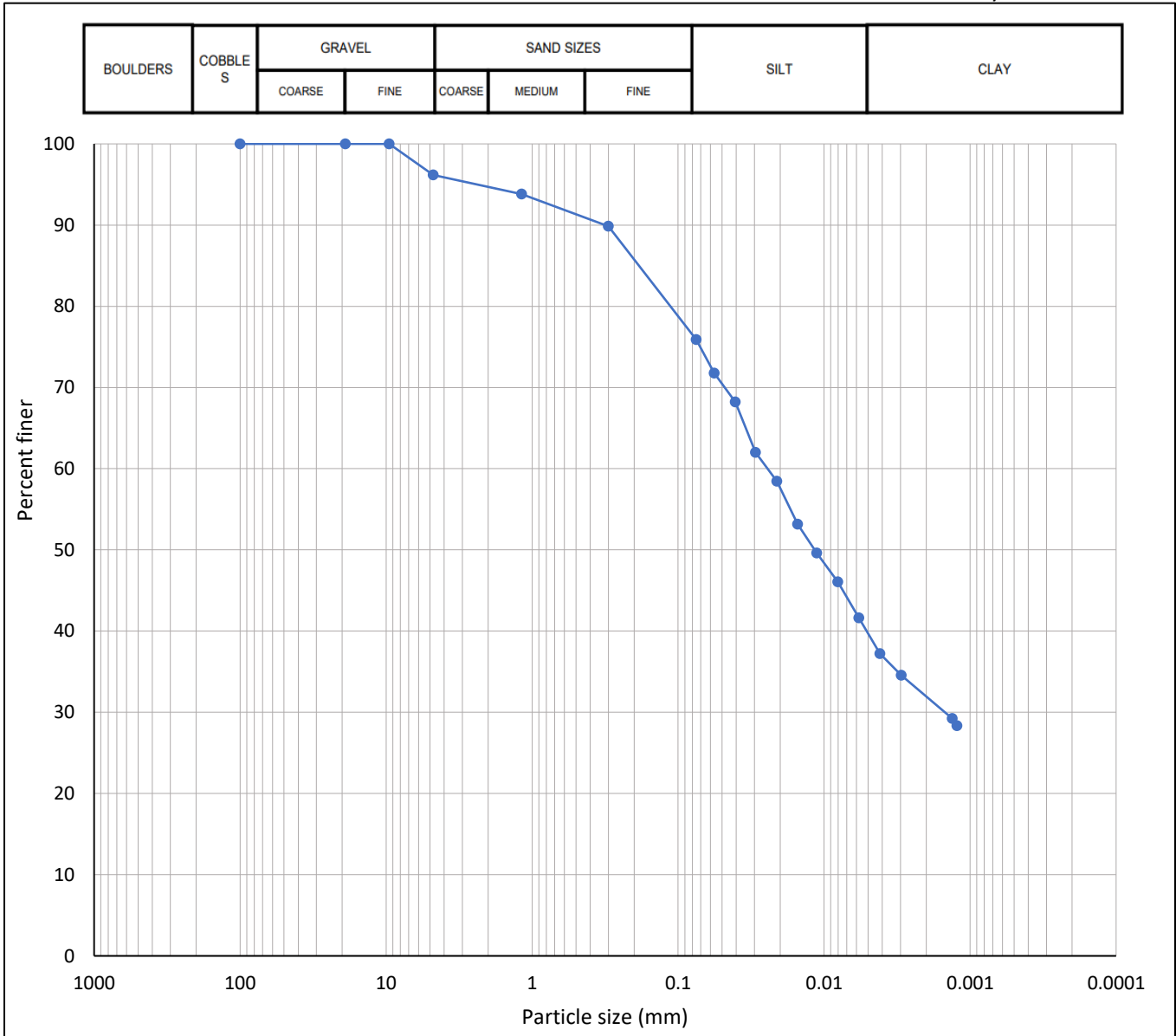
Sample ID: 21-7241-2 TH1 1.50-1.95m

Gravel: 4%

Sand: 20%

Silt: 36%

Clay: 40%



Sample ID: 21-7241-2 TH1 1.50-1.95m

Diameter	Weight (%)	Grain Size
>4.75mm	3.8	Gravel
1.18mm-4.75mm	2.4	Coarse Sand
300um-1.18mm	4.0	Medium Sand
75um-300um	14.0	Fine Sand
5um-75um	36	Silt
2um-5um	8	Clay
<2um	32	

Client: Dymon Group of Companies

F.E. Job #: 21-7241B

Grain Size Distribution

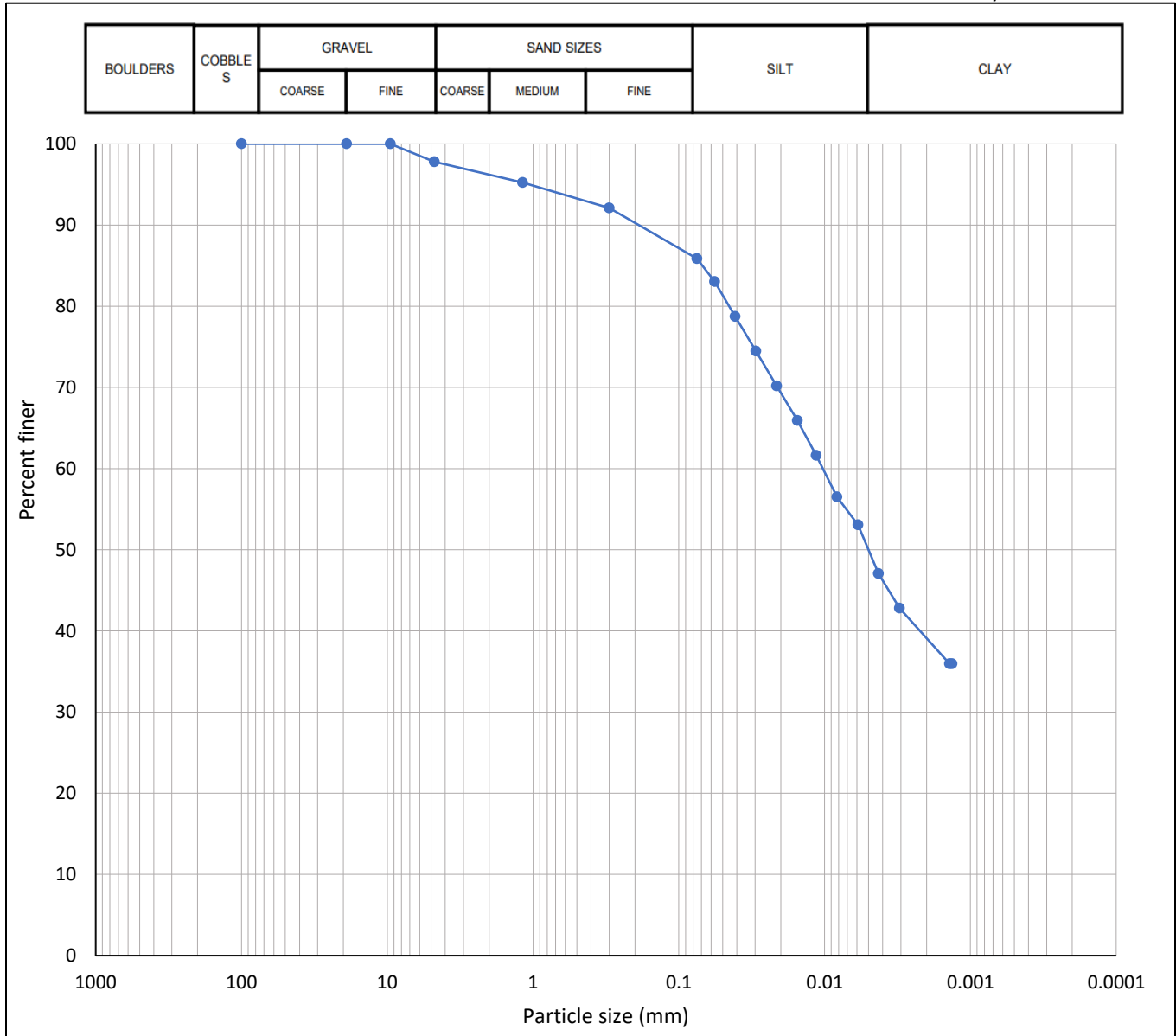
Sample ID: 21-7241-5 TH4 0.75-1.20m

Gravel: 2%

Sand: 12%

Silt: 36%

Clay: 50%



Sample ID: 21-7241-5 TH4 0.75-1.20m		
Diameter	Weight (%)	Grain Size
>4.75mm	2.2	Gravel
1.18mm-4.75mm	2.5	Coarse Sand
300um-1.18mm	3.1	Medium Sand
75um-300um	6.3	Fine Sand
5um-75um	36	Silt
2um-5um	11	Clay
<2um	39	

