



CHUNG & VANDER DOELEN
ENGINEERING LTD.

**PRELIMINARY GEOTECHNICAL AND SLOPE STABILITY
INVESTIGATION
PROPOSED MILL REDEVELOPMENT
3089 Greenfield Road
Ayr, Ontario**

SUBMITTED TO:
Greenfield Mill Inc.
3089 Greenfield Road
Ayr, ON
N0B 1E0

ATTENTION:
Mr. Kurt Fried



CHUNG & VANDER DOELEN
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April 8, 2026
File No.: 2213G-1v0

Greenfield Mill Inc.
3089 Greenfield Road
Ayr, ON
N0B 1E0

Attention: Mr. Kurt Fried

RE: Preliminary Geotechnical and Slope Stability Investigation
Proposed Mill Redevelopment
3089 Greenfield Road, Ayr, Ontario

We take pleasure in enclosing one (1) copy of our Geotechnical Investigation Report carried out at the above-referenced Site. Soil samples will be retained for a period of three (3) months and will thereafter be disposed of unless we are otherwise instructed.

If you have any questions or clarifications are required, please contact the undersigned at your convenience.

We thank you for giving us this opportunity to be of service to you.

Yours truly,
CHUNG & VANDER DOELEN ENGINEERING LTD.

Eric Y. Chung, M.Eng., P.Eng.
Principal Engineer

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1.0 INTRODUCTION

CHUNG & VANDER DOELEN ENGINEERING LTD. (CVD) has been retained by Greenfield Mill Inc. to provide a preliminary geotechnical and slope stability investigation for the proposed Mill Redevelopment planned for 3089 Greenfield Road in Ayr, Ontario.

Based on the current site concept plan, the existing mill building will be renovated, with a three- to four-storey addition proposed along the west side of the structure to accommodate an elevator/stair core and kitchen facilities. Site access is proposed from the northeast corner of the property, connecting to Greenfield Road through lands to be conveyed from an adjacent property owner. The main parking area is planned west of the renovated building and addition and will be connected to the site entrance via a primary drive aisle, with a turning circle located north of the building. A stormwater management pond is proposed south of the renovated mill within the southeast corner of the site.

The proposed access road and turning circle north of the building are planned near the toe of the existing slope, with portions of the paved areas encroaching into the slope. The purpose of this geotechnical investigation was to review the condition of the existing slope and assess the feasibility of stabilizing it with retaining wall features, as well as provide preliminary foundation recommendations for the proposed building addition, and pavement structure design.

A “Scoped” Hydrogeological Assessment was completed by CVD, which should be read in conjunction with this report.

2.0 FIELD WORK

Nine (9) boreholes, designated as Boreholes 1 to 9, were advanced on March 27, 2025, to depths between 2.15 and 6.55 m below ground surface to determine and assess the subsurface conditions at the site. The borehole locations are shown on the Borehole Location Plan, Drawing No. 1.

The field work was carried out under the supervision of a member of our engineering team, who logged the boreholes in the field, effected the subsurface sampling, and monitored the groundwater conditions.

The boreholes were advanced using a track-mounted CME-55 drill rig, supplied and operated by a specialist contractor. The drill rig was equipped with continuous flight solid and hollow stem augers, as well as standard soil sampling equipment. Standard penetration tests (SPTs) in accordance with ASTM Specification D1586 were carried out at frequent intervals of depth, and the results are shown on the Borehole Logs as Penetration Resistance or “N”-values. The compactness condition and consistency of the soil strata have been inferred from these various test results.

Groundwater conditions were monitored during advancement of the boreholes and immediately following the withdrawal of the drilling augers at each borehole location. In addition, three (3) monitoring wells were installed at selected borehole locations to determine the groundwater level/elevation and to provide hydrogeological information.



The boreholes were surveyed for the purpose of this report using a Network RTK Global Navigation Satellite System (GNSS) Receiver. The survey data was collected using the UTM Zone 17N Projection, NAD83(CSRS)v7-2010 datum and Canada Geoid Model HT2_2010v70 (CGVD28).

3.0 GEOTECHNICAL LABORATORY TESTING

Soil samples obtained from the in-situ tests were examined in the field and subsequently brought to our laboratory for visual and tactile examination to confirm field classification. Geotechnical testing performed at CVD's laboratory included natural moisture content determinations for all recovered samples along with three (3) grain size distribution analyses.

4.0 EXISTING SITE CONDITIONS

The Site is irregularly-shaped, comprising an approximate plan area of about 1.8± ha, and is bounded by the Nith River wetlands and woodlots to the south and west, by Greenfield Road and existing housing lots to the north, and by vacant lands, a woodlot and wetlands along with Northumberland Street to the east. Portions of the southwest side of the Site area are located within the 286.6± m topographic contour demarking the regional flood line elevation for the Nith River.

High ground elevations at the subject site occur along the north and east extents of the property, with elevations decreasing toward the Nith River to the south and west. Ground surface elevations at the borehole locations ranged from approximately 286.2 m to 291.57 m. Boreholes could not be advanced at the top of the GRCA-regulated slopes, which extend further upslope to a maximum elevation of approximately 301.5 m in the vicinity of the proposed site access.

5.0 SUBSURFACE CONDITIONS

5.1 General

The detailed subsurface conditions encountered at the nine (9) boreholes advanced as part of this investigation are shown on the Borehole Log Sheets, Enclosures 1 to 9. The following sections provide descriptions of the major deposits encountered at the boreholes. Enclosure A provides explanations of the various soil abbreviations and terms used on the borehole log sheets.

The stratigraphic boundaries shown on the borehole logs are inferred from non-continuous sampling conducted during advancement of the borehole drilling procedures and, therefore, represent transitions between soil types rather than exact planes of geologic change. The subsurface conditions will vary between and beyond the borehole locations.

5.2 Topsoil and Granular Base

Topsoil was encountered at the ground surface in Boreholes 1, 4, 6 to 8, with measured thicknesses



ranging from 200 to 300 mm. A 150 mm thick layer of topsoil was encountered below the granular base in Borehole 2. Additionally, in Borehole 7 buried topsoil/topsoil fill, with wood fragments, was encountered below the surficial topsoil and clayey silt fill at a depth of 0.8 m extending at least to the borehole termination depth of 2.15 m.

Granular base materials, from an existing gravel access road and parking areas, were encountered at the ground surface of Boreholes 2, 3, 5 and 9 with thickness typically ranging from 150 mm to 380 mm. Granular fill, with brick fragments, was encountered below a 50 mm thick granular base layer in Borehole 9, extending to a depth of 1.7 m below existing grade.

5.3 Fill

Fill soils were encountered underlying the topsoil or granular base in all nine (9) borehole locations extending to depths between 0.8 and 3.65 m below existing grade. Borehole 8 was terminated in the fill at a depth of 2.15 m below grade. The fill typically comprised of sands and silts with variable amounts of gravel and clay, and trace organics were commonly encountered within the fill. Concrete and/or brick fragments were observed in the fill in Boreholes 3, 8 and 9.

The Standard Penetration Test (SPT) “N”-values measured within the fill materials ranged from 3 to 33 blows per 300 mm of penetration, indicating a variable very loose to compact compactness condition. Moisture contents of samples from this layer ranged from 7 to 39%, indicating a moist to saturated moisture condition. Elevated moisture content is a strong indicator of the presence of organics within the fill.

5.4 Silt

A silt deposit was encountered below the fill in Boreholes 2, 4, 6 and 9 and below the sand deposit in Borehole 1 extending to depths between 1.4 and 2.9 m below existing grade. Boreholes 6 and 9 were terminated in the deposit at a depth of 2.15 m. Trace to some sand, trace clay was typically observed within the silt, with trace gravel, occasional sand or clayey lenses intermittently encountered.

The Standard Penetration Test (SPT) “N”-values measured within this silt deposit ranged from 6 to 31 blows per 300 mm of penetration, indicating a loose to dense compactness condition. Moisture contents of samples from this layer ranged from 12.2 to 21.5%, indicating a moist to saturated moisture condition.

5.5 Sand to Sand and Gravel

A deposit of sand to sand and gravel was encountered below the fill in Boreholes 1 and 5 extending to depths between 2.15 and at least 3.5 m below existing grade. Borehole 5 was terminated within the deposit. Trace to some silt was observed within the sand deposit and occasional silt lenses/seams were locally encountered in Borehole 1.



Two (2) grain size distribution analyses were performed on representative samples of this deposit obtained from Boreholes 1 and 5. The grain size distribution results are graphically presented on Enclosures 10 and 12.

The Standard Penetration Test (SPT) “N”-values measured within this stratum ranged from 16 to 28 blows per 300 mm of penetration, indicating a compact compactness condition. Moisture contents of samples from this layer ranged from 1 to 10%, reflecting a damp to moist moisture condition.

5.6 Sandy Silt Till

Sandy silt till was encountered below the above noted fill and native deposits in Boreholes 1 to 4, which were the only boreholes that extended below depths of 3.5 m. These four (4) boreholes all terminated within the till deposit at depths of 5.05 to 6.55 m below existing grade. Trace to some gravel and trace clay were typically encountered within the till with occasional clayey lenses and sand seams observed intermittently.

One (1) grain size distribution analysis was performed on a representative sample of this deposit obtained from Borehole 2. The grain size distribution results are graphically presented on Enclosure 11.

The Standard Penetration Test (SPT) “N”-values measured within this silt deposit ranged from 12 to 80 blows per 300 mm of penetration, indicating a compact to very dense compactness condition. Moisture contents of samples from this layer ranged from 6 to 18%, indicating a moist to wet moisture condition.

5.7 Groundwater Monitoring Program

Groundwater conditions were monitored during and immediately following the withdrawal of the drilling augers at each borehole location.

Three (3) monitoring wells were installed across the site to assess groundwater levels and elevations and to provide hydrogeological information. Manual water level readings were conducted on three (3) occasions between April 1, 2025 and October 23, 2025. The observed groundwater depths and corresponding elevations recorded during these visits are presented in the table below.

Borehole No.	Existing Ground Surface Elevation (m)	Groundwater Measurements		
		April 1, 2025	July 15, 2025	October 23, 2025
		Depth (m) / (Elevation)	Depth (m) / (Elevation)	Depth (m) / (Elevation)
1	289.81	1.02 / (288.79)	1.64 / (288.17)	1.77 / (288.04)
2	288.77	0.59 / (288.18)	0.98 / (287.78)	0.74 / (288.03)
3	286.91	2.03 / (284.88)	2.55 / (284.36)	3.09 / (283.82)



Based on the manually recorded data, groundwater levels across the Site varied between 283.82 and 288.79 m (approximately 0.5± to 3± m below existing grade). The overall groundwater flow direction is towards the south of the property in the direction of the Nith River and generally follows the topography of the Site. It should be noted that the observed groundwater table will fluctuate seasonally and in response to major weather events.

Please see CVD's "Scoped" Hydrogeological Assessment for complete details pertaining to groundwater levels and general groundwater situation.



6.0 DISCUSSION AND RECOMMENDATIONS

6.1 General

Based on the current site concept plan, the existing mill building will be renovated, with a three- to four-storey addition proposed along the west side of the structure to accommodate an elevator/stair core and kitchen facilities. Site access is proposed from the northeast corner of the property, connecting to Greenfield Road through lands to be conveyed from an adjacent property owner. The main parking area is planned west of the renovated building and addition and will be connected to the site entrance via a primary drive aisle, with a turning circle located north of the building. A stormwater management pond is proposed south of the renovated mill within the southeast corner of the site.

Based on the CVD field investigation, the boreholes are underlain by either 150 to 300 mm of topsoil or 150 to 380 mm of granular base, depending upon the location. Fill materials, typically comprised of sand and silt to sandy silt and containing occasional asphalt, wood, and brick fragments, were encountered in all nine (9) boreholes, and extended to depths varying between 0.80 and 3.65 m below grade.

