

Ottawa, December 5, 2021  
No.: 1186-Shillington-YME-L2

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**Reference:** Geotechnical testholes completed on November 16, 2018 at 1186 Shillington Ave., Ottawa, ON at the location shown in figure 1A in page 1.

**Subject:** Detailed description, geotechnical recommendations and conclusions based on the findings in the referenced testholes shown in figure 1B in page 1 in response to the following city comments:

“Geotechnical Memo, 1186-Shillington-YME-L1, prepared by Yuri Mendez Engineering, dated November 20, 2018.

1. Provide a detailed site description.
2. Provide geotechnical recommendations and conclusions for the suitability of the site for the proposed development. “

## 1 Description

The site is developed land consisting on the 1186 Shillington Ave. parcel in a city block within the City of Ottawa. It is relatively flat and is partially covered by a 2 storey residential building, landscaped areas and parking.

The data base by Belanger (1998) suggests 5 to 10 m of overburden soils at this site.

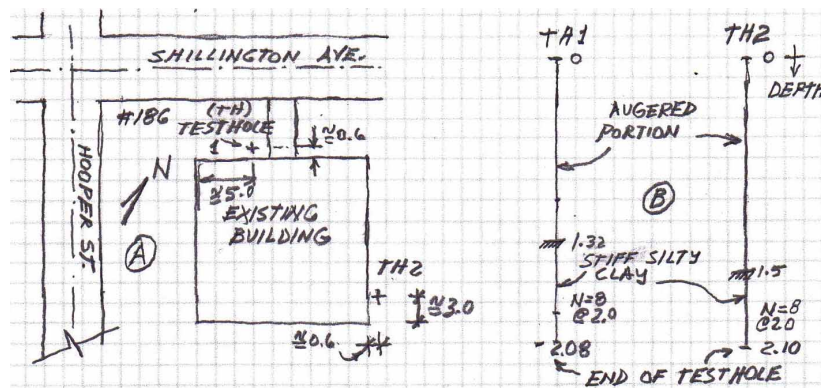


Figure 1: Test-hole Location (A) and test-hole logs (B)



## 2 Recommendations

For residential buildings, YME recommends the following as it relates to soil conditions:

### 2.1 Striping

Topsoil and/or organic soils and/or existing fill must be removed from the perimeter of all proposed structures, including retaining wall, buildings, pavement, parking areas and earth or fill banks for grading.

### 2.2 Excavation to Undisturbed Soil Surface

All soil surfaces in which to commence construction for all structures are to be preserved in undisturbed condition (Undisturbed Soil Surface (USS)). Native soil surfaces exposed to the weather for a period exceeding 72 hours are considered disturbed. Where rainy weather and/or equipment operation and/or labor make impractical or difficult the preservation of USS a working-leveling granular pad may be used. Use the compaction requirements and materials in Table 1.

Except as otherwise indicated for select earthfill materials (subsection ??) at this site, reinstatement of excavated soil is not allowed. When excavation exceeds the depth of the proposed USS, a granular pad using the compaction requirements and materials in Table 1.

It can be assumed that it is impractical to conduct excavations to an even USS. In such case a granular pad not less than 150mm thick must be used to remedy for irregularities caused by the operation of equipment.

### 2.3 Foundations Placement

Native soil surfaces exposed to the weather for a period exceeding 72 hours are considered disturbed. Place foundations on a OPSS.MUNI 1010 granular B type 2 granular pad that is at least 150 mm thick placed on undisturbed soils.

### 2.4 Pavement

Gravel access lanes and/or parking to be placed on native soils or engineered roadbed at this site may consist of 300 mm of OPSS granular B or granular A or a combination of both.

### 2.5 Compaction General

It is to be assumed that water will be added for compaction and that the required maximum grain size shall be  $3/4$  of the compacted lift thickness.

Obtain the approximate loose lift thickness by dividing the compacted lift by 0.88. Compacted lifts are approximately 12% less than the loose lift thickness.

Each lift shall be compacted by the specified number of passes of the approved type and weight of roller or other equipment.  
Table 1 in page 4 presents Proctor Standard (PS) compaction requirements for specified placement and materials.

### 3 Conclusions

The site is suitable for the proposed development based on the support capacity provided under letter 1186-Shillington-YME-L1 issued on November 20, 2018 for this site.

Do not hesitate to contact us if you have any questions.



Yuri Mendez, M. Eng, P. Eng

| Material Placement  | Material Description  | % PS       |
|---|---|------------|
| Base  | OPSS.MUNI 1010 Granular A   | 100        |
| Subbase   | OPSS.MUNI 1010 Granular B Type II   | 100        |
| Subgrade  | Granular earthfill (with 12 % or less fines) and 100% passing 106 mm sieve<br>Select earthfill            | 95<br>95   |
| Backfill for trenches under pavement                                  | Granular earthfill (with 12 % or less fines) and 100% passing 106 mm sieve.<br>Select earthfill           | 95<br>95   |
| Under sidewalks top 200 mm  | Any OPSS.MUNI 1010 Granular specification for which 100% passes the 26.5 mm sieve                         | 95         |
| Under foundations   | OPSS.MUNI 1010 Granular B type 2 with 12% or less fines and for which 100% passes the 106 mm sieve        | 98         |
| Backfill under slabs on grade   | Cohesionless (with 12 % or less fines) and 100% passing 106 mm sieve.<br>Select earthfill                 | 100<br>100 |
| Top 100 mm under slabs  | Crushed stone 9.5 to 19 mm (use one or several sizes).  | 90         |
| Pipe bedding and cover (150 mm for bedding to 150 mm above the crown) | Any OPSS.MUNI 1010 Granular specification for which 100% passes the 26.5 mm sieve                         | 95         |
| Trench foundation (stabilization minimum 200 mm)                      | Any OPSS 1010.MUNI Granular specification for which 100% passes the 106 mm sieve except Granular B Type I | 95         |
| Backfill for non building, non traffic and/or non parking areas       | Granular (with 12 % or less fines) and 100% passing 106 mm sieve<br>Select earthfill                      | 90<br>90   |
| Placement not specified above   | Granular (with 12% or less fines) and 100% passing 106 mm sieve<br>Select earthfill                       | 95<br>95   |

Table 1: Proctor Standard (PS) compaction requirements for specified placement and materials.