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July 13, 2021 21-005.L01

2706913 Ontario Inc.
c/o The Cedar Crescent Village
603 Goderich Street
P.O. Box 449
Port Elgin, Ontario
N0M 2C0

Attention: Mr. Pier Donnini

Dear Sir:

Re: Addendum
Geotechnical Investigation
Proposed Cedar Crescent Village
122 Elgin Street
Port Elgin, Ontario

This letter is provided as an addendum to the previously issued geotechnical report completed by CMT Engineering Inc. (CMT Inc.) titled "*Geotechnical Investigation, Cedar Crescent Village, 122 Elgin Street, Port Elgin, Ontario*", Report No. 21-005.R01 and dated February 16, 2021. The purpose of this letter is to provide additional information in regard to the founding soil information and a summary of the estimated geotechnical reaction at the SLS and the factored geotechnical resistance at the ULS at various elevations based on the new proposed finished floor elevation of 179.5 m for the proposed buildings, as well as additional recommendations and comments on pavement design information for the parking and travel areas. This addendum should be read in conjunction with the previously issued geotechnical investigation report.

Founding Soil Information

As requested, CMT Inc. has reviewed the founding soil information provided in Section 5.1 (also provided below) of the previously issued geotechnical report in regard to the proposed development. The founding soil information provided in the geotechnical report (21-005.R01 dated February 16, 2021) is still considered to be valid for the proposed development.

Serviceability and Ultimate Limit Pressure

Based on the information obtained from the boreholes, the following table provides a summary of the estimated geotechnical reaction at the Serviceability Limit State (SLS) and the factored geotechnical resistance at the Ultimate Limit State (ULS) at various elevations, including soil type:

Borehole No.	Ground Surface Elevation (m)	SLS kPa (psf)	ULS kPa (psf)	Estimated Highest Founding Elevation (m)	Depth to Highest Founding Elevation (m)	Soil Type
BH 1	177.68	75 (1,500)	150 (3,000)	176.92 to 174.08	0.76	Sand
		25 (500)	50 (1,000)	174.08 to 170.67 (founding not recommended)	3.60	Sand/Clayey Silt
		300 (6,000)	400 (8,000)	170.67 to 169.45 (termination)	7.01	Till
BH 2	177.80	150 (3,0000)	225 4,500)	177.04 to 174.2	0.76	Sand
		50 (1,000)	75 (1,500)	174.2 to 170.79 (Founding not recommended)	3.60	Sand/Clayey Silt
		300 (6,000)	400 (8,000)	170.79 to 170.18 (termination)	7.01	Till
BH 3	177.85	150 (3,000)	225 (4,500)	177.55 to 175.50	0.30	Sand
		50 (1,000)	75 (1,500)	175.50 to 171.75 (founding not recommended)	2.35	Sand/Clayey Silt
		300 (6,000)	400 (8,000)	171.75 to 171.75 (termination)	6.10	Till
BH 4	178.34	75 (1,500)	150 (3,000)	176.82 to 174.77	1.52	Sand
		25 (500)	50 (1,000)	174.77 to 172.34 (founding not recommended)	3.57	Sand Fill/Sand/Clayey Silt
		300 (6,000)	400 (8,000)	172.24 to 171.63 (termination)	6.10	Till
BH 5	178.36	75 (1,500)	150 (3,000)	178.06 to 176.84	0.30	Sand
		25 (500)	50 (1,000)	176.84 to 173.51 (founding not recommended)	1.52	Sand/Clayey Silt
		300 (6,000)	400 (8,000)	173.51 to 171.65 (termination)	4.85	Till
BH 6	178.32	75 (1,500)	150 (3,000)	177.56 to 175.66	0.76	Sand
		0 (0)	25 (500)	175.66 to 172.12 (founding not recommended)	2.66	Sand/Clayey Silt
		300 (6,000)	400 (8,000)	172.12 to 171.61 (termination)	6.20	Till

It is understood that prior to construction, the site grades will be raised approximately 1.14 m (3.74 ft) to 1.82 m (5.97 ft) above the existing grades in order to achieve a proposed finished floor elevation of 179.50 m. Therefore, it is understood that the proposed footings will be designed to be constructed at elevations higher than the elevations indicated in the table above. As such, the placement of structural fill will be required in order to achieve the design grades for the proposed foundations. The serviceability limit pressure for good quality granular structural fill placed and compacted in accordance with Section 5.4.5 of the initial report is estimated to be at least 150 kPa (3,000 psf) at SLS and 225 kPa (4,500 psf) at ULS. Alternatively, lean mix concrete fill could be used for this application.

