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PROJECT NO.: SM 250413.GIS December 19, 2025

LIV COMMUNITIES
1005 Skyview Road – Suite 301
Burlington, Ontario
L7P 5B1

Attention: Dan Doherty
Land Development Manager

GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
DUNDAS STREET EAST AND PARIS ROAD
PARIS, ONTARIO

Dear Mr. Doherty,

Further to your authorisation, SOIL-MAT ENGINEERS & CONSULTANTS LTD. has completed the fieldwork, laboratory testing, and report preparation in connection with the above noted project. The investigation and reporting were undertaken in general accordance with our proposal P250413, dated May 21, 2025. Our comments and recommendations, based on our findings at the seventeen [17] borehole locations, are presented in the following paragraphs.

1. INTRODUCTION

We understand that the project will involve the construction of a residential development at the south side of the intersection of Dundas Street East and Paris Road in Paris, Ontario. The proposed development is understood to consist of 312 units of townhomes and stacked townhomes along an asphalt paved roadway, including the installation of associated underground municipal services. The purpose of this geotechnical investigation work was to assess the subsurface soil conditions, and to provide our comments and recommendations with respect to the design and construction of the proposed development, from a geotechnical point of view. It is understood that a detailed hydrogeological assessment is being undertaken by CF Crozier & Associates.

This report is based on the above summarised 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, this office must be consulted to review the new design with respect to the results of this investigation.

2. PROCEDURE

A total of seventeen [17] sampled boreholes were advanced at the locations illustrated in the attached Drawing No. 1, Borehole Location Plan. The boreholes were advanced using continuous flight power auger equipment under the direction of a representative of SOIL-MAT ENGINEERS to termination at depths of between approximately 3.7 and 11.3 metres below the existing ground surface.

Upon completion of drilling, groundwater monitoring wells were installed at seven [7] borehole locations, identified as Borehole Nos. 1, 2, 3, 4, 5, 7, and 10. The monitoring wells were installed to varying depths based on direction from CF Crozier & Associates Consulting Engineers, and consisted of 50-millimetre diameter PVC pipe, screened in the lower 1.5 to 3.0 metres. The monitoring wells were encased in well filter sand up to approximately 0.3 metres above the screened portion and then bentonite 'hole plug' medium, then fitted with a protective steel casing. The remaining boreholes were backfilled in general accordance with Ontario Regulation 903, and the ground surface reinstated flush with the existing grade.

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 the ASTM test specification D1586, Standard Penetration Resistance Testing. After undergoing a general field examination, the soil samples were preserved and transported to the SOIL-MAT laboratory for visual, tactile, and olfactory classifications. Routine moisture content tests were performed on all soil samples recovered from the borings and selected samples were also subjected to grain size analyses at our laboratory.

The boreholes were located in the field by a representative of SOIL-MAT ENGINEERS & CONSULTANTS LTD., based on accessibility over the site and clearance of underground services. At this time the ground surface elevation at the borehole locations has been referenced to the existing ground surface, however it is understood that the project surveyor will be providing the elevations. Once received, the ground surface elevations at the borehole locations can be updated.

Details of the conditions encountered in the boreholes, together with the results of the field and laboratory tests, are presented in the Log of Borehole Nos. 1 to 17, following the text of this report. 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 planes of geological change.

3. SITE DESCRIPTION AND SUBSURFACE CONDITIONS

The subject site is located on the south-west section of the intersection of Dundas Street East and Paris Road in Paris, Ontario and primarily consists of former agricultural fields, and former commercial, industrial, and residential properties which have since been cleared with structures demolished. At the time of our investigation, the north-western corner of the site had been stripped of topsoil, which was stockpiled on site, and this area being utilised as a staging area for construction equipment and building materials for municipal roadwork along Dundas Street East. This portion of the site was also noted to have some depth of fill material placed to level the area for use. The site is bound to the north by commercial properties and Dundas Street East, to the east by commercial properties and Paris Road, to the south by residential properties and vacant land, and to the west by a railway line and forested lands. The topography of the site is generally undulating, with an overall topographic relief from north to south by several metres.

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

Pavement Structure

Boreholes Nos. 1 and 2 were advanced through the existing pavement structure adjacent to Dundas Street East at the north-west portion of the site. The pavement structure was found to consist of approximately 50 millimetres of asphaltic concrete overlying 150 millimetres of compact granular base. The pavement surface was noted to generally be in a fair to poor condition, with frequent longitudinal, transverse, and alligator cracking. The pavement structures encountered at the borehole locations has been summarized as follows:

TABLE A: PAVEMENT STRUCTURE SUMMARY

Borehole No.	1	2
Asphaltic Concrete (mm)	50	50
Granular Base (mm)	150	150

It is noted that the depth of asphalt and granular material should be expected to vary across the site and from the borehole locations. Further, as the subgrade soils below the granular material are relatively granular in nature, the distinction from a pit run granular aggregate and the subgrade soils may be indistinguishable via borehole. As such, the depth of granular material may be greater than those identified at the borehole locations.

Topsoil

As noted above, the north-western portion of the site had previously been stripped of topsoil as a staging area for construction activities, and the topsoil stockpiled on the southern edge of the staging area. The remainder of the site was noted to have varying degrees of organics within the upper levels, likely due to former agricultural activities and tilling. While no real clear depth of topsoil was measurable at the time of our investigation as the ground was predominately snow covered and frozen, it is recommended that a minimum depth of topsoil of perhaps 300 to 400 millimetres be assumed to be present across the site.

It is noted that there may be areas of greater depth of topsoil, such as low areas, areas of thick vegetation, trees, etc. It is also noted that the term 'topsoil' has been used from a geotechnical point of view, and does not necessarily reflect its nutrient content or ability to support plant life.

Fill Materials

Fill material was identified beneath the pavement structure and existing ground surface at several of borehole locations, predominately along the northern portion of the site and in the area of former structures. The fill material was generally brown in colour and comprised of varying amounts of silt and sand, with trace to some clay, gravel, and cobbles, organics, and construction debris.

It is noted that based on the predominately granular nature of the soils encountered, the distinction from fill and native soils can be difficult to make in the relatively limited assessment via boreholes. As such, material identified as native soils may be relatively compacted fill materials. Conversely, material identified as fill may actually be weathered/disturbed native soils. Given the site was previously occupied by multiple buildings at the north end, as well a former dwelling located roughly in the centre of the site in the general vicinity of Borehole No. 8, various depths of fill should be expected to be encountered, especially in these locations.

Sand and Gravel/Cobbles

Native granular soils comprised of varying amounts of sand, gravel, and cobbles were encountered at all of the borehole locations. The native granular soils contained trace to some, silt, and was generally in a compact to dense condition. The fine native sand, gravel, and cobbles were proven to termination at varying depths at all of the borehole locations.