Grain Size Distribution

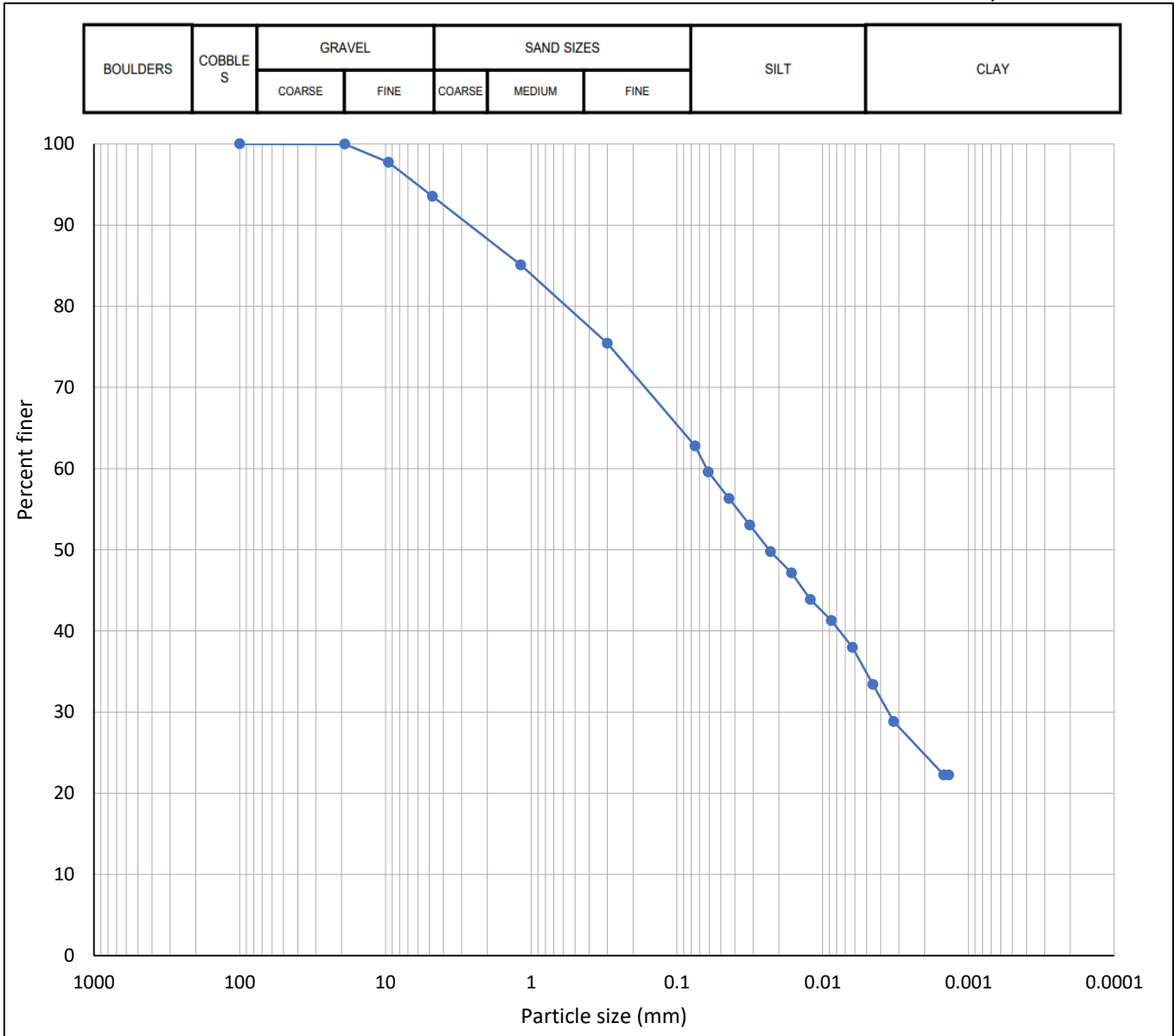
Sample ID: 21-7241-7 TH6 1.50-1.95m

Gravel: 6%

Sand: 31%

Silt: 29%

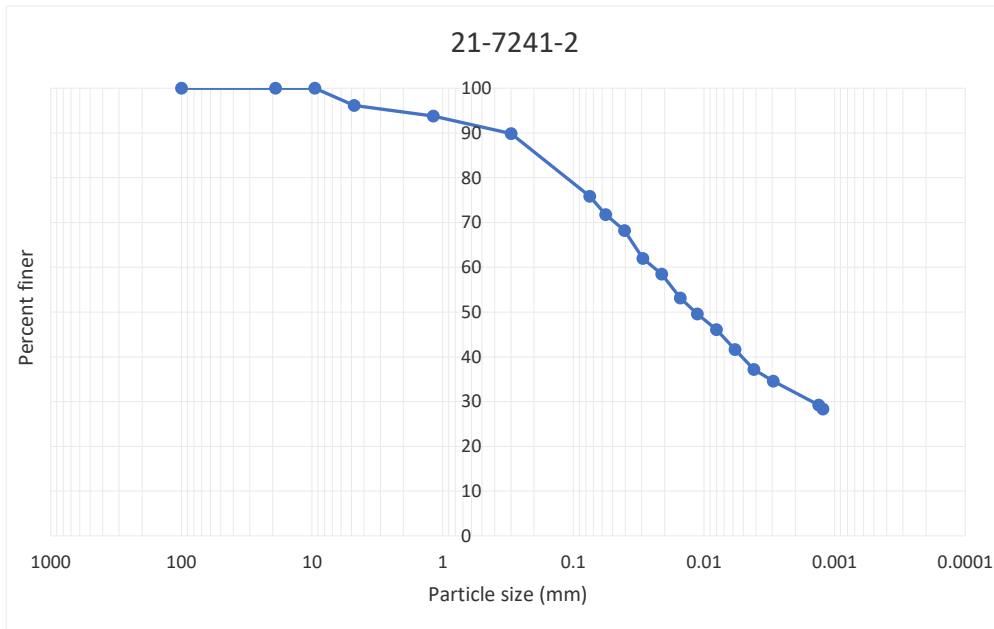
Clay: 34%



Sample ID: 21-7241-7 TH6 1.50-1.95m		
Diameter	Weight (%)	Grain Size
>4.75mm	6.4	Gravel
1.18mm-4.75mm	8.5	Coarse Sand
300um-1.18mm	9.6	Medium Sand
75um-300um	12.7	Fine Sand
5um-75um	28.8	Silt
2um-5um	10.0	Clay
<2um	24	

Temp(K/C)	Soil Weight (g)	Water g/ml	viscosity (poise)	G(solid)	Specific Gravity							
297	40	0.997329795	0.009120211		3 F	FS	FSW	FW	S	DW	DS	G
24					122.804	138.649	335.394	324.193	15.845	1	15.845	3

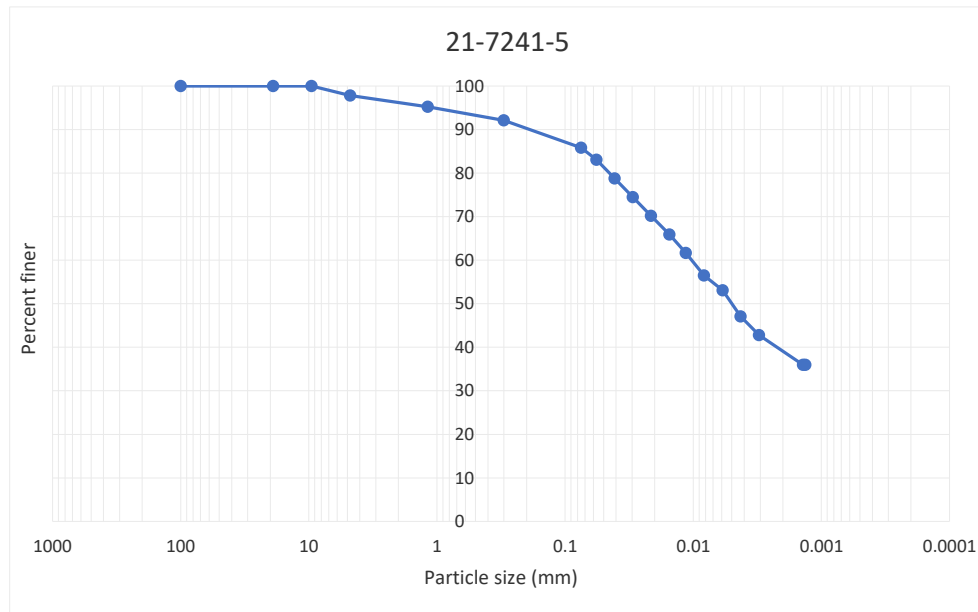
Time	Reading	Comp Correction	Corrected Reading	Hm (cm)	Particle size (µm)	Percent Finer	% finer whole
30	43	4	39	11.46204	56.59980633	94.557375	71.75013615
60	40.5	3.5	37	11.79742	40.60341802	89.887875	68.20691955
120	37	3.5	33.5	12.38435	29.41647038	81.71625	62.0062905
240	35	3.5	31.5	12.71973	21.08035801	77.04675	58.4630739
480	32	3.5	28.5	13.22281	15.19797992	70.0425	53.148249
900	30	3.5	26.5	13.55819	11.23891236	65.373	49.6050324
1800	27.5	3	24.5	13.89358	8.044803257	60.7035	46.0618158
3600	25	3	22	14.31281	5.773721257	54.866625	41.63279505
7200	22.5	3	19.5	14.73204	4.141997379	49.02975	37.2037743
14400	21	3	18	14.98358	2.953732428	45.527625	34.54636185
73800	18	3	15	15.48665	1.32646337	38.523375	29.23153695
86400	17.5	3	14.5	15.5705	1.229246711	37.356	28.3457328
		3	-3	18.50511	#DIV/0!	-3.502125	-2.65741245
		3	-3	18.50511	#DIV/0!	-3.502125	-2.65741245