Native fine granular deposits, varying between fine to medium sand and silt, underlie the fill layer. Occasional clay and/or silt lenses/seams were encountered in the deposits. These subsoils extend to depths between 1.40 and 2.90 m, corresponding to elevations between 286.91 and 287.37 m. Additionally, a sand and gravel to sand deposit was encountered beneath the fill materials in Borehole 5 and extended to at least elevation 283.06 m. The aforementioned deposits are underlain by a sandy silt till with occasional clayey lenses/seams. This deposit extends to at least the termination depths of 5.05 and 6.55 m in Boreholes 1 to 4, corresponding to elevations between 281.86 and 284.76 m.

Based on the manually recorded data, groundwater levels across the Site varied between 283.82 and 288.79 m (approximately $0.5\pm$ to $3\pm$ m below existing grade). The overall groundwater flow direction is towards the south of the property in the direction of the Nith River and generally follows the topography of the Site. It should be noted that the observed groundwater table will fluctuate seasonally and in response to major weather events.

6.2 Footing Foundations

Based on the preliminary results of this investigation, conventional strip and spread footings appear suitable for supporting the proposed building addition, provided they are founded on compact to very dense native, undisturbed soils. These soils were encountered in the “deeper” boreholes closest to the proposed addition (BH3, BH4, and BH5) at depths ranging from approximately 0.8 m to 3.65 m below existing grade. **Footings founded on compact to dense silt, sand to sand and gravel, and/or till, may be designed using a Net Geotechnical Bearing Resistance of 150 kPa at SLS and a Factored Geotechnical Resistance of 225 kPa at ULS.**

These soil bearing pressures can be achieved provided that the founding subgrade is undisturbed during construction. New footings should be founded below any existing fill or highly compressible organic



materials, building foundations and utility trenches, on competent native subsoils. Spacing between adjacent footing steps should not be steeper than 10H to 7V.

It should be noted that Borehole 9, located within the building addition area, was advanced to support pavement design and was therefore terminated at a depth of 2.15 m. At this location, loose silt was encountered between 1.7 m and 2.15 m below existing grade, and the compact to dense native soils identified in the other boreholes were not encountered within the explored depth. Additional boreholes or test pits should be completed prior to final design to confirm the thickness of fill materials and the compactness of the underlying native soils across the proposed building addition footprint.

The maximum total and differential settlements of footings designed to the above recommended bearing pressure are expected to be less than 25 and 20 mm, respectively, and these are considered tolerable for the structure being contemplated. The majority of the settlements will take place during construction and the first loading cycle of the building.

Exterior footings and footings in unheated portions of the building should be provided with a soil cover of not less than 1.2 m or equivalent synthetic thermal insulation for adequate frost protection. The founding subgrade must be protected from frost penetration during winter construction. If wet to saturated conditions are encountered, it is recommended that a 50 to 75 mm thick protective concrete slab be poured and allowed to set on the prepared subgrade to further protect it from disturbance by construction traffic and the elements.

The footing excavations should be inspected by the geotechnical engineer to ensure adequate soil bearing and proper subgrade preparation.

6.3 Earthquake Considerations

In accordance with The Ontario Building Code 2024 (OBC), the proposed structure should be designed to resist earthquake load and effects as per Subsection 4.1.8.

Based on the soils condition encountered at the boreholes and our experience in the surrounding area, the site can be classified as a Site Class D as per OBC Table 4.1.8.4.B.

6.4 Groundwater Control and Open Cut Excavation

Excavations are generally expected to be in the order of up to 1± to 3± m deep for foundation construction, pavement construction, and installing site servicing. Excavations are expected to extend primarily through topsoil, granular base, and fill materials, and into the underlying native fine-granular or till deposits which are generally in a loose to compact compactness condition. The on-site soils are generally classified as Type 3 soils in accordance with the current Occupational Health and Safety Act.

Above the groundwater table, or where adequate groundwater control is provided, excavations in the Type 3 soils are expected to remain stable during the construction period provided that side slopes are



cut to 1H : 1V from the bottom of the excavation.

Where seepage/perched groundwater are encountered, side slopes should be cut to angles of 3H : 1V or flatter. The side slopes should be suitably protected from erosion processes. Excavations can also be supported using a trench box or timber lagging.

Dewatering will be required for any excavations in fine granular deposits below the water table, as these soils will become “quick” and lose their ability to support loads. The groundwater should be lowered and maintained at least 600 mm below the excavation to allow footing foundations, engineered fill, and/or site servicing to be constructed under dry conditions. Groundwater can be controlled by pumping from filtered sump pit(s) to a depth of 0.6 m below the groundwater table, and stormwater runoff or perched water above the groundwater table can be managed similarly as required.

It should be noted that the groundwater table may fluctuate seasonally and during major weather events. Excavation is recommended during the typically drier summer months, when groundwater levels are expected to be lower to minimize dewatering requirements and facilitate construction.

CVD can provide additional recommendations regarding groundwater control and dewatering during the detailed design phase, upon request.

6.5 Lateral Earth Pressure

The unbalanced foundation walls and any other soil retaining structures should be designed to resist the lateral earth pressure acting against these walls. The following formula may be used to calculate the unfactored earth pressure distribution.

$$P = K (\gamma H + q)$$

where:

P =	Lateral earth pressure	kPa
K =	earth pressure coefficient, 0.5 for non-yielding foundation wall earth pressure coefficient, 0.3 for yielding retaining wall	
γ =	unit weight of granular backfill, compacted to 95% SPMDD	21 kN/m ³
H =	unbalanced height of wall	m
q =	surcharge load at ground surface	kPa

The backfill for the foundation walls and retaining walls should be free-draining granular materials (OPSS Granular “B” Type I) which should have less than 8% silt size particles (10% for quarried materials). The backfill should be placed in thin layers and compacted to 95% SPMDD. Over-compaction adjacent to the foundation/retaining walls should be avoided. Compaction should be carried out with hand operated equipment within 1 m of the foundation wall or retaining wall. Weeping tiles leading to a frost-free outlet or weep holes should be installed to effect drainage behind the retaining wall.



The sliding resistance of the retaining wall footings should be checked. The unfactored horizontal resistance against sliding between cast-in-place concrete and the various soils can be calculated using the following unit weight and friction coefficient:

Soil	Unit Weight (kN/m ³)	Friction Coefficient
Compact Fine-Granular Deposits	20.0	0.30
Compact to Dense Sandy Silt Till	21.0	0.40
Well Compacted Granular Backfill	21.0	0.45

The designer should apply appropriate load factors to earth pressures and surcharges, and apply applicable resistance factors to sliding resistance, in accordance with the governing design standard.

6.6 Pavement Design

The predominant subgrade materials at the site will consist of fine-granular fill or native deposits in a loose to compact compactness condition. The following flexible pavement structures are recommended based on assumed CBR values, groundwater conditions, frost susceptibility of subgrade soils and estimated traffic volumes.

Component	Light Duty (mm)	Heavy Duty (mm)
Asphaltic Concrete HL3	40	50
Asphaltic Concrete HL8	50	60
Granular "A" Base	150	150
Granular "B" Sub-base	300	450

A light-duty pavement structure is recommended for all car parking areas, while a heavy-duty pavement structure should be implemented for access driveways and zones subjected to heavier loads, such as fire trucks, garbage trucks, and delivery vehicles.

The pavement design considers that pavement construction will be carried out during the drier time of the year and that the subgrade is stable, not heaving under construction equipment traffic.

Prior to placement of the granular subbase materials, all topsoil and other deleterious materials must be stripped from the proposed pavement areas to expose inorganic subgrade soils. The exposed subgrade surface must be thoroughly proof-rolled and recompacted by large heavy compaction equipment (10-tonne compactor is recommended) and inspected by qualified geotechnical personnel. If the subgrade is wet or unstable following proof-rolling, additional granular sub-base and/or placement of a geogrid/geotextile material may be required.



Bulk fill placed to raise site grades in pavement areas should consist of select approved inorganic fill or imported sand and gravel (OPSS Granular “B” Type I), placed in maximum 300 mm thick lifts, and compacted to no less than 95% Standard Proctor maximum dry density (SPMDD). The moisture content of the soil must be within 3% dry of its optimum moisture condition to achieve the specified degree of compaction.

The Granular “A” and Granular “B” materials should be produced in accordance with the current OPSS specifications and placed and uniformly compacted to at least 100% SPMDD. The placing and rolling of the asphalt mixture should conform to OPSS.MUNI 310 Table 10 and should be compacted to no less than 92% of the Marshall density (MRD). Frequent in situ density testing by this office should be carried out to verify that the specified degree of compaction is being achieved and maintained.

SS-1 or SS-1HH tack coat should be applied to all binder course surfaces and vertical surfaces (i.e., curbs, pavement joints, etc.) prior to placement of asphalt. Refer to OPSS 310 and OPSS 1101 for additional details.

It is noted that even well compacted trench backfill could settle for a period of time after construction. In this regard, the surface course of the asphaltic concrete should be placed at least one (1) year after trench backfill is completed to allow any minor settlements to occur within the trench backfill. The incomplete pavement structure may not be capable of supporting construction traffic. Consequently, minor repairs of the sub-base, base and asphaltic concrete may be required prior to paving with the base course and/or the surface course asphaltic concrete.

The prepared earth subgrade and final pavement surfaces should be graded to direct water runoff away from buildings, sidewalks, and other similar pertinent structures. Positive drainage outlets should be provided at all low points of the prepared earth subgrade, such as stub drains and/or longitudinal sub-drains extended from the catch-basins. Systematic drainage of the granular base materials will promote the longevity of the pavement structures.

7.0 SLOPE STABILITY ANALYSES

The proposed access road and turning circle north of the building are planned near the toe of the existing slope, with portions of the paved areas encroaching into the slope.

Two (2) representative slope cross-sections (Sections A–A’ and B–B’) were developed based on the provided topographic survey contours to evaluate the stability of the existing slope conditions and to represent the range of slope inclinations across the site. To assess the feasibility of accommodating the proposed roadway features and turning circle, the slope models were subsequently updated to include retaining wall elements, and stability analyses were completed to determine the resulting factors of safety.

It should be noted that these analyses are preliminary and were undertaken to evaluate the general feasibility of this approach. As part of the detailed design stage, additional slope stability analyses will be required for the slope north of the building. Further analyses will also be required as part of



the detailed retaining wall design for the proposed entrance roadway from Greenfield Road along the east side of the site to evaluate slope stability under the final roadway alignment and grading conditions.

The two (2) sections are depicted on the Slope Stability Cross-Section Location Plan, Drawing 2. The results of the slope stability analyses are included in Appendix B.

The soil parameters and groundwater levels used in the slope stability analyses were determined based on the field and laboratory test results from the current investigation, as well as our experience with similar soil types. The selected “effective stress - drained condition” soil parameters were used to perform the stability analyses with the use of the slope stability modeling software Slide by Rocscience Inc., applying the Morgenstern-Price method of analysis.

The following soil strength parameters were used in the stability analyses:

Soil Type	Unit Weight (kN/m ³)	Friction Angle (φ ^o)	Cohesion (kPa)
Fill	19	28	0
Compact Silt	20	30	0
Compact Sandy Silt Till	21	32	0
Dense to Very Dense Sandy Silt Till	22	35	0
Crushed Clear Stone (Wall Backfill)	18	35	0

The groundwater level in Borehole 2 was measured at 288.18 m on April 1, 2025. The groundwater is interpreted to approximately follow the contours of the site.

The results of the slope stability analyses are presented graphically in Appendix B. The top and bottom elevations of the existing slopes, average slope inclinations, and corresponding factors of safety for each section are summarized in the table below.