Sandy Silt/Clayey Silt

Deposits of sandy silt/clayey silt were encountered at greater depths sporadically across the site, at Borehole Nos. 5, 7, and 10 at depths of approximately 6.1 and 7.2 metres. The predominately silty/clayey soils contained trace gravel, with varying amounts of clay and sand, and generally noted to be very stiff to hard in consistency. The sandy silt/clayey silt soils were proven to termination at depths of approximately 8.2 and 11.3 metres at Borehole Nos. 5, 7, and 10.

Groundwater Observations

Upon completion of drilling, Borehole Nos. 1 to 4 were noted to be 'wet' at depths of between approximately 6.1 to 8.8 metres, while Borehole Nos. 5 and 10 were 'wet' at a depths of approximately 2.1 and 4.0 respectively metres upon completion of drilling, with the remaining boreholes were recorded as 'dry' upon completion of drilling. It is noted that insufficient time would have passed for the static groundwater level to stabilise in the open boreholes, however based on our observations during drilling, the static groundwater level is anticipated to be relatively deep, well below the anticipated depths of construction. Regardless, shallower, perched deposits should be expected, especially during the 'wet' times of the year.

As noted above, the hydrogeological aspects of the site including groundwater levels are currently being assessed by CF Crozier & Associates Consulting Engineers. Detailed groundwater level readings may be available in the hydrogeological report once available.

General Subsurface Conditions

A review of available published information [Quaternary Geology of Ontario, Southern Sheet Map 2556] indicates the subsurface soils to consist of glaciofluvial deposits comprised of sand, gravel, and cobbles, consistent with our experience in the area and observations during drilling.

The subsurface soils encountered were generally variable across the site, consisting of predominately granular soils comprised of sand, gravel, and cobbles, with some deposits of more fine grained silty soils. Deposits containing higher concentrations of silt or clay may be present across the site, and should be expected. Groundwater levels across the site were generally relatively deep, on the order of 4 to 6 metres or greater.

The native soils evidently are comprised of a somewhat layered system of sand and gravel with cobbles, and occasional silty deposits, and clayey soils at greater depths. The granular sand and gravel soils are generally considered to be fairly permeable. On a preliminary basis, the native granular soils would conservatively be expected to yield infiltration rates on the order of 50 millimetres per hour or more with respect to low impacted development [LID] stormwater management systems, accounting for possible silty deposits. The in-situ infiltration rate may be considerably higher, however if higher rates would be beneficial to the project, they should be confirmed via in-situ testing at specific locations and elevations, once the locations of such LID features are established.

4. EARTHWORKS AND SITE GRADING

It is understood that site grading works will require cuts and placement of engineered fill across the site. The soils encountered are generally considered suitable for use as engineered fill, provided they are free of significant inclusions of organics, construction debris, or other deleterious materials, and are moisture conditioned to within 3 per cent of the materials optimum moisture content. Structural fill supporting underground infrastructure, foundations, or other settlement sensitive structures, should be placed in loose lifts not exceeding 300 millimetres in thickness and compacted to a minimum of 98 per cent of materials SPMDD.

Fine grained soils which may be encountered are sensitive to disturbance from moisture conditions, and will become increasingly difficult to effectively compact in wet conditions. The comments and recommendations provided below in the “Backfill Considerations” section should be adhered to with respect to placement of engineered fill in such wet conditions.

As noted above, deposits of fill material should be expected to be encountered across the site. Any such deposits of fill should be further investigation upon discovery, such as via test pits to confirm depth and composition of the fill deposit. It is recommended that any such fill deposits encountered be most readily remediated at the time of earthworks, making use of excavators and dozers on site. Upon removal of surficial topsoil, the exposed grade should be thoroughly assessed by a representative of SOIL-MAT ENGINEERS to confirm sufficient removal of organics, potential for fill deposits, etc.

5. EXCAVATIONS

Excavations for the installation of foundations and underground services are generally expected to extend to depths of up to about 3 to 4 metres below the finished grade. Excavations through the granular soils encountered would be expected to remain stable at inclinations of up to 45 degrees to the horizontal. Where fill or wet seams are encountered or during periods of extended precipitation, excavations may have a tendency to 'slough in' to as flat as 3 horizontal to 1 vertical, or flatter. Where encountered, the presence of cobbles, boulders, etc. would be expected to slow the rate of excavation. Nevertheless, all excavations must comply with the current Occupational Health and Safety Act and Regulations for Construction Projects. 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 monitor the work.

As noted above the static groundwater level is estimated to be well below the anticipated depths of construction, however shallower perched deposits may be present across the site. Minor infiltration of water from permeable seams, as well as from surface runoff should be anticipated, especially during the 'wet' times of the year. The rate of any such potential infiltration is expected to be sufficiently slow such that it should be possible to control via conventional construction dewatering techniques, such as pumping from sumps in the base of the excavation, however as the native soils are relatively permeable, it's expected that any such infiltration would continue to infiltrate through the native soils. More infiltration should be anticipated when connections are made to existing services. Surface water should be directed away from the excavations.

The base of the excavations in the native soils encountered in the boreholes above the groundwater level should generally remain firm and stable, however may be susceptible to disturbance within fill deposits, predominately silty soils, etc., especially where left open to the elements for extended periods of time. Such instability may require sub-excavation of disturbed materials, and/or stabilisation via the provision of coarse crushed material, etc. Such stabilisation for service laterals should not be neglected. The need for such stabilisation measures is best assessed in the field at the time of construction. Once stabilised as required, standard pipe bedding, as typically specified by the Ontario Provincial Standard Specification will be satisfactory, compacted to 95 per cent of its standard Proctor maximum dry density [SPMDD], should suffice.

Any utility poles, light poles, etc. located within 3 metres of the top of an excavation slope should be braced to ensure their stability. Likewise, temporary support might be required for other existing above and below ground structures, including existing underground services, depending on their proximity to the trench excavations.

6. BACKFILL CONSIDERATIONS

The excavated materials will consist primarily of the native sand, gravel, and cobbles, as well as deposits of fill and silty soils encountered in the boreholes, as described above. The native soils and select portion of the fill materials are generally considered suitable for use as engineered fill, trench backfill, etc., provided that they are free of organics, significant inclusions or large cobbles, boulders, debris, or other deleterious material, and that their moisture contents can be controlled to within 3 per cent of their standard Proctor optimum moisture content. Some selective sorting of excavated soil to remove organics, debris, or otherwise unsuitable material should be expected to be required.