100	100	
19	100	
9.5	100	
4.75	96.18	
1.18	93.81	
0.3	89.86	
0.075	75.88	
0.0566	71.7501	71.7501 "corrected" for sieve data
0.040603	68.2069	68.2069
0.029416	62.0063	62.0063
0.02108	58.4631	58.4631
0.015198	53.1482	53.1482
0.011239	49.6050	49.6050
0.008045	46.0618	46.0618
0.005774	41.6328	41.6328
0.004142	37.2038	37.2038
0.002954	34.5464	34.5464
0.001326	29.2315	29.2315
0.001229	28.3457	28.3457
#DIV/0!	-2.6574	-2.6574
#DIV/0!	-2.6574	-2.6574

Temp(K/C)	Soil Weight (g)	Water g/ml	viscosity (poise)	G(solid)	Specific Gravity								
297	49.06	0.997329795	0.009120211	2.75	F	FS	FSW	FW	S	DW	DS	G	
24						122.804	138.649	335.394	324.193	15.845	1	15.845	2.75

Time	Reading	Comp Correction	Corrected Reading	Hm (cm)	Particle size (µm)	Percent Finer	% finer whole
30	51	4	47	10.1205	56.85661106	96.72037156	83.03443898
60	48	3.5	44.5	10.53973	41.02794334	91.73478539	78.75431326
120	45.5	3.5	42	10.95896	29.58248771	86.74919923	74.47418754
240	43	3.5	39.5	11.37819	21.31432723	81.76361307	70.19406182
480	40.5	3.5	37	11.79742	15.34664949	76.77802691	65.9139361
900	38	3.5	34.5	12.21665	11.40500542	71.79244074	61.63381038
1800	34.5	3	31.5	12.71973	8.228929168	65.80973735	56.49765951
3600	32.5	3	29.5	13.05511	5.894944552	61.82126842	53.07355894
7200	29	3	26	13.64204	4.261024241	54.84144779	47.08138293
14400	26.5	3	23.5	14.06127	3.058944762	49.85586163	42.80125721
72900	22.5	3	19.5	14.73204	1.391580317	41.87892377	35.95305605
79200	22.5	3	19.5	14.73204	1.335086642	41.87892377	35.95305605
		3	-3	18.50511	#DIV/0!	-2.991351698	-2.568075432
		3	-3	18.50511	#DIV/0!	-2.991351698	-2.568075432

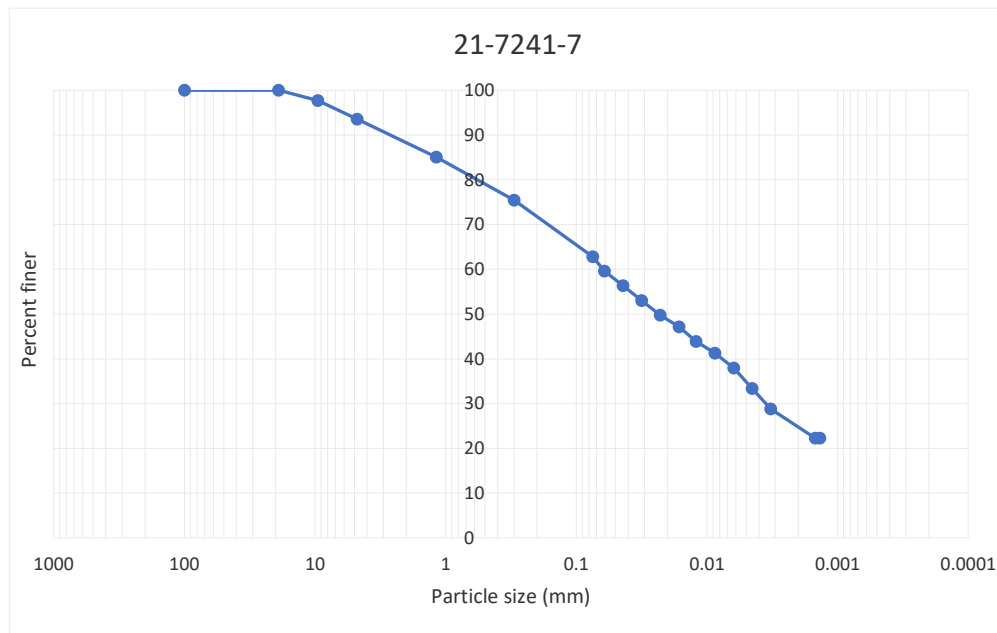


100	100	100
19	100	100
9.5	100	100
4.75	97.79	97.79
1.18	95.25	95.25
0.3	92.11	92.11
0.075	85.85	85.85
0.056857	83.0344	83.0344 "corrected" for sieve data
0.041028	78.7543	78.7543
0.029582	74.4742	74.4742
0.021314	70.1941	70.1941
0.015347	65.9139	65.9139
0.011405	61.6338	61.6338
0.008229	56.4977	56.4977
0.005895	53.0736	53.0736
0.004261	47.0814	47.0814
0.003059	42.8013	42.8013
0.001392	35.9531	35.9531
0.001335	35.9531	35.9531
#DIV/0!	-2.5681	-2.5681
#DIV/0!	-2.5681	-2.5681

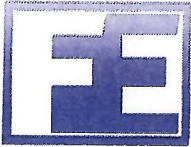
Temp(K/C)	Soil Weight (g)	Water g/ml	viscosity (poise)	G(solid)	Specific Gravity							
297	48.5	0.997329795	0.009120211		2.6 F	FS	FSW	FW	S	DW	DS	G
24					122.804	138.649	335.394	324.193	15.845	1	15.845	2.6

Time	Reading	Comp Correction	Corrected Reading	Hm (cm)	Particle size (µm)	Percent Finer	% finer whole
30	48	4	44	10.62358	60.92203515	94.91440722	59.59675629
60	45	3.5	41.5	11.04281	43.92014618	89.6993299	56.32220924
120	42.5	3.5	39	11.46204	31.64025362	84.48425258	53.04766219
240	40	3.5	36.5	11.88127	22.77851704	79.26917526	49.77311514
480	38	3.5	34.5	12.21665	16.33259395	75.0971134	47.15347751
900	35.5	3.5	32	12.63588	12.13057036	69.88203608	43.87893046
1800	33	3	30	12.97127	8.690697524	65.70997423	41.25929282
3600	30.5	3	27.5	13.3905	6.243768574	60.49489691	37.98474577
7200	27	3	24	13.97742	4.510731316	53.19378866	33.4003799
14400	23.5	3	20.5	14.56435	3.255846357	45.89268041	28.81601403
73800	18.5	3	15.5	15.40281	1.47901105	35.46252577	22.26691993
86400	18.5	3	15.5	15.40281	1.366918837	35.46252577	22.26691993
		3	-3	18.50511	#DIV/0!	-3.129046392	-1.964728229
		3	-3	18.50511	#DIV/0!	-3.129046392	-1.964728229

100	100
19	99.99
9.5	97.73
4.75	93.55
1.18	85.08
0.3	75.44
0.075	62.79
0.060922	59.5968
0.04392	56.3222
0.03164	53.0477
0.022779	49.7731
0.016333	47.1535
0.012131	43.8789
0.008691	41.2593
0.006244	37.9847
0.004511	33.4004
0.003256	28.8160
0.001479	22.2669
0.001367	22.2669
#DIV/0!	-1.9647
#DIV/0!	-1.9647



"corrected" for sieve data



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laboratory@fisherenvironmental.com

