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Geotechnical Investigation
Proposed Residential Development

51-55 Dundas Street West and 60-78 Agnes Street
Mississauga, Ontario

G2S24602B

55 Dundas Developments Ltd.
(D-Stillwaters Development Inc.)
1629 Stillriver Crescent
Mississauga, Ontario
L5M 3X2

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Appendices

1. Introduction

G2S Consulting Inc. (G2S) was retained by 55 Dundas Developments Ltd. (the Client) to complete a Geotechnical Investigation for the properties located at 51, 53, 55 and 57 Dundas Street West, 60, 66, 70 and 78 Agnes Street in Mississauga, Ontario, hereinafter referred to as the 'Site'.

The irregular shaped Site is located on the north side of Dundas Street West, at the northwest corner of the intersection with Cook Street and extends north to Agnes Street in Mississauga, Ontario. The Site covers an approximate plan area of 0.44 hectares (1.1 acres). The current land use of the Site consists of residential, commercial, and institutional use.

It is our understanding that the proposed development plan includes the demolition of the existing buildings and the construction of a high rise building which will comprise of a 34-storey tower extending into a 7-storey podium, and two levels of underground parking. The general location of the Site is shown on Drawing 1 in Appendix A. This Geotechnical Investigation was carried out as outlined in G2S' Proposal No. G2S24602 dated January 10, 2025. Authorization to proceed with this assignment was provided by Akeem Ameen of 55 Dundas Developments Ltd.

2. Site And Project Overview

2.1 Site Description

The Site is currently occupied by five buildings. A daycare facility occupies the northwest portion of the Site (78 Agnus Street), two residential buildings at the north central portion (66 and 70 Agnus Street), a mixed-use building with both commercial and residential spaces at the northeast portion of the Site (60 Agnus Street), there is a commercial building (51-57 Dundas Street West) at the southeast corner of the Site. An asphalt paved parking lot covers the east central and northern areas of the Site, with landscaped vegetated areas found throughout the central portion.

2.2 Proposed Development

It is understood that the proposed redevelopment will consist of a high-rise building with the potential for two levels of underground parking. The purpose of this Geotechnical Investigation was to determine the subsurface conditions at a total of six (6) exterior borehole locations and to interpret these findings with respect to the design and construction of the underground services, foundations, and related earthworks for this project from a geotechnical point-of-view.

This report is based on the above summarized project description, and on the assumption that the design and construction will be performed in accordance with applicable codes and standards. Any significant deviations from the proposed project design may void the recommendations given in this report. If significant changes are made to the proposed design, then this office must be consulted to review the new design with respect to the results of this investigation. The information contained in this report does not reflect upon the environmental aspects of the Site and therefore has not been addressed in this document.

3. Investigation Methodology

Four (4) sampled geotechnical boreholes, BH101 to BH104, were advanced at the site for the purpose of this investigation. In addition, two (2) environmental boreholes, BH105 and BH106, were also advanced at the site and the retrieved soil samples from these boreholes were used for chemical testing. Information from these boreholes was used in the current geotechnical investigation. The locations of the boreholes are illustrated in the attached Drawing 1, Borehole and Monitoring Well Location Plan in Appendix A. Groundwater monitoring wells were installed in boreholes BH101 to BH104, identified as BH/MW101, BH/MW102, BH/MW103 and BH/MW104, respectively. The borings were put down uncased using continuous flight auger equipment. The drilling and sampling operations were carried out under the direction and supervision of a G2S staff member. The geotechnical boreholes were advanced to depths between approximately 3.6 and 15.9 metres below the existing grade (mbeg). On completion of drilling, the boreholes were backfilled in general accordance with Ontario Regulation 903.

Representative samples of the subsoils were recovered from the borings at selected depth intervals using split barrel sampling equipment driven in accordance with the requirements of Standard Penetration Resistance Testing. After undergoing a general field examination, the soil samples were preserved and transported to the soil laboratory for visual, tactile, and olfactory classifications. Routine moisture content tests were performed on the soil samples recovered from the boring. The bedrock was cored at three (3) borehole locations (Borehole BH101, BH103 and BH104) using HQ-sized equipment and the retrieved samples were preserved in core boxes and transported to the Burlington laboratory for detailed review.

Details of the conditions encountered in the boreholes, together with the results of the field and laboratory tests, are presented in Borehole (BH) Logs BH101 to BH106, inclusive, included in Appendix B. It is noted that the boundaries of soil types indicated on the borehole logs are inferred from non-continuous soil sampling and observations made during drilling. These boundaries are intended to reflect transition zones for the purpose of geotechnical design and therefore should not be construed as the exact plans of geological change.

Elevations at the ground surface of the borehole locations were interpolated from the provided topographic survey plan entitled “Existing Survey Plan Site Images (Reference Only)”, Project “24018”, Drawing SP100, dated March 5, 2025, by RA Lumbao Architects Inc.

4. Subsurface Conditions

The subsurface soil conditions have been evaluated in the six (6) boreholes investigated by G2S at the Site for the purpose of this report. It should be considered that the subsurface conditions may not be consistent between and beyond the locations investigated at the Site. The soil descriptions outlined in the following stratigraphic summary are based on our interpretation of non-continuous samples of soil obtained from the boreholes.

The subsurface conditions encountered at the borehole locations are summarized as follows:

4.1 Pavement Structure

A pavement structure of approximately 50 to 90 millimetres of asphaltic concrete overlying a granular base material was found in Boreholes BH101, BH102, BH104, BH105, and BH106. The thickness of the granular base ranged between 70 and 250 millimetres.

4.2 Topsoil

Topsoil was encountered in borehole BH103, with a thickness of approximately 225 mm.

The depth of topsoil must be expected to vary across the Site from the depth encountered at the borehole location. In this report the term “topsoil” has been used from a geotechnical point of view and does not necessarily reflect the suitability of the material to support plant growth. If it is to be used for landscaping or agricultural purposes, its suitability should be confirmed by tests on representative samples for organic and nutrient content and therefore its ability to support plant growth.

4.3 Fill

Fill materials were encountered in all boreholes, extending to depths ranging from approximately 1.5 to 3.1 mbeg. The fill consisted predominantly of yellow brown to light brown to brown sand with varying silt content and traces of organics. In BH102 and BH104, construction debris including red bricks, concrete, and slag. Moisture content values in fill materials ranged from 8% to 25% indicating moist to wet conditions.

4.4 Sand

Native sand deposits were encountered beneath the fill in all boreholes except for BH104, extending to depths of approximately 2.6 to 3.8 mbeg. The sand was generally light brown with trace to some silt content.

With “N” values ranging from 12 to in excess of 50 blows per 300 mm of penetration, the sand deposit was classified as loose to dense, with density typically increasing with depth. With moisture content ranging from 5 to 13%, the sand was described as moist to very moist. Based on the grain size analysis for four (4) sand samples, the sand deposit contained, 0 to 1% gravel, 76 to 84% sand 15 to 24% fines (silt & clay) sized particles. Results of the grain size analyses are included in Appendix B.

4.5 Shale/Till Complex

A shale/till complex was encountered below the sand deposit in BH101, BH103, and BH104, and extended to depths ranging between 3.1 and 4.6 mbeg. This material was described as grey in colour, The till/shale complex consists of a mixture of clayey silt to silt to sandy silt till and highly/completely weathered shale. With SPT N-values ranging from 19 to in excess of 50 blows per 300 mm, the shale till complex deposit was classified as compact/very stiff to very dense/hard.

The moisture content was measured at 6% indicating moist conditions Based on grain size analysis for one (1) sample, the deposit contained 7% clay, 26% silt, 28% sand, and 39% gravel. Results of the grain size analyses are included in Appendix B.

There is a gradual transition from this till/shale complex into shale bedrock and the shale bedrock surface may vary and can potentially be found at more shallow depths. The till/shale complex may also contain limestone seams/layers. Hence, it is possible that the till/shale complex may be interpreted as shale bedrock.

4.6 Shale Bedrock

Shale bedrock was encountered at depths ranging from approximately 2.4 to 4.9 mbeg (~Elev. 112.5 to 109.3 m). These boreholes were extended into the bedrock using rock coring techniques, with stratigraphy detailed in separate rock core logs in Appendix B. In Boreholes BH102, BH105, and BH106, bedrock surface was inferred by sampler refusal at depths of 3.6, 2.7, and 3.1 mbeg, respectively.

Due to the method of drilling and sampling, the surface elevation of the bedrock can be different than indicated on the borehole logs. Based on our experience, the available published information, and as confirmed by coring, the upper portion of the bedrock is typically weathered and becomes more sound with depth.

The approximate depth and elevation of the shale bedrock surface/probable shale bedrock surface at the borehole locations are presented in Table No. 1 below:

Table 1: Approximate Depth and Elevation of Shale Bedrock Surface

Borehole ID	Depth of Shale Bedrock Surface Below Existing Grade (m)	Approximate Elevation of Bedrock Surface (m)	Remarks
BH101	4.9	109.8	Proven by Coring between 4.9 m to 15.5 m (~Elev. 109.8 to 99.2)
BH102	3.5	111.3	Inferred by auger and sampler refusal
BH103	3.3	111.4	Proven by Coring between 3.3 m to 14.3 m (~Elev. 111.4 to 100.4)
BH104	4.4	109.3	Proven by Coring between 4.4 m to 15.9 m (~Elev. 109.3 to 97.9)
BH105	2.7	112.5	Inferred by auger and sampler refusal
BH106	3.1	111.1	Inferred by auger and sampler refusal

Based on the Ministry of Northern Development and Mines Map 2544, *Bedrock Geology of Ontario, Southern Sheet*, the bedrock in the Site vicinity consists of Georgian Bay Shale of the Upper Ordovician period. Hard limestone, dolostone, and siltstone lenses may also be encountered within the shale.

The shale was typically grey (Georgian Bay formation) and contained increasing limestone content with depth. Based on the rock core samples, which were obtained from Borehole/Coreholes BH101, BH103 and BH104, the bedrock consisted of grey shale of the Georgian Bay formation, completely to highly weathered up to depths ranging between 6.4 and 9.8 mbeg. The upper section of the shale was generally found low to high in strength with highly fractured zones occurring at various depths, notably from 5.8 to 5.9, 7.0 to 7.2, 11.0 to 11.1, and 12.1 to 12.3 mbeg in BH101, 6.8 to 8.2, 9.9 to 10.5, 11.5 to 11.6, 12.5 to 12.6, 12.8 to 12.9, 13.3 to 13.4, and 13.6 to 13.7 mbeg in BH103, and 4.4 to 4.7 , 5.3 to 5.5, 5.8 to 5.9, 6.4 to 6.5, 7.4 to 7.5, 9.4 to 9.8, and 11.1 to 11.2 mbeg in BH104. The lower section of the shale below these depths was moderately weathered to unweathered and was found medium in strength. The shale contained strong to very strong limestone interbedding throughout all three boreholes. Details of the limestone interbedding layers are shown on the rock core log sheets attached in Appendix B. The thicknesses of these layers ranged from approximately 50 to 450 mm.

The Total Core Recovery (TCR) ranged from 53 to 100. The recorded Rock Quality Designation (RQD) values within the upper sections of the shale in BH101, BH103, and BH104 ranged between 0 and 77%, indicating very poor to fair quality. The RQD values in deeper portions ranged between 51 and 91%, indicating fair to excellent quality. The discontinuities observed in the rock cores were typically horizontal bedding planes with flat orientation, except at several depths in the investigated boreholes where vertical joints were observed, particularly at depths of approximately 6.4 mbeg and 10.5 mbeg in BH103, and 13.3 mbeg in BH104. The spacing of the discontinuities ranged from very close to moderate, and joints filling was generally slightly altered, tight, or oxidized. Photographs for the retrieved core samples are included in Appendix C.

4.7 Groundwater Observations

Groundwater monitoring wells were installed in Boreholes BH101, BH102, BH103, and BH104. The borehole BH104 was observed to be dry. The results of our groundwater monitoring to date are presented below:

Table 2: Groundwater Observation

BH/MW ID	Full Depth of Well (m beg)	March 26, 2025		April 15, 2025		April 21, 2025	
		Depth (m)	Elevation (m)	Depth (m)	Elevation (m)	Depth (m)	Elevation (m)
BH/MW101	10.1	6.5	108.2	6.4	108.3	5.4	109.3
BH/MW102	3.4	3.3	111.5	3.1	111.7	3.1	111.7
BH/MW103	9.7	5.3	109.3	5.2	109.4	5.2	109.5
BH/MW104	3.0	Dry	-	Dry	-	Dry	-

Some infiltration of groundwater through the fill layer, sand, permeable seams of the native soils and from surface runoff should be anticipated during the excavation operations. Surface water should be directed away from the excavations. It is noted that the static groundwater level fluctuates based on seasonal conditions experienced and may at times be slightly shallower than noted above during the 'wet' periods of the year (i.e., Spring melt). Refer to Appendix B for the list of abbreviations and borehole logs.

5. Geotechnical Considerations

5.1 Site Preparation

At the time of the investigation, the grading plan for the Site was not yet available to G2S; however, it is understood that consideration has been given to the construction of the mentioned high-rise building with two levels of underground garages as well as the associated surface parking and underground utilities. Prior to any earthwork, it will be necessary to remove any unacceptable fill or organic soils from the areas to be developed. It is expected that only limited placement of engineered fill will likely be necessary in order to develop the Site. Any engineered fill must be placed and uniformly compacted in maximum lift thicknesses of 300 mm for earth fill and 200 mm for commercially sourced granular material. Each lift of the engineered fill must be uniformly compacted to at least 100 percent of Standard Proctor Maximum Dry Density (SPMDD). The placement water content of the engineered fill material should be maintained within ±3 percent of the laboratory optimum water content in order to achieve an acceptable degree of compaction.

The limits of any engineered fill placed during this operation can best be determined by the geotechnical engineer at the time of construction. If engineered fill will be used to support foundations or pavements, it must extend laterally at a sufficient distance to develop adequate lateral resistance.

All aspects of engineered fill construction including final excavation, material selection, placement and compaction must be tested by the geotechnical engineer at the time of placement and compaction. In-situ density (compaction) testing is required during construction for any and all engineered fill placement.