It is noted that while moderately permeable, the on-site granular soils should not be considered to be sufficiently free draining without additional testing or assessment. Silty deposits will tend to restrict infiltration, and result in difficulties in achieving effective compaction where access with compaction equipment is restricted. The native soils encountered are generally noted to be near to slightly 'dry' of their standard Proctor optimum moisture content. Some moisture conditioning may be required at the time of construction, depending upon the weather conditions. In the event that backfilling and road construction is undertaken during the 'wet' times of the year, instability associated with wet and loose backfill should be expected, resulting in the inability to effectively compact backfill material.

We note that where backfill material is placed near or slightly above its optimum moisture 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 the '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. During extended periods of precipitation, excavated and stockpiled soils may become wet to saturated, affecting compaction efforts of the material. Stockpiled soils should be protected from rainfall by tarps, and any saturated soils removed, or mixed into the stockpile as part of moisture conditioning operations following rainfall events prior to reuse.

The backfill soils may require high compaction energy to achieve acceptable densities if the moisture content is not close to its standard Proctor optimum value. It is therefore very important that the placement moisture content of the backfill soils be within 3 per cent of their standard Proctor optimum moisture content during placement and compaction to minimise long term subsidence [settlement] of the fill mass. Any imported fill required in service trenches or to raise the subgrade elevation should have its moisture content within 3 per cent of its optimum moisture content and meet the necessary environmental guidelines.

A representative of SOIL-MAT should be present on-site during the backfilling and compaction operations to confirm the 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'. All structural fill, backfill within service trenches, areas to be paved, etc., should be compacted to a minimum of 98 per cent of its SPMDD. The appropriate compaction equipment should be employed based on soil type, i.e. pad-toe for cohesive soils and smooth drum/vibratory plate for granular soils. A method should be developed to assess compaction efficiency employing the on-site compaction equipment and backfill materials during construction.

7. MANHOLES, CATCH BASINS AND THRUST BLOCKS

In the event that the manholes, catchbasins, valve chambers, etc. are founded on the native soils or suitable engineered fill, stabilised where required, the bearing surfaces will be practically non-yielding under the anticipated loads. Proper preparation of the founding soils will tend to accentuate the protrusion of these structures above the pavement surface if compaction of the fill around these structures is not adequate, causing settlement of the surrounding paved surfaces. Conversely, the pavement surfaces may rise above the valve chambers and around manholes under frost action. To alleviate the potential for these types of differential movements, free-draining, non-frost susceptible material should be employed as backfill around the structures located within the paved roadway limits, and compacted to a minimum of 98 per cent of its SPMDD. The native granular soils are likely suitable for such use, however this should be confirmed at the time of construction.

The thrust blocks in the native soils may be conservatively sized as recommended by the applicable Ontario Provincial Standard Specification using a horizontal allowable bearing pressure of 100 kPa [~2,000 psf]. Any backfill required behind the blocks should be granular in nature and compacted to a minimum of 98 per cent of its SPMDD.

8. PAVEMENT CONSIDERATIONS

All areas to be paved should be stripped of all organic or otherwise unsuitable materials. The exposed subgrade should be proofrolled with 3 to 4 passes of a loaded tandem truck in the presence of a representative of SOIL-MAT ENGINEERS & CONSULTANTS LTD., immediately prior to the placement of the sub-base material. Any areas of distress revealed by this or other means must be sub-excavated and replaced with suitable backfill material. Alternatively, the soft areas may be stabilised by placing coarse crushed stone and 'punching' it into the soft areas. In severe cases, the use of a geofabric separator and/or stabilising geogrid product may be warranted. The need for the treatment of softened subgrade will be reduced if construction is undertaken during the dry summer months and careful attention is paid to the compaction operations. The fill over shallow utilities cut into or across paved areas must also be compacted to a minimum of 98 per cent of its SPMDD.

Good drainage provisions will optimise 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 mitigate softening of the subgrade material. Surface water should not be allowed to pond adjacent to the outer limits of the paved areas.

The most severe loading conditions on the subgrade typically occur during the course of construction. Therefore, precautionary measures should be taken to ensure that the subgrade is not unduly disturbed by construction traffic. These measures would include minimising 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 during the Fall and Spring months, or during colder winter weather, it should be anticipated that additional subgrade preparation will be required, such as additional depth of Ontario Provincial Standard Specification [OPSS] Granular 'B', Type II sub-base material, use of a fully crushed material, etc. In severe cases, the provision of coarse crushed granular material such as rip rap 'punched' into the softened subgrade may be warranted. It is important that the sub-base and base granular layers of the pavement structure be placed as soon as possible after preparation and approval of the subgrade, to minimise exposure to the elements.

The proposed pavement structure would be required to adequately support cars, trucks, and intermittent delivery and garbage trucks. The provided pavement structure should conform to the relevant Brant County standards where the roadway is to be assumed by the County, understood to consist of, at a minimum, the following:

Local Residential Roadways
40mm HL3 Surface Course Asphaltic Concrete
50mm HL4 Binder Course Asphaltic Concrete
150mm Granular 'A' Base Course
450mm Granular 'B' Sub-Base Course

Collector Roadways
40mm HL3 Surface Course Asphaltic Concrete
50mm HL4 Binder Course Asphaltic Concrete
200mm Granular 'A' Base Course
450mm Granular 'B' Sub-Base Course

It is our opinion that this design is suitable for use on a residential roadway section, provided that the subgrade has been prepared as specified and is good and firm before the sub-base course material is placed. If the subgrade is soft, remedial measures as discussed above may have to be implemented, such as the use of a fully crushed Granular 'B' Type II (crushed bedrock) sub-base material, and/or the sub-base thickness may have to be increased. The granular sub-base and base courses and asphaltic concrete layers should be compacted to OPSS or Brant County requirements. A program of in-place density testing must be carried out to monitor that compaction requirements are being met. We note that this pavement structure is not to be considered as a construction roadway design.

To minimise segregation of the finished asphalt mat, the asphalt temperature must be maintained uniform throughout the mat during placement and compaction. All too often, significant temperature gradients exist in the delivered and placed asphalt with the cooler portions of the mat resisting compaction and presenting a honeycomb surface. As the spreader moves forward, a responsible member of the paving crew should monitor the pavement surface, to ensure a smooth uniform surface. The contractor can mitigate the surface segregation by 'back-casting' or scattering shovels of the full mix material over the segregated areas and raking out the course particles during compaction operations. Of course, the above assumes that the asphalt mix is sufficiently hot to allow the 'back-casting' to be performed.

Asphalt paving of driveways should be consistent with the general recommendations provided above. Proper preparation of the subgrade soils is essential to good long-term performance of the pavement. Likewise, sufficient depth and compaction of granular base materials and adequate drainage will be important in achieving good long-term performance, i.e. preventing/limiting premature cracking, subgrade failure, rutting, etc. The Brant County pavement structure standards for design of driveway aprons is understood to be as follows:

Residential Driveway Apron
50mm HL3 Surface Course Asphalt
150mm Granular 'A' Base Material

This would be considered suitable for the subject driveway aprons provided the subgrade is good and stable prior to placement of the granular base materials. However, consideration should be given to the use of an HL3F asphalt, which is a finer mix less susceptible to segregation, a common issue with residential driveways.