LAB JOB #: 21-7241

CHAIN OF CUSTODY 2588

Page 1 of 1

CLIENT INFORMATION
 Company Name: *Dymer Group*
 Contact:
 Address: *3855 Dundas Street East*
MISSISSAUGA
 Phone:
 Fax:
 Email:
 Fax results? *Y/N*
 Email results? *Y/N*

PROJECT INFORMATION
 Project Name: *Infiltration Tests*
 Project ID:
 Sampled By: *Saha*

TURNAROUND TIME (TAT) REQUIRED

STD - Standard (5-7 working days)		Working Time: Monday-Friday 9:00am-5:00pm
SR - Semi Rush (48 hours)	50%	Surcharges apply; Sample received after 2pm will be considered received the next business day
R - Rush (24 hours)	75%	
SD - Same Day - 100%	100%	

BILLING INFORMATION
 Purchase Order #:
 Verbal Authorization:
 Credit Card (type):
 Credit Card #:
 Expiry Date:

LAB SAMPLE ID	CLIENT'S SAMPLE ID AND DESCRIPTION	SAMPLING DATE/TIME	SAMPLE MATRIX	CONTAINER # & TYPE	TAT (Above)	ANALYSIS REQUESTED (Check or Specify)										NOTES				
						Metals	PHCs	VOCs	PAHs	PCBs	Asbestos	GS	m	Hydrometer						
1	TH1: 2 1/2 - 4	14/09/21	soil	Bag																
2	" 5 - 6 1/2	"	"	"																
3	TH2: 5 - 6 1/2	"	"	"																
4	TH3: 5 - 6 1/2	"	"	"																
5	TH4: 2 1/2 - 4	"	"	"																
6	TH5: 2 1/2 - 4	"	"	"																
7	TH6: 5 - 6 1/2	"	"	"																
8	TH6: 2 1/2 - 4	"	"	"																

Relinquished by: (Signature & Print)
CLIVE
 Date & Time:
 Method of Shipment: *By Hand*

Received by: (Signature & Print)
ko
 Date & Time: *Sept 17, 21*

Client's Comments:
 Arrival Temperature (°C):
 Laboratory Remarks: *6°C*

Regulatory Requirements

Reg. 153
 Table _____
 Residential / Parkland
 Industrial / Commercial
 Agricultural
 Soil Texture
 Coarse Med/Fine

Sewer Use
 Sanitary
 Storm
 Region _____

Reg. 558
 TCLP




FISHER ENVIRONMENTAL
ATTN: CLIVE
15-400 ESNA PARK DRIVE
MARKHAM ON NA

Date Received: 01-SEP-20
Report Date: 14-SEP-20 12:39 (MT)
Version: FINAL

Client Phone: 905-475-7755

Certificate of Analysis

Lab Work Order #: L2497329
Project P.O. #: 3855 DUNDAS ST E
Job Reference: 20-10464
C of C Numbers:
Legal Site Desc: MISSISSAUGA



Emily Hansen
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2497329-1 BH102- 10-11 1/2 Sampled By: CLIENT on 28-AUG-20 Matrix: SOIL Physical Tests Grain Size Curve Particle Size Gravel (4.75mm - 3in.) Medium Sand (0.425mm - 2.0mm) Coarse Sand (2.0mm - 4.75mm) Fine Sand (0.075mm - 0.425mm) Silt (0.002mm - 0.075mm) Silt (0.005mm - 0.075mm) Clay (<0.002mm) Clay (<0.005mm)	SEE ATTACHED				11-SEP-20	11-SEP-20	R5222734
L2497329-2 BH103- 10-11 1/2 Sampled By: CLIENT on 28-AUG-20 Matrix: SOIL Physical Tests Grain Size Curve Particle Size Gravel (4.75mm - 3in.) Medium Sand (0.425mm - 2.0mm) Coarse Sand (2.0mm - 4.75mm) Fine Sand (0.075mm - 0.425mm) Silt (0.002mm - 0.075mm) Silt (0.005mm - 0.075mm) Clay (<0.002mm) Clay (<0.005mm)	SEE ATTACHED				11-SEP-20	11-SEP-20	R5222734

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
GRAIN SIZE-HYD-SK	Soil	Grain Size by Hydrometer	ASTM D6913/D7928

Particle size curve is generated from dry sieving (particles > 2 mm), wet sieving (particles 2 mm-75 um) and hydrometer readings (particles < 75 um)

ASTM D422-63 has been withdrawn, the ASTM D6913/D7928 standard serves as the successor method.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid weight of sample

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2497329

Report Date: 14-SEP-20

Page 1 of 2

Client: FISHER ENVIRONMENTAL
 15-400 ESNA PARK DRIVE
 MARKHAM ON NA
 Contact: CLIVE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
GRAIN SIZE-HYD-SK		Soil						
Batch	R5222734							
WG3401674-1	DUP	L2497329-2						
Gravel (4.75mm - 3in.)		<1.0	<1.0	RPD-NA	%	N/A	5	11-SEP-20
Coarse Sand (2.0mm - 4.75mm)		<1.0	<1.0	RPD-NA	%	N/A	5	11-SEP-20
Medium Sand (0.425mm - 2.0mm)		12.9	12.0	J	%	1.0	5	11-SEP-20
Fine Sand (0.075mm - 0.425mm)		21.8	21.1	J	%	0.6	5	11-SEP-20
Silt (0.005mm - 0.075mm)		36.1	36.4	J	%	0.4	5	11-SEP-20
Clay (<0.005mm)		28.9	30.2	J	%	1.3	5	11-SEP-20
Silt (0.002mm - 0.075mm)		45.0	46.2	J	%	1.3	5	11-SEP-20
Clay (<0.002mm)		20.1	20.4	J	%	0.4	5	11-SEP-20
WG3401674-2	IRM	2017-PSA						
Medium Sand (0.425mm - 2.0mm)			8.9		%		3.9-13.9	11-SEP-20
Fine Sand (0.075mm - 0.425mm)			34.5		%		27.6-37.6	11-SEP-20
Silt (0.005mm - 0.075mm)			31.1		%		25.8-35.8	11-SEP-20
Clay (<0.005mm)			25.5		%		22.7-32.7	11-SEP-20
Silt (0.002mm - 0.075mm)			36.7		%		31.1-41.1	11-SEP-20
Clay (<0.002mm)			20.0		%		17.4-27.4	11-SEP-20

Quality Control Report

Workorder: L2497329

Report Date: 14-SEP-20

Page 2 of 2

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

ALS Laboratory Group

819-58th Street, Saskatoon, SK

Client Name: FISHER ENVIRONMENTAL

Project Number:

Client Sample ID BH102- 10-11 1/2

Lab Sample ID L2497329-1

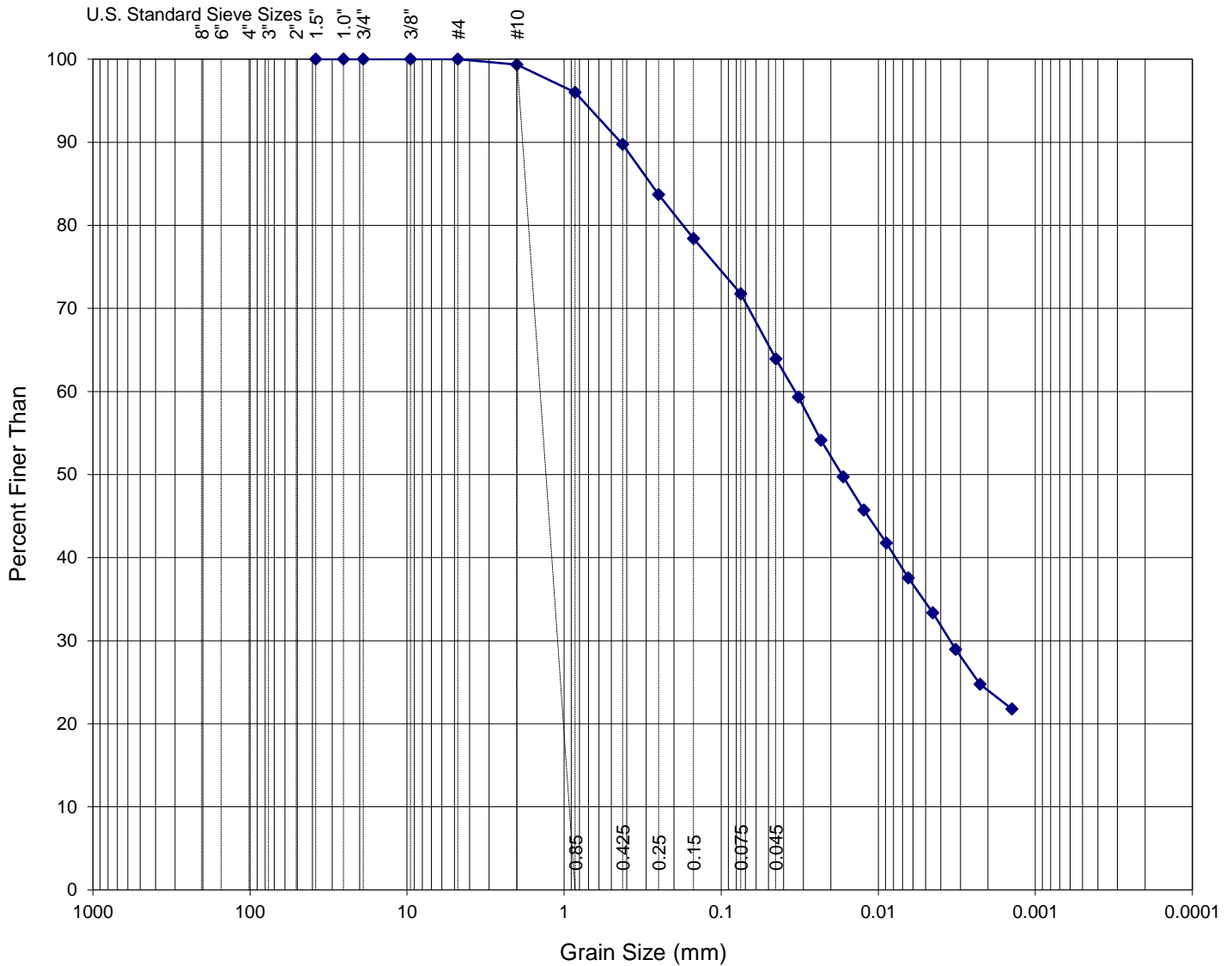
Date Sample Received 01-Sep-20

Test Completion Date: 12-Sep-20

Analyst: SHCH

PARTICLE SIZE DISTRIBUTION CURVE

BOULDERS	COBBLES	GRAVEL		SAND SIZES			SILT	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		



METHOD DESCRIPTION

Method Reference: ASTM D 422 - 63 (2002)

Dispersion method: Mechanical

Dispersion period: 1 minute cm/s

Soil classification system used: ASTM D422-63 Classification

DESCRIPTION OF SAND AND GRAVEL PARTICLES

Shape: Angular

Hardness: Hard

SUMMARY OF RESULTS

GRAIN SIZE	WT %	DIA. RANGE (mm)
% GRAVEL :	<1	> 4.75
% COARSE SAND :	<1	2.0 - 4.75
% MEDIUM SAND :	9.59	0.425 - 2.0
% FINE SAND :	17.99	0.075 - 0.425
% SILT :	37.14	0.075 - 0.005
% CLAY :	34.60	< 0.005

ALS Laboratory Group

819-58th Street, Saskatoon, SK

Client Name: FISHER ENVIRONMENTAL

Project Number:

Client Sample ID BH103- 10-11 1/2

Lab Sample ID L2497329-2

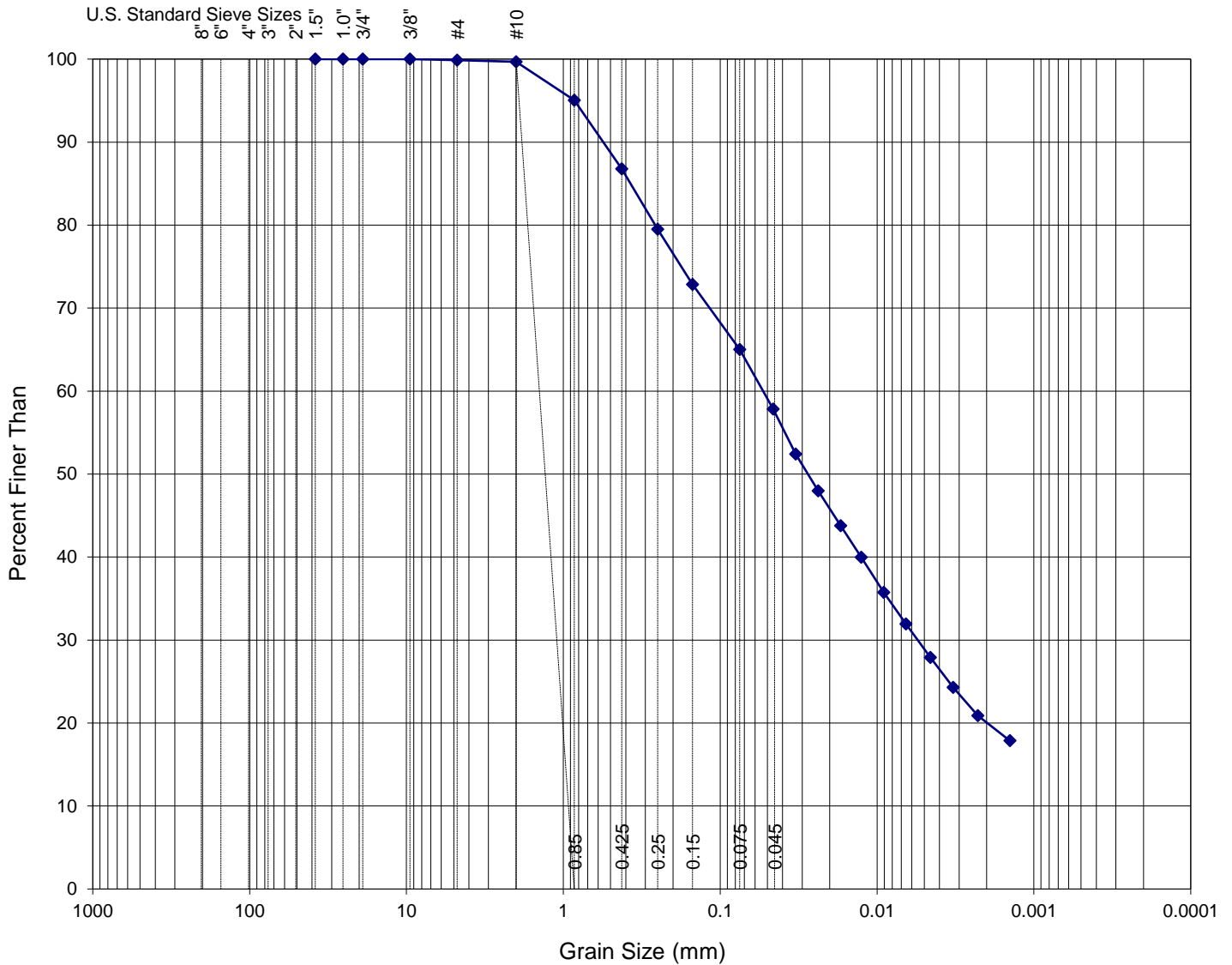
Date Sample Received 01-Sep-20

Test Completion Date: 12-Sep-20

Analyst: SHCH

PARTICLE SIZE DISTRIBUTION CURVE

BOULDERS	COBBLES	GRAVEL		SAND SIZES			SILT	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		



METHOD DESCRIPTION

Method Reference: ASTM D 422 - 63 (2002)

Dispersion method: Mechanical

Dispersion period: 1 minute cm/s

Soil classification system used: ASTM D422-63 Classification

DESCRIPTION OF SAND AND GRAVEL PARTICLES

Shape: Angular

Hardness: Hard

SUMMARY OF RESULTS

GRAIN SIZE	WT %	DIA. RANGE (mm)
% GRAVEL :	<1	> 4.75
% COARSE SAND :	<1	2.0 - 4.75
% MEDIUM SAND :	12.91	0.425 - 2.0
% FINE SAND :	21.76	0.075 - 0.425
% SILT :	36.08	0.075 - 0.005
% CLAY :	28.92	< 0.005



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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2497329-COFC

COC Number: 17 -

Page 1 of 1

[Handwritten signature]