Section	Top of Slope Elevation (m)	Bottom of Slope Elevation (m)	Average Slope Inclination	Factor of Safety
A-A' Existing	297.5	289.5	2.1H:1V	1.14
B-B' Existing	299.0	289.0	2.3H:1V	1.16

To evaluate the feasibility of installing retaining walls at the proposed locations, an iterative analysis was undertaken with varying wall heights and geogrid reinforcement extents, while generally maintaining the proposed bottom-of-wall elevations for both sections. Infinite strength was assigned to the concrete retaining wall facing in the model to ensure that potential failure surfaces did not intersect the



wall face. Final retaining wall design will be dependent on the selected retaining wall system and will be completed as part of the detailed design stage. For the purposes of this analysis, a long-term design strength of 37.6 kN/m was assumed for the geogrid reinforcement.

The key parameters and resulting factors of safety for the modeled retaining wall configurations are summarized below.

Section	Top of Slope Elevation (m)	Top of Wall Elevation (m)	Wall Height (m)	Wall Width ¹ (m)	Factor of Safety
A-A' with Retaining Wall	297.5	294.0	5.1	4.5	1.46
B-B' with Retaining Wall	299.0	291.6	2.3	2.0	1.31

Note: 1. Includes geogrid reinforced backfill zone.

The Ontario Ministry of Natural Resources *River and Stream Systems and Great Lakes Technical Guides* recommend a Factor of Safety between 1.3 and 1.5 for land uses classified as "Active."

The analyses indicate that Sections A-A' and B-B' currently have Factors of Safety below 1.3. Following the iterative analysis, both sections achieved Factors of Safety greater than 1.3 with the addition of retaining walls, indicating that stabilization can be achieved with the proposed wall configurations.

It is noted that alternative retaining wall systems, such as gravity walls, may also be suitable for achieving the required stability. Regardless of the selected retaining wall system, additional slope stability analyses will be required during detailed design to confirm the suitability and performance of the final retaining wall configuration. While a detailed analysis was not completed for the proposed site access entrance, a similar stabilization approach is considered feasible given that the slope inclinations and heights are comparable to those evaluated in this preliminary assessment.

During construction, existing vegetation along the slopes should be preserved where practical. Disturbed areas should be restored as necessary to improve surficial stability and minimize the potential for erosion.



8.0 CLOSURE

The Limitations of Report, as quoted in Appendix A, is an integral part of this report.

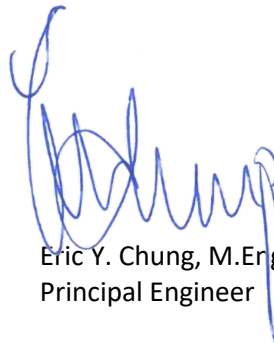
We trust that the information presented in this report is complete within our terms of reference. If there are any further questions concerning this report, please do not hesitate to contact our office.

Yours truly,

CHUNG & VANDER DOELEN ENGINEERING LTD.



Mark Marriner, P.Eng.
Associate Director
Geotechnical Services



Eric Y. Chung, M.Eng., P.Eng.
Principal Engineer



APPENDIX A

Limitations of Report



APPENDIX “A”

LIMITATIONS OF REPORT

The conclusions and recommendations given in this report are based on information determined at the testhole locations. Subsurface and groundwater conditions between and beyond the testholes may differ from those encountered at the testhole locations, and conditions may become apparent during construction which could not be detected or anticipated at the time of the site investigation. It is recommended practice that the Soils Engineer be retained during construction to confirm that the subsurface conditions throughout the site do not deviate materially from those encountered in the testholes.

The comments made in this report on potential construction problems and possible methods are intended only for the guidance of the designer. The number of testholes may not be sufficient to determine all the factors that may affect construction methods and costs. For example, the thickness of surficial topsoil or fill layers may vary markedly and unpredictably. The contractors bidding on this project or undertaking the construction should, therefore, make their own interpretation of the factual information presented and draw their own conclusion as to how the subsurface conditions may affect their work.

The benchmark and elevations mentioned in this report were obtained strictly for use in the geotechnical design of the project and by this office only, and should not be used by any other parties for any other purposes.

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. CHUNG & VANDER DOELEN ENGINEERING LIMITED accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

This report does not reflect the environmental issues or concerns unless otherwise stated in the report. The design recommendations given in this report are applicable only to the project described in the text and then only if constructed substantially in accordance with the details stated in this report. Since all details of the design may not be known, we recommend that we be retained during the final design stage to verify that the design is consistent with our recommendations, and that assumptions made in our analysis are valid.

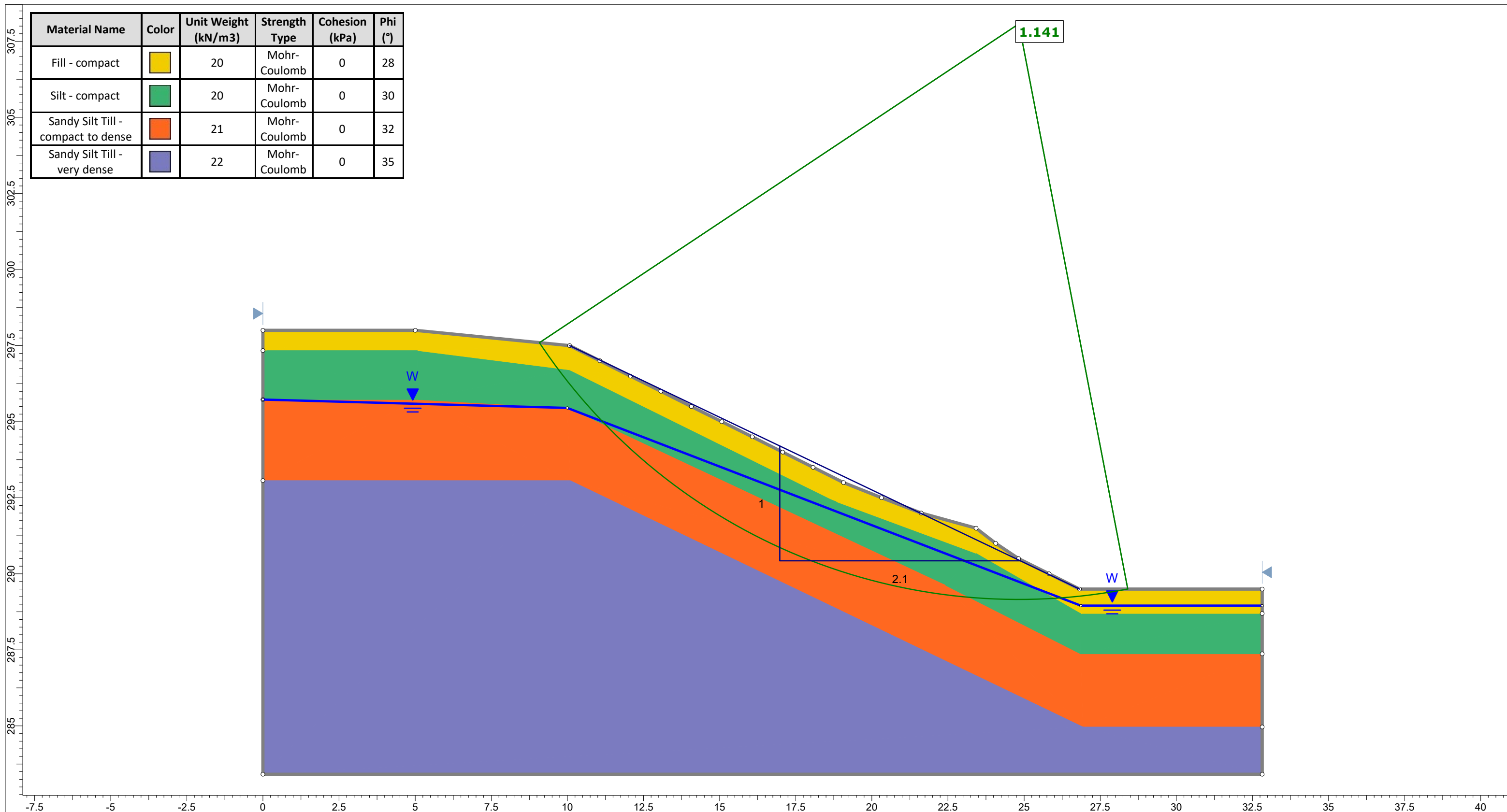



APPENDIX B

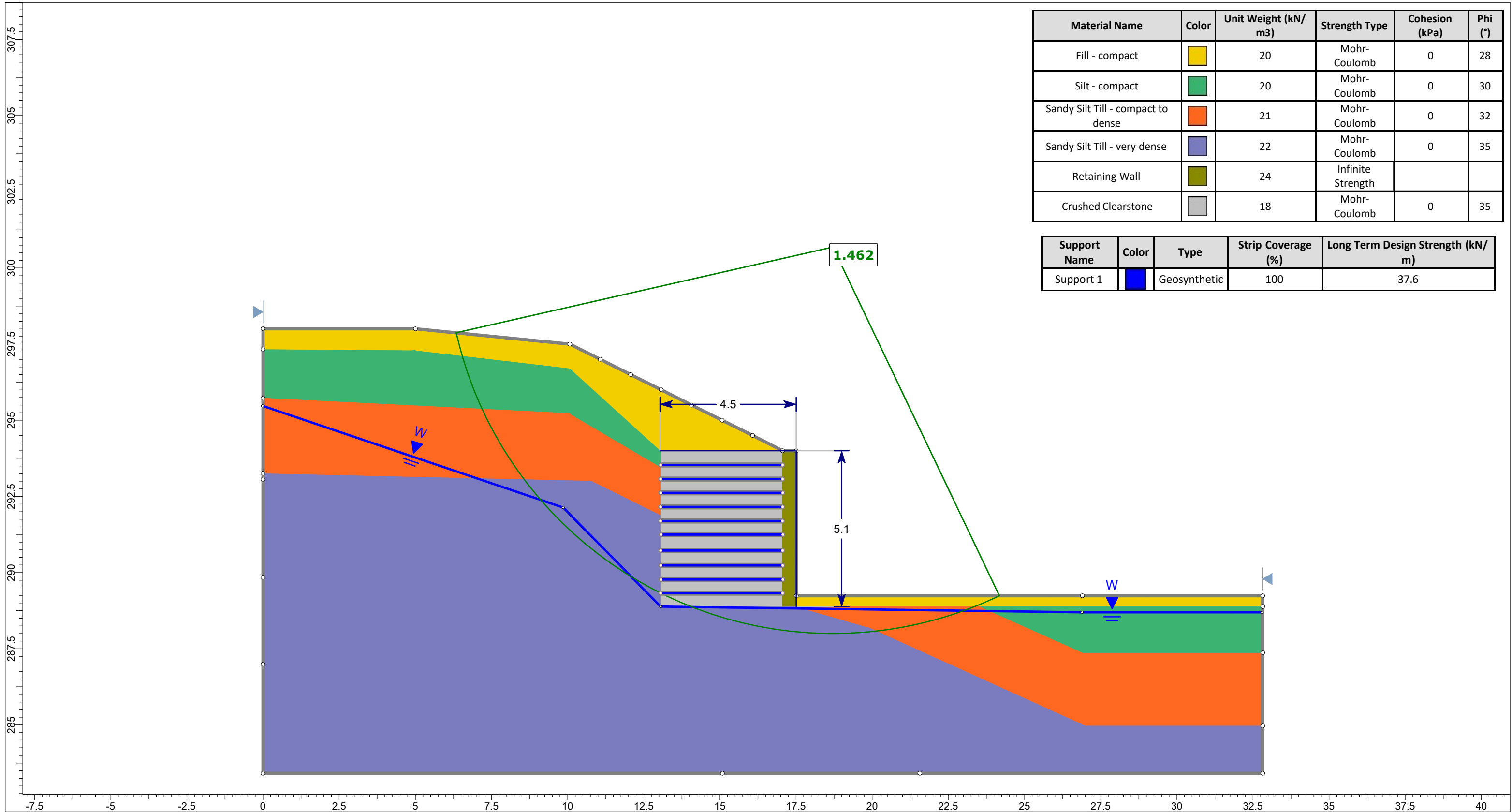
Slope Stability Analysis



Material Name	Color	Unit Weight (kN/m ³)	Strength Type	Cohesion (kPa)	Phi (°)
Fill - compact	Yellow	20	Mohr-Coulomb	0	28
Silt - compact	Green	20	Mohr-Coulomb	0	30
Sandy Silt Till - compact to dense	Orange	21	Mohr-Coulomb	0	32
Sandy Silt Till - very dense	Purple	22	Mohr-Coulomb	0	35