5.2 Foundation Recommendations

5.2.1 Spread and Strip Footing

Based on preliminary information, the lowest basement slab will be at a depth of approximately 7.2 mbeg assuming the grade level is at ~Elev. 114.4 m. As such, the foundation level would likely be set in the sound shale bedrock. Foundations constructed on the weathered shale approximately 0.5 m below the bedrock surface can be designed with a geotechnical resistance of 3,000 kPa at Ultimate Limit States (ULS) and 1,500 kPa at Serviceability Limit State (SLS). Foundations constructed on the sound shale at least 3.0 m below the bedrock surface at or below ~Elev. 108.4 to 106.3 m can be designed with a geotechnical resistance of 5,000 kPa at ULS. The geotechnical resistance of a sustained load at SLS should be within the normally tolerated limits of 25 millimetres of settlement. The settlement of foundations placed on sound bedrock is expected to be negligible. As such, the bearing resistance SLS is not provided.

5.2.2 Foundation General

The footing beds in the shale bedrock will be prone to disturbance from construction, foot traffic and precipitation. It would be prudent to consider the placement of a 50-millimetre concrete ‘mud’ slab over the footing bases once evaluated. This will protect the footing beds from disturbance and provide a clean working surface for the placement of formwork and reinforcing steel.

In areas where it will be necessary to provide adjacent footings at different founding elevations, the lower footing should be constructed before the higher footing, if possible. To limit stress

transfer from higher footings to lower footings, the higher footing should be set below a line drawn up from the edge of the lower footing at 10 horizontal to 7 vertical. All footings exposed to the environment must be provided with a minimum of 1.2 metres of earth cover or equivalent insulation to protect against frost damage. This frost protection would also be required if construction were undertaken during the winter months. During winter construction, temporary frost protection shall be provided for footing bases and concrete placements. All footings and foundations should be designed and constructed in accordance with the current Ontario Building Code. We would recommend, where applicable, the placement of a 50 millimetres thick high-density sheet of Styrofoam insulation against the exterior of the foundation walls, which protrude from the main foundation walls, followed by the placement of a 10-mil sheet of 'double' polyethylene ('fold' placed at 'top') to prevent frost heaving/adfreezing action.

With foundations designed as outlined above and as required by the current Ontario Building Code, and with careful attention paid to construction detail, total and differential settlements should be well within normally tolerated limits of 25 and 20 millimetres, respectively. However, as is typical in most commercial/residential construction, 'cosmetic' cracking of plasterboard, foundation walls, etc., may occur within the first year of construction because of shrinkage, minor settlement, etc. Subsequent to repair, additional cracking should be minimal.

It is imperative that a soils engineer be retained from this office to provide geotechnical engineering services during the excavation and foundation construction phases of the project. This is to observe compliance with the design concepts and recommendations of this report and to allow changes to be made if subsurface conditions differ from the conditions identified at the borehole locations.

5.3 Seismic Design Parameters

The structure shall be designed according to Section 4.1.8 of the Ontario Building Code, Ontario Regulation 163/24. Based on the subsurface soil conditions encountered in this investigation, the applicable Site Classification for the seismic design is Site Class B-footing on Sound Rock, based on the average soil characteristics for the Site. The conducting of site specific shear wave velocity testing may be considered to confirm the site class. The seismic data as per the 2020 National Building Code interpolated seismic hazard values, are as follows:

S_a[0.2]	S_a[0.5]	S_a[1.0]	S_a[2.0]	S_a[5.0]	S_a[10.0]	PGA	PGV
0.277	0.127	0.0613	0.0273	0.00693	0.00252	0.153	0.0828

It should be noted that the values above were based on the 2%-in-50-year seismic hazard values and are provided in accordance with Article 4.1.8.4. of the National Building Code 2020 (NBC). The structural engineer responsible for the project should review the earthquake loads and effects.

5.4 Floor Slab Considerations

The slab-on-grade for the proposed building is expected to be constructed on shale bedrock. The exposed subgrade should be prepared by carefully examining the surface for any loose or unsuitable material (i.e., weak, disturbed, fractured rock, etc.). All unsuitable and loose material should be removed and replaced with approved suitable material and be compacted to at least

98 percent of its Standard Proctor Maximum Dry Density (SPMDD), in the presence of a G2S representative. Oversized particles in excess of 4 inches (100 mm) in diameter should not be permitted in the backfilling operations. Imported granular fill is preferred due to its relative insensitivity to weather conditions, its relative ease in achieving the required degree of compaction, and its quick response to applied stresses. Based on the conditions encountered in the boreholes, backfill recommendations, and the floor slab considerations as included in our report, a modulus of sub-grade reaction, k_s, of 40 MPa/m (based on a loaded area of 300 mm x 300 mm) can be used for the design of the slab-on-grade floor slab.

As with all concrete floor slabs, there is a tendency for the floor slabs to crack. The slab thickness, concrete mix design, amount of steel and/or fiber reinforcement, and/or wire mesh placed into the concrete slab, if any, will therefore be a function of the owner's tolerance for cracks in, and movements of, the slabs-on-grade, etc. The 'saw-cuts' on the concrete floors, for crack control, should extend a minimum of 1/3 the thickness of the slab.

A moisture barrier will be required under the floor slabs such as the placement of at least 200 mm of well-compacted 19 mm clear crushed stone. At a minimum, the moisture barrier material should contain no more than 10 percent passing the No. 4 sieve.

Curing of the slab-on-grade must be carefully specified to ensure that slab curl is minimized. This is especially critical during the hot summer months of the year when the surface of the slab tends to dry out quickly while high moisture conditions in the moisture barrier or water trapped on top of any 'poly' sheet at the saw cut joints and cracks, and at the edges of the slabs, maintains the underside of the slab in a moist condition.

It is also important that excess free water not be added to the concrete during its placement as this could increase the potential for shrinkage cracking and curling of the slab.

5.5 Lateral Earth Pressure and Perimeter Drainage

The following soil properties may be considered for the design of structures subject to an unbalanced earth load. These properties have been estimated based on our review and laboratory testing of the soil samples, which were recovered during the geotechnical investigation, as well as type of backfill material, which is expected to be used in construction.

Table 3: Soil Properties for Design of Earth Retaining Structures

Material	φ	γ	K_a	$K_\circ$	K_P
Fill: OPSS 1010 Granular B - compact	32	21.0	0.31	0.47	3.25
Native Sand - Compact	30	19.5	0.33	0.50	3.00
Shale/Till Complex – Highly Weathered Shale	36	22	0.26	0.41	3.85

Φ = Angle of Internal Friction (degrees), γ = Bulk Unit Weight of Soil (kN/m^3), K_a = Active Earth Pressure Coefficient, $K_\circ$ = At-rest Earth Pressure Coefficient, K_P = Active Earth Pressure Coefficient

The following equation can be used to calculate earth pressure acting on the retaining walls including the effects of groundwater pressure:

$$p = K(\gamma h_1 + \gamma' h_2 + q) + \gamma_w h_2$$

Where, p = lateral earth pressure in kPa acting at depth h;

K = earth pressure coefficient ;

γ = unit weight of retained soil

h_1 = depth in meters above the water table

γ' = effective unit weight of soil

γ_w = unit weight of water (10 kN/m^3)

h_2 = depth in metres below the water table; and

q = equivalent value of surcharge on the ground surface in kPa

A permanent perimeter drainage system should be provided around the structure to prevent the build-up of water against the basement walls. At a minimum, it is recommended that the perimeter weeping tile consists of a 150 mm diameter perforated pipe with a geofabric 'sock', surrounded with 200 mm of 19-mm clear stone, with the stone in turn encased by a heavy geotextile filter fabric. The suppliers of the geotextile filter fabric should be consulted as to the type best suited for this project. The perimeter drainage system should outlet to a gravity storm sewer connection, fitted with a suitable back-flow prevention valve. In the event that a sump pump system is required, it should be constructed with an 'oversized' reservoir to limit pumping intervals and include an alarm in the event that the system fails to operate as per design, with a municipal water operated backup pump to operate during power outages and when maintenance of the main pump is required. If the structure is not designed as a watertight structure, it is recommended to install an underfloor drain. The underfloor drain should be connected to a positive outlet. Elevator

pits should be drained separately with an independent lower pumping sump, or it can be designed as a watertight structure.

This office should examine the installation of the perimeter and subfloor drains. Even a small break in the filtering materials could result in loss of 'fines' into the drains with attendant performance difficulties, including settlements of the ground surface. The exterior grade around the structure should be sloped away from the structure to prevent the ponding of water against the foundation walls. Additional well graded granular material should be placed and compacted in exterior sidewalk and accessibility ramp areas to reduce the effects of frost heaving. Alternatively, insulation could be placed in these areas, or a structural 'frost' slab should be constructed at the doorways.

If a sewer discharge permit/agreement was required by the City of Mississauga to discharge the private water directly or indirectly into the municipal sewer or connecting the perimeter drainage system to a positive outlet was not possible, the portion of the proposed building, below grade level, could be constructed completely watertight. The basement wall for the watertight structure should be suitably waterproofed, designed and constructed to withstand hydrostatic water pressure. The building material and the proposed construction method should be selected to accommodate the installation of the waterproofing system.

The suggested perimeter drainage against a soldier pile and timber lagging, if it was utilized for temporary shoring system, is shown on Figure 1, and that against caisson wall is shown on Figure 2 in Appendix D.

The hydraulic uplift pressure below the waterproofed structure can be calculated using the following formula:

$$P = k [\gamma_w h_w]$$

Where, P = The hydraulic pressure acting on the base of the structure (kPa)

γ_w = The unit weight of water (9.8 kN/m3)

h_w = Depth of the base of the structure below the highest GWL (m)

For construction where foundations are placed directly on shale bedrock, the factored geotechnical resistance against sliding is a function of the friction between the footing base and the surface of the bedrock and can be expressed as follows:

$$R = \mu (N \tan \varphi)$$

Where, R = The friction between the footing(s) and the bedrock

N = The normal load acting on the bedrock

$\tan \varphi$ = The friction resistance of the bedrock

μ = The factor of safety for the ultimate limits states design (ULS) for sliding (0.8)

5.6 Excavations and Groundwater Control

It is understood that the proposed development will potentially consist of the high rise building with two levels of underground parking garages. Based on the investigation findings, excavation

for underground garages and foundations will be carried out through the fill, native sand, shale till complex, weathered shale, and shale bedrock with inclusions of limestone layers.

The excavation must be completed in accordance with the current OHSA regulations. For guidance, soft soils and soils below the groundwater level are classified as Type 4. The fill material, the native compact sand could be classified as Type 3 soil. The very dense to hard till shale complex bedrock would be classified as Type 2 soil. If the excavation contains more than one type of soil, the soil shall be classified as the type with the highest number. Excavation slopes steeper than those required in the Safety Act must be supported or a trench box must be provided, and a senior Geotechnical Engineer from this office should supervise the work. We note that the rate of excavation may be slowed when existing buried services and foundations, and floor slabs of the existing structures are encountered by the contractor.

The excavation of the overburden soils at the Site is not expected to pose any difficulty and can be carried out with heavy hydraulic backhoes. Where workers must enter excavations extending deeper than 1.2 m below grade, the excavation sidewalls must be suitably sloped and/or braced in accordance with the Occupational Health and Safety Act and Regulation for Construction Projects. In addition, a rock fall protection system should be considered for the protection of the workers. It should be noted that the glacial tills are non-sorted sediments and therefore may contain boulders. Provisions must be made in the excavation/drilling contract for the removal of possible boulders within the overburden soils.

The excavation of the upper layers of shale can be made with conventional hydraulic backhoes equipped with ripping teeth. However, increasing resistance to excavation should be expected with depth due to the increasing bedrock quality especially where limestone layers of considerable thickness are encountered. At these depths, excavations may require the use of a ripper and a hydraulic hammer. Provisions should be made in the excavation contract to include the use of these types of equipment for excavation in bedrock. It is not uncommon for natural gas pockets to be encountered in the shale excavation. Therefore, gas monitoring should be carried out during construction for any excavation into the shale.

Excavations for the foundations should be carried out so as to minimize the disturbance of shale at the design founding elevations. In this regard, it is recommended that a hydraulic hammer be used for foundation excavations.

Typically, in deep excavation into the shale material in Southern Ontario, the shale may begin to experience pressure relief once it is excavated. This pressure relief/deformation is time dependent. In addition, the shale may also exhibit the potential for swelling. In the Queenston and Georgian Bay formations, the time dependent deformation can take up to 4 months. As such, consideration should be given to accommodate this long-term deformation property of the bedrock in the project schedule. Alternatively, a layer of compressible material (i.e., minimum of 50 mm of compressible insulation or at least 600 mm of granular backfill) should be placed behind the portions of the structure that will be constructed against the rock face.

If a continuous caisson wall is installed around the perimeter, it should be possible to dewater the caisson wall enclosed area using a series of pumping wells installed inside the excavation. The quality of water and disposal method should be taken into consideration during tendering. The dewatering system should be designed and installed by an experienced specialist contractor who can provide an estimate of time needed to dewater the Site and the amount of groundwater anticipated. G2S will be pleased to review and comment on the contractor's proposed dewatering system. In this regard, it is recommended that a number of test excavations be conducted to

allow tendering contractors to observe the groundwater conditions firsthand to assess how this will affect their operations.

Ontario Regulation 387/04 requires authorization from the Ministry of the Environment, Conservation, and Parks (MECP) for all water takings over 50,000 L/day. Ontario Regulation 63/16 specifies that for temporary construction dewatering at rates between 50,000 and 400,000 L/day an Environmental Activity and Sector Registry (EASR) may be obtained in lieu of a Permit to Take Water (PTTW). Dewatering at rates of more than 400,000 L/day requires a PTTW to authorize groundwater withdrawal.

The base of the excavations in the till material and shale bedrock encountered in the boreholes should remain firm and stable. Therefore, standard pipe bedding, as typically specified by the City of Mississauga, should suffice. The bedding material should be uniformly compact to at least 95 percent SPMDD, with special attention paid to compaction under the pipe haunches. It should be noted that a hydrogeological investigation should be completed for the Site to provide recommendations pertinent to the type and extent of the groundwater control for in-construction and post-construction dewatering needs. G2S would be pleased to assist in this regard.

5.7 Temporary Shoring

A temporary shoring system may be required for the underground utility installation or foundation excavation. Trench boxes may be used to reduce the lateral extent of the excavations for portions of the utility installation. However, in Type 4 soil or in trenches with a depth exceeding 6 m or a width exceeding 3.6 m, prefabricated support systems cannot be used. Consequently, designed engineered support systems will be required.