9. HOUSE AND TOWNHOUSE CONSTRUCTION

The native soils encountered at the borehole locations and quality engineered fill soils are considered capable of supporting the loads associated with the construction of residential dwellings and townhouse blocks on conventional spread footings. This typically considers a nominal bearing capacity of 150 kPa [~3,000 psf], however bearing capacities as high as 200 kPa [~4,000 psf] SLS and 300 kPa [~6,000 psf] ULS or higher would be considered available on the competent native soils. As noted above, the presence of unsuitable fill deposits may be encountered requiring removal and replacement with suitable engineered fill, ideally conducted during earthworks. In the event such unsuitable fill deposits are not identified at the earthworks stage and are encountered during dwelling construction, the fill should be sub-excavated down to the competent native soils. The founding may then be raised via the placement of lean-mix [~5 MPa] concrete up to the design founding elevation. Depending on the depth and extents of fill deposits encountered, the use of unshrinkable fill [~0.4 MPa] or engineered fill comprised of soil may also be feasible, however this would be best assessed in the field at the time of construction. Founding surfaces must be hand cleaned of any loose or disturbed material, along with any ponded water, immediately prior to placement of foundation concrete.

In the event that site grading works result in engineered fill below founding elevations, the general recommendations presented in the Backfill Considerations above should be strictly adhered to, with compaction to a minimum of 98 per cent SPMDD, verified by monitoring and testing by a representative of SOIL-MAT ENGINEERS present on a full time basis. If there is a short fall in the volume of fill required, then the source of imported fill should be reviewed for gradation, Proctor value, compatibility with existing fill, environmental characteristics and be approved by this office prior to use. Foundations within quality engineered fill should be designed considering a nominal bearing capacity of no more than 150 kPa [~3,000 psf].

The support conditions afforded by the native soils and/or engineered fill are generally not uniform across the building footprint, nor are the loads on the various foundations' elements. As such it is recommended that consideration be given to the provision of nominal reinforcement in the footings and foundation walls to account for variable support and loading conditions. The use of nominal reinforcement is considered good construction practice as it will act to reduce the potential for cracking in the foundation walls due to minor settlements, heaving, shrinkage, etc. and will assist in resisting the pressures generated against the foundation walls by the backfill. Such nominal reinforcement is an economical approach to the reduction and prevention of costly foundation repairs after completion and later in the life of the buildings. This reinforcement would typically consist of two continuous 15M steel bars placed in the footings [directly below the foundation wall], and similarly two steel bars placed approximately 300 millimeters from the top of the foundation walls at a minimum, depending on ground conditions exposed during construction. These reinforcement bars would be bent to reinforce all corners and under basement windows, and be provided with sufficient overlap at staggered splice locations. At 'steps' in the foundations and at window locations, the reinforcing steel should transition diagonally, rather than at 90 degrees, to maintain the continuous tensile capacity of the reinforcement. Where footings are founded on, or partially on, engineered fill the above provision for nominal reinforcement would be required. It is recommended that nominal reinforcement be provided for all dwelling foundations, regardless of founding conditions.

All basement foundation walls should be suitably damp proofed, including the provision of a 'dimple board' type drainage product, and provided with a perimeter drainage tile system outlet to a gravity sewer connection or positive sump pit a minimum of 150 millimetres below the basement floor slab. The clear stone material surrounding the weeping tile should be encased with a geotextile material to prevent the migration of fines from the foundation wall backfill into the clear stone product. In the event that sump pit systems are required we would recommend that the sump pump system should be constructed with an 'oversized' reservoir and a 'back-flow' prevention valve so that the sump pump will not cycle repeatedly within short time periods.

All footings exposed to the environment must be provided with a minimum of 1.2 meters of earth or equivalent insulation to protect against frost penetration. This frost protection would also be required if construction were undertaken during the winter months. All footings must be proportioned to satisfy the requirements of the Ontario Provincial Building Code.

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 outlined in this report, and to allow changes to be made in the event that subsurface conditions differ from the conditions identified at the borehole locations.

10. LOW IMPACT DEVELOPMENT [LID] STORMWATER MANAGEMENT CONSIDERATIONS

As noted above, the on site soils predominately consist of sand, gravel, and cobbles, with some clayey layers/deposits. The granular soils encountered would generally be of moderate to high permeability, while the sandy silt/clayey silt soils encountered at greater depths would have a considerably lower permeability to effectively impermeable. Based on the granular nature of the majority of soils encountered, the subsurface soils are generally considered suitable to support low impact development [LID] stormwater management systems. On a preliminary basis, it is recommended that such LID systems are designed considering an available infiltration rate of 50 millimetres per hour, accounting for potentially silty deposits. Additional in-situ testing may be conducted at the specific locations and elevations where LID features would be installed to further refine the available infiltration rate, and optimise design of these systems.

11. SOIL IMPORT/EXPORT CONSIDERATIONS

Ontario Regulation 406/19 regulates the management of excess soil generated as part of construction projects. At this time the import/export requirements of the project are not known, however SOIL-MAT ENGINEERS may be retained to conducted the necessary testing, report preparation, etc., in accordance with Ontario Regulation 406/19 when such details are finalised.

12. GENERAL COMMENTS

The comments provided in this document are intended only for the guidance of the design team. The material in it reflects SOIL-MAT ENGINEERS' best judgement in light of the information available at the time of preparation. The subsurface descriptions and borehole information are intended to describe conditions at the borehole locations only. It is the contractors' responsibility to determine how these conditions will affect the scheduling and methods of construction for the project. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. SOIL-MAT ENGINEERS accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that this geotechnical report is sufficient for your present requirements. Should you require any additional information or clarification as to the contents of this document, please do not hesitate to contact the undersigned.

Yours very truly,
SOIL-MAT ENGINEERS & CONSULTANTS LTD.

Karam Ismail, B. Sc., M.Eng., EIT
Geotechnical Associate

Kyle Richardson, P. Eng.
Senior Engineer

Enclosures: Drawing No. 1, Borehole Location Plan
Log of Borehole Nos. 1 to 17, inclusive

Distribution: LIV Communities [pdf]

LEGEND

Borehole Location
BH#

Monitoring Well Location
MW#

NOTES

1. This drawing should be read in conjunction with Soil-Mat Engineers & Consultants Ltd. Report No. SM 250413.GIS.

2. Borehole locations are approximate.

SOIL-MAT

ENGINEERS & CONSULTANTS LTD.