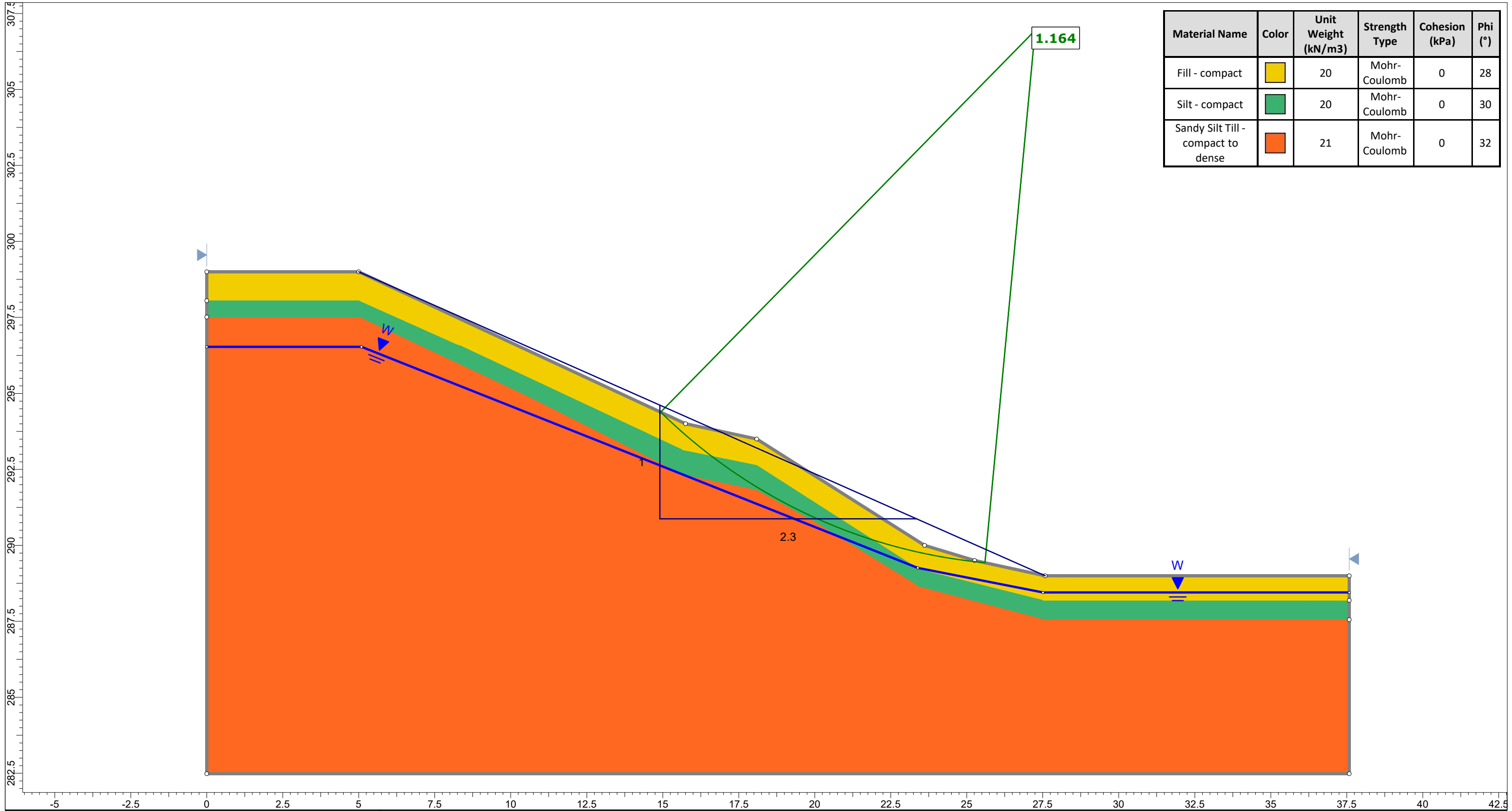
	Project		Proposed Mill Redevelopment	
	Group	Section A-A'	Scenario	Existing Conditions
	Drawn By	MM	Company	CVD
	Date	2026-03-31	File Name	2213




Material Name	Color	Unit Weight (kN/m ³)	Strength Type	Cohesion (kPa)	Phi (°)
Fill - compact	Yellow	20	Mohr-Coulomb	0	28
Silt - compact	Green	20	Mohr-Coulomb	0	30
Sandy Silt Till - compact to dense	Orange	21	Mohr-Coulomb	0	32
Sandy Silt Till - very dense	Purple	22	Mohr-Coulomb	0	35
Retaining Wall	Olive Green	24	Infinite Strength		
Crushed Clearstone	Grey	18	Mohr-Coulomb	0	35

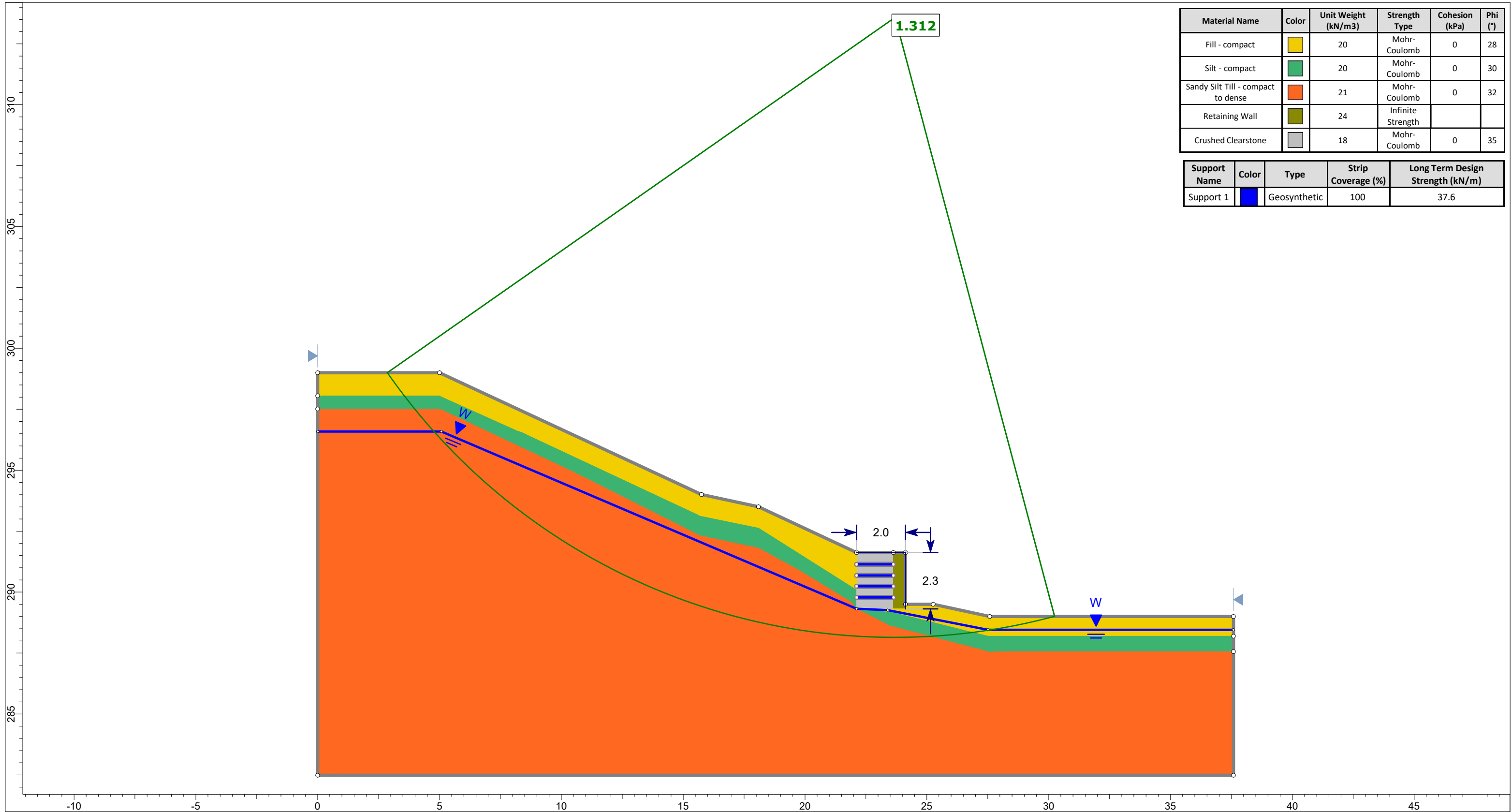
Support Name	Color	Type	Strip Coverage (%)	Long Term Design Strength (kN/m)
Support 1	Blue	Geosynthetic	100	37.6

	Project		Proposed Mill Redevelopment	
	Group	Section A-A'	Scenario	Proposed with Retaining Wall
	Drawn By	MM	Company	CVD
	Date	2026-03-31	File Name	2213



Material Name	Color	Unit Weight (kN/m ³)	Strength Type	Cohesion (kPa)	Phi (°)
Fill - compact	Yellow	20	Mohr-Coulomb	0	28
Silt - compact	Green	20	Mohr-Coulomb	0	30
Sandy Silt Till - compact to dense	Orange	21	Mohr-Coulomb	0	32

	Project		Proposed Mill Redevelopment	
	Group	Section B-B'	Scenario	Existing Conditions
	Drawn By	MM	Company	CVD
	Date	2026-03-31	File Name	2213



Material Name	Color	Unit Weight (kN/m ³)	Strength Type	Cohesion (kPa)	Phi (°)
Fill - compact	Yellow	20	Mohr-Coulomb	0	28
Silt - compact	Green	20	Mohr-Coulomb	0	30
Sandy Silt Till - compact to dense	Orange	21	Mohr-Coulomb	0	32
Retaining Wall	Grey	24	Infinite Strength		
Crushed Clearstone	Light Grey	18	Mohr-Coulomb	0	35

Support Name	Color	Type	Strip Coverage (%)	Long Term Design Strength (kN/m)
Support 1	Blue	Geosynthetic	100	37.6

	Project		Proposed Mill Redevelopment	
	Group	Section B-B'	Scenario	Proposed with Retaining Wall
	Drawn By	MM	Company	CVD
	Date	2026-03-31	File Name	2213

ENCLOSURES



Soil Abbreviations and Terms Used on Record of Borehole Sheets

TERMINOLOGY DESCRIBING COMMON SOIL TYPES:

Topsoil	-	mixture of soil and humus capable of supporting vegetation
Peat	-	mixture of visible and invisible fragments of decayed organic matter
Till	-	unstratified glacial deposit which may range from clay to boulders
Fill	-	soil materials identified as being placed anthropologically

CLASSIFICATION (UNIFIED SYSTEM)

Clay	<0.002mm
Silt	0.002 to .075mm
Sand	0.075 to 4.75mm
	Fine 0.075 to 0.425 mm
	Medium 0.425 to 2.0 mm
	Coarse 2.0 to 4.75 mm
Gravel	4.75 to 75mm
	Fine 4.75 to 19 mm
	Coarse 19 to 75 mm
Cobbles	75 to 300mm
Boulders	>300mm

TERMINOLOGY

Soil Composition	% by Weight
"traces"	<10%
"some"(eg. some silt)	10-20%
Adjective (eg. sandy)	20-35%
"and"(eg. sand and gravel)	35-50%

Standard Penetration Resistance (SPT): Standard Penetration Resistance ('N' Values) refers to the number of blows required to advance a standard (ASTM D1586) 51 mm Ø (2 inch) split-spoon sampler by the use of a free falling, 63.5 Kg (140lbs) hammer. The number of blows from the drop weight is recorded for every 15 cm (6 inches). The hammer is dropped from a distance of 0.76m (30 inches) providing 474.5 Joules per blow. When the sampler is driven a total of 45 cm (18 inches) into the soil, the standard penetration index ('N' Value) is the total number of blows for the last 30 cm (12 inches).