The excavation may be supported by a temporary shoring system consisting of timber lagging and soldier piles (Figure No. 1, Appendix D). or a continuous caisson wall (Figure No. 2, Appendix D). The requirement for caisson walls is given in Figure No. 3 in Appendix D

A caisson wall or soldier piles/timber lagging system may be used for the shoring system. The shoring method will depend on the settlement tolerance for the adjacent structure and buried utilities. The shoring wall must be designed and constructed as a rigid shoring system, such as a continuous interlocking caisson wall to limit adjacent soil movements/deflections. The shoring system may be constructed with walers supported by rakers or soil anchors. Tieback agreements will be required for the installation of soil anchors from the neighboring properties. The shoring system must be designed by a professional engineer experienced in shoring design and the shoring system constructed by an experienced contractor. Any surcharge loads must be incorporated into the shoring design. The structural member stiffness and stability is the responsibility of the shoring design engineer and the shoring contractor. We would recommend that a detailed condition survey for the nearby structures and roadways be conducted prior to the commencement of the excavation operation. In addition, the shoring system must be monitored for any vertical or horizontal movements during the course of construction. The excavation must provide ‘space’ for the construction of the footings and foundation walls, with an allowance for access by workers. The shoring design should be based on the procedure detailed in the latest edition of the Canadian Foundation Engineering Manual. Lateral earth pressure, K = 0.35 can be used if small lateral deformations are acceptable, or K = 0.5 in fill against rigid walls.

Caisson and solider pile toes will be made in sound shale bedrock. The horizontal resistance of the solider pile toes will be developed by embedment below the base of excavation, where resistance is developed from passive earth pressure. The factored vertical bearing resistance for

the design of the pile embedded in sound bedrock is 8 MPa. The factored lateral bearing capacity of the sound rock is 1 MPa.

If anchor support is required, the shoring system should be supported by pre-stressed soil anchors extending below the adjacent lands. The effective length of the tie-back anchor is the length extending beyond a line drawn from the base of the shoring and projecting upward at 45° angle. Anchors extended into the weathered, and intact shale bedrock may be designed based on skin frictions of 100 kPa and 600 kPa, respectively. These values depend on the anchor installation method and grouting procedures. Gravity poured concrete can result in low bond values, while pressure grouted anchors will give higher values and produce a more satisfactory anchor. It will be necessary to perform load tests on the tiebacks to confirm the bond stresses assumed in the design of anchors. Movement of the shoring system is anticipated. Vertical movements will result from the vertical loads on the piles resulting from the tieback. Horizontal movement will result from the soil and water pressures. The magnitude of this movement can be controlled by sound construction practices. The horizontal and vertical movement of the shoring system must be monitored especially at locations where settlement sensitive structures are present. Raker footings established on bedrock at an inclination of 45 degrees can be designed using a maximum factored geotechnical resistance at ULS of 2500 kPa.

5.8 Backfill Considerations

The majority of the excavated material will consist of the native sand, shale/till complex, and shale bedrock. We expected that most of the excavated material will be removed from the Site to accommodate the basement levels. The remaining material is considered not to be suitable for use as service trench backfill and as engineered fill.

We note that where backfill material is placed near or slightly above its optimum content, the potential for long-term settlements due to the ingress of groundwater and collapse of the fill structure is reduced. Correspondingly, the shear strength of ‘wet’ backfill material is also lowered, thereby reducing its ability to support construction traffic, and therefore impacting roadway construction. If the soil is well ‘dry’ of its optimum value, it will appear to be very strong when compacted but will tend to settle with time as the moisture content in the fill increases to equilibrium condition. The soils may require high compaction energy to achieve acceptable densities if the moisture content is not close to their standard Proctor optimum value. It is therefore very important that the placement moisture content of the backfill soils be within 3 percent of its standard Proctor optimum moisture content during placement and compaction.

Any imported fill required in service trenches or to raise the subgrade elevation should have its moisture content within 3 percent of its optimum moisture content and meet the necessary environmental guidelines.

The backfilling and compaction operations should be monitored by a G2S representative to monitor uniform compaction of the backfill material to project specification requirements. Close supervision is prudent in areas that are not readily accessible to compaction equipment, for instance near the end of compaction ‘runs’, and around the foundation walls. Any engineered fill should be compacted to 100 percent SPMDD. A method should be developed to assess compaction efficiency employing the on-site compaction equipment and backfill materials during construction.

5.9 Pavement Considerations

The proposed pavement areas should be stripped of all topsoil, fill material, organic and other unsuitable materials. The exposed subgrade should be proof rolled with 3 to 4 passes of a loaded tandem truck in the presence of a representative of G2S, immediately prior to the placement of the sub-base material. Any areas of distress revealed by this, or any other means must be subexcavated and replaced with suitable backfill material. Alternatively, the soft areas may be repaired by the placement of coarse aggregate, such as 50-millimetre clear crushed stone. The need for sub excavations of a softened subgrade will be reduced if construction is undertaken during periods of dry weather and careful attention is paid to the compaction operations. The fill placed over shallow utilities cuts into or across the paved areas must also be compacted to 100 percent of its Standard Proctor Maximum Dry Density (SPMDD). In areas of weak subgrade, suitable geogrid products such as Tensar TriAx (TX) geogrid or equivalent can be used to stabilize the subgrade.

Good draining provisions will optimize the long-term performance of the pavement structure. The subgrade must be properly crowned and shaped to promote drainage to the subdrain system. Subdrains should be installed to intercept excess subsurface water and to prevent softening of the subgrade material. Surface water should not be allowed to pond adjacent to the outer limits of paved areas. The most severe loading conditions on the subgrade typically occur during the course of construction, therefore precautionary measures may have to be taken to ensure that the subgrade is not unduly disturbed by construction traffic. These measures would include minimizing the amount of heavy traffic travelling over the subgrade, such as during the placement of granular base layers.

If construction is conducted under adverse weather conditions, additional subgrade preparation may be required. During wet weather conditions, such as typically experienced during the fall and spring months, it should be anticipated that additional subgrade preparation would be required, such as the provision of an additional depth of Granular B sub-base course material. It is also important that the sub-base and base course granular layers of the pavement structure be placed as soon after exposure and preparation of the subgrade level as practical.

The suggested pavement structures for the interior building lot pavement areas are outlined in **Table** below. These are based on subgrade parameters estimated on the basis of visual and tactile examinations of the on-site soils and past experience. The outlined pavement structures may be expected to have an approximate 10-year design life, assuming that regular maintenance is performed. Should a more detailed pavement structure design be required, Site-specific traffic information would be needed, together with detailed laboratory testing of the subgrade soils.

Table 4: Suggested Pavement Structure

Layer Description	Compaction Requirements	Light Duty Sections	Heavy Duty
Asphaltic Concrete Wearing course OPSS HL 3 or HL 3A	Min 92.0 % *MRD	65 mm	40 mm
Binder Course OPSS HL 8	Min 92.0 % *MRD	--	65 mm
Base Course OPSS Granular A	100% **SPMDD	150 mm	150 mm
Sub-base Course OPSS Granular B Type II	100% **SPMDD	300 mm	400 mm

* MRD denotes maximum relative density, MTO LS-264
** SPMDD denotes Standard Proctor Maximum Dry Density, ASTM-D698.

Depending on the arrangement of light-duty and heavy-duty pavement sections, the transition between sections may present some difficulty for contractors. In this regard, consideration might be given to a slightly increased light-duty pavement structure consisting of 50 mm of HL8 binder course and 40 millimetres of HL3 surface course asphaltic concrete. This structure will provide for a continuous depth of surface course asphalt allowing for ease of construction. As well, such a structure would have an improved performance over an increased design life. Such an arrangement of asphalt layers would also allow for future rehabilitation with a ‘mill and pave’ type operation.

6. General Comments

The comments provided in this document are intended only for the guidance of the design team. The subsoil descriptions and borehole information are only intended to describe conditions at the borehole locations. Contractors undertaking this project should carry out due diligence to verify the results of this investigation and to determine how the subsurface conditions will affect their operations.

The action of stripping topsoil and unsuitable near-surficial soils as well as the selection and placement of engineered fill should be tested by the geotechnical engineer at the time of construction. In-situ density testing should be carried out on any engineered fill placed at the Site.

All foundations should be reviewed on Site by the geotechnical engineer as they are constructed, as required by Section 4.2.2.3 of the Ontario Building Code (2024). If G2S is not retained to review the foundation bearing conditions or the construction of the foundations in the field, then G2S assumes no responsibility for the performance of the foundations as constructed.

The long-term performance of slabs on grade is dependent on the subgrade support conditions. Subgrades to support slabs on grade should be inspected by the geotechnical engineer prior to final construction. It is important that any engineered fill constructed beneath slabs on grade is carried out as outlined in this report.

7. Limitations

The geotechnical engineering advice and recommendations provided in this report are considered preliminary and were based on the factual information obtained during this investigation.

It may be possible that the subsurface conditions vary between and beyond the investigated borehole locations. For the purpose of this report, it is assumed that the conditions outside of and between the exact borehole locations are similar to the conditions observed in the boreholes. The change in subsurface stratigraphy reported on the borehole logs has also been interpreted based on non-continuous sampling; therefore, changes in stratigraphy as shown on the borehole logs and as discussed in this report should not be regarded as exact lines of geological change. The subsurface conditions at the Site may change with the passage of time and/or by human intervention.

The findings along with the geotechnical engineering advice and recommendations provided in this report are limited to the conditions at the Site at the time of this investigation as described herein. Conclusions presented in this report should not be construed as legal advice. If Site conditions or applicable standards change or if any additional information becomes available at a future date, changes to the findings, conclusions and recommendations in this report may be necessary.

Through any subsurface investigation by boreholes, it may not be possible to identify all aspects of the subsurface conditions at the Site that could affect construction costs, techniques, equipment, and scheduling. Contractors undertaking work on the project must be directed to draw their own conclusions as to how the subsurface conditions may affect them, based on their interpretation of the subsurface conditions and/or their own investigations.

This report has been prepared for the sole benefit of 55 Dundas Developments Ltd. (D-Stillwaters Development Inc.). and is intended to provide geotechnical engineering advice and recommendations based on the subsurface conditions investigated at the subject Site, 51 – 55 Dundas Street West 60 - 78 Agnes Street, Mississauga, Ontario. This report is the copyright of G2S Consulting Inc. (G2S) and may not be used by any other person or entity without the expressed written consent of 55 Dundas Developments Ltd. and G2S. Any use which a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. G2S accepts no responsibility for damages, if any suffered by any third party as a result of decisions made or actions based on this report. It is recognized that The City of Mississauga in their capacity as the planning and building authority under Provincial statues, may make use of and rely upon this report cognizant of the limitations thereof, both as are expressed and implied.

8. Closing Remarks

We trust this report is satisfactory for your present purposes. Should you have any questions, please do not hesitate to contact this office.

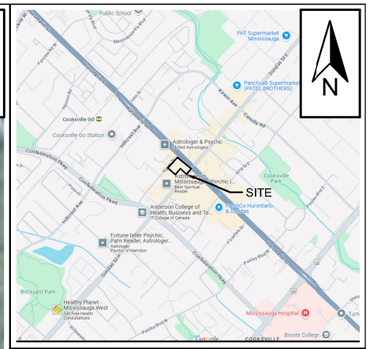
Yours truly,

G2S Consulting Inc.

Navid Shafiee, P.Eng.
Geotechnical Engineer

Ashraf Abass, P. Eng.
Senior Geotechnical Engineer

Appendix A:
Drawings



LEGEND

- BOREHOLE LOCATION
- MONITORING WELL LOCATION
- XXX.XX GROUND SURFACE ELEVATION (m)

REFERENCE:
DRAWING REPRODUCED USING GOOGLE MAPS AERIAL IMAGERY

TITLE:
BOREHOLE AND MONITORING WELL LOCATION PLAN

CLIENT:
55 DUNDAS DEVELOPMENTS INC.

LOCATION:
51-57 DUNDAS STREET WEST & 60-78 ANGES STREET, MISSISSAUGA, ONTARIO

PROJECT NO.:	G2S24602
DRAWING:	1
SCALE:	AS SHOWN
DATE:	AUGUST 2025
DRAWN BY:	DB/VP
FILE NAME:	G2S24602.dwg

Appendix B:
Borehole Logs
Grain Size Analysis Graphs

G2S Consulting Inc.