Report To Contact and company name below will appear on the final report		Report Format			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)						
Company: <u>Fisher Environmental</u>		Select Report Format: <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply						
Contact: <u>Clive</u>		Quality Control (QC) Report with Report <input type="checkbox"/> <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4-20%] <input type="checkbox"/>		EMERGENCY	1 Business day [E - 100%]		
Phone: <u>246 605 9722</u>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3-25%] <input type="checkbox"/>			Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]		
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm						
Street:		Email 1 or Fax <u>Clive</u>			For tests that can not be performed according to the service level selected, you will be contacted.						
City/Province:		Email 2 <u>Frank</u>			Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below						
Postal Code:		Email 3									
Invoice To		Invoice Distribution			NUMBER OF CONTAINERS <u>1 95 hydrometer</u>	SAMPLES ON HOLD					SUSPECTED HAZARD (see Special Instructions)
Same as Report To <input type="checkbox"/> <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX									
Copy of Invoice with Report <input type="checkbox"/> <input type="checkbox"/> NO		Email 1 or Fax <u>Clive</u>									
Company:		Email 2 <u>Clive</u>									
Contact:		Oil and Gas Required Fields (client use)									
Project Information		AFE/Cost Center: PO#									
ALS Account # / Quote #:		Major/Minor Code: Routing Code:									
Job #: <u>20-10464</u>		Requisitioner:									
PO / AFE: <u>3855 Dundas St E</u>		Location:									
LSD: <u>MISSISSAUGA</u>		ALS Contact: Sampler:									
ALS Lab Work Order # (lab use only): <u>L2497329</u>											
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type							
	<u>BH102: - 10-11/2</u>	<u>28-08-20</u>		<u>soil</u>							
	<u>BH103: 10-11/2</u>	"		"							
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)						
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>						
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>						
					Cooling Initiated <input type="checkbox"/>						
					INITIAL COOLER TEMPERATURES °C: FINAL COOLER TEMPERATURES °C: <u>11.7</u>						
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)						
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	<u>11/7</u> <u>9-1-2020</u> <u>1645</u>		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

NOV 2019 FRONT



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Client: Dymon
Address:


Tel.:
Email:
Attn.:

F.E. Job #: 20-5123
Project Name: Geo/Hydro Investigations
Project ID: FE-P 20-10404
Date Sampled: 19-Aug-2020
Date Received: 28-Aug-2020
Date Reported: 4-Sep-2020
Location: 3855 Dundas Street, East
Mississauga, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Moisture Content	Soil	5	N/A	1-Sep-20	Support Procedures F-99	Carter (1993)
Grain Size	Soil	5	N/A	3-Sep-20	Grain Size F-28	ASTM D6913-04

Fisher Environmental Laboratories is accredited by CALA (the Canadian Association for Laboratory Accreditation Inc.) for specific parameters as required by Ontario Regulation 153/04. All analytical testing has been performed in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act published by Ontario Ministry of the Environment.

Authorized by: 
Roger Lin, Ph. D., C. Chem.
Laboratory Manager



Certificate of Analysis

Analysis Requested:	Moisture Content, Grain Size
Sample Description:	5 Soil Sample(s)

Parameter	20-5123-1 BH101 1.50-1.95m	20-5123-2 BH101 2.25-2.70m	20-5123-3 BH101 3.00-3.45m	20-5123-4 BH101 4.55-5.00m	20-5123-5 BH101 0.75-1.20m	
Moisture Content (%)	12	12	9.8	10	18	

QA/QC Report

Parameter	Blank	RL	LCS	AR	Duplicate	AR
	Recovery (%)			RPD (%)		
Moisture Content (%)	<0.1	0.1	100	70-130	4.1	0-20

LEGEND:

- RL - Reporting Limit
- LCS - Laboratory Control Sample
- AR - Acceptable Range
- RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Moisture Content, Grain Size					
Sample Description:	5 Soil Sample(s)					
Parameter	20-5123-1 BH101 1.50-1.95m	20-5123-2 BH101 2.25-2.70m	20-5123-3 BH101 3.00-3.45m	20-5123-4 BH101 4.55-5.00m	20-5123-5 BH101 0.75-1.20m	
Grain Size (%)						
>19mm	0.0	0.0	0.0	0.0	0.0	
9.5mm-19mm	0.0	0.0	0.0	0.0	0.0	
4.75mm-9.5mm	2.1	2.2	1.9	2.0	0.8	
1.18mm-4.75mm	3.9	5.2	7.8	9.4	1.8	
300um-1.18mm	4.1	3.3	6.1	6.6	2.1	
75um-300um	6.5	5.0	4.4	5.4	5.0	
<75um	83.4	84.3	79.7	76.6	90.3	
Clay & Silt	83	84	80	77	90	
Sand	15	14	18	21	9	
Gravel	2	2	2	2	1	