Dynamic Cone Penetration Resistance (DCPT): Dynamic Cone Penetration Resistance is similar to a SPT with the 474.5 Joule/blow impulse provided by the free falling hammer where the split-spoon sampler is replaced by a 51 mm Ø, 60° conical point and the number of blows is recorded continuously for every 30 cm (12 inches).

COHESIVE SOILS CONSISTENCY

	(kPa)	(P.S.F.)	Nominal 'N' Value
Very Soft	<12	<250	0-2
Soft	12-25	250-500	2-4
Firm	25-50	500-1000	4-8
Stiff	50-100	1000-2000	8-15
Very Stiff	100-200	2000-4000	15-30
Hard	>200	>4000	>30

RELATIVE DENSITY OF COHESIONLESS SOIL

	'N' Value
Very Loose	0-4
Loose	4-10
Compact	10-30
Dense	30-50
Very Dense	>50

MOISTURE CONDITIONS:

Cohesive Soil
DTPL- Drier than plastic limit
APL- About plastic limit
WTPL- Wetter than plastic limit
MWTPL- Much wetter than plastic limit

Cohesionless Soil
Damp
Moist
Wet
Saturated

SAMPLE TYPES AND ADDITIONAL FIELD TESTS

SS Split Spoon Sample (obtained from SPT)	GS Grab Sample	PP Pocket Penetrometer
AS Auger Sample	BS Bulk Sample	VANE Peak & Remolded shear
	TW Thin Wall Sample or Shelby Tube	DMT Flat Plate Dilatometer

LABORATORY TESTS

SG Specific Gravity	S Sieve Analysis	W Water Content
H Hydrometer	P Field Permeability	K Lab Permeability
W_p Plastic Limit	W_L Liquid Limit	I_p Plasticity Index
GSA Grain Size Analysis	C Consolidation	UNC Unconfined compression

FILE No: 2213

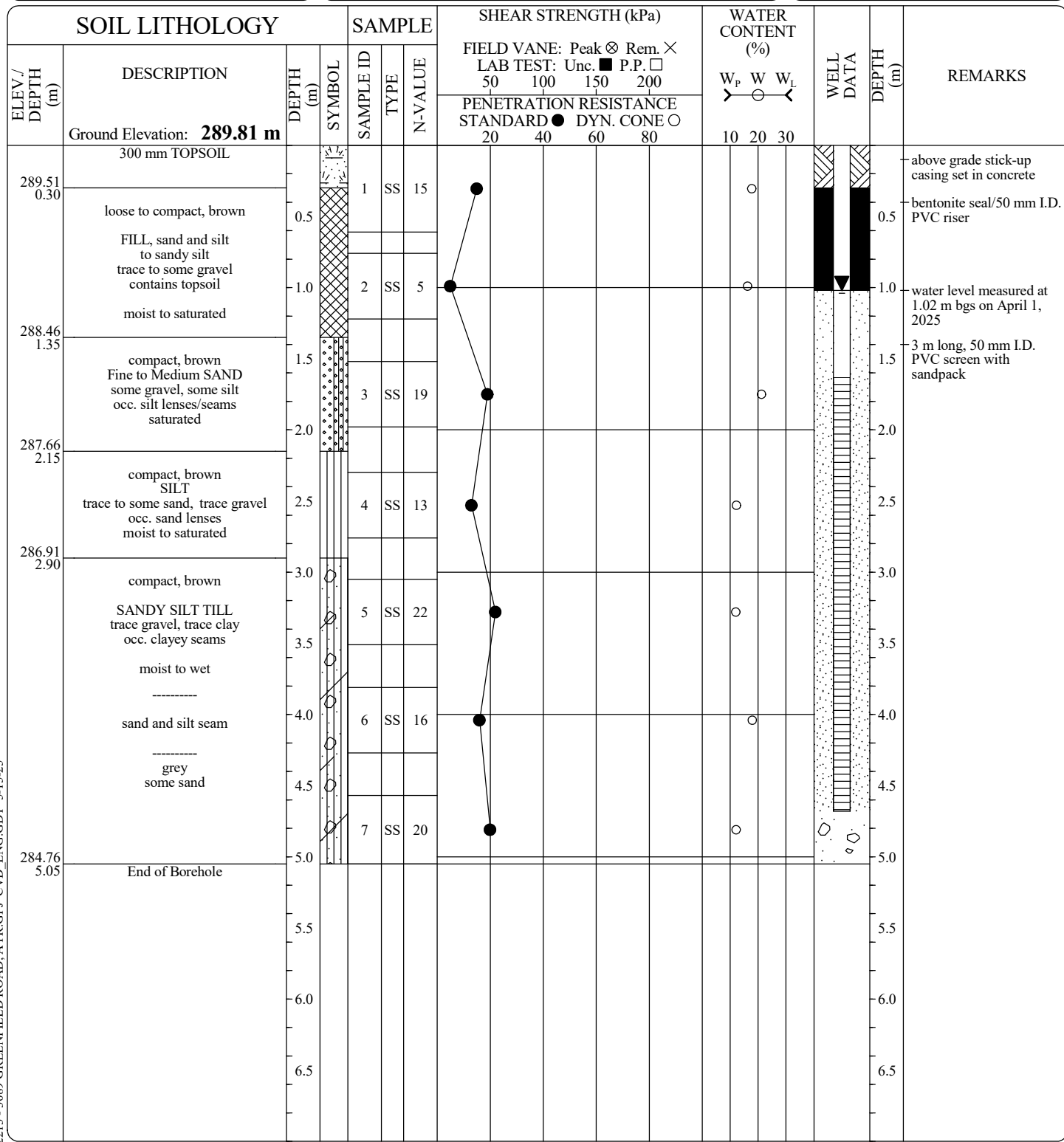
BOREHOLE No. 1



Client: **Greenfield Mill Co Inc.**
Project: **Proposed Mill Redevelopment**
Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Augers**
Size: **83 mm I.D.**
Date: **Mar 27 - 25 TO Mar 27 - 25**



CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR.GPJ_CVD_ENG.GDT 5-15-25

PROJECT MANAGER: EYC

**CHUNG & VANDER DOELEN
ENGINEERING LTD.**
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Kitchener, Ontario N2H 5E1
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FILE No: 2213

BOREHOLE No. 2



Client: **Greenfield Mill Co Inc.**
Project: **Proposed Mill Redevelopment**
Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Augers**
Size: **83 mm I.D.**
Date: **Mar 27 - 25 TO Mar 27 - 25**

ELEV./ DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE		SHEAR STRENGTH (kPa)				WATER CONTENT (%)			WELL DATA	DEPTH (m)	REMARKS	
				SAMPLE ID	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200				W _p	W	W _L				
	Ground Elevation: 288.77 m															
288.47 0.30	150 mm GRANULAR BASE 150 mm TOPSOIL			1	SS	16										above grade stick-up casing set in concrete
	compact, dark brown to brown FILL, sand and silt, trace gravel trace clay, moist to wet	0.5														bentonite seal/50 mm I.D. PVC riser
287.97 0.80																water level measured at 0.59 m bgs on April 1, 2025
	compact, brown SILT, trace to some sand trace clay, occ. sand seams saturated	1.0		2	SS	15										
287.37 1.40																
	compact to dense, brown SANDY SILT TILL trace to some gravel trace clay occ. clayey lenses/seams	1.5		3	SS	13										3 m long, 50 mm I.D. PVC screen with sandpack
	moist to wet	2.0														
	grey	2.5		4	SS	16										
		3.0														
		3.5		5	SS	35										
		4.0														
		4.5		6	SS	16										
		5.0														
		5.5		7	SS	18										
		6.0														
282.22 6.55	End of Borehole	6.5		8	SS	23										

CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR.GPJ CVD_ENG.GDT 5-15-25

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PROJECT MANAGER: **EYC**

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FILE No: 2213

BOREHOLE No. 3



Client: **Greenfield Mill Co Inc.**
Project: **Proposed Mill Redevelopment**
Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Augers**
Size: **83 mm I.D.**
Date: **Mar 27 - 25 TO Mar 27 - 25**

ELEV./ DEPTH (m)	SOIL LITHOLOGY DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE			SHEAR STRENGTH (kPa)				WATER CONTENT (%)			WELL DATA	DEPTH (m)	REMARKS
				SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200				W _p	W	W _L			
							PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80									
Ground Elevation: 286.91 m																
286.53 0.38	380 mm GRANULAR BASE contains asphalt fragments			1	AS	25										above grade stick-up casing set in concrete
	loose to compact brown to black	0.5														bentonite seal/50 mm I.D. PVC riser
	FILL, sandy silt to sand and silt trace gravel, trace clay trace topsoil	1.0		2	SS	4										
	occ. clayey seams moist to wet	1.5														
		2.0		3	SS	6										3 m long, 50 mm I.D. PVC screen with sandpack
	contains brick fragments saturated	2.5		4	SS	5										water level measured at 2.03 m bgs on April 1, 2025
		3.0														
	brown FILL, sand and gravel contains concrete fragments	3.5		5	SS	22										
283.26 3.65	compact, grey SANDY SILT TILL trace gravel, trace clay	4.0		6	SS	12										
	occ. sand lenses moist to wet	4.5														
		5.0		7	SS	20										
281.86 5.05	End of Borehole	5.0														

CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR, ONT. CVD_ENG.GDT 5-15-25

