

October 4, 2013 File No. 11-12-2098

Brampton Office

IBI Group 30 International Boulevard Toronto, Ontario M9W 5P3

Attention: Mr. Allan Ortlieb

RE: HYDROGEOLOGICAL REVIEW
McLAUGHLIN ROAD RECONSTRUCTION
BRITANNIA ROAD WEST TO BRISTOL ROAD WEST
CITY OF MISSISSAUGA, ONTARIO

Dear Sir:

Terraprobe was retained by the IBI Group to conduct a hydrogeologic review for the reconstruction of McLaughlin Road south of Britannia Road West to North of Bristol Road West in the City of Mississauga. The hydrogeologic review was undertaken to assess the potential impacts to shallow ground water levels in areas of proposed grade changes.

A subsurface investigation was completed within the study area by Terraprobe as part of the Draft Pavement Design Report, completed under separate cover dated July 16, 2013. As part of this report a series of 30 boreholes were completed along the current alignment of McLaughlin Road to various depths from 2.0 m to 8.1 m below existing grades as shown on the attached borehole location plan (Figure 1). Borehole logs are also provided in the attached enclosures.

Soils encountered as part of the subsurface investigation consisted of asphalt and granular sub-base (McLaughlin Road) to depths between 0.6 and 1.1 m below grade. Underlying the road structure fill deposits and glacial till deposits were generally encountered. Fill deposits were encountered in BH2,

Terraprobe Inc.

BH7, BH19 to BH24, BH28 and BH29. Fill deposits consisted of loose silty sand to clayey silt ranging from 0.4 to 3.9 m in thickness. Till deposits were encountered underlying fill deposits and consisted of compact to very dense deposits of clayey silt. Silty sand to sand glacial till was to the completed depths of boreholes at locations BH3, BH6, BH8 and BH10 to 29. Till deposits were observed to be brown in colour indicating that the shallow ground water table is likely to be at depths greater than the depth of drilling.

All boreholes were observed to be dry and open upon completion of drilling. Two monitoring wells were installed along the alignment in order to determine shallow ground water levels. Wells were installed at BH 15 and BH 26. Wells consisted of a 50 mm diameter PVC pipe with a 1.5 m slotted screen. A summary of the two monitoring well installations is provided in the table below.

| Location | Northing | Easting | Station | Well Depth | Water Level | Screened Materials |
|----------|----------|---------|---------|------------|-------------|--------------------------------------|
| BH15 | 4829393 | 606448 | 11+080 | 8.1 m | Dry | Sand and Silt to Silty Sand (Glacial |
| | | | | | | Till) |
| BH26 | 4828741 | 607116 | 10+150 | 5.0 m | Dry | Silty Sand (Glacial Till) |

Water levels measured on January 18, 2013

Based on a review of the proposed cut and fill depths for the reconstruction of McLaughlin Road, earthworks up to a maximum of 2.0 m are expected. Ground water was not encountered at this depth in any of the 30 boreholes. The reconstruction of McLaughlin Road is not anticipated to result in any significant changes to the shallow ground water in the vicinity of the project area.

We trust this information is sufficient for your present purposes. Should you have any questions concerning the above, please do not hesitate to contact the undersigned.

Yours truly,

Terraprobe Inc.

Paul L. Raepple, P.Geo.