LIST OF ABBREVIATIONS

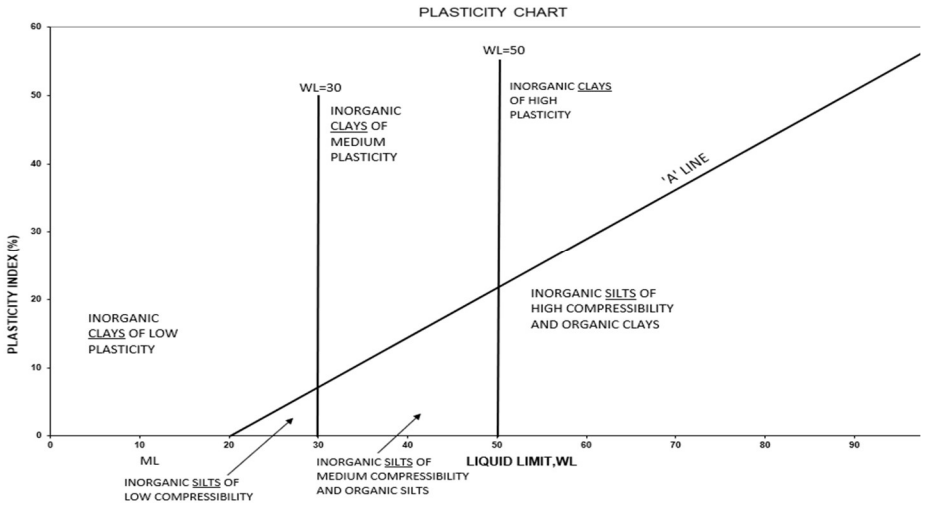
Description of Soil

The consistency of cohesive soils and the relative density or compactness of cohesionless soils are described in the following terms:

COHESIVE SOIL			COHESIONLESS SOIL	
CONSISTENCY	N (blows/0.3 m)	C (kPa)	DENSENESS	N (blows/0.3 m)
Very Soft	0 – 2	0 – 12	Very Loose	0 – 4
Soft	2 – 4	12 – 25	Loose	4 – 10
Firm	4 – 8	25 – 50	Compact	10 – 30
Stiff	8 – 15	50 – 100	Dense	30 – 50
Very Stiff	15 – 30	100 – 200	Very Dense	>50
Hard	>30	>200		
Moisture conditions				
Moist: dark or greyish color, may feel cool upon				
Wet: same as moist with free water seepage when handled				

Abbreviations

SS	Split Spoon Sample
AS	Auger Sample
GS	Grab Sample
DP	Direct Push
S	Sample
RC	Rock Core
FV/VA	Shear Vane (Field)
SPT	Standard Penetration Test
N	Blow counts per 300mm of penetration. (ASTMD1586)
MC	Moisture Content
PL	Plastic Limits
LL	Liquid Limits
PI	Plasticity Index
CF	Continuous Flight
SSA	Solid Stem Auger
HSA	Hollow Stem Auger



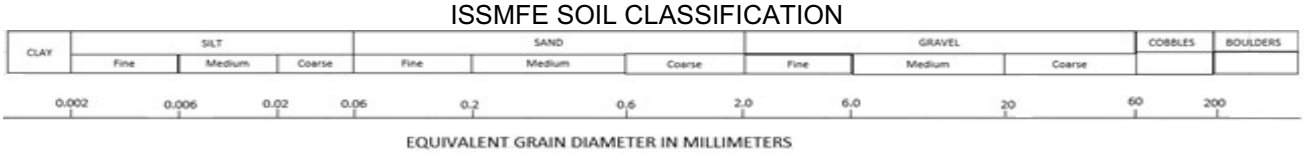
Penetration Resistance

Standard Penetration Resistance N: The number of blows required to advance a standard split spoon sampler 0.3 m into the subsoil. Driven by means of a 63.5 kg hammer falling freely a distance of 0.76 m. The values reported are as noted in the field without corrections.

Soil Classification Dynamic Penetration Resistance: The number of blows required to advance a 51 mm, 60-degree cone, fitted to the end of drill rods, 0.3 m into the subsoil. The driving energy being 475 J per blow. Soils descriptions are made per the Canadian Foundations Engineering Manual (CFEM), following the International Society for Soil Mechanics and Foundation Engineering. (ISSMFE)

Notes
Soil samples will be discarded after three months unless directed otherwise by the Client.
Unless the grain size analysis is performed in our lab, soil samples are classified based on visual, tactile, and olfactory examinations, which may not be sufficient for accurate classification or precise grain sizing.

ISSMFE SOIL CLASSIFICATION



BH/MW NUMBER 101

G2S Consulting Inc.

CLIENT D-Stillwaters Development Inc. **PROJECT NAME** Proposed Mixed Use Condo Development

PROJECT NUMBER G2S24602 **PROJECT LOCATION** 55 Dundas St W, Mississauga, ON

DATE STARTED 25-3-12 **COMPLETED** 25-3-12 **GROUND ELEVATION** 114.7 m

DRILLING CONTRACTOR Davis Drilling Ltd. **LOGGED BY** DB/NS **CHECKED BY** AA

DRILLING METHOD CME 55 Track; CFHSA; HQ Core **NOTES**

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	NUMBER	TYPE	N VALUE	SOIL GAS READINGS HEX/IBL (ppm)	WELL CONSTRUCTION	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
	0.05 ASPHALT: ~50 mm	114.65						Flushmount protective casing set in concrete
	0.12 GRANULAR: ~70 mm	114.58	S1	SPT	8	0/0		
1	FILL: Sand, yellow brown, trace silt, moist		S2A	SPT	7	0/0		
	0.99 becoming brown, trace silt	113.72	S2B			0/1		
2			S3	SPT	7	0/0		
	2.3	112.41						
3	SAND: Light brown, trace silt, moist, dense		S4	SPT	30	0/0		1 84 (15)
			S5	SPT	44	0/0		Bentonite seal
4	3.8	110.89						
	SHALE / TILL COMPLEX: Grey, trace shale fragments, compact		S6	SPT	19	5/0		39 28 26 7
	4.6	110.13						
5	4.9 WEATHERED SHALE: Grey	109.82	S7	SPT	50/100 mm	10/0		
	SHALE BEDROCK OF GEORGIAN BAY FORMATION: Refer to log of rock core for details of bedrock stratigraphy Run No. 1 Total Recovery - 100% RQD - 77% Good rock quality based on RQD Moderately weathered to highly weathered.		S8	RC				
6	6.4	108.32						
7	Run No. 2 Total Recovery - 100% RQD - 32% Poor rock quality based on RQD Moderately weathered to highly weathered.		S9	RC				Filter sand
8	8.0	106.72						
9	Run No. 3 Total Recovery - 100% RQD - 52% Fair rock quality based on RQD Slightly weathered to moderately weathered.		S10	RC				Slotted screen
	9.5	105.25						
10	Run No. 4 Total Recovery - 100% RQD - 56% Fair rock quality based on RQD Slightly weathered to moderately weathered.		S11	RC				
11	11.0	103.73						
12	Run No. 5 Total Recovery - 100% RQD - 66% Fair rock quality based on RQD Slightly weathered to highly weathered.		S12	RC				

SPT N VALUES — N values 10 20 30 40; CPT values

Undrained Shear Strength (kPa) — Pocket Penetrometer; Vane — 40 80 120 160

MOISTURE / PLASTICITY — PL MC LL — 10 20 30

(Continued Next Page)

BH/MW NUMBER 101

Consulting Inc.

CLIENT D-Stillwaters Development Inc. **PROJECT NAME** Proposed Mixed Use Condo Development

PROJECT NUMBER G2S24602 **PROJECT LOCATION** 55 Dundas St W, Mississauga, ON

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	GRAPHIC LOG	NUMBER	TYPE	N VALUE	SPT N VALUES / Undrained Shear Strength (kPa)	MOISTURE / PLASTICITY	SOIL GAS READINGS HEX/IBL (ppm)	WELL CONSTRUCTION	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
	12.5	102.20									
13	Run No. 6 Total Recovery - 100% RQD - 77% Good rock quality based on RQD Slightly weathered to unweathered.			S13	RC						
14	14.0	100.68									
15	Run No. 7 Total Recovery - 100% RQD - 91% Excellent rock quality based on RQD Slightly weathered to unweathered.			S14	RC						
	15.5	99.16									

SPT N values: N values 10 20 30 40; CPT values

Undrained Shear Strength (kPa): Pocket Penetrometer; Vane; 40 80 120 160

MOISTURE / PLASTICITY: PL MC LL; 10 20 30

Borehole terminated at 15.5 m.

Water Level Readings:

Date	Depth (m)	Elev. (m)
2025-03-26	6.50	108.20
2025-04-16	6.40	108.30
2025-04-21	5.40	109.30
2025-05-23	6.50	108.20

BH/MW NUMBER 102

Consulting Inc.

CLIENT D-Stillwaters Development Inc.
PROJECT NAME Proposed Mixed Use Condo Development
PROJECT NUMBER G2S24602
PROJECT LOCATION 55 Dundas St W, Mississauga, ON
DATE STARTED 25-3-12 **COMPLETED** 25-3-12
GROUND ELEVATION 114.8 m
DRILLING CONTRACTOR Davis Drilling Ltd.
LOGGED BY DB/NS **CHECKED BY** AA
DRILLING METHOD CME 55 Track; CFHSA
NOTES

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	GRAPHIC LOG	NUMBER	TYPE	N VALUE	SPT N VALUES / Undrained Shear Strength (kPa)	MOISTURE / PLASTICITY	SOIL GAS READINGS HEX/IBL (ppm)	WELL CONSTRUCTION	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
	FILL: Sand, dark brown and brown, some gravel, some silt, debris including slag, organics, moist			S1	SPT	33			0/0		Flushmount protective casing set in concrete
0.76		114.04									
1	becoming sand, yellow brown, debris including red brick			S2	SPT	7			0/0		Bentonite seal
				S3	SPT	9			0/0		Filter sand
2											
2.3		112.51									
	SAND: Light brown, trace silt, very moist, compact			S4	SPT	29			0/0		Slotted screen
3											
3.1		111.75									
	becoming wet			S5A	SPT	50	50/125 mm		0/0		
3.5		111.27									
3.6	WEATHERED SHALE: Grey	111.17		S5B							

SPT N VALUES: N values ▲ CPT values △ — 10 20 30 40
Undrained Shear Strength (kPa): Pocket Penetrometer × — Vane ✚ — 40 80 120 160
MOISTURE / PLASTICITY: PL MC LL — 10 20 30

No further progess due to auger and sampler refusal on probable bedrock
Borehole terminated at 3.6 m.

Water Level Readings:

Date	Depth (m)	Elev. (m)
2025-04-16	3.10	111.70
2025-03-26	3.30	111.50
2025-05-23	3.20	111.60
2025-04-21	3.10	111.70

BH/MW NUMBER 103

G2S Consulting Inc.

CLIENT D-Stillwaters Development Inc. **PROJECT NAME** Proposed Mixed Use Condo Development

PROJECT NUMBER G2S24602 **PROJECT LOCATION** 55 Dundas St W, Mississauga, ON

DATE STARTED 25-3-11 **COMPLETED** 25-3-11 **GROUND ELEVATION** 114.6 m

DRILLING CONTRACTOR Davis Drilling Ltd. **LOGGED BY** DB/NS **CHECKED BY** AA

DRILLING METHOD CME 55 Track; CFHSA; HQ Core **NOTES**

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	NUMBER	TYPE	N VALUE	SOIL GAS READINGS HEX/IBL (ppm)	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
0.23	TOPSOIL: ~225 mm	114.38	S1A	SPT	2	0/0	Flushmount protective casing set in concrete
	FILL: Sand, yellow brown, trace to some silt, moist		S1B			0/0	
0.76		113.84					
1	becoming brown, rust staining		S2	SPT	7	0/0	
1.5		113.08					
	SAND: Light brown, some silt, reworked appearance, moist, compact		S3	SPT	12	0/0	0 76 20 4
2							
2.6		112.00	S4A	SPT	50	0/0	
	SHALE / TILL COMPLEX: Grey, trace shale fragments, very dense		S4B			0/0	
3							
3.1		111.55					
3.3	WEATHERED SHALE: Grey	111.35	S5	SPT	50	0/0	
3.7	SHALE BEDROCK OF GEORGIAN BAY FORMATION: Refer to log of rock core for details of bedrock stratigraphy Run No. 1 Total Recovery - 100% RQD - 30% Poor rock quality based on RQD Moderately weathered to highly weathered.	110.94	S6	RC			Bentonite seal
4			S7	RC			
5							
5.2		109.42					
	Run No. 2 Total Recovery - 100% RQD - 27% Poor rock quality based on RQD Moderately weathered to highly weathered.		S8	RC			
6							
6.7		107.87					
	Run No. 3 Total Recovery - 100% RQD - 47% Poor rock quality based on RQD Moderately weathered to highly weathered.		S9	RC			Filter sand
7							
8							
8.2		106.37					
	Run No. 4 Total Recovery - 40% RQD - 0% Very poor rock quality based on RQD Highly weathered to completely weathered.		S10	RC			Slotted screen
9							
	Run No. 5 Total Recovery - 100% RQD - 50% Fair rock quality based on RQD Slightly weathered to moderately weathered.						
9.8		104.85					
10							
	Run No. 6 Total Recovery - 100% RQD - 58% Fair rock quality based on RQD Slightly weathered to completely weathered.		S11	RC			
11							
11.3		103.32					
12							

SPT N VALUES (N values, CPT values): 10 20 30 40

Undrained Shear Strength (kPa): Pocket Penetrometer, Vane — 40 80 120 160

MOISTURE / PLASTICITY: PL MC LL — 10 20 30

50/25 mm

50/125 mm

WELL CONSTRUCTION

2021 G2S GEOTECH BOREHOLE LOG G2S24602 BOREHOLE LOGS.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-8-14

(Continued Next Page)

BH/MW NUMBER 103

Consulting Inc.

CLIENT D-Stillwaters Development Inc. **PROJECT NAME** Proposed Mixed Use Condo Development

PROJECT NUMBER G2S24602 **PROJECT LOCATION** 55 Dundas St W, Mississauga, ON

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	GRAPHIC LOG	NUMBER	TYPE	N VALUE	SPT N VALUES / Undrained Shear Strength (kPa)	MOISTURE / PLASTICITY	SOIL GAS READINGS HEX/IBL (ppm)	WELL CONSTRUCTION	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
	Run No. 7 Total Recovery - 100% RQD - 82%			S12	RC						
12.8	Good rock quality based on RQD Unweathered to slightly weathered. *(continued)*	101.80									
13	Run No. 8 Total Recovery - 100% RQD - 51%			S13	RC						
14	Fair rock quality based on RQD Slightly weathered to highly weathered.										
14.3		100.27									

SPT N VALUES: N values 10 20 30 40; CPT values 10 20 30 40

Undrained Shear Strength (kPa): Pocket Penetrometer 40 80 120 160; Vane 40 80 120 160

MOISTURE / PLASTICITY: PL MC LL; 10 20 30

Borehole terminated at 14.3 m.

Water Level Readings:

Date	Depth (m)	Elev. (m)
2025-03-26	5.30	109.30
2025-04-16	5.20	109.40
2025-04-21	5.20	109.40
2025-05-23	5.20	109.40

BH/MW NUMBER 104

G2S Consulting Inc.