Footings founded on soil may be placed at a higher elevation relative to another footing provided that the slope between the outside face of the footings is separated by a minimum slope of 10 horizontal to 7 vertical (10H:7V) with an imaginary line projected from the underside of the footings.

When constructing new footings adjacent to existing footings, such as those from neighbouring buildings, all existing disturbed backfill material from the existing footing must be subexcavated to ensure that new footings are founded on approved undisturbed soil. Any areas subexcavated to remove disturbed soils could be backfilled with mass concrete. It is imperative that excavations do not extend below the existing footings or the bottom of foundation walls without providing support to both the underside of the foundation wall through shoring or underpinning, as well as support the foundation wall structure itself (as designed by the structural engineer).

It is recommended that structural foundation drawings be cross-referenced with site servicing drawings to ensure that service pipes do not conflict with building foundations (including the zone of influence down and away from the footings).

With respect to the Serviceability Limit State (SLS), the total and differential footing settlements are not expected to exceed the generally acceptable limits of 25 mm (1") and 19 mm (3/4") respectively.

All exterior footings must be provided with a minimum of 1.2 m of soil cover or equivalent thermal insulation in order to provide protection against frost action. If the minimum of 1.2 m of soil cover extends below the placed structural fill and/or native soils deemed satisfactory as noted in the table above, deep foundations such as helical piles will be required as recommended in the initial geotechnical report.

Earthquake Loading

The site classification for seismic response in Table 4.1.8.4 of the 2012 Ontario Building Code relates to the average properties of the upper 30.0 m of strata. The information obtained in the geotechnical field investigation was gathered from the upper 5.18 m to 8.23 m of strata. Based on the information gathered in the geotechnical field investigation, the site classification for seismic site response would be considered Site Class D (stiff soils) for structures founded on the native soils at the proposed founding elevation provided in Section 5.1 of the geotechnical report. For foundations constructed on structural fill, placed in accordance with Section 5.4.5 of the initial

report, the site classification for seismic site response would be considered Site Class D (stiff soil). The structural engineer responsible for the design of the structure should review the earthquake loads and effects.

Pavement Design Recommendations

It is understood that supplemental pavement design recommendations for pavement structures are requested. As well, recommendations and comments in regard to sand surface parking lots and driving surfaces. The pavement design recommendations provided in Section 5.11 of the previously issued geotechnical report should be utilized for all pavement areas on the subject site associated with the proposed development.

For areas with existing brick and concrete surfaces, it is recommended that prior to placement of the granular base/subbase materials, all brick/concrete be removed down to satisfactory subgrade soils and the subgrade soils must be proof-rolled, and any soft or unstable areas should be subexcavated and replaced with suitable materials. The subgrade should be graded smooth (free of depressions) and properly crowned to ensure positive drainage, with a minimum grade of 3% toward the catch basins or to the parking lot/driveway edge. When service pipes are installed, pipe bedding and backfilling should be undertaken as indicated in Sections 5.9 and 5.10 of the previously issued geotechnical report.

In regard to sand parking and travel areas, it should be noted that the sand surface could become very loose to loose if disturbed and may not maintain a solid structure throughout the year or during high traffic situations. Once the sand surface is disturbed, ruts and loose areas will remain until fully repaired. Repairing of the sand surface may be difficult during the winter months and the sand surface may be required to be repaired very frequently during the typically busy summer months depending on traffic volumes. If a sand parking structure and travel area is required, it would be recommended to consider the use of a product such as a heavy duty cellular porous paving system (Truegrid Pro Plus Paver) or equivalent, to stabilize the parking and driving surface. The installation recommendations and product instructions of the supplier/manufacturer should be followed by the contractor.

We trust that this information meets your present requirements, and we thank you for allowing us to be involved in this project. Should you have any questions, please do not hesitate to contact our office.

Yours truly,

Brandon Figg

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Senior Soil Technician

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