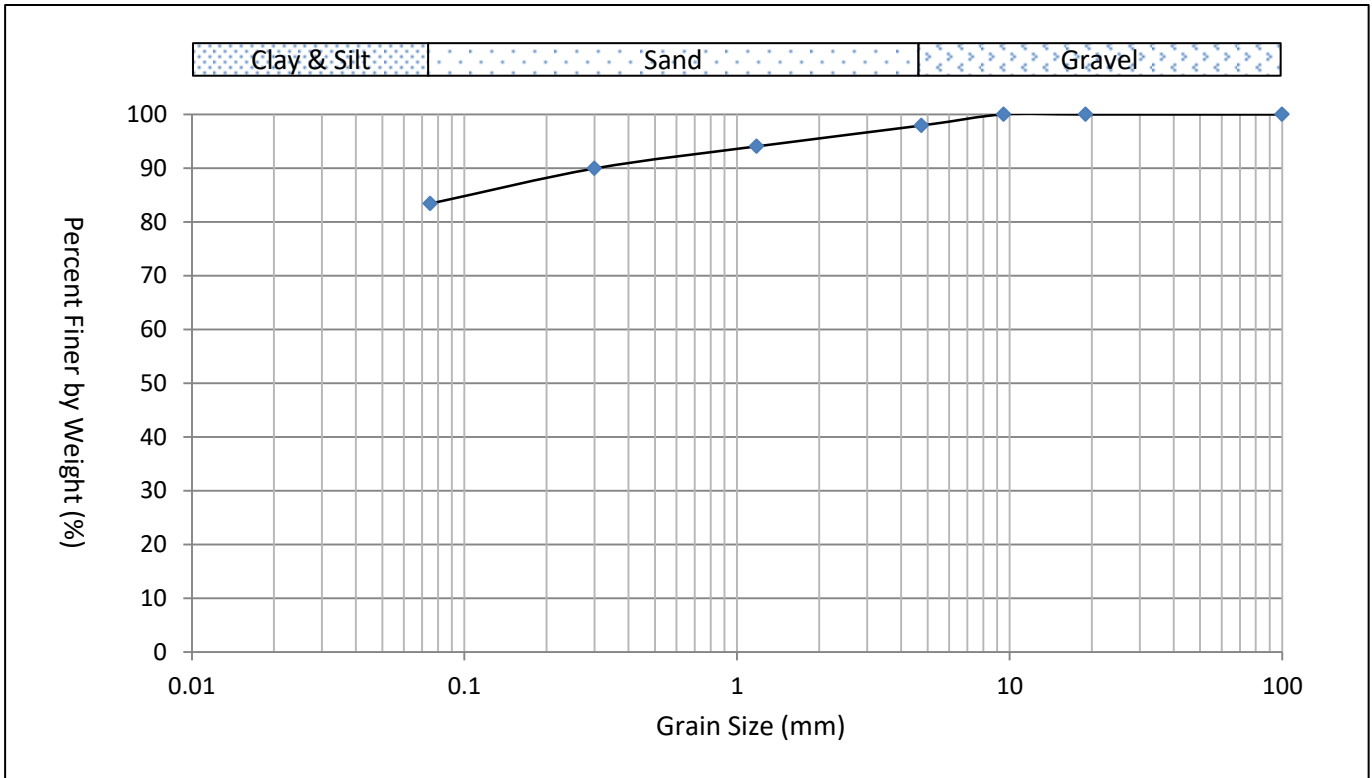
Grain Size Distribution

Sample ID: 20-5123-1 BH101 1.50-1.95m

Clay & Silt: 83%

Sand: 15%

Gravel: 2%



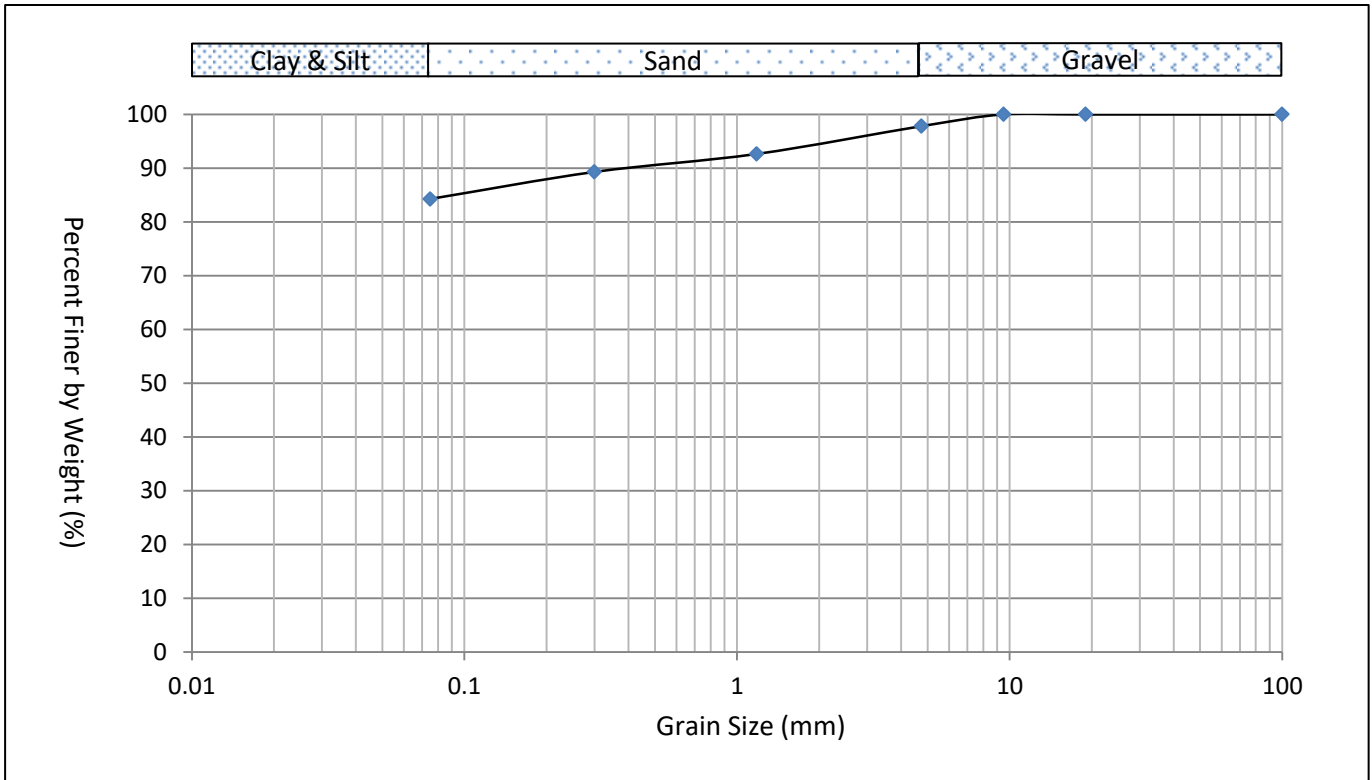
Grain Size Distribution

Sample ID: 20-5123-2 BH101 2.25-2.70m

Clay & Silt: 84%

Sand: 14%

Gravel: 2%



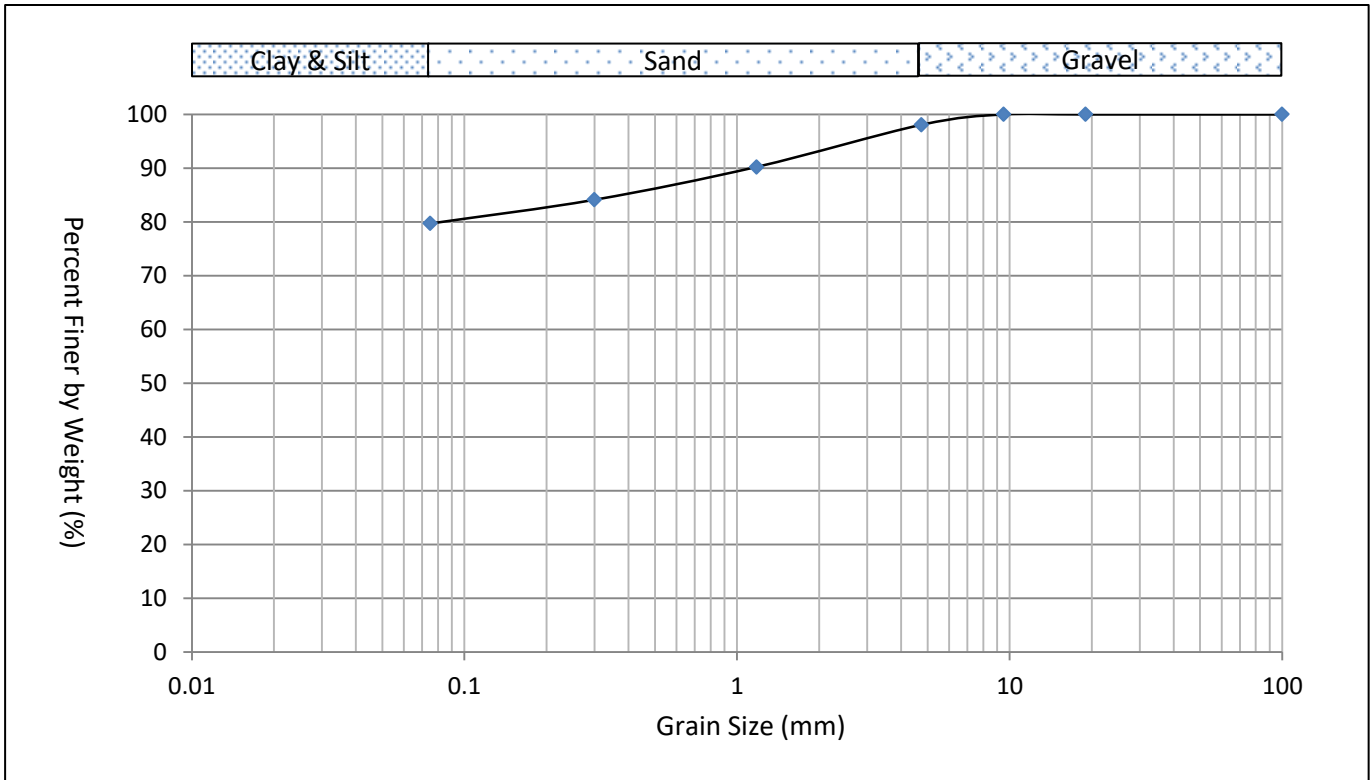
Grain Size Distribution

Sample ID: 20-5123-3 BH101 3.00-3.45m

Clay & Silt: 80%

Sand: 18%

Gravel: 2%



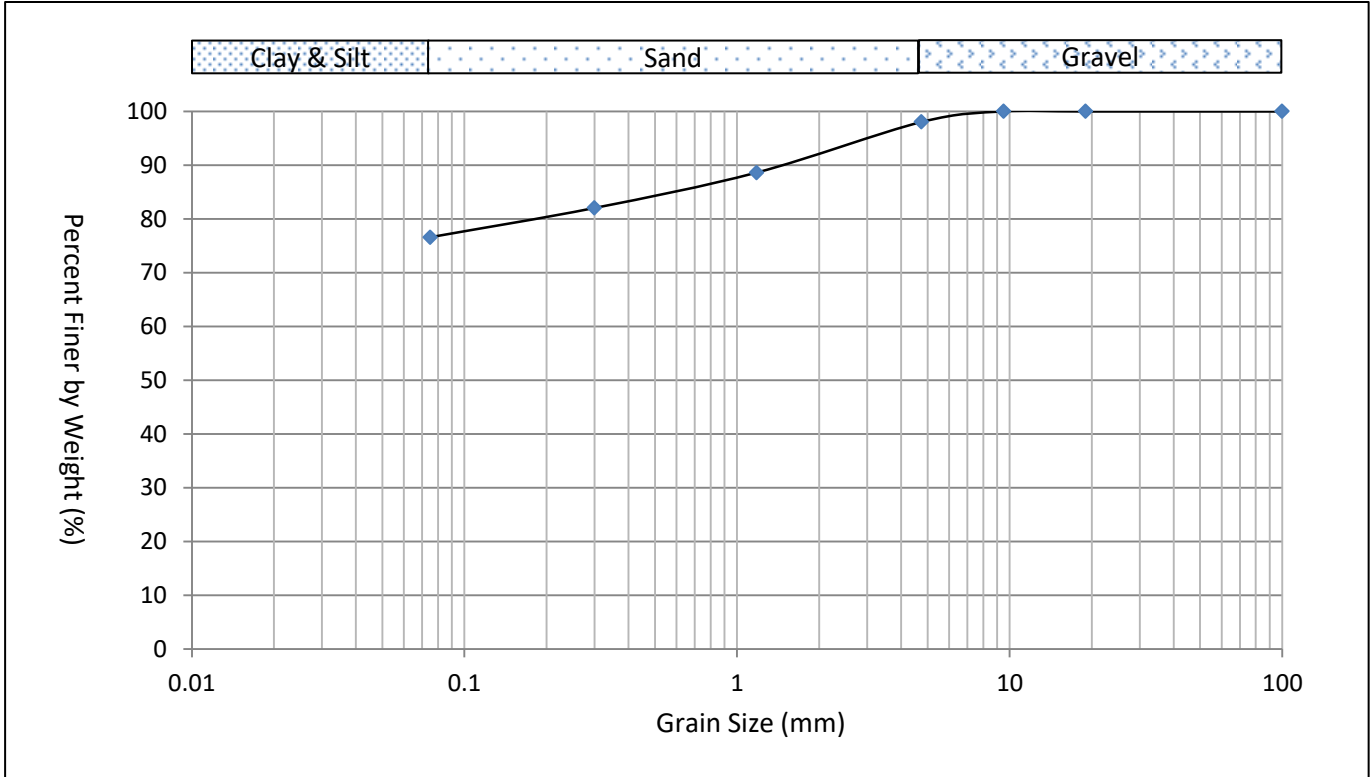
Grain Size Distribution

Sample ID: 20-5123-4 BH101 4.55-5.00m

Clay & Silt: 77%

Sand: 21%

Gravel: 2%



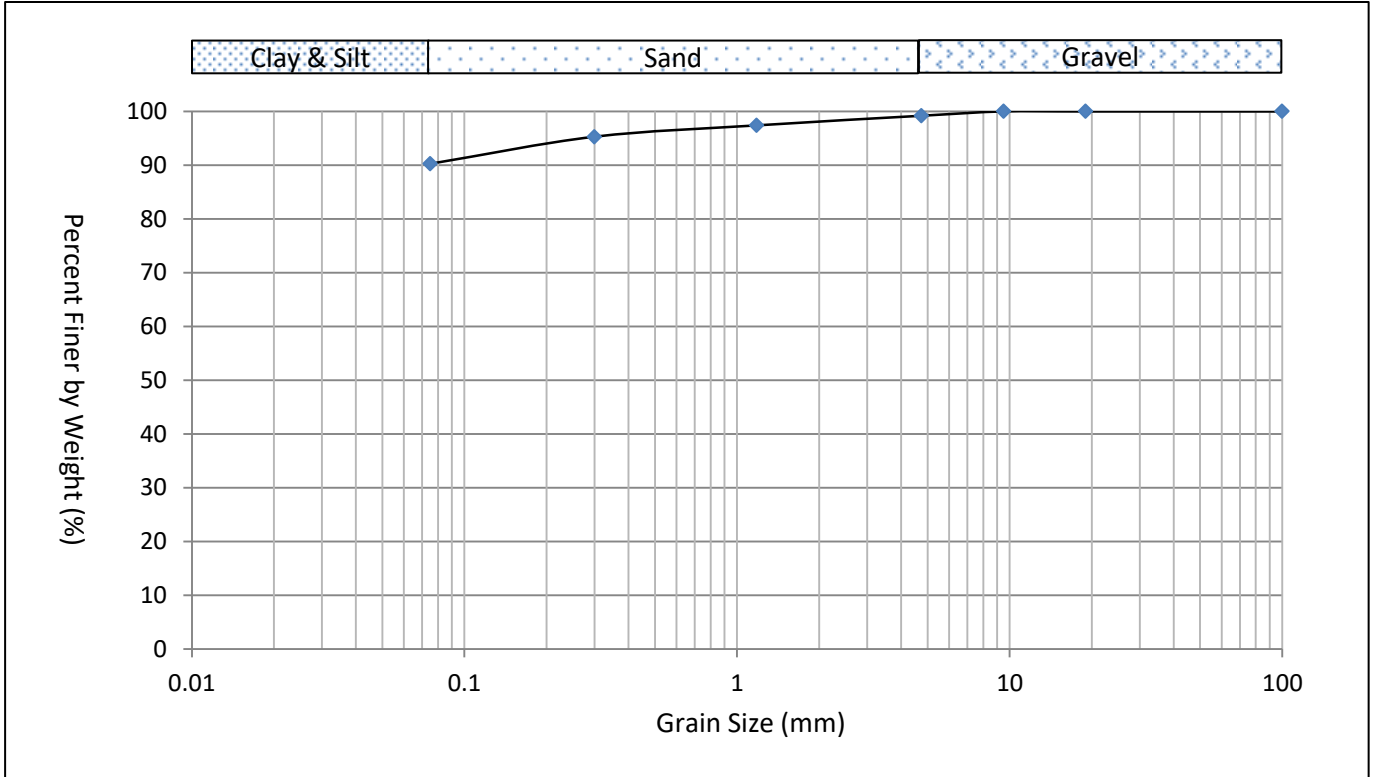
Grain Size Distribution

Sample ID: 20-5123-5 BH101 0.75-1.20m

Clay & Silt: 90%

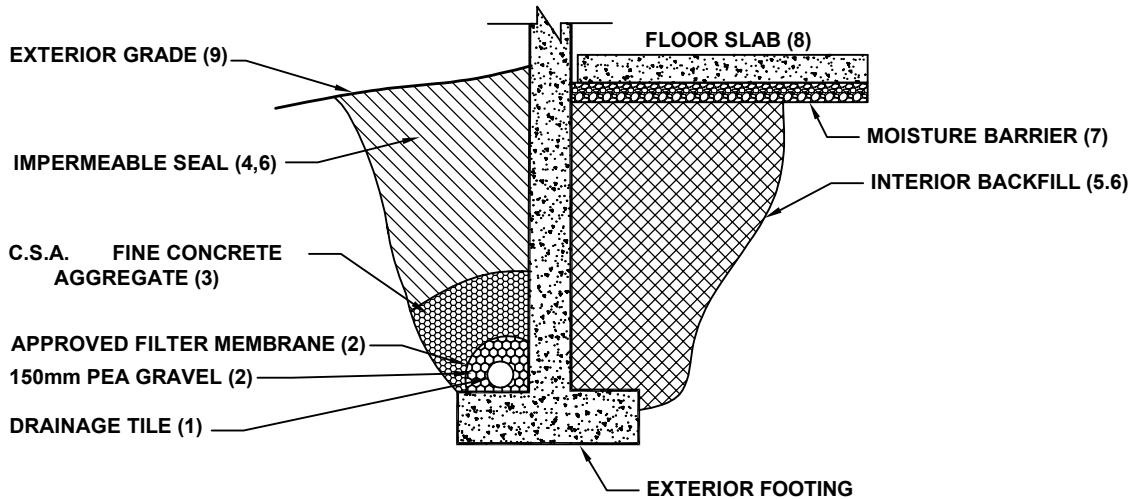
Sand: 9%

Gravel: 1%



APPENDIX D – DRAINAGE AND BACKFILL RECOMMENDATIONS





NOTES:

- (1) DRAINAGE TILE TO CONSIST OF 100mm (4") DIAMETER WEEPING TILE OR EQUIVALENT PERFORATED PIPE LEADING TO A POSITIVE SUMP OR OUTLET. INVERT TO BE A MINIMUM OF 150MM (6") BELOW UNDERSIDE OF FLOOR SLAB.