CLIENT D-Stillwaters Development Inc. **PROJECT NAME** Proposed Mixed Use Condo Development

PROJECT NUMBER G2S24602 **PROJECT LOCATION** 55 Dundas St W, Mississauga, ON

DATE STARTED 25-3-10 **COMPLETED** 25-3-10 **GROUND ELEVATION** 113.7 m

DRILLING CONTRACTOR Davis Drilling Ltd. **LOGGED BY** DB/NS **CHECKED BY** AA

DRILLING METHOD CME 55 Track; CFHSA; HQ Core **NOTES**

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	NUMBER	TYPE	N VALUE	SOIL GAS READINGS HEX/IBL (ppm)
0.09	ASPHALT: ~90 mm	113.61	S1A	SPT	16	10/0
0.34	GRANULAR: ~250 mm	113.36	S1B			10/1
1	FILL: Sand, light brown, trace silt, debris including concrete, moist		S2	SPT	3	5/1
2			S3	SPT	6	10/0
3			S4	SPT	0	20/1
3.1	SHALE / TILL COMPLEX: Grey, trace shale fragments, very dense	110.65	S5	SPT	50 (50/125 mm)	15/1
3.8	WEATHERED SHALE: Grey	109.89	S6	SPT	50 (50/50 mm)	0/1
4.4	SHALE BEDROCK OF GEORGIAN BAY FORMATION: Refer to log of rock core for details of bedrock stratigraphy	109.33	S7	RC		
5.2	Run No. 1 Total Recovery - 100% RQD - 12% Very poor rock quality based on RQD Moderately weathered to highly weathered.	108.52	S8	RC		
6.8	Run No. 2 Total Recovery - 100% RQD - 35% Poor rock quality based on RQD Moderately weathered to completely weathered.	106.92	S9	RC		
8.2	Run No. 3 Total Recovery - 100% RQD - 69% Fair rock quality based on RQD Slightly weathered to moderately weathered.	105.50	S10	RC		
9.8	Run No. 4 Total Recovery - 40% RQD - 37% Poor rock quality based on RQD Slightly weathered to completely weathered.	103.95	S11	RC		
11.2	Run No. 5 Total Recovery - 100% RQD - 71% Fair rock quality based on RQD Slightly weathered to moderately weathered.	102.52				

SPT N VALUES (N values ▲ CPT values △) 10 20 30 40

Undrained Shear Strength (kPa) — Pocket Penetrometer × Vane ✚ 40 80 120 160

MOISTURE / PLASTICITY PL MC LL 10 20 30

WELL CONSTRUCTION: Flushmount protective casing set in concrete; Bentonite seal; Filter sand; Slotted screen

GRAIN SIZE DISTRIBUTION % GR SA SI & CL

(Continued Next Page)

BH/MW NUMBER 104

Consulting Inc.

CLIENT D-Stillwaters Development Inc. **PROJECT NAME** Proposed Mixed Use Condo Development

PROJECT NUMBER G2S24602 **PROJECT LOCATION** 55 Dundas St W, Mississauga, ON

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	GRAPHIC LOG	NUMBER	TYPE	N VALUE	SPT N VALUES / Undrained Shear Strength (kPa)	MOISTURE / PLASTICITY	SOIL GAS READINGS HEX/IBL (ppm)	WELL CONSTRUCTION	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
	Run No. 6 Total Recovery - 100% RQD - 85% Good rock quality based on RQD Slightly weathered to unweathered. *(continued)*			S12	RC						
12.8		100.92									
13	Run No. 7 Total Recovery - 100% RQD - 77.5% Good rock quality based on RQD Slightly weathered to highly weathered.			S13	RC						
14.3		99.40									
15	Run No. 8 Total Recovery - 100% RQD - 90% Excellent rock quality based on RQD Slightly weathered to unweathered.			S14	RC						
15.9		97.85									

Borehole terminated at 15.9 m.

Water Level Readings:

Date	Depth (m)	Elev. (m)
2025-03-26	Dry	--
2025-04-16	Dry	--
2025-04-21	Dry	--

BOREHOLE NUMBER 105

Consulting Inc.

CLIENT D-Stillwaters Development Inc.
PROJECT NAME Proposed Mixed Use Condo Development
PROJECT NUMBER G2S24602
PROJECT LOCATION 55 Dundas St W, Mississauga, ON
DATE STARTED 25-3-11 **COMPLETED** 25-3-11
GROUND ELEVATION 114.9 m
DRILLING CONTRACTOR Davis Drilling Ltd.
LOGGED BY DB/NS **CHECKED BY** AA
DRILLING METHOD CME 55 Track; CFHSA
NOTES

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	GRAPHIC LOG	NUMBER	TYPE	N VALUE	SPT N VALUES / Undrained Shear Strength (kPa)	MOISTURE / PLASTICITY	SOIL GAS READINGS HEX/IBL (ppm)	WELL CONSTRUCTION	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
	0.06 ASPHALT: ~60 mm	114.84									
	0.08	114.82									
	GRANULAR: ~20 mm			S1	SPT	1			0/0		
	0.61	114.29									
1	FILL: Sand, yellow brown, trace silt becoming rust stained			S2	SPT	6			0/0		
	1.5	113.43		S3A	SPT	13			0/0		
	SAND: Light brown, trace to some silt			S3B					0/0		
2				S4	SPT	29			0/1		0 80 (20)
	2.4	112.46									
	2.7 WEATHERED SHALE: Grey	112.21		S5	SPT	50	50/100 mm		0/1		
	No further progess due to auger and sampler refusal on probable bedrock Borehole terminated at 2.7 m.										

BOREHOLE NUMBER 106

Consulting Inc.

CLIENT D-Stillwaters Development Inc. **PROJECT NAME** Proposed Mixed Use Condo Development

PROJECT NUMBER G2S24602 **PROJECT LOCATION** 55 Dundas St W, Mississauga, ON

DATE STARTED 25-3-10 **COMPLETED** 25-3-10 **GROUND ELEVATION** 113.8 m

DRILLING CONTRACTOR Davis Drilling Ltd. **LOGGED BY** DB/NS **CHECKED BY** AA

DRILLING METHOD CME 55 Track; CFHSA **NOTES**

DEPTH (m)	MATERIAL DESCRIPTION	ELEVATION (m)	GRAPHIC LOG	NUMBER	TYPE	N VALUE	SPT N VALUES / Undrained Shear Strength (kPa)	MOISTURE / PLASTICITY	SOIL GAS READINGS HEX/IBL (ppm)	WELL CONSTRUCTION	GRAIN SIZE DISTRIBUTION % GR SA SI & CL
	0.07 ASPHALT: ~70 mm	113.73		S1A	SPT	17			0/0		
	0.32 GRANULAR: ~250 mm	113.48		S1B					0/0		
1	0.76 FILL: Silty sand, dark brown and grey becoming sand, yellow brown, trace silt	113.04		S2	SPT	11			0/1		
	1.7	112.11		S3A	SPT	17			0/1		
2	SAND: Light brown, trace to some silt, compact			S3B					0/1		
	2.3	111.51									
	becoming grey, dense			S4A	SPT	50		50/125 mm	50/1		0 83 (17)
	2.7	111.08		S4B					40/2		
3	WEATHERED SHALE: Grey							50/50 mm			
	3.1	110.70		S5	SPT	50			10/1		

No further progess due to auger and sampler refusal on probable bedrock
Borehole terminated at 3.1 m.

Explanatory Sheet To Core Log

Column No.	Description
1	Elevation of Geotechnical Boundary
2	Depth of Geotechnical Boundary in Borehole
3	Geological Symbol for Rock or Soil Material
4	General Description of Geotechnical Unit: Quantitative description including rock type(s), percentage of rock types, frequency, and sizes of interbeds, colour, texture, weathering, strength and general joint spacing
5-11	Joint (Discontinuity) Characteristics
5	Number of Joints in Set: A rock mass can be intersected by a number of joint sets of varying orientation
6	Joint Type:

B = Bedding Joint	F = Fault
C = Cross Joint	S = Shear Plane

7 Orientation: Only variations in dip can be identified in core; dip direction is obtained from field mapping or orientated core

F = Flat	= 0 – 20°
D = Dipping	= 20 – 50°
V = Vertical	= 50 – 90°

8 Joint Spacing: This is an approximate measure of spacing between joints in specific joint sets

VW = Very Wide	= >3 m
W = Wide	= 1 to 3 m
M = Moderate	= 30 cm to 1 m
C = Close	= 5 to 30 cm
VC = Very Close	= <5 cm

9 Roughness

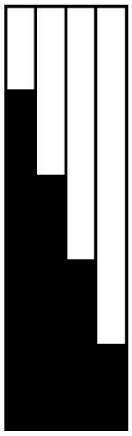
RU = Rough Undulating
RP = Routh Planar
SU = Smooth Undulating
SP = Smooth Planar
LU = Slickensided Undulating
LP = Slickensided Planar

10 Filling:

	Approximate Φ_t
T = Tight, hard, non-softening	25 – 35°
O = Oxidation, surface staining only	25 – 30°
SA = Slightly altered; clay free	25 – 30°
S = Sandy particles; clay free	25 – 35°
Si = Sandy and silty minor clay	20 – 25°
NC = Non softening clays (<5mm)	16 – 24°
SO = Softening clays (<5mm)	12 – 16°
SC = Swelling clay fillings (<5mm)	6 – 12°

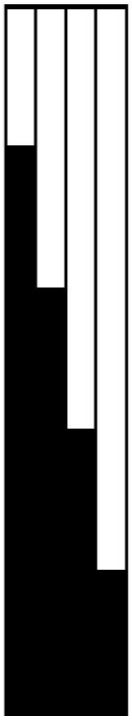
11 Aperture: Estimated size of joint opening

12 Degree of Weathering of Rock Material



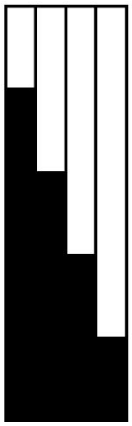
Unweathered	= no signs of discoloration or oxidation
Slightly weathered	= partial discoloration: fractures (joints) typically oxidized
Moderately weathered	= total discoloration
Highly weathered	= total discoloration: typically, friable & pitted
Completely weathered	= resembles soil: rock structure usually preserved

13 Strength of Rock Material



		Approx. Uniaxial Compressive Strength
Very High Strength	= Specimen can only be chipped by a geological hammer	>200 MPa
High Strength	= Specimen requires a number of blows to fracture it: cannot be scrapped with a pocketknife	50 – 100 MPa
Medium Strength	= Specimen can be fractured by a single blow of geological hammer; can be scrapped with pocketknife, not peeled	15 – 50 MPa
Low Strength	= Shallow indentations made with a firm blow of geological hammer; can be peeled with pocketknife with difficult	4 – 15 MPa
Very Low Strength	= Crumbles under firm blow with point of geological hammer; can be peeled by pocketknife	1 – 4 MPa

14 Fracture Frequency: Number of natural joints occurring over a mere length of core. All natural joints are counted irrespective of the number of the number of joint sets:



Fracture Frequency		Joint Spacing
<0.3 /m	=	Very wide = 3 m
0.3 – 1 /m	=	Wide = 1 – 3 m
1 – 3 /m	=	Moderate = 30 cm – 1 m
3 – 20 /m	=	Close = 5 – 30 cm
>20 /m	=	Very close = <5 cm

15 Run Number: Drill run number

16 Core Recovery: Core recovery is the total length of core pieces, irrespective of their individual lengths, obtained in a core run and expressed as a percentage of the length of that core run.

17 Rock Quality Designation (RQD): The total length of those pieces of sound core which are 10 cm or greater in length in a core run expressed as a percentage of the total length of that core run. Sound pieces of rock are those pieces separated by natural breaks and not machine breaks or subsequent artificial breaks

ROD	Rock Mass Classification (After Deere)
0 – 25%	Very poor
25 – 50%	Poor
50 – 75%	Fair
75 – 90%	Good
90 – 100%	excellent

18 Water Recovery: The estimated water returning out of the casing

19 Water Colour: The colour of the water returning out the casing

ROCK CORE LOG

BH NO. 101

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
109.8			GEORGIAN BAY FORMATION SHALE BEDROCK		B	F	VC	SU	SO									
					B	F	VC	SP	SA									
	5				B	F	C	RP	SA									
					B	F	C	RP	SA									
					B	F	VC	SU	SA									
					B	F	C	RP	SA									
					B	F	VC	RU	SA									
					B	F	C	RP	SA									
					B	F	C	RP	SA									
					B	F	C	RP	SA									
					B	F	VC	RP	SA									
					B	F	VC	SP	SA									
					B	F	C	RP	SA									
					B	F	C	RP	SA									
					B	F	VC	SU	SA									
					B	F	C	RP	SA						1	100	77	100	Grey
					B	F	VC	SP	SA									
109.0					B	F	VC	RP	SO									
			- Fractured Zone		B	F	VC	RP	SA									
108.9					B	F	VC	RU	SA									
			- Limestone slab		B	F	VC	SP	SA									
					B	F	VC	RP	SA									
	6				B	F	VC	SU	SA									
108.3																		
			- Thin limestone slabs		B	F	VC	RP	SA									
					B	F	VC	SP	T									
					B	F	VC	RP	SA									
					B	F	VC	SP	SA									
					B	F	C	RU	SO									
					B	F	VC	RU	SA									
					B	F	VC	SU	SA									
	7																	
107.7					B	F	VC	RU	Si									
			- Fractured Zone															
107.5															2	100	32	100	Grey
					B	F	VC	RP	SA									
					B	F	VC	SU	SA									
					B	F	VC	RU	Si									
					B	F	VC	RP	SA									
					B	F	VC	RU	SA									

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 101

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
106.7	8		- Thin limestone slabs		F	V	C	RU	SA									
					B	F	C	RP	SA									
					B	F	C	RU	SA									
					B	F	C	RP	SA									
					B	F	VC	RP	SA									
					B	F	C	RP	SA									
106.0					B	F	C	SP	T					3	100	52	100	Grey
					B	F	VC	SU	SA									
					B	F	VC	RU	Si									
					F	V	C	RP	Si									
					B	F	C	RU	SA									
	9				B	F	C	RP	SA									
105.5					B	F	C	SP	T									
					B	F	C	RU	SA									
					B	F	C	RU	Si									
					B	F	VC	SP	SA									
104.9					B	F	C	SP	SA									
	10				B	F	C	RU	SA					4	100	56	100	Grey
104.6					B	F	VC	SP	SA									
					B	F	C	SP	SA									
					B	F	VC	RP	SA									
					B	F	VC	RU	SA									
					B	F	VC	RP	SA									
					B	F	C	SU	SA									
104.2					B	F	VC	SU	SA									
					B	F	VC	SU	SA									
					B	F	C	RU	SA									
104.0					F	V	C	RP	O									
					B	F	VC	RU	SA									
					B	F	C	SP	T									