Geotechnical Investigation
Proposed Residential Development
Dundas Street East & Paris Road
Paris, Ontario

Borehole Location Plan

Project No. SM 250413.GIS

Date: December, 2025

Drawn: BS/KI

Checked: KR

Drawing No. 1

Log of Borehole No. 1 (MW1)

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782225
E: 551661

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface						
0–8 / 0–3	0.00 to -3.00	**Pavement Structure** Approximately 50 millimetres of asphaltic concrete overlying 150 millimetres of compact granular material.						
		Silty Sand/Sandy Silt Fill Brown, trace clay and gravel, very loose.	SS	1	10, 5, 4, 8	9		
			SS	2	1, 2, 1, 1	3		
			SS	3	2, 2, 1, 2	3		
			SS	4	3, 1, 2, 5	3		
			SS	5	6, 7, 7, 5	14		
			SS	6	19, 21, 18, 28	39		
		Sand and Gravel/Cobbles Brown, trace to some silt, compact to dense.	SS	7	12, 14, 19, 23 Wet Spoon	33		
26 / 8	-8.10		SS	8	17, 38, 50/3" Wet Spoon	100		
		End of Borehole						

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)

NOTES:

1. Borehole was advanced using hollow stem auger equipment on July 14, 2025 to termination at a depth of 8.1 metres.

2. Borehole was recorded as open and 'wet' at a depth of 6.1 metres below the existing ground surface upon completion and a monitoring well was installed.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Hollow Stem Auger
Drill Date: July 14, 2025
Hole Size: 200 millimetres
Drilling Contractor: Davis Drilling

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Datum: Temporary Benchmark
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Checked by: KI
Sheet: 1 of 1

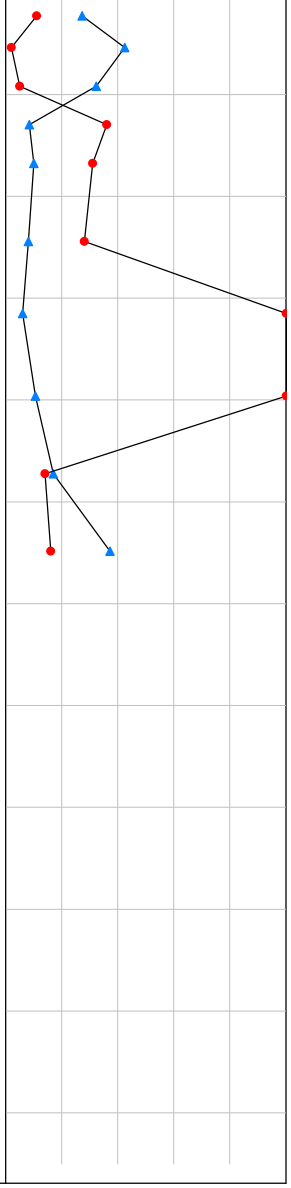
Log of Borehole No. 2 (MW2)

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782245
E: 551733

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface						
0–6 / 0–2	0.00 to -2.20	**Pavement Structure** Approximately 50 millimetres of asphaltic concrete overlying 150 millimetres of compact granular material.						
6–36 / 2–11	-2.20 to -11.30	**Silty Sand/Sandy Silt Fill** Brown, trace gravel, occasional clayey seams, very loose to loose.	SS	1	9, 6, 5, 5	11		
			SS	2	2, 1, 1, 1	2		
			SS	3	1, 2, 3, 8	5		
			SS	4	17, 17, 19, 16	36		
			SS	5	9, 15, 16, 18	31		
			SS	6	13, 16, 12, 9	28		
		Sand and Gravel/Cobbles Brown, trace to some silt, compact to dense.	SS	7	21, 39, 50/5"	100		
			SS	8	50/5"	100		
			SS	9	3, 6, 8, 13 Wet Spoon	14		
36 / 11	-11.30		SS	10	2, 6, 10, 12 Wet Spoon	16		
		End of Borehole						

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using hollow stem auger equipment on July 16, 2025 to termination at a depth of 11.3 metres.

2. Borehole was recorded as open and 'wet' at depth of 8.8 metres below the existing ground surface upon completion and a monitoring well was installed.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Hollow Stem Auger
Drill Date: July 16, 2025
Hole Size: 200 millimetres
Drilling Contractor: Davis Drilling

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Sheet: 1 of 1

Log of Borehole No. 3 (MW3)

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782250
E: 551807

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface						
0 – 3 / 0 – 1		**Silty Sand/Sandy Silt Fill** Brown, trace gravel, occasional clayey seams, occasional cobbles and organic inclusions, compact to loose.	SS	1	8, 12, 7, 6	19		
3 – 4 / 1	-1.50		SS	2	3, 3, 3, 4	6		
5 – 10 / 1 – 3			SS	3	8, 13, 20, 20	33		
10 – 11 / 3			SS	4	10, 21, 26, 50/5"	47		
11 – 16 / 3 – 5		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.	SS	5	15, 27,19, 21	46		
16 – 20 / 5 – 6			SS	6	14, 30, 27, 26	57		
21 – 23 / 6 – 7			SS	7	50/5"	100		
25 – 26 / 8			SS	8	37, 50/5"	100		
30 – 33 / 9 – 10			SS	9	14, 16, 30, 46 Wet Spoon	46		
36 / 11	-11.30		SS	10	12, 23, 27, 35 Wet Spoon	50		
37 – 76 / 12 – 23		End of Borehole						

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)

NOTES:

1. Borehole was advanced using hollow stem auger equipment on July 16, 2025 to termination at a depth of 11.3 metres.

2. Borehole was recorded as open and 'wet' at a depth of 8.5 metres below the existing ground surface upon completion and a monitoring well was installed.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Hollow Stem Auger
Drill Date: July 16, 2025
Hole Size: 200 millimetres
Drilling Contractor: Davis Drilling

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Sheet: 1 of 1

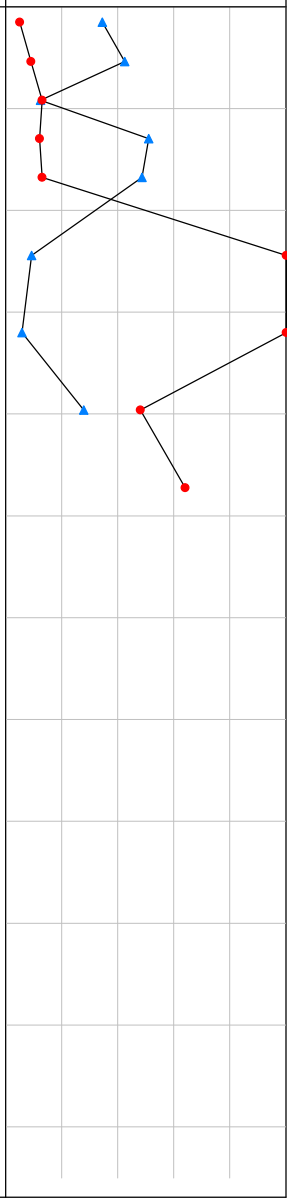
Log of Borehole No. 4 (MW4)