- (2) PEA GRAVEL-150mm (6") TOP AND SIDE OF DRAIN. IF DRAIN IS NOT ON FOOTING, PLACE 100mm (4") OF PEA GRAVEL BELOW DRAIN. 20mm (3/4") CLEAR STONE IS AN ALTERNATIVE PROVIDED IT IS SURROUNDED BY AN APPROVED FILTER FABRIC (TERRAFIX 270R OR EQUIVALENT).
- (3) C.S.A. FINE CONCRETE AGGREGATE TO ACT AS FILTER MATERIAL. MINIMUM 300mm (12") TOP AND SIDE OF TILE DRAIN. THIS MAY BE REPLACED BY AN APPROVED FILTER FABRIC AS INDICATED IN (2).
- (4) IMPERMEABLE BACKFILL SEAL - COMPACTED CLAY, CLAYEY SILT OR EQUIVALENT. IF ORIGINAL SOIL IS FREE-DRAINING, SEAL MAY BE OMITTED.
- (5) THE ENTIRE FILL MAY BE ANY CLEAN NON-ORGANIC SOIL WHICH CAN BE COMPACTED TO THE SPECIFIED IN THIS CONFINED SPACE.
- (6) DO NOT USE HEAVY COMPACTION EQUIPMENT WITHIN 450mm (18") OF THE WALL. DO NOT FILL OR COMPACT WITHIN 1.8m(6') OF THE WALL UNLESS FILL IS PLACED ON BOTH SIDES SIMULTANEOUSLY.
- (7) MOISTURE BARRIER TO BE AT LEAST 200mm (8") OF COMPACTED CLEAR 20mm (3/4") STONE.
- (8) SLAB ON GRADE SHOULD NOT BE STRUCTURALLY CONNECTED TO THE WALL OR FOOTING.
- (9) EXTERIOR GRADE TO SLOPE AWAY FROM BUILDING.
- (10) THIS SYSTEM IS NOT NORMALLY REQUIRED IF THE FLOOR SLAB IS AT LEAST 300mm (1') ABOVE THE EXTERIOR GRADE.

**DRAINAGE AND BACKFILL RECOMMENDATIONS
FOR SLAB ON GRADE CONSTRUCTION
(NOT TO SCALE)**