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 101

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
					B	F	VC	SP	SA									
					B	F	VC	SP	T									
103.7																		
	11		- Fractured zone															
103.6					B	F	VC	SP	Si									
					B	F	VC	RP	SA									
103.5																		
103.5																		
					B	F	C	RP	SA									
103.4					B	F	VC	SP	SA									
103.1					B	F	C	RP	SA									
					B	F	VC	RP	Si									
														5	100	66	100	Grey
	12				B	F	M	RU	SA									
					B	F	VC	RU	SA									
102.6			- Fractured zone		B	F	C	SP	SA									
102.5					B	F	C	RP	Si									
					B	F	C	RU	Si									
					B	F	C	SU	SA									
102.2			- Thin limestone slabs		B	F	VC	RP	SA									
					B	F	C	RU	SA									
					B	F	VC	SU	SA									
					B	F	C	SP	SA									
101.9																		
101.8																		
	13				B	F	C	RP	SA									
					B	F	VC	RP	SA									
					B	F	VC	RU	SA									
					B	F	C	RP	SA									
					B	F	C	RU	T									
														6	100	77	100	Grey
					B	F	M	SU	SA									

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 101

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
					B	F	C	SP	SA									
100.7	14				B	F	C	RP	SA									
100.5					B	F	C	RP	NC									
					B	F	M	RP	NC					7	100	91	100	Grey
	15				B	F	M	RP	SA									
99.2			End of Borehole at 15.5 m															
	16																	

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 103

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.6		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
111.4			GEORGIAN BAY FORMATION SHALE BEDROCK		B	F	VC	SP	SA									
					B	F	VC	RP	Si									
					B	F	VC	RP	SA					1	100	30	100	Grey
								RU										
111.1			- Limestone slab															
111.0					B	F	C	RP	Si									
					B	F	VC	RP	SA									
110.9			- Limestone slab		B	F	VC	SP	SA									
110.9			- Thin Lenses of limestone		B	F	C	SP	Si									
					B	F	C	RP	SA									
					B	F	VC	RU	SA									
					B	F	VC	SU	SA									
	4				B	F	C	RP	SA									
								RU										
					B	F	C	RU	SA									
					B	F	VC	RP	SA									
					F	V	VC	RP	SA									
					F	V	VC	RP	O									
					B	F	VC	RU	SA					2	100	27	100	Grey
					F	V	C	RU	SA									
					B	F	C	RU	SA									
					B	F	C	RU	SA									
					B	F	C	RP	SA									
	5																	
109.6			- Limestone slab															
109.4					B	F	VC	RU	SA									
					F	V	C	RP	SA									
							VC	SU										
109.2																		
109.2			- Thin Lenses of limestone		B	F	VC	RP	Si									
					B	F	VC	RU	SA									
					F	V	C	RU	SA									
					F	V	VC	RP	SA									
					B	F	C	RU	SA									
								RP						3	100	47	100	Grey
	6																	
					F	V	C	RP	SA									
								RU										

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 103

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.6		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
					B	F	VC	RP	SA									
108.0					B	F	C	RU	Si									
107.9					F	V	C	RP	SA									
					B	F	VC	RP	SA									
107.8			- Fractured Zone		B	F	VC	RP	T									
107.7								RU										
107.6	7		- Fractured zone & highly weathered shale															
					B	F	VC	RP	Si					4	53	0	40	Grey
							C											
	8																	
106.5																		
106.4			- Thick limestone slabs		B	F	VC	RP	SA									
					B	F	VC	RP	O									
106.1																		
106.0			- Thin slabs of limestone throughout		B	F	VC	RP	SA									
					B	F	VC	SP	SA									
								SU										
					B	F	C	SU	T									
	9													5	100	50	100	Grey
					F	V	C	RP	SA									
105.4					B	F	VC	RP	Si									

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 103

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.6		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
105.3			- Thin slabs of limestone throughout		B	F	C	SU	T									
105.1			- Thick limestone slabs		B B	F F	C VC	RU SP RP	Si SA									
104.9			- Thin slabs of limestone throughout															
104.9					B	F	C	RU SU	SA									
104.7	10		- Fractured Zone															
104.6			- Thin slabs of limestone throughout		F B B	V F F	C VC VC	RP SU SP RP	SA SA SA									
104.3					B	F	VC	SP	Si									
104.2					F	V	C	RP RU RP	SA					6	100	58	100	Grey
103.7					B	F	M	RP	SA									
103.7	11				B	F	C VC	SU RU	SA									
103.2			- Fractured Zone		B	F	C	SP	T									
103.1																		
103.0			- Thin slabs of limestone throughout		B	F	M	RU RP	SA					7	100	82	100	Grey
	12																	

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 103

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	114.6		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
102.2			- Fractured Zone		B B B	F F F	C VC C	SP RU SP	T Si T									
102.0			- Thin slabs of limestone throughout					RP										
101.8			- Fractured Zone		B	F	VC	RO SU	SA									
101.7					B	F	C	RU	SA									
101.6	13				B	F	C	RU	SA									
					B B	F F	C VC VC	SP RP RU	T Si									
101.4			- Fractured Zone		B	F	VC	RU	SA									
101.3								SP										
101.1			- Fractured Zone											8	100	51	100	Grey
100.9					B	F	C M	SP RP	SA									
100.7																		
100.6	14																	
100.3			End of Borehole at 14.3 m															
	15																	

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 104

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	113.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
109.3			GEORGIAN BAY FORMATION SHALE BEDROCK		B	F	C	RP	Si									
					B	F	VC	SU	T									
109.2			- Fractured Zone		B	F	VC	RP	SA									
					B	F	VC	RU	Si									
109.1					B	F	VC	SP	SA									
					B	F	C	SP	Si									
					B	F	C	RU	SA					1	100	12	100	Grey
					B	F	C	RU	SA									
					B	F	VC	RU	Si									
	5				B	F	VC	RP	Si									
					B	F	C	RP	SA									
					B	F	C	SP	SA									
					B	F	C	SU	T									
					B	F	VC	RU	SA									
108.4																		
108.4			- Fractured Zone		B	F	C	RU	SA									
108.3			- Fractured Zone		B	F	VC	SU	Si									
108.3					B	F	C	RU	SA									
					B	F	C	SP	SA									
					B	F	VC	SP	SA									
					B	F	VC	RP	SA									
					F	D	VC	SU	T									
107.9			- Fractured		B	F	C	SU	SA									
107.8			- Thin Lenses of limestone		B	F	VC	SU	SA									
					B	F	C	SP	SA					2	100	35	100	Grey
	6				B	F	C	RU	SA									
					B	F	C	RP	SA									
					B	F	VC	RP	SA									
					B	F	C	RU	SA									
					B	F	VC	RP	SA									
					B	F	C	RU	Si									
107.3			- Fractured Zone		B	F	VC	RP	SA									
107.2			- Thin Lenses of limestone															
					B	F	C	RP	SA									
					B	F	C	RP	SA									
					B	F	VC	SU	SA									
	7				B	F	C	RU	SA									
					B	F	C	SP	SA									
					B	F	C	RU	SA									
			- Increase in weathering															

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 104

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	113.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
106.3					B	F	C	RP	SA									
			- Fractured Zone		B	F	VC	RU	SA									
106.2			- Thin Lenses of limestone											3	100	69	100	Grey
					B	F	C	SP	SA									
106.1																		
					B	F	C	RU	Si									
106.0			- Thin Lenses of limestone		B	F	VC	RP	Si									
					B	F	C	RU	Si									
	8				B	F	VC	RP	Si									
					B	F	C	RP	Si									
105.6					B	F	VC	RP	Si									
105.6					B	F	C	RP	Si									
					B	F	VC	RP	Si									
					B	F	C	RU	Si									
105.4																		
					B	F	C	RP	Si									
105.2					B	F	VC	RU	Si									
105.1																		
					B	F	C	RU	Si									
105.0					B	F	VC	SU	T									
					B	F	VC	RP	Si									
					B	F	C	SP	SA									
	9				B	F	C	SU	SA					4	90	37	100	Grey
					B	F	VC	RP	SA									
					B	F	C	RP	Si									
					B	F	C	SU	SA									
104.5			- Fractured		B	F	C	RU	Si									
104.0					B	F	C	SU	T									
	10				B	F	C	RP	SA									
103.7					B	F	VC	RP	SA									
103.6					B	F	C	SU	SA									

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 104

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	113.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
					B	F	C	SP	SA					5	100	71	100	Grey
					B	F	VC	SU	SA									
					B	F	C	RP	SA									
102.9					B	F	C	SU	SA									
102.8																		
	11																	
102.6																		
102.5			- Fractured		B	F	M	RU	SA									
					B	F	M	SP	SA									
					B	F	VC	RP	SA									
					B	F	VC	RU	SA									
					B	F	C	RU	SA									
					B	F	C	SU	T									
					B	F	C	RP	T									
	12				B	F	C	SU	SA					6	100	85	100	Grey
					B	F	C	SP	SA									
					B	F	M	SP	SA									
					B	F	C	RU	Si									
					B	F	C	RU	Si									
					B	F	C	RP	SA									
101.0					B	F	VC	RP	SA									
100.9					B	F	C	RU	Si									
					B	F	VC	RP	SA									
					B	F	C	SP	SA									
					B	F	VC	RU	SA									
	13				B	F	C	RU	Si									
					B	F	C	RP	Si									
					B	F	C	RU	Si									

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

G2S Consulting Inc.

ROCK CORE LOG

BH NO. 104

PROJECT	ORIENTATION	ELEVATION (m)	DATUM	PROJECT NUMBER
Geotechnical Investigation	Vertical	113.7		G2S24602
LOCATION	**DATE STARTED**	**COMPLETED**	**LOGGED BY**	**DRAWING NUMBER**
55 Dundas Street, Mississauga	03-11-25	03-11-25	NS	
CLIENT	**DRILLER**	**DRILL TYPE**	**CORE BARREL**	**SHEET**
55 Dundas Development Inc.	Davis Drilling Ltd.	HQ Rock Coring	HQ	of

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS: NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)	WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
					B	F	C	RP	Si					7	97	77.5	100	Grey
					B	F	C	SP	T									
					B	F	C	SU	SA									
	14																	
					B	F	M	RP	SA									
99.4					B	F	C	SP	SA									
					B	F	M	RU	SA					8	100	90	100	Grey
	15																	
					B	F	M	SP	SA									
					B	F	C	RP	SA									
					B	F	VC	RP	SA									
					B	F	C	RP	SA									
					B	F	C	RP	SA									
97.9			End of Borehole at 15.9 m		B	F	C	RP	SA									
	16																	

CORE LOG G2S24602_ROCK CORE LOG.GPJ G2S 2021 BH DATA TEMPLATE.GDT 25-5-16

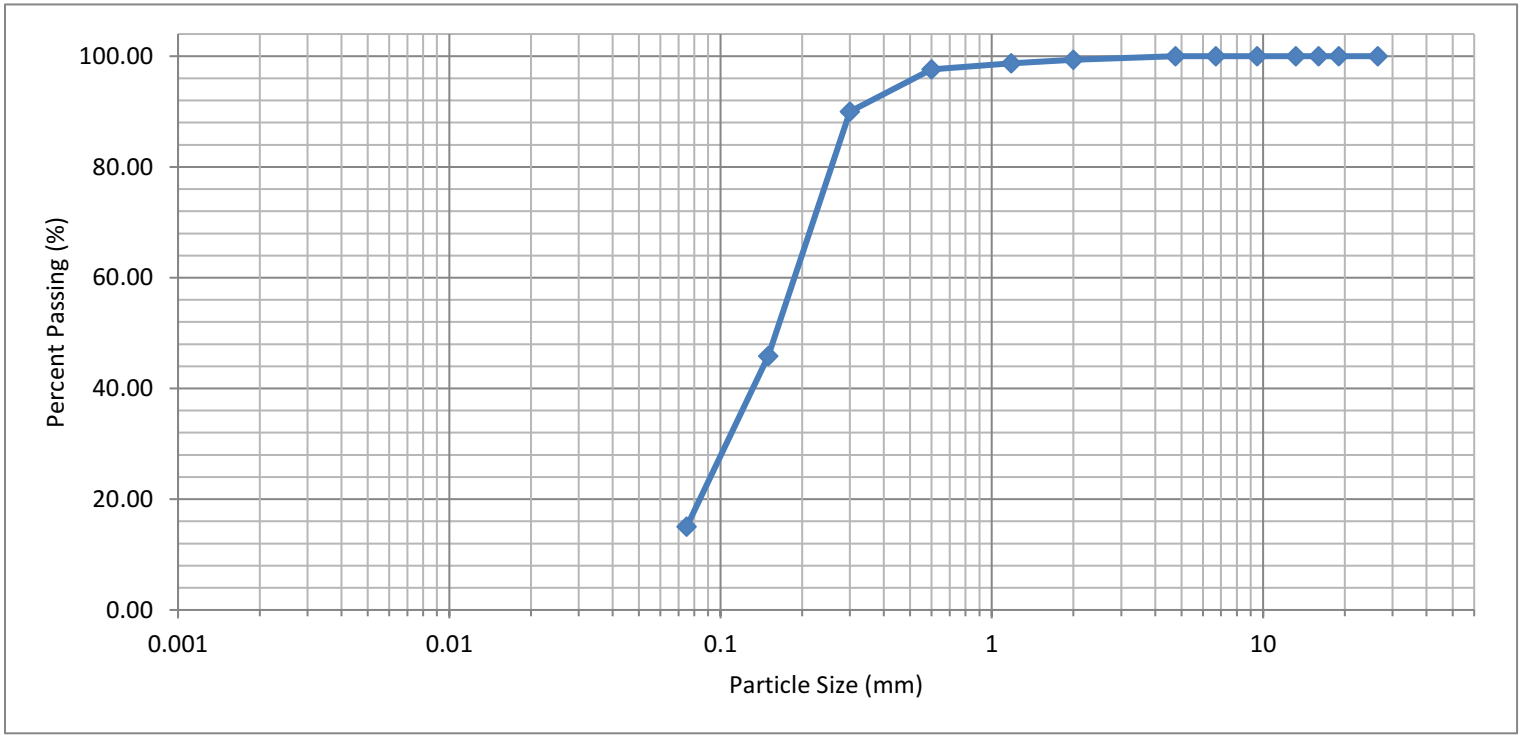
G2S Consulting Inc.