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782198
E: 551857

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface						
0 – 3 / 0 – 1		**Topsoil** Approximately 300 millimetres of topsoil.	SS	1	1, 2, 3, 3	5		
3 – 10 / 1 – 3		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.	SS	2	2, 4, 5, 5	9		
			SS	3	4, 7, 6, 7	13		
			SS	4	5, 6, 6, 8	12		
			SS	5	5, 6, 7, 28	13		
16 / 5			SS	6	50/5"	100		
21 / 6			SS	7	30, 41, 50/5"	100		
26 / 8			SS	8	20, 20, 28, 38 Wet Spoon	48		
32 / 9	-9.80		SS	9	17, 28, 38, 38 Wet Spoon	64		
33 / 10		End of Borehole						

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using hollow stem auger equipment on July 14 and July 15, 2025 to termination at a depth of 9.8 metres.

2. Borehole was recorded as open and 'wet' at depth of 7.0 metres below the existing ground surface upon completion and a monitoring well was installed.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Hollow Stem Auger
Drill Date: July 14 and July 15, 2025
Hole Size: 200 millimetres
Drilling Contractor: Davis Drilling

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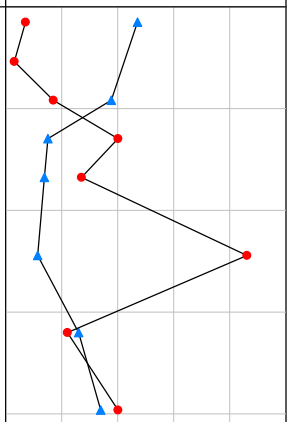
Log of Borehole No. 5 (MW5)

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782130
E: 551651

Depth (ft / m)	Elevation (m)	Description	Well Data	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
		Topsoil Approximately 250 millimetres of topsoil.		SS	1	2, 4, 3, 4	7		
5 / 1	-1.50			SS	2	2, 1, 2, 2 Wet Spoon	3		
		Silty Sand/Sandy Silt Fill Brown, trace to some gravel, occasional clayey seams, very loose.		SS	3	5, 10, 7, 5 Wet Spoon	17		
				SS	4	18, 22, 18, 19 Wet Spoon	40		
10 / 3				SS	5	5, 9, 18, 16 Wet Spoon	27		
		Sand and Gravel/Cobbles Brown, trace to some silt, compact to dense.		SS	6	30, 40, 46, 48 Wet Spoon	86		
20 / 6	-6.10			SS	7	6, 10, 12, 16 Wet Spoon	22		
		Sandy Silt/Clayey Silt Grey, trace gravel, varying amounts of clay and sand, very stiff to hard.		SS	8	15, 22, 18, 19 Wet Spoon	40		
26 / 8	-8.20	End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using hollow stem auger equipment on July 18, 2025 to termination at a depth of 8.2 metres.

2. Borehole was recorded as open and 'wet' at depth of 2.0 metres below the existing ground surface upon completion and a monitoring well was installed.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Hollow Stem Auger
Drill Date: July 18, 2025
Hole Size: 200 millimetres
Drilling Contractor: Davis Drilling

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Log of Borehole No. 6

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782168
E: 551778

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
ft / m	0.00	Ground Surface							
		Silty Sand/Sandy Silt Fill Brown, trace clay and gravel, occasional cobbles, loose to compact.		SS	1	3, 4, 3, 3	7		
				SS	2	5, 5, 5, 5	10		
	-2.20			SS	3	3, 5, 6, 6	11		
		Sand and Gravel/Cobbles Brown, trace to some silt, compact to dense.		SS	4	8, 15, 16, 18	31		
				SS	5	6, 18, 17, 19	35		
				SS	6	11, 16, 22, 30	38		
				SS	7	11, 12, 16, 15	28		
	-8.20			SS	8	41, 50/4"	100		
		End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)

NOTES:

1. Borehole was advanced using solid stem auger equipment on July 17, 2025 to termination at a depth of 8.2 metres.

2. Borehole was recorded as caved to a depth of 4.3 metres below the existing ground surface and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: July 17, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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Log of Borehole No. 7 (MW7)

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782069
E: 552012

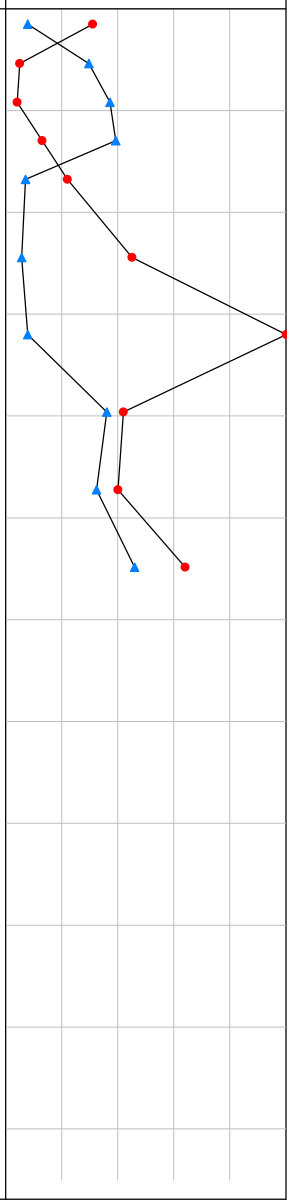
Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface						
0 – 3 / 0 – 1		**Topsoil** Approximately 150 millimetres of topsoil.	SS	1	5, 13, 18, 20	31		
			SS	2	3, 3, 2, 3	5		
6 / 2	-2.20	**Silty Sand/Sandy Silt Fill** Brown, trace to some gravel, occasional clayey seams, occasional cobbles and organic inclusions, dense to loose.	SS	3	1, 1, 3, 3	4		
			SS	4	4, 6, 7, 15	13		
10 / 3			SS	5	11, 11, 11, 30	22		
16 / 5			SS	6	11, 13, 32, 37	45		
23 / 7	-7.20	**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.	SS	7	13, 50/4"	100		
26 / 8		**Sandy Silt/Clayey Silt** Grey, trace sand and gravel, hard.	SS	8	17, 18, 24, 25	42		
30 / 9			SS	9	13, 18, 22, 22	40		
36 / 11	-11.30		SS	10	19, 26, 38, 50/5"	64		
		End of Borehole						

NOTES:

1. Borehole was advanced using hollow stem auger equipment on July 15, 2025 to termination at a depth of 11.3 metres.

2. Borehole was recorded as open and dry upon completion and a monitoring well was installed.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.