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PROJECT MANAGER: **EYC**

FILE No: 2213

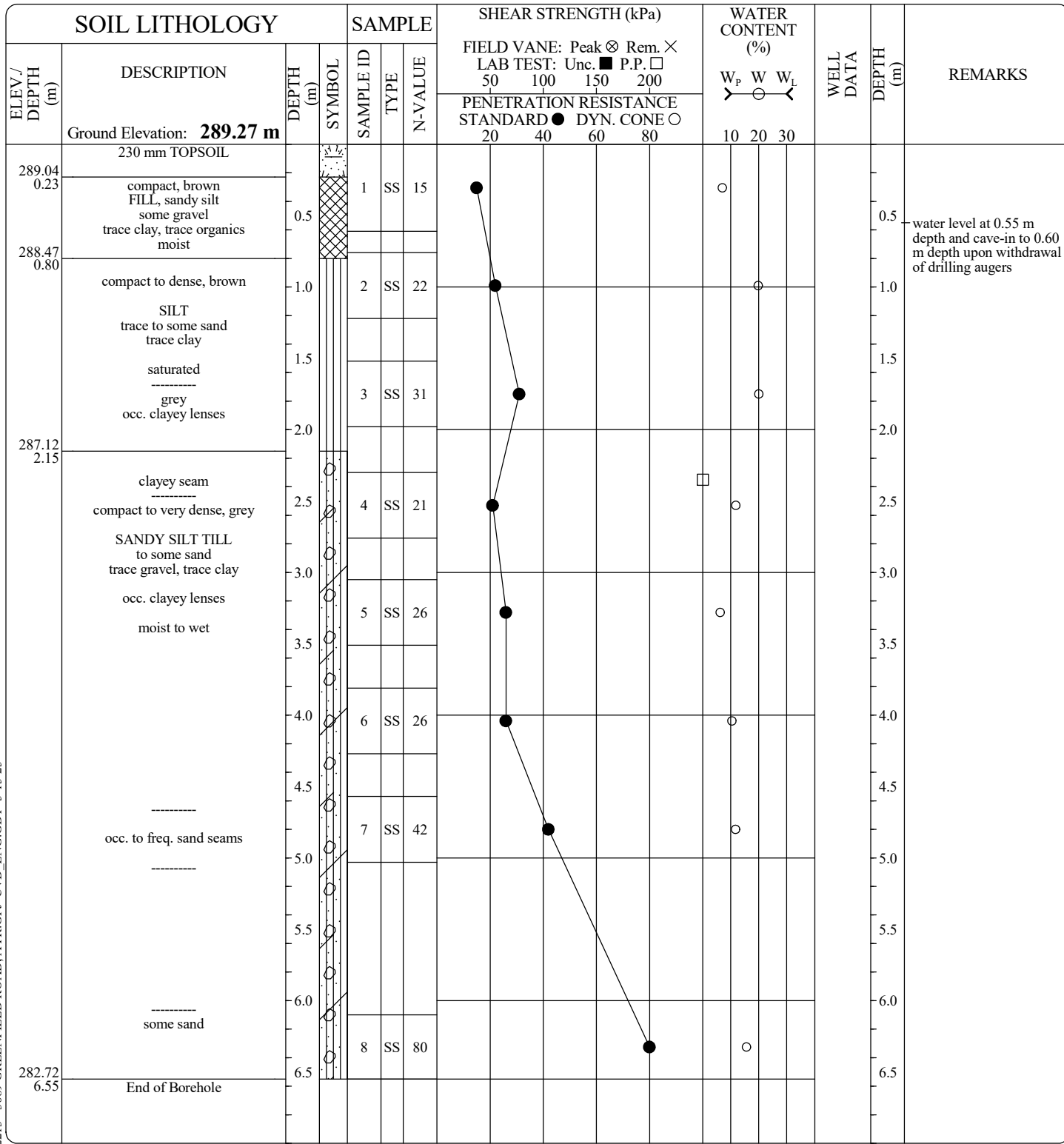
BOREHOLE No. 4



Client: **Greenfield Mill Co Inc.**
Project: **Proposed Mill Redevelopment**
Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Augers**
Size: **83 mm I.D.**
Date: **Mar 27 - 25 TO Mar 27 - 25**



CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR.GPJ CVD_ENG.GDT 5-15-25

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PROJECT MANAGER: **EYC**

FILE No: 2213

BOREHOLE No. 5



Client: **Greenfield Mill Co Inc.**
Project: **Proposed Mill Redevelopment**
Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Augers**
Size: **83 mm I.D.**
Date: **Mar 27 - 25 TO Mar 27 - 25**

SOIL LITHOLOGY		SAMPLE		SHEAR STRENGTH (kPa)				WATER CONTENT (%)			WELL DATA	DEPTH (m)	REMARKS
ELEV./DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200	PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80					
Ground Elevation: 286.56 m													
286.23 0.33	330 mm GRANULAR BASE contains asphalt fragments	0.5	[Cross-hatched symbol]	1	AS	17	●				○		
	compact, brown FILL, sand and silt trace to some gravel trace topsoil moist to saturated	1.0	[Cross-hatched symbol]	2	SS	12	●				○		
		1.5	[Cross-hatched symbol]	3	SS	11	●				○		
284.26 2.30	compact, brown SAND AND GRAVEL TO SAND trace silt saturated	2.5	[Dotted symbol]	4	SS	28	●				○		
		3.0	[Dotted symbol]	5	SS	16	●				○		
283.06 3.50	End of Borehole	3.5											

water level at 1.85 m depth and cave-in to 2.15 m depth upon withdrawal of drilling augers

CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR.GPJ CVD_ENG.GDT 5-15-25

PROJECT MANAGER: **EYC**

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FILE No: 2213

BOREHOLE No. 6



Client: **Greenfield Mill Co Inc.**
Project: **Proposed Mill Redevelopment**
Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
Method: **Hollow Stem Augers**
Size: **83 mm I.D.**
Date: **Mar 27 - 25 TO Mar 27 - 25**

SOIL LITHOLOGY		SAMPLE			SHEAR STRENGTH (kPa)				WATER CONTENT (%)			WELL DATA	DEPTH (m)	REMARKS		
ELEV./DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200				PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80				W _p	W
Ground Elevation: 291.57 m																
291.34 0.23	230 mm TOPSOIL															
	very loose to loose, brown FILL, sand and silt trace clay trace organics moist	0.5		1	SS	3	●									
		1.0		2	AS	9	●									
290.07 1.50	compact, brown SILT trace sand moist to wet	1.5														
		2.0		3	SS	12	●									
289.42 2.15	End of Borehole	2.15													borehole open upon withdrawal of drilling augers	
		2.5														
		3.0														
		3.5														
		4.0														
		4.5														
		5.0														
		5.5														
		6.0														
		6.5														

CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR, ONT. CVD_ENG.GDT 5-15-25

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PROJECT MANAGER: **EYC**

FILE No: 2213

BOREHOLE No. 7



Client: **Greenfield Mill Co Inc.**
 Project: **Proposed Mill Redevelopment**
 Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
 Method: **Solid Stem Augers**
 Size: **152 mm O.D.**
 Date: **Mar 27 - 25 TO Mar 27 - 25**

SOIL LITHOLOGY			SAMPLE			SHEAR STRENGTH (kPa)				WATER CONTENT (%)			WELL DATA	DEPTH (m)	REMARKS	
ELEV./DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200				PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80					W _p
Ground Elevation: 286.51 m																
286.31 0.20	200 mm TOPSOIL															
	loose, grey FILL, clayey silt trace gravel, trace sand moist	0.5		1	SS	9	●						○			
285.71 0.80	buried TOPSOIL / topsoil-like FILL contains wood fragments	1.0		2	SS	8	●						○			
		1.5														
		2.0		3	AS	3	●						○			
284.36 2.15	End of Borehole															
		2.5														
		3.0														
		3.5														
		4.0														
		4.5														
		5.0														
		5.5														
		6.0														
		6.5														

borehole open upon withdrawal of drilling augers

CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR, ONT. CVD_ENG.GDT 5-15-25

PROJECT MANAGER: EYC

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FILE No: 2213

BOREHOLE No. 8



Client: **Greenfield Mill Co Inc.**
 Project: **Proposed Mill Redevelopment**
 Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

Machine: **CME-55 Track**
 Method: **Solid Stem Augers**
 Size: **152 mm O.D.**
 Date: **Mar 27 - 25 TO Mar 27 - 25**

SOIL LITHOLOGY			SAMPLE			SHEAR STRENGTH (kPa)				WATER CONTENT (%)			WELL DATA	DEPTH (m)	REMARKS	
ELEV./DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200				PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80					W _p
286.00	230 mm TOPSOIL	0.23														
	loose to compact dark brown to brown	0.5		1	SS	10										
	FILL, sand and silt trace gravel, trace clay	1.0		2	SS	10										
	contains brick fragments	1.5														
	moist	2.0		3	SS	6										
	FILL, silty sand and gravel saturated	2.15														
284.08	End of Borehole	2.15														borehole open upon withdrawal of drilling augers

CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR, GPJ_CVD_ENG.GDT 5-15-25

PROJECT MANAGER: EYC

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FILE No: 2213

BOREHOLE No. 9



Client: **Greenfield Mill Co Inc.**
 Project: **Proposed Mill Redevelopment**
 Location: **3089 Greenfield Road, Ayr, Ontario**

EQUIPMENT DATA

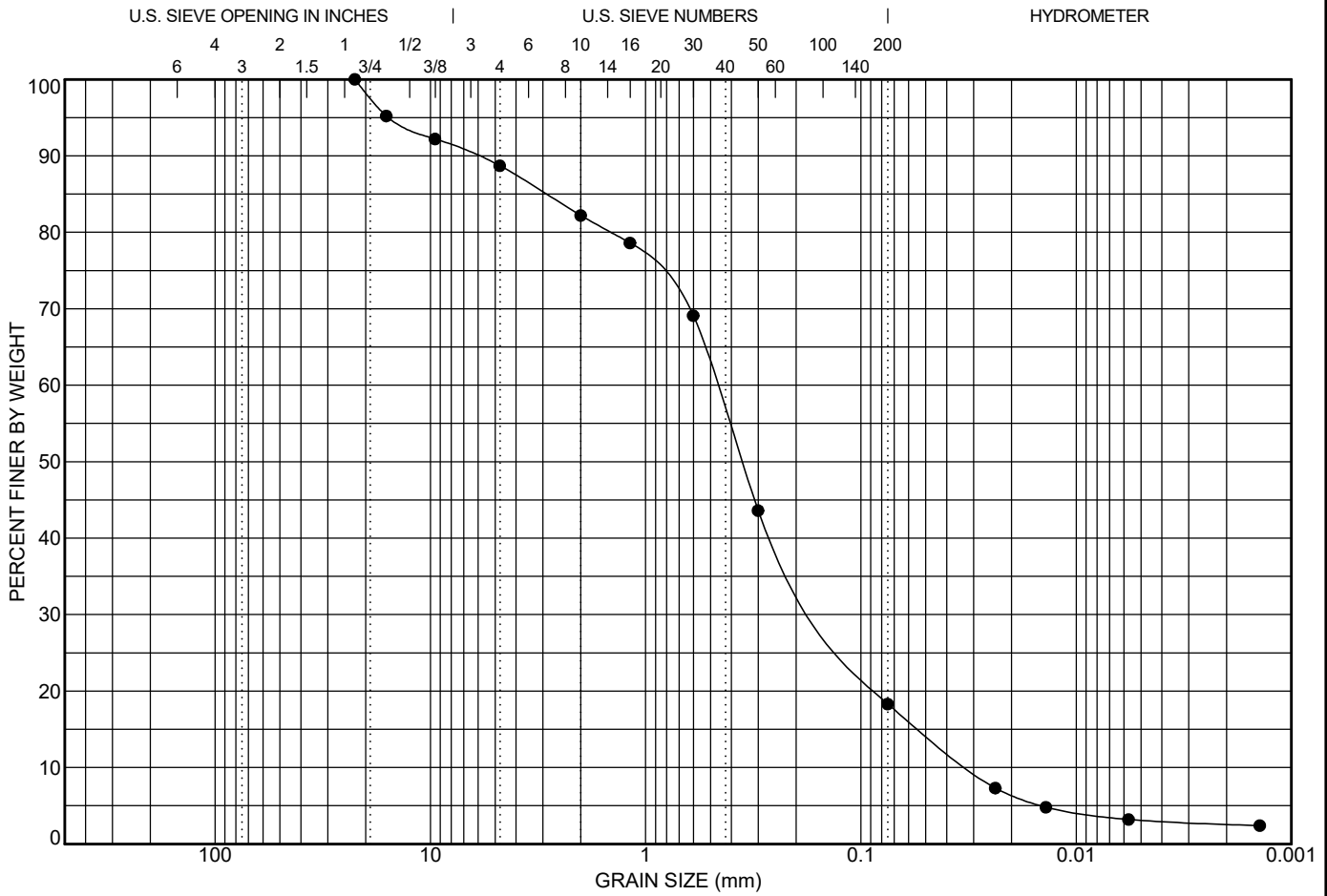
Machine: **CME-55 Track**
 Method: **Solid Stem Augers**
 Size: **152 mm O.D.**
 Date: **Mar 27 - 25 TO Mar 27 - 25**