Project No.:	G2S24602B	**Lab No.:**	25037A
Project Name:	Proposed Residential Development - 55 Dundas St. W, Mississauga	**Borehole/Sample No.:**	BH101-S4

ISSMGE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL		
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE

SIEVE SIZE: 1 2 6 20 6C#200 #100 #50 #16 #8 #4 3/8" 3/4" 2-1/2"

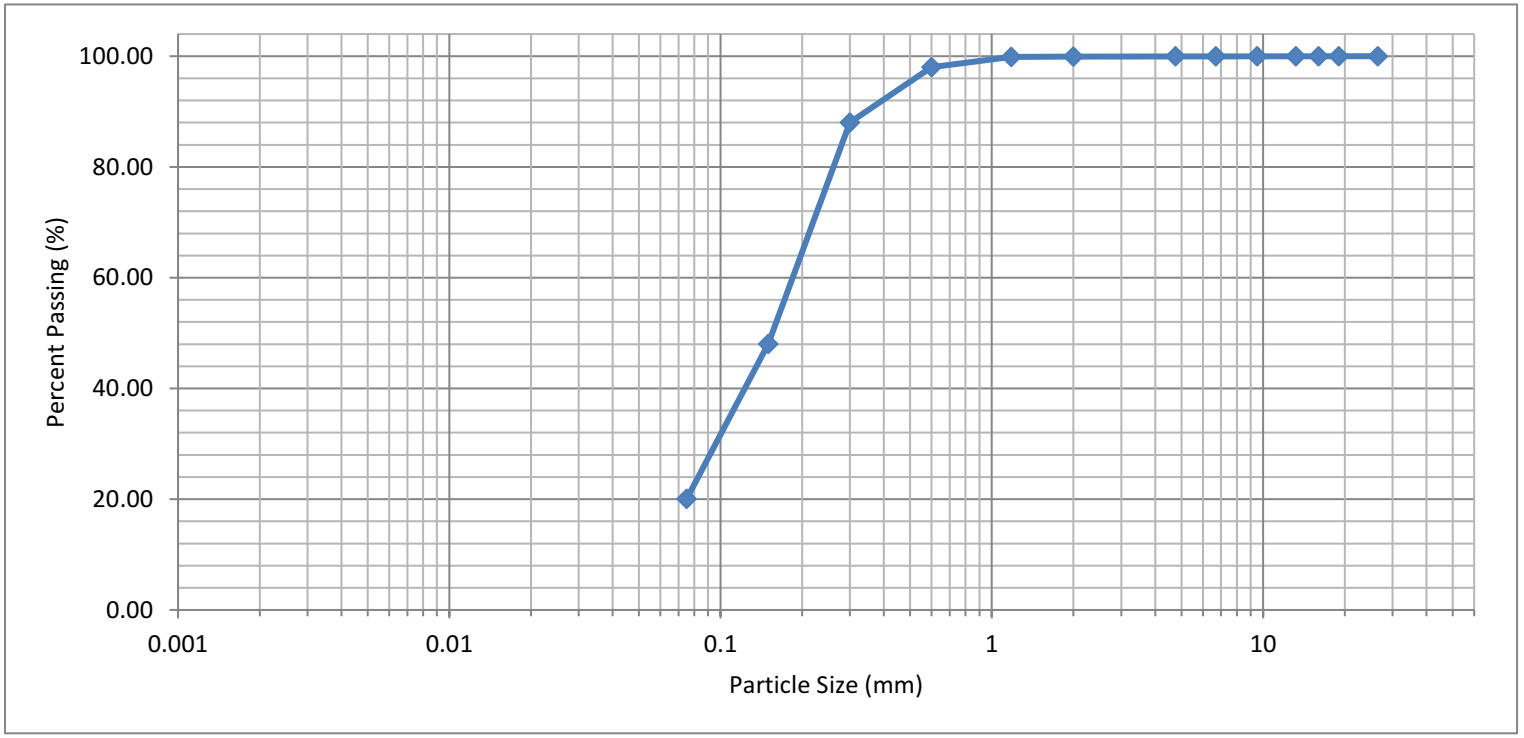


Project No.:	G2S24602B	**Lab No.:**	25037D
Project Name:	Proposed Residential Development - 55 Dundas St. W, Mississauga	**Borehole/Sample No.:**	BH105-S4

ISSMGE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL		
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE

SIEVE SIZE: 1 2 6 20 6C#200 #100 #50 #16 #8 #4 3/8" 3/4" 2-1/2"

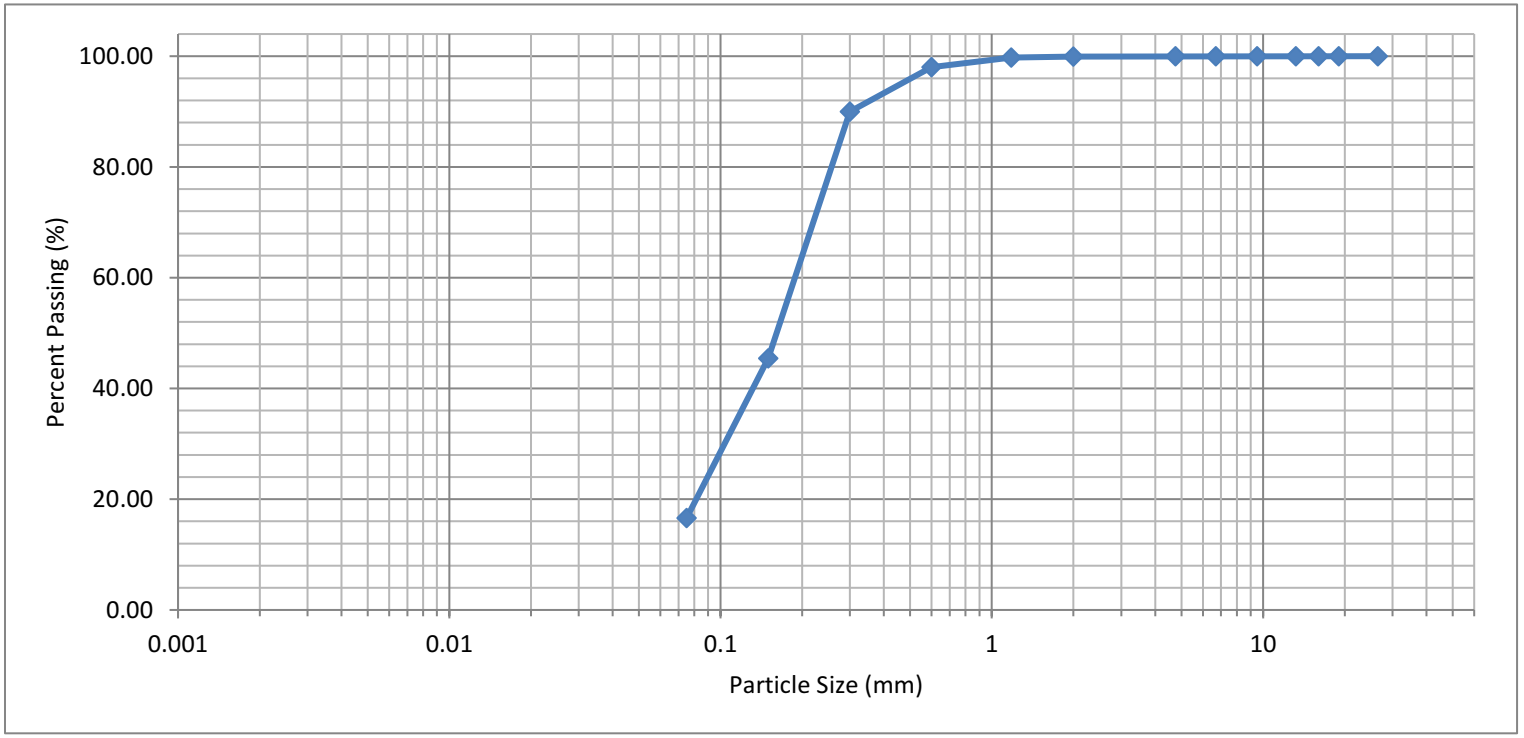


Project No.:	G2S24602B	**Lab No.:**	25037E
Project Name:	Proposed Residential Development - 55 Dundas St. W, Mississauga	**Borehole/Sample No.:**	BH106-S4A

ISSMGE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL		
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE

SIEVE SIZE: 1 2 6 20 6C#200 #100 #50 #16 #8 #4 3/8" 3/4" 2-1/2"

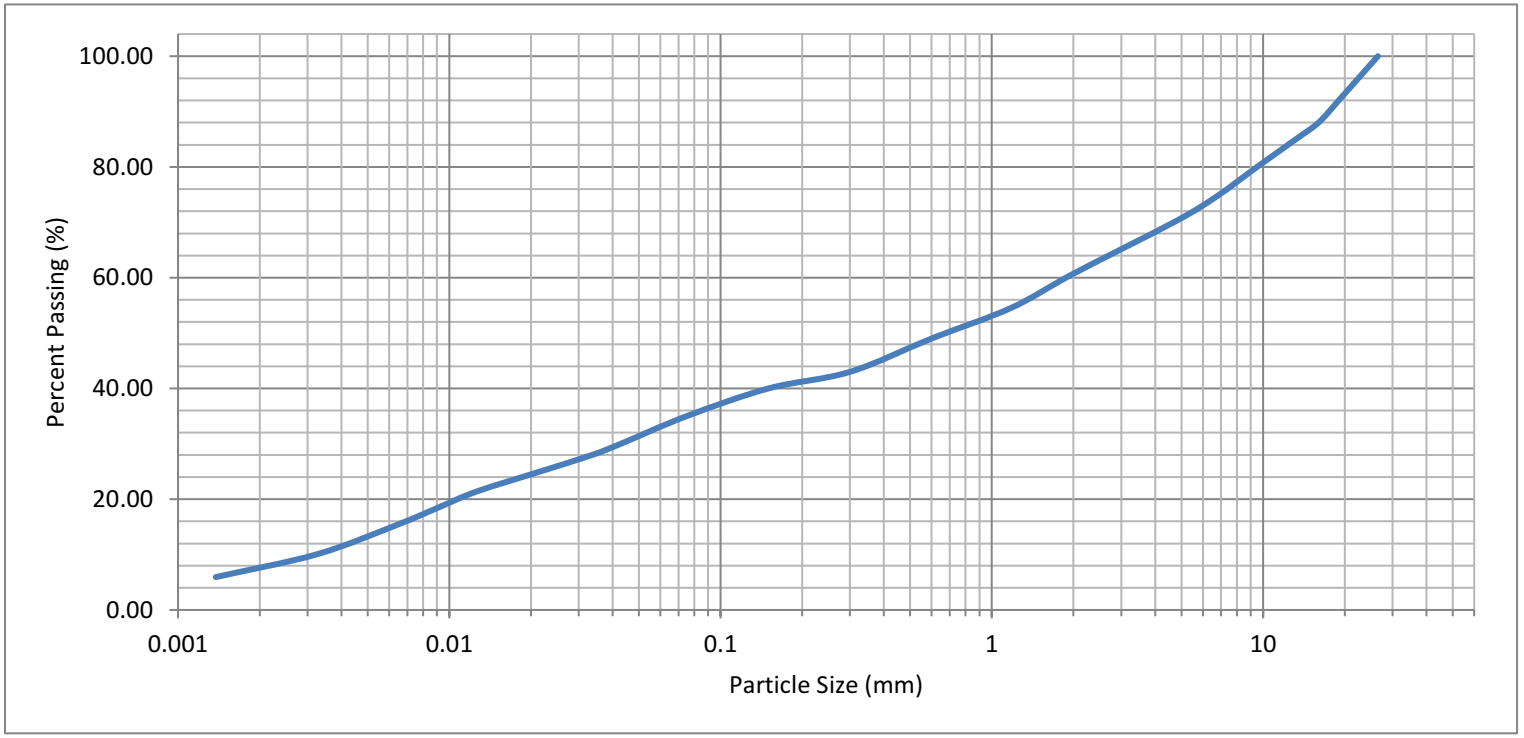


Project No.:	G2S24602B	**Lab No.:**	25037B
Project Name:	Proposed Residential Development - 55 Dundas St. W, Mississauga	**Borehole/Sample No.:**	BH101-S6

ISSMGE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL		
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE

SIEVE SIZE: 1 2 6 20 6C#200 #100 #50 #16 #8 #4 3/8" 3/4" 2-1/2"

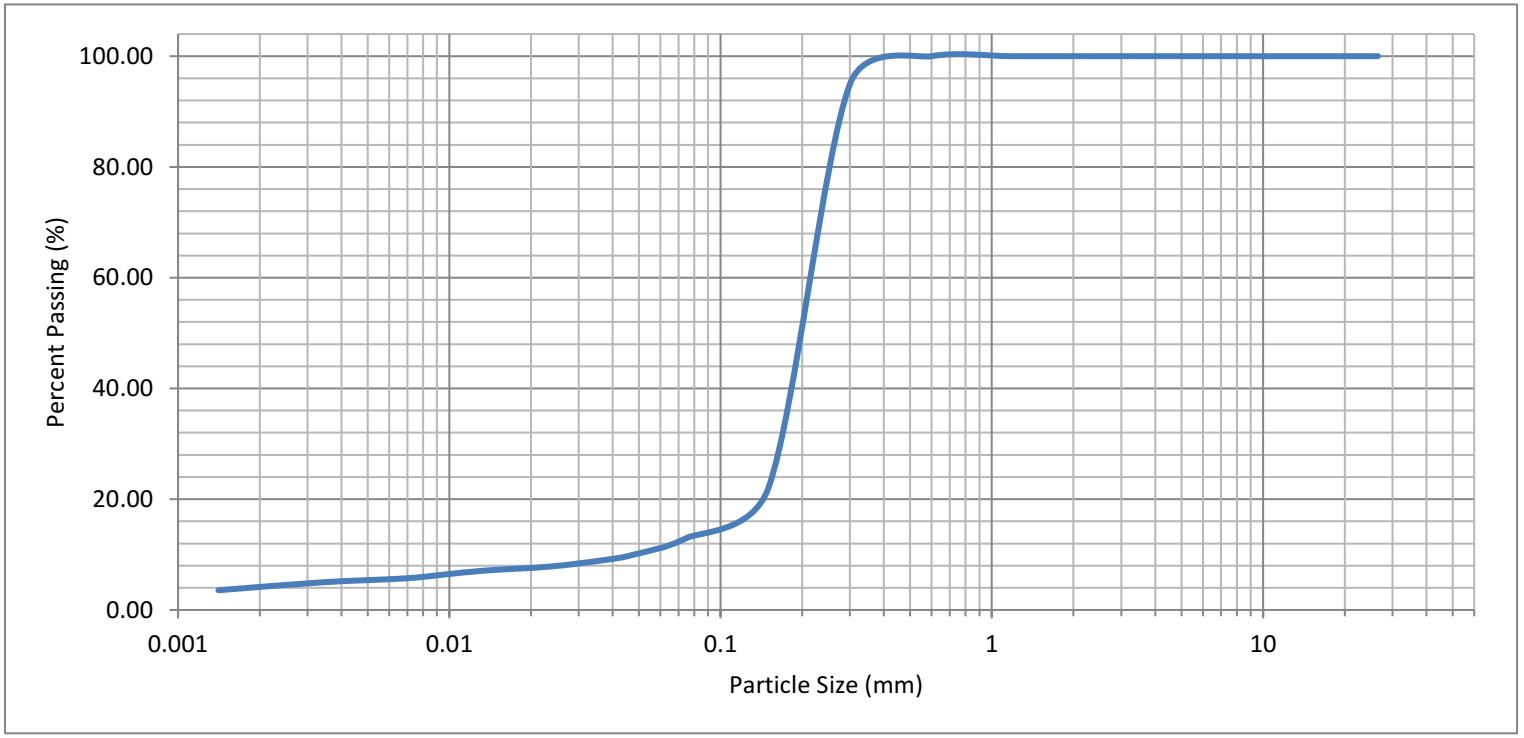


Project No.:	G2S24602B	**Lab No.:**	25037C
Project Name:	Proposed Residential Development - 55 Dundas St. W, Mississauga	**Borehole/Sample No.:**	BH103-S3