Drill Method: Hollow Stem Auger
Drill Date: July 15, 2025
Hole Size: 200 millimetres
Drilling Contractor: Davis Drilling

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Sheet: 1 of 1

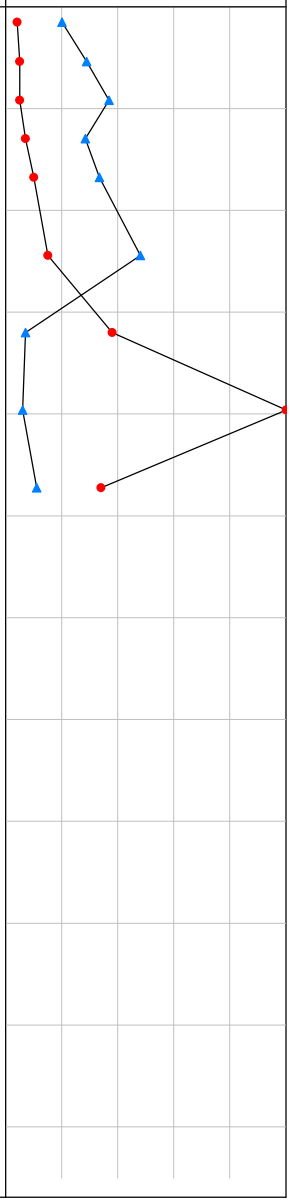
Log of Borehole No. 8

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782144
E: 551785

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
		Silty Sand/Sandy Silt Fill Brown, trace to some gravel, occsasional clayey seams, occasional cobbles, very loose to loose.		SS	1	2, 2, 2, 1	4		
				SS	2	1, 2, 3, 1	5		
				SS	3	3, 2, 3, 3	5		
	-2.70			SS	4	4, 3, 4, 6	7		
		Sand and Gravel/Cobbles Brown, trace to some silt, increased silt content in upper levels, compact to dense.		SS	5	5, 5, 5, 7	10		
				SS	6	8, 7, 8, 8	15		
				SS	7	20, 21, 17, 16	38		
				SS	8	22, 50/6"	100		
	-9.80			SS	9	20, 18, 16, 16	34		
33 / 10		End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using solid stem auger equipment on July 17, 2025 to termination at a depth of 9.8 metres.

2. Borehole was recorded as caved to a depth of 6.7 metres below the existing ground surface and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: July 17, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

Soil-Mat Engineers & Consultants Ltd.
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Sheet: 1 of 1

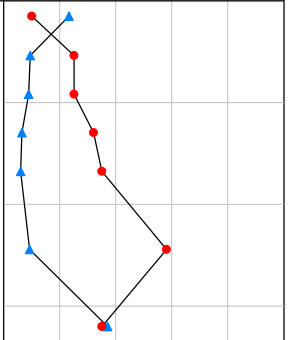
Log of Borehole No. 9

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782100
E: 551924

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
0 / 0		**Topsoil** Approximately 300 millimetres of topsoil.		SS	1	3, 4, 6, 11	10		
2 / 1				SS	2	8, 11, 14, 16	25		
4 / 1				SS	3	7, 11, 14, 16	25		
6 / 2		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.		SS	4	8, 16, 16, 19	32		
8 / 2				SS	5	8, 14, 21, 26	35		
10 / 3									
12 / 4				SS	6	16, 23, 35, 30	58		
14 / 4									
16 / 5									
18 / 5				SS	7	8, 15, 20, 35 Wet Spoon	35		
20 / 6	-6.70								
22 / 7		End of Borehole							

Moisture Content w% (10, 20, 30, 40)
Standard Penetration Test blows/300mm (20, 40, 60, 80)



NOTES:

1. Borehole was advanced using solid stem auger equipment on July 15, 2025 to termination at a depth of 6.7 metres.

2. Borehole was recorded as caved at a depth of 2.4 metres and 'dry' below the existing ground surface upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: July 15, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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Field Logged by: MT
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Sheet: 1 of 1

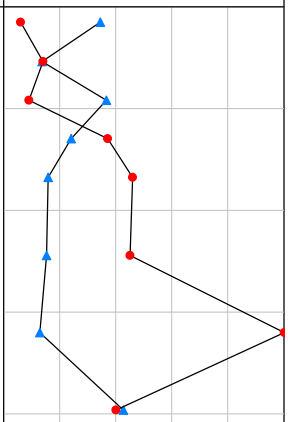
Log of Borehole No. 10 (MW10)

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782007
E: 551788

Depth (ft / m)	Elevation (m)	Description	Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface						
0 – 3 / 0 – 1		**Topsoil** Approximately 300 millimetres of topsoil.	SS	1	3, 3, 3, 4	6		
3 – 23 / 1 – 7		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.	SS	2	4, 8, 6, 6	14		
			SS	3	4, 4, 5, 7	9		
			SS	4	7, 15, 22, 15	37		
			SS	5	10, 22, 24, 32	46		
			SS	6	18, 22, 23, 30 Wet Spoon	45		
			SS	7	24, 25, 50/5" Wet Spoon	100		
23 – 26 / 7 – 8	-7.20 -8.20	**Sandy Silt/Clayey Silt** Grey, trace gravel, varying amounts of clay and sand, hard.	SS	8	9, 15, 25, 28 Wet Spoon	40		
26 / 8		End of Borehole						

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using hollow stem auger equipment on December 10, 2025 to termination at a depth of 8.2 metres.

2. Borehole was recorded as open and 'wet' at a depth of 4.0 metres below the existing ground surface upon completion and a monitoring well was installed.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Hollow Stem Auger
Drill Date: December 10, 2025
Hole Size: 200 millimetres
Drilling Contractor: Davis Drilling

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Datum: Temporary Benchmark
Field Logged by: KI
Checked by: BS
Sheet: 1 of 1

Log of Borehole No. 11

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P. Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782091
E: 551797

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
3 / 1	-1.30	**Topsoil** Approximately 300 millimetres of topsoil.		SS	1	3, 2, 3, 2	5		
				SS	2	2, 2, 2, 5	5		
7 / 2		**Silty Sand/Sandy Silt Fill** Brown, trace gravel, occasional clayey seams, loose to compact.		SS	3	4, 5, 6, 7	11		
11 / 3				SS	4	5, 6, 7, 6	13		
15 / 4				SS	5	6, 6, 6, 6	12		
16 / 5		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.		SS	6	7, 10, 13, 15	23		
21 / 6	-6.70			SS	7	7, 10, 13, 23	23		
23 / 7		End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)