SOIL LITHOLOGY		SAMPLE		SHEAR STRENGTH (kPa)				WATER CONTENT (%)			WELL DATA	DEPTH (m)	REMARKS				
ELEV./DEPTH (m)	DESCRIPTION	DEPTH (m)	SYMBOL	SAMPLE ID	TYPE	N-VALUE	FIELD VANE: Peak ⊗ Rem. × LAB TEST: Unc. ■ P.P. □ 50 100 150 200							W _p	W	W _L	
Ground Elevation: 288.35 m								PENETRATION RESISTANCE STANDARD ● DYN. CONE ○ 20 40 60 80			↔ — ○ — ↔ 10 20 30						
286.65	50 mm GRANULAR BASE and GRANULAR FILL contains brick fragments	0.5		1	SS	16											
1.70		1.0		2	AS	15											
286.20		2.0		3	SS	6											
286.20	loose, brown, SILT trace sand, wet	2.0															
2.15	End of Borehole	2.15															borehole open upon withdrawal of drilling augers
		2.5															
		3.0															
		3.5															
		4.0															
		4.5															
		5.0															
		5.5															
		6.0															
		6.5															

CVD BOREHOLE (2017) 2213 - 3089 GREENFIELD ROAD, AYR, ONT. CVD_ENG.GDT 5-15-25

PROJECT MANAGER: EYC

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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
			1.38	14.90	22.4	0.469	0.142	0.031	11.3	70.4	18.3	

Date: Apr. 14 - 2025 Client: Greenfield Mill Co Inc. Contractor: Source: Sampled From: BH 1 - SA 3; 1.50 to 1.95 m depth Sample No.: 1-3 Date Sampled: Mar. 27 - 2025 Sampled By: RS Lab No.: 257 Date Tested: Apr. 14 - 2025 Type of Material: Fine to Medium Sand, some gravel and silt	Sieve Size (mm)	Percent Passing	No Specifications

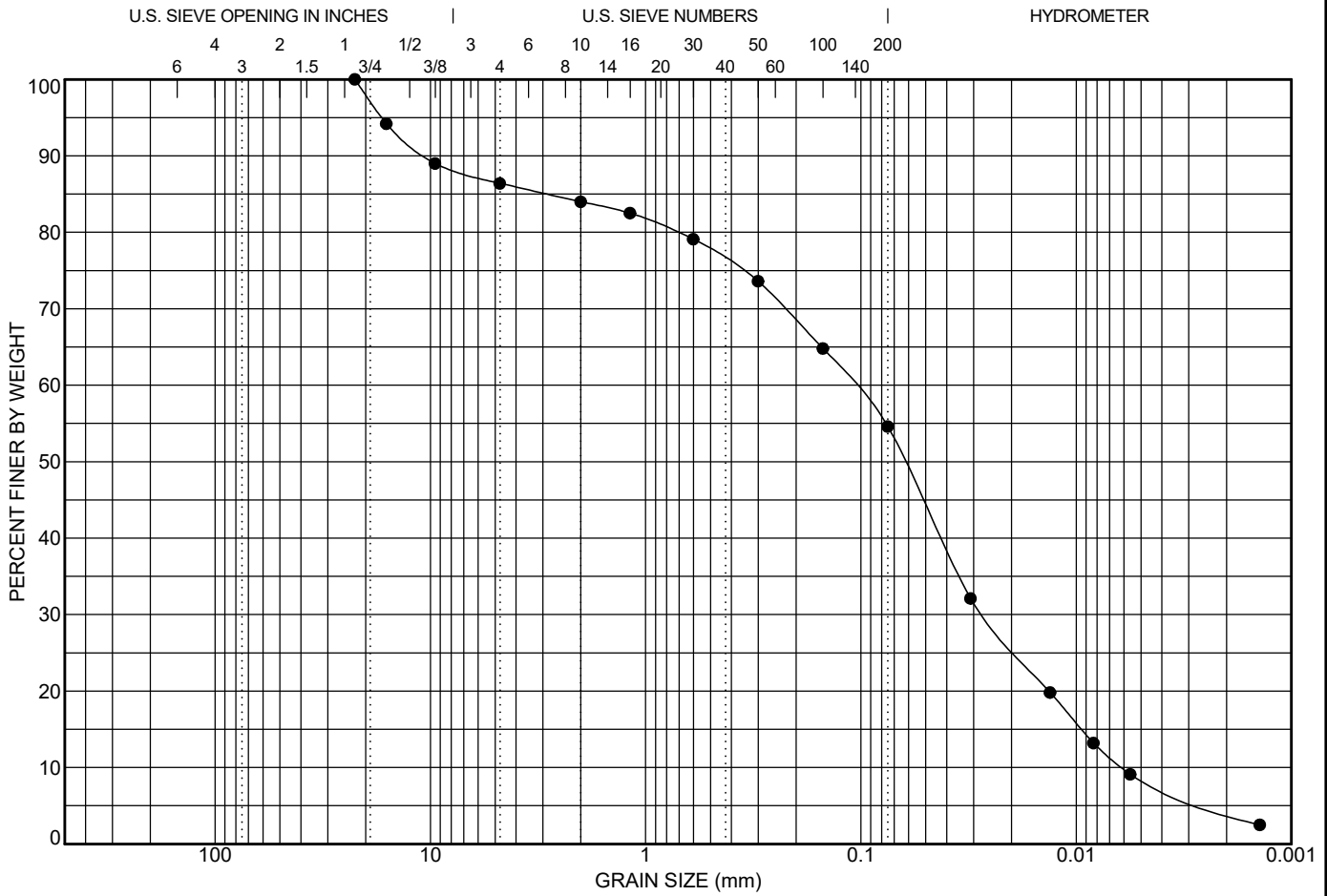
DM - NO SPECIFICATIONS 2213 - 3089 GREENFIELD ROAD, AYR, ONT. L4R 1G1 LAW LNDN.GDT. 4-21-25



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e-mail: info@cvdengineering.com

GRAIN SIZE DISTRIBUTION

Project: Proposed Mill Redevelopment
 Location: 3089 Greenfield Road, Ayr, Ontario
 File No.: 2213
 Enclosure No.: 10



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
			1.08	17.73	22.4	0.108	0.027	0.006	13.6	31.8	54.6	

Date: Apr. 14 - 2025
Client: Greenfield Mill Co Inc.
Contractor:
Source:
Sampled From: BH 2 - SA 4; 2.30 to 2.75 m depth
Sample No.: 2-4
Date Sampled: Mar. 27 - 2025
Sampled By: RS
Lab No.: 258
Date Tested: Apr. 14 - 2025
Type of Material: Sandy Silt Till, some gravel, trace clay

Sieve Size (mm)	Percent Passing	No Specifications

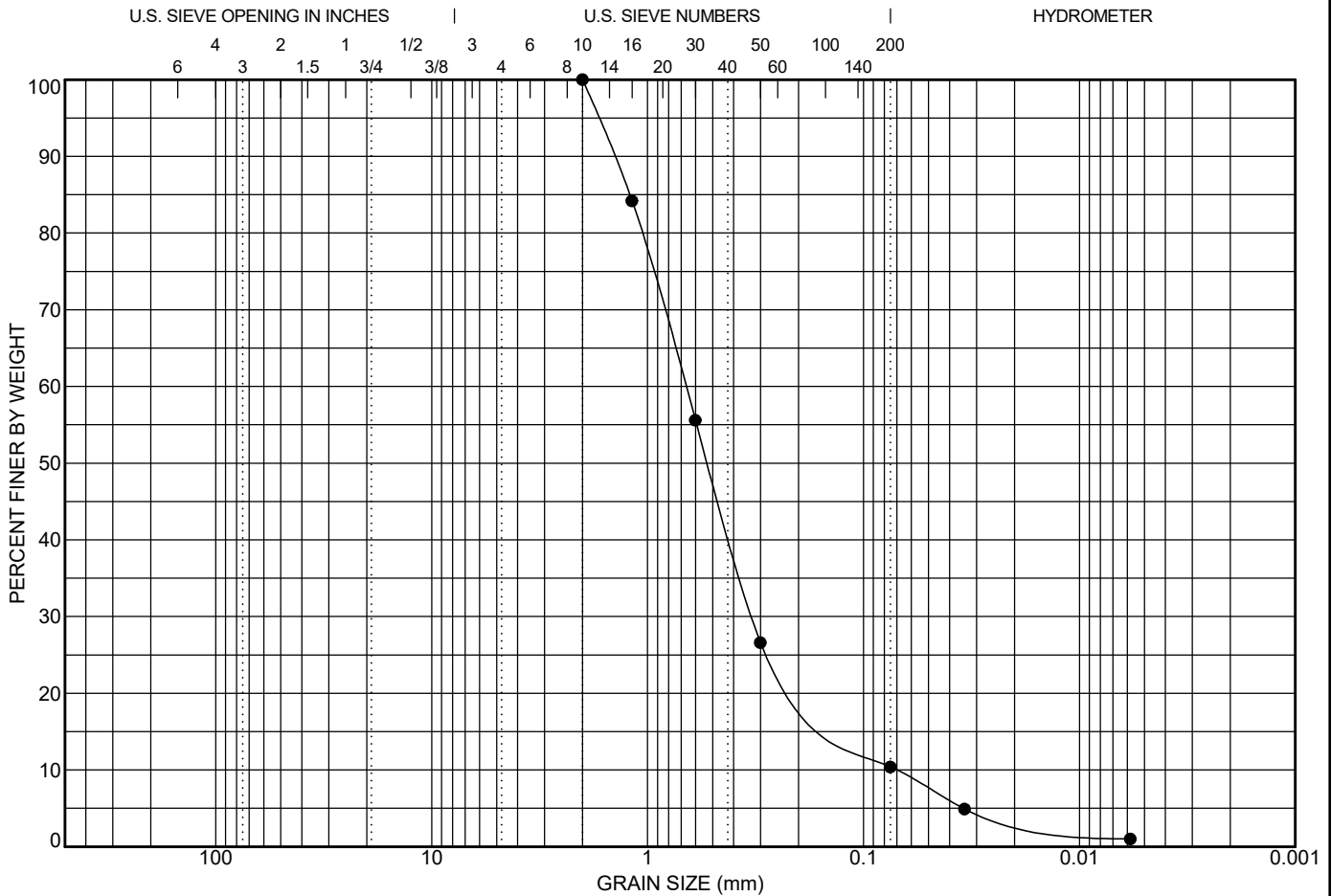
DM - NO SPECIFICATIONS 2213 - 3089 GREENFIELD ROAD, AYR, ONT. L4N 1G1. LAW LNDN.GDT. 4-21-25



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 e-mail: info@cvdengineering.com

GRAIN SIZE DISTRIBUTION

Project: Proposed Mill Redevelopment
Location: 3089 Greenfield Road, Ayr, Ontario
File No.: 2213
Enclosure No.: 11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
			2.25	9.40	2	0.666	0.325	0.071	0.0	89.6	10.4	

Date: Apr. 14 - 2025
Client: Greenfield Mill Co Inc.
Contractor:
Source:
Sampled From: BH 5 - SA 4; 2.30 to 2.75 m depth
Sample No.: 5-4
Date Sampled: Mar. 27 - 2025
Sampled By: RS
Lab No.: 259
Date Tested: Apr. 14 - 2025
Type of Material: Fine to Medium Sand, trace silt