ISSMGE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL		
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE

SIEVE SIZE: 1 2 6 20 6C#200 #100 #50 #16 #8 #4 3/8" 3/4" 2-1/2"



Appendix C:
UCS Test Results & Retrieved Rock Core Samples Photographs

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Rock Core Compressive Strength Test Report

Project: Proposed Residential Development - 55 Dundas St., Mississauga

Project No.: G2S24602B
Lab No.: 25167

Compressive Strength Test Results

Core No	Location/ Depth BGL (m)	Date Tested	Weight (g)	Diameter (mm)	Length (mm)	Unit Mass (kg/m3)	L/D	Test Load (kN)	Compressive Strength (MPa)	Correction Factor	Corrected Compressive Strength (MPa)
25167-A	BH101 - Run 2 7.7 - 7.8	30-Apr-25	512.5	62	64	2652	1.03	97.5	32.3	0.92	29.7
25167-B	BH103 - Run 3 6.3 - 6.4	30-Apr-25	455.7	62	55	2744	0.89	139.4	46.2	0.92	42.5
25167-C	BH103 - Run 4 8.3 - 8.4	30-Apr-25	532.1	62	64	2754	1.03	188.8	62.5	0.92	57.5
25167-D	BH103 - Run 5 10.8 - 10.9	30-Apr-25	1069.9	62	131	2705	2.11	194.6	64.5	1.00	64.5

Note:
1. Test procedure in general accordance with A23.2-14C: Method for Compressive Strength Testing of Drilled Cores

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Rock Core Compressive Strength Test Report

Project: Proposed Residential Development - 55 Dundas St., Mississauga

Project No.: G2S24602B
Lab No.: 25167

Compressive Strength Test Results

Core No	Location/ Depth BGL (m)	Date Tested	Weight (g)	Diameter (mm)	Length (mm)	Unit Mass (kg/m3)	L/D	Test Load (kN)	Compressive Strength (MPa)	Correction Factor	Corrected Compressive Strength (MPa)
25167-E	BH104 - Run 3 6.9 - 7.0	30-Apr-25	842.1	62	104	2682	1.68	146.3	48.5	0.96	46.5
25167-F	BH104 - Run 4 8.6 - 8.7	30-Apr-25	736.7	62	89	2742	1.44	204.1	67.6	0.94	63.5

Note:
1. Test procedure in general accordance with A23.2-14C: Method for Compressive Strength Testing of Drilled Cores

Photo No. 1: BH101 – Box 1 to 4 – Run Nos. 1 – 7

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Photo No. 3: BH101 – Box 1 to 4 – (Photo 1 of 4)

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Photo No. 3: BH101 – Box 1 to 4 – (Photo 2 of 4)

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Photo No. 4: BH101 – Box 1 to 4 – (Photo 3 of 4)

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Photo No. 5: BH101 – Box 1 to 4 – (Photo 4 of 4)

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Photo No. 6: BH103 – Box 1 to 4 – Run Nos. 1 – 8

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Photo No. 7: BH103 – Box 1 to 4 – (Photo 1 of 4)

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Photo No. 8: BH103 – Box 1 to 4 – (Photo 2 of 4)

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Photo No. 9: BH103 – Box 1 to 4 – (Photo 3 of 4)

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4361 Harvester Rd., Unit 12, Burlington, ON L7L 5M4
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Photo No. 10: BH103 – Box 1 to 4 – (Photo 4 of 4)

G2S Consulting Inc.
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Photo No. 11: BH104 – Box 1 to 4 – Run Nos. 1 – 8

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Photo No. 12: BH104 – Box 1 to 4 – (Photo 1 of 4)

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Photo No. 13: BH104 – Box 1 to 4 – (Photo 2 of 4)

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Photo No. 14: BH104 – Box 1 to 4 – (Photo 3 of 4)

Photo No. 15: BH104 – Box 1 to 4 – (Photo 4 of 4)

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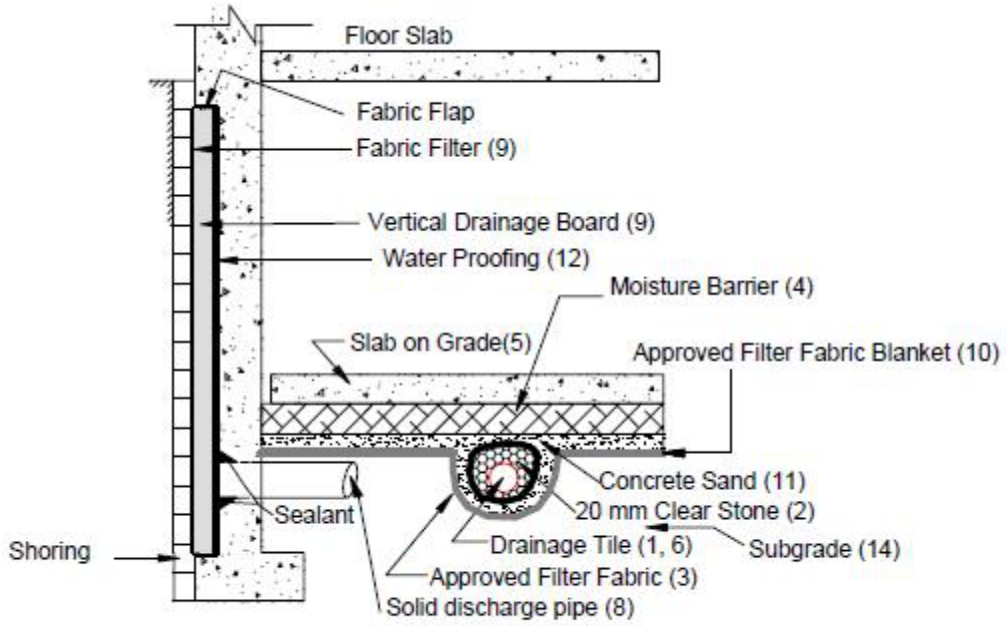
Appendix D:
Drainage and Underpinning Recommendation Figures

G2S Consulting Inc.



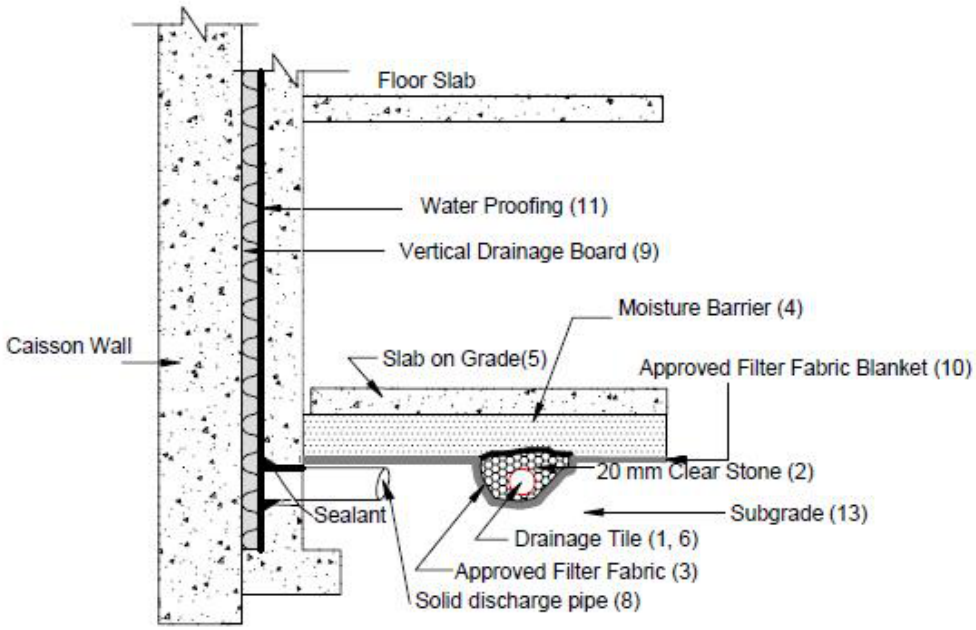
EXTERIOR FOOTING

Notes

1. Drainage tile to consist of 100 mm (4") diameter weeping tile or equivalent perforated pipe leading to a positive sump or outlet, spaced between columns.
2. 20 mm (3/4") clear stone - 150 mm (6") top and side of drain. If drain is not on footing, place100 mm (4 inches) of stone below drain.
3. Wrap the clear stone with an approved filter membrane (Terrafix 270R or equivalent).
4. Moisture barrier to be at least 200 mm (8") of compacted clear 20 mm (3/4") stone or equivalent free draining material. A vapour barrier may be required for specialty floors.
5. Slab on grade should not be structurally connected to the wall or footing.
6. Underfloor drain invert to be at least 300 mm (12") below underside of floor slab. Drainage tile placed in parallel rows 6 to 8 m (20 to 25') centers one way. Place drain on 100 mm (4") clear stone with 150 mm (6") of clear stone on top and sides. Enclose stone with filter fabric as noted in (3).
7. Do not connect the underfloor drains to perimeter drains.
8. Solid discharge pipe located at the middle of each bay between the solider piles, approximate spacing 2.5 m, outletting into a solid pipe leading to a sump.
9. Vertical drainage board with filter cloth should be kept a minimum of 1.2 m below exterior finished grade.
10. The entire subgrade to be sealed with approved filter fabric (Terrafix 270R or equivalent) if non-cohesive (sandy) soils below ground water table encountered.
11. Above the filter fabric, we recommend 60 mm thick concrete sand be placed to prevent loss of fines through filter fabric.
12. The basement walls should be water proofed using bentonite or equivalent water-proofing system.
13. Review the geotechnical report for specific details. Final detail must be approved before system is considered acceptable.
14. Subgrade must be inspected and approved by geotechnical personal. If soft/ loose is encountered, the soft/ loose soil must replaced with compacted granular material or the recommendations in the Geotechnical report must be followed.

DRAINAGE RECOMMENDATIONS
Shored Basement Wall with Underfloor Drainage System

(NOT TO SCALE)



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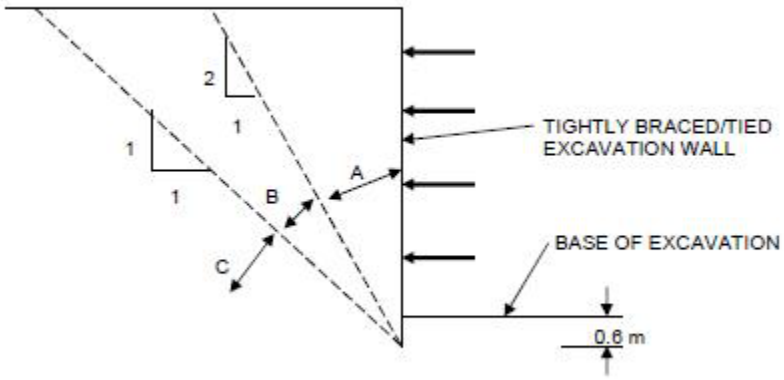
7. Do not connect the underfloor drains to perimeter drains.
8. Solid discharge pipe located at the middle of each bay between the solider piles, approximate spacing 2.5 m, outletting into a solid pipe leading to a sump.
9. Vertical drainage board mira-drain 6000 or equivalent with filter cloth should be continuous from bottom to 1.2 m below exterior finished grade.
10. The entire subgrade to be sealed with approved filter fabric (Terrafix 270R or equivalent) if non-cohesive (sandy) soils below ground water table encountered.
11. The basement walls must be water proofed using bentonite or equivalent water-proofing system.
12. Review the geotechnical report for specific details. Final detail must be approved before system is considered acceptable.
13. Subgrade must be inspected and approved by geotechnical personal. If soft/ loose is encountered, the soft/ loose soil must be replaced with compacted granular material or the recommendations in the Geotechnical report must be followed.

DRAINAGE RECOMMENDATIONS
Shored Basement Wall with Underfloor Drainage System

(NOT TO SCALE)

Guidelines for Underpinning in Soil and Excavation Support

Existing foundations located within Zone A normally require underpinning, especially for heavy structures. For some foundations in Zone A, it may be possible to eliminate underpinning and control foundation movement by tightly braced excavation walls, such as caisson walls.



Zone A Foundations located within this zone normally require underpinning. Horizontal and vertical pressures on the excavation wall of non underpinned foundations must be considered.

Zone B Foundations located within this zone normally do not require underpinning. Horizontal and vertical pressures on the excavation wall of non underpinned foundations must be considered.

Zone C Underpinning to structures is normally founded in this zone. Lateral pressure from underpinning is not normally considered.