NOTES:

1. Borehole was advanced using solid stem auger equipment on December 10, 2025 to termination at a depth of 6.7 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: December 10, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

Soil-Mat Engineers & Consultants Ltd.
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Sheet: 1 of 1

Log of Borehole No. 12

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P. Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782006
E: 551851

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
3 / 1	-1.50	**Topsoil** Approximately 300 millimetres of topsoil.		SS	1	4, 4, 5, 7	9		
				SS	2	3, 4, 3, 5	7		
7 / 2		**Silty Sand/Sandy Silt Fill** Brown, ttrace gravel, occasional clayey seams, occasional cobbles in the lower levels, loose.		SS	3	13, 17, 15, 15	32		
				SS	4	15, 23, 21, 19	44		
11 / 3	-3.70			SS	5	15, 20, 23, 48	43		
13 / 4		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.							
		End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)

NOTES:

1. Borehole was advanced using solid stem auger equipment on December 10, 2025 to termination at a depth of 3.7 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: December 10, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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Sheet: 1 of 1

Log of Borehole No. 13

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782210
E: 551744

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
3 / 1	-1.40	**Silty Sand/Sandy Silt Fill** Brown, trace gravel, occasional clayey seams, occasional cobbles, loose to compact.		SS	1	6, 5, 3, 3	8		
				SS	2	5, 6, 6, 6	12		
7 / 2				SS	3	5, 11, 11, 12	22		
10 / 3				SS	4	6, 9, 10, 14	19		
12 / 4	-3.70	**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.		SS	5	6, 19, 24, 32	43		
		End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)

NOTES:

1. Borehole was advanced using solid stem auger equipment on July 17, 2025 to termination at a depth of 3.7 metres.

2. Borehole was recorded as caved to a depth of 3.0 metres below the existing ground surface and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: July 17, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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Sheet: 1 of 1

Log of Borehole No. 14

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782245
E: 551768

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
0 – 2 / 0 – 0.6		**Silty Sand/Sandy Silt Fill** Brown, trace to some gravel, occasional clayey seams, occasional cobbles and organic inclusions, loose to compact.		SS	1	12, 12, 13, 11	25		
				SS	2	3, 3, 3, 5	6		
				SS	3	5, 7, 9, 8	16		
2 – 3 / 0.6 – 0.9	-2.20			SS	4	11, 17, 16, 19	33		
				SS	5	8, 22, 22, 32	44		
3 – 5 / 0.9 – 1.5		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.							
				SS	6	27, 37, 26, 19	63		
5 – 7 / 1.5 – 2.1				SS	7	5, 9, 9, 14	18		
7 – 8 / 2.1 – 2.4	-8.20			SS	8	50/4"	100		
8 / 2.4		End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)

NOTES:

1. Borehole was advanced using solid stem auger equipment on July 17, 2025 to termination at a depth of 8.2 metres.

2. Borehole was recorded as caved to a depth of 3.0 metres below the existing ground surface and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: July 17, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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Sheet: 1 of 1

Log of Borehole No. 15

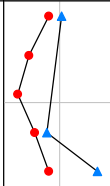
Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P.Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782214
E: 551673

Depth (ft / m)	Elevation (m)	Symbol	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
ft / m	0.00		Ground Surface							
0 – 3 / 0 – 1			**Silty Sand/Sandy Silt Fill** Brown, trace to some gravel, occasional clayey seams, loose to compact.		SS	1	7, 9, 7, 6	16		
					SS	2	7, 6, 3, 4	9		
6 – 8 / 2 – 3					SS	3	3, 2, 3, 6	5		
					SS	4	4, 6, 5, 4	11		
10 – 11 / 3 – 4	-3.70				SS	5	4, 7, 9, 9	16		
12 – 76 / 4 – 23			End of Borehole							

Moisture Content w% (10 20 30 40)

Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using solid stem auger equipment on July 17, 2025 to termination at a depth of 3.7 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: July 17, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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Sheet: 1 of 1

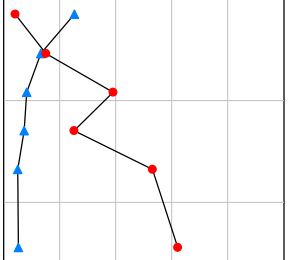
Log of Borehole No. 16

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P. Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782066
E: 551825

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
0 / 0	0.00	Ground Surface							
0–3 / 0–1		**Topsoil** Approximately 300 millimetres of topsoil.		SS	1	2, 2, 3, 3	4		
3–16 / 1–5		**Sand and Gravel/Cobbles** Brown, trace to some silt, compact to dense.		SS	2	5, 6, 9, 14	15		
				SS	3	6, 20, 19, 15	39		
				SS	4	15, 12, 13, 21	25		
				SS	5	19, 31, 22, 19	53		
16 / 5	-5.20	End of Borehole		SS	6	9, 21, 41, 50/3"	62		

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using solid stem auger equipment on December 10, 2025 to termination at a depth of 5.2 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: December 10, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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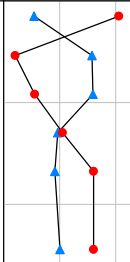
Log of Borehole No. 17

Project No: SM 250413.GIS
Project: Proposed Residential Development
Location: Dundas Street East and Paris Road
Client: LIV Communities

Project Manager: Kyle Richardson, P. Eng., QP ESA
Borehole Location: See Drawing No. 1
UTM Coordinates - N: 4782153
E: 551684

Depth (ft / m)	Elevation (m)	Description	Well Data	SAMPLE Type	Number	Blow Counts	Blows/300mm	Recovery	PP (kgf/cm2)
ft / m	0.00	Ground Surface							
		Silty Sand/Sandy Silt Fill		SS	1	21, 22, 19, 14	41		
		Brown, trace to some gravel, occasional clayey seams, occasional to moderate cobbles, dense to loose		SS	2	3, 2, 2, 4	4		
				SS	3	2, 4, 7, 8	11		
				SS	4	8, 10, 11, 16	21		
				SS	5	18, 16, 16, 28	32		
	-2.20	**Sand and Gravel/Cobbles**							
		Brown, trace to some silt, compact to dense.		SS	6	10, 10, 22, 25	32		
	-5.20	End of Borehole							

Moisture Content w% (10 20 30 40)
Standard Penetration Test blows/300mm (20 40 60 80)



NOTES:

1. Borehole was advanced using solid stem auger equipment on December 10, 2025 to termination at a depth of 5.2 metres.

2. Borehole was recorded as open and 'dry' upon completion and backfilled as per Ontario Regulation 903.

3. Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Auger
Drill Date: December 10, 2025
Hole Size: 150 millimetres
Drilling Contractor: Davis Drilling

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