Sieve Size (mm)	Percent Passing	No Specifications

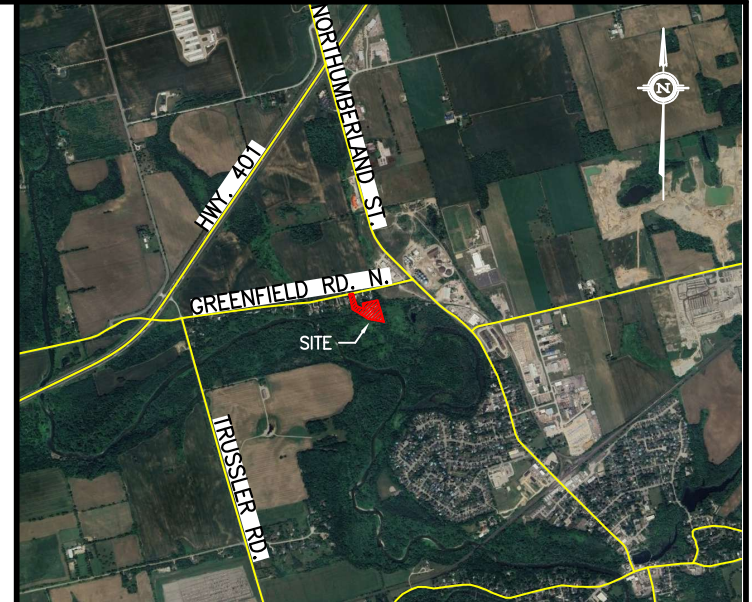
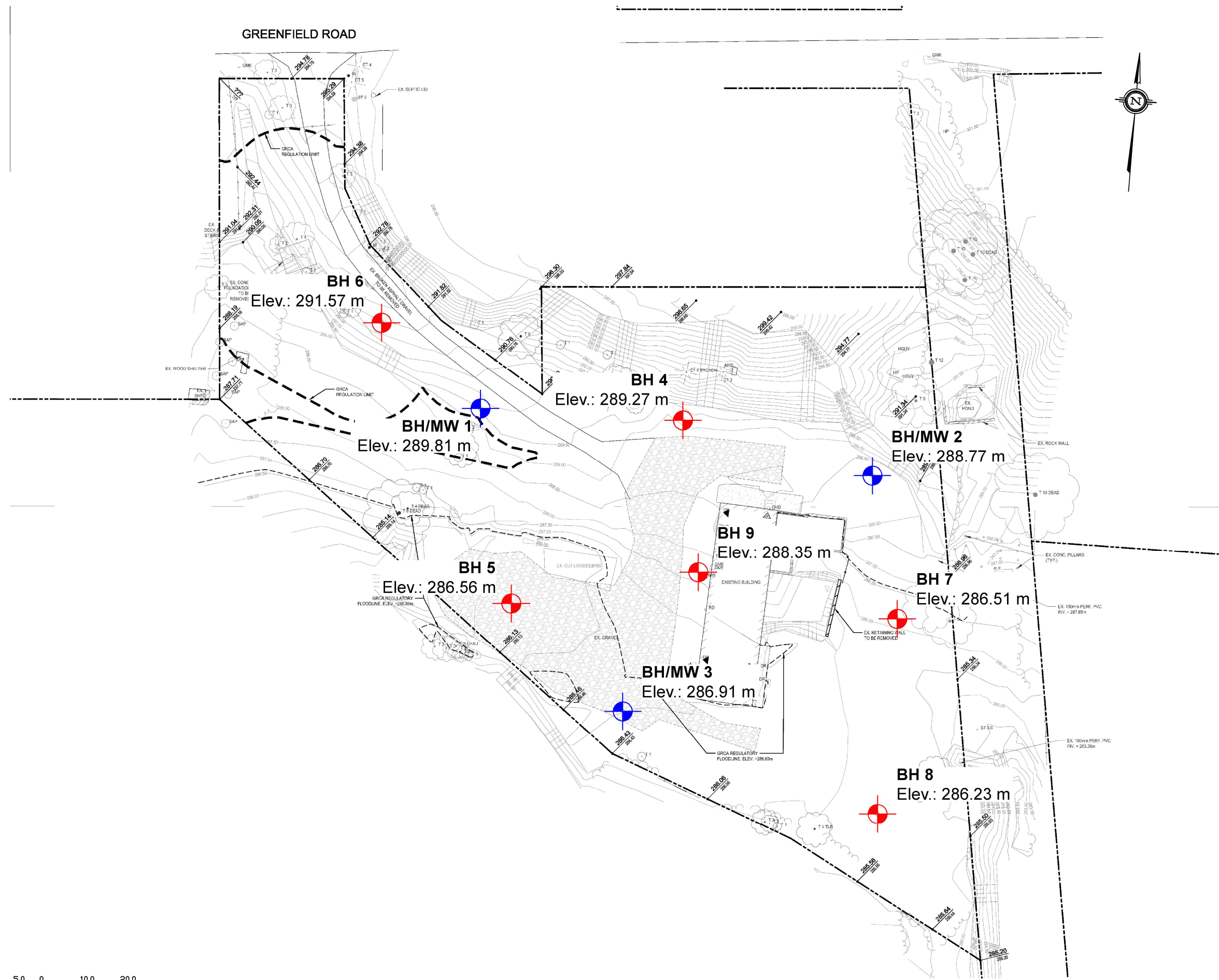
DM - NO SPECIFICATIONS 2213 - 3089 GREENFIELD ROAD, AYR, ONT. L4R 1A1 LNDN.GDT. 4-21-25



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 Kitchener, Ontario N2H 5E1
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 e-mail: info@cvdengineering.com



GRAIN SIZE DISTRIBUTION

Project: Proposed Mill Redevelopment
Location: 3089 Greenfield Road, Ayr, Ontario
File No.: 2213
Enclosure No.: 12



KEY PLAN SOURCE: Google Earth

LEGEND

-  Borehole Location
-  Borehole Location and Monitoring Well

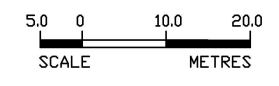
Elev. Ref.: The borehole locations and associated ground surface elevations were surveyed using a Network RTK Global Navigation Satellite System (GNSS) Receiver. The survey data was collected using UTM Zone 17N Projection, NAD83(CSR) v7-2010 datum and Canada Geoid Model HT2_2010v70 (CGVD28).

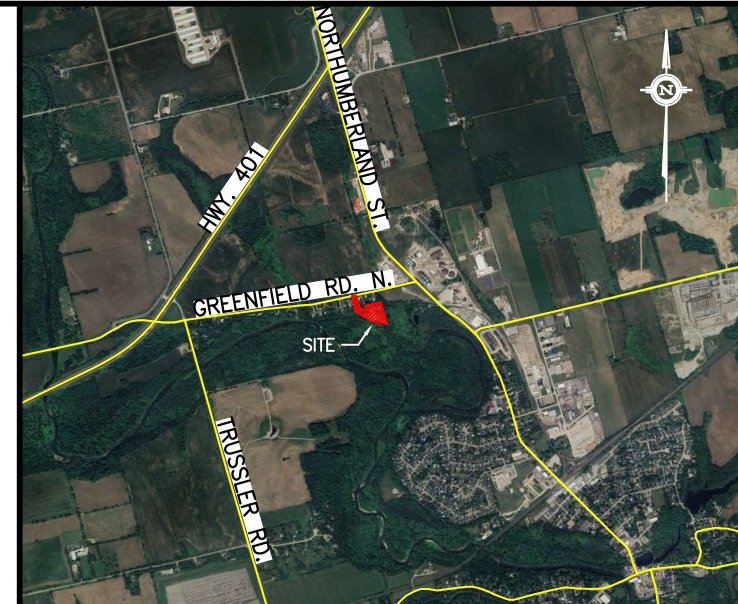
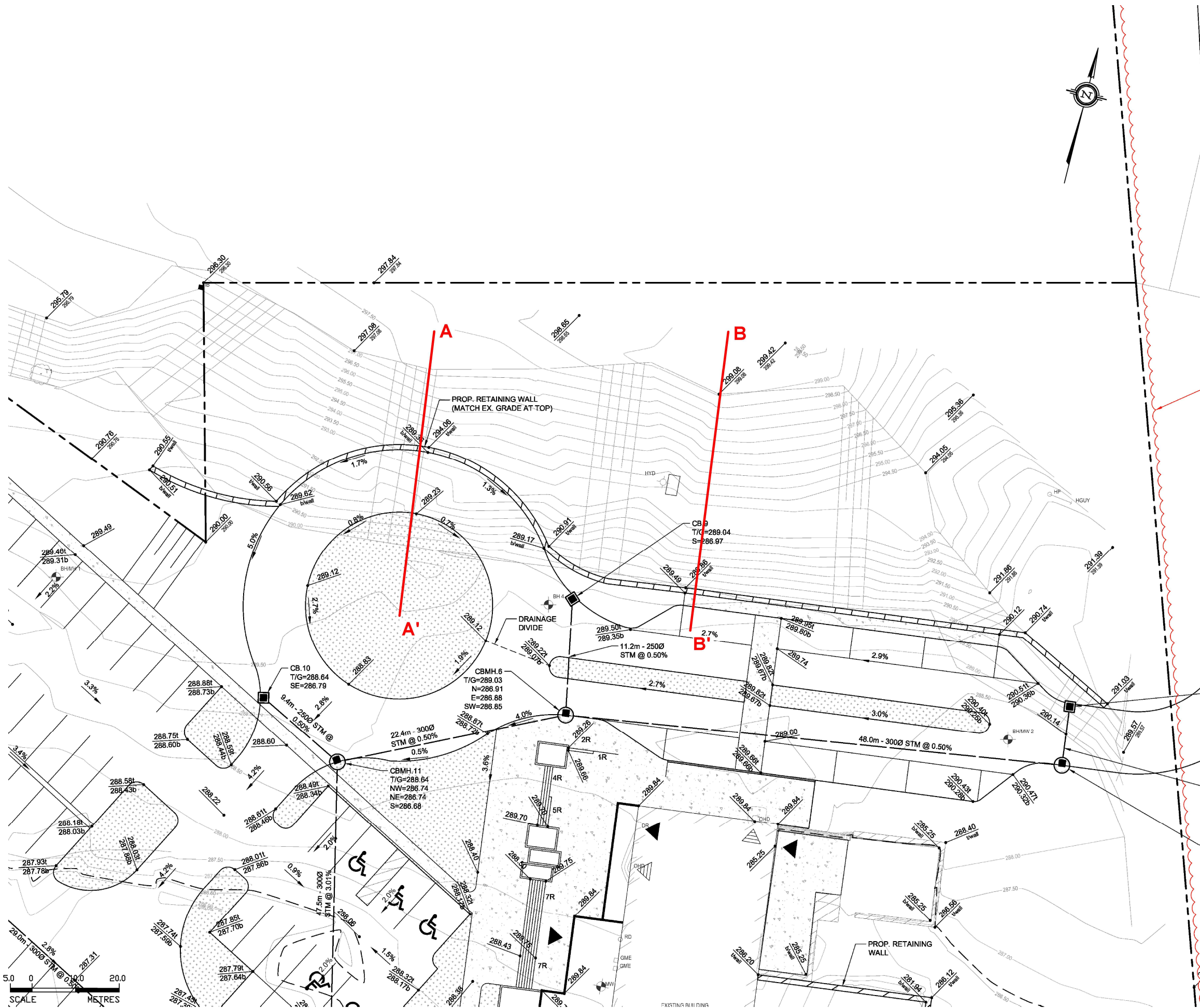
DWG Ref.: GEI Consultants, Inc.; "Existing Conditions Plan"; Project No.: 2406548; Drawing No.: 1; 2024-12

BOREHOLE LOCATION PLAN
 Proposed Mill Redevelopment
 3089 Greenfield Road North
 Ayr, Ontario


CHUNG & VANDER DOELEN
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 KITCHENER / ONTARIO / N2H 5E1 / 519-742-8979

Drawn By: JR	Date: April 2026	File No.: 2213
Checked By: MM	Scale: 1:900	Drawing No.: 1





KEY PLAN SOURCE: Google Earth

LEGEND

DWG Ref.: GEI Consultants, Inc.; "Preliminary Site Grading & Servicing Plan 2"; Project No.: 2406548; Drawing No.: 3; 2024-12

SLOPE STABILITY CROSS-SECTION PLAN
 Proposed Mill Redevelopment
 3089 Greenfield Road North
 Ayr, Ontario



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Drawn By: JR	Date: April 2026	File No.: 2213
Checked By: MM	Scale: N.T.S.	Drawing No.: 2