P. L. RAEPPLE
PRACTISING MEMBER
2242
ON TAR 10

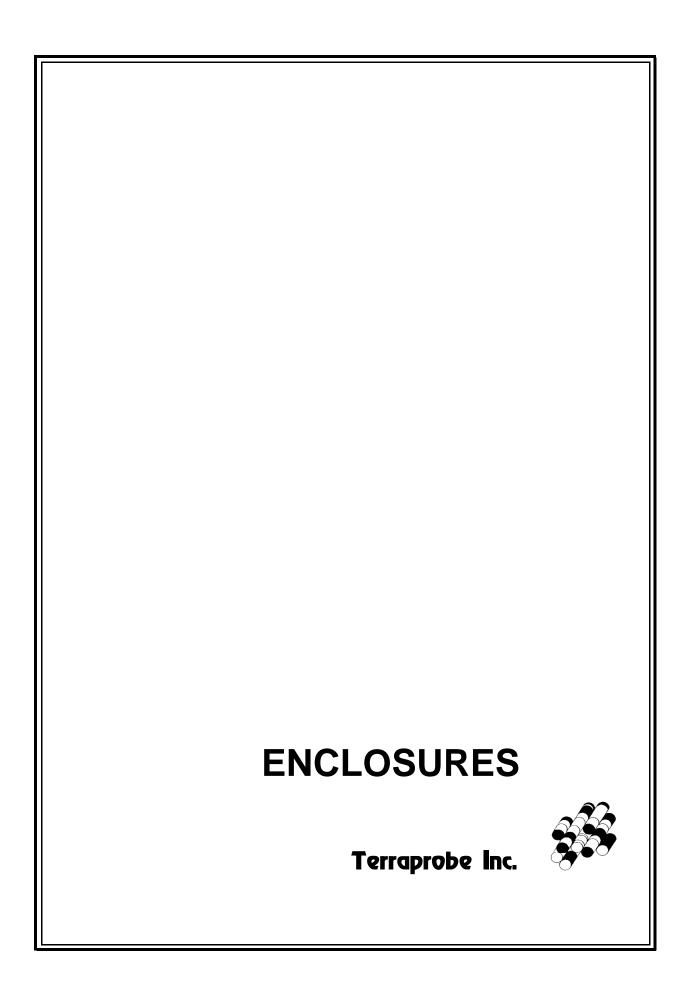
Paul W. Bowen, P.Geo., P.Eng., QP_{ESA} Principal

Stoney Creek Office

Enclosures:

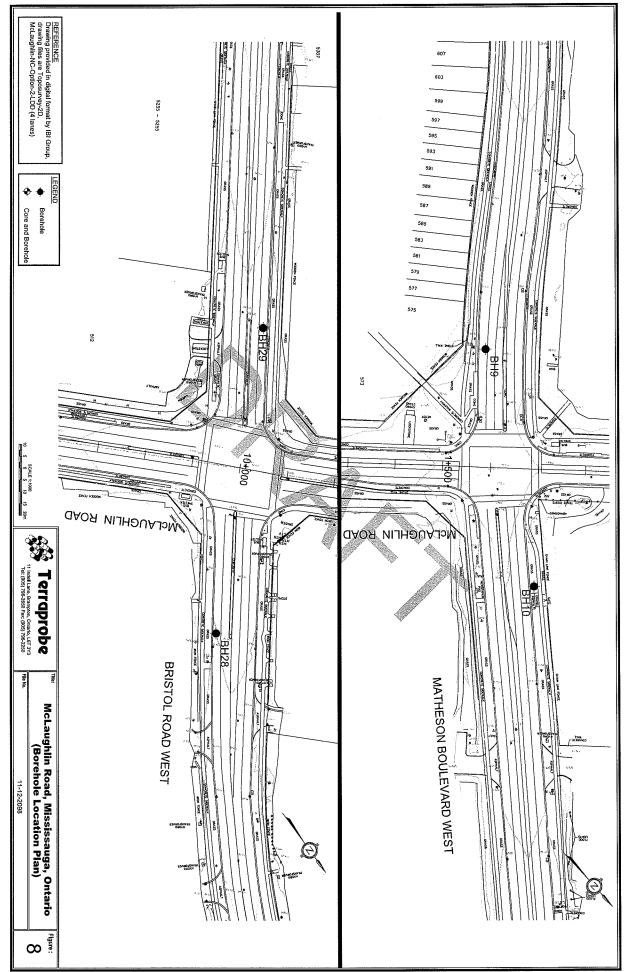
Figure 1 — Borehole Location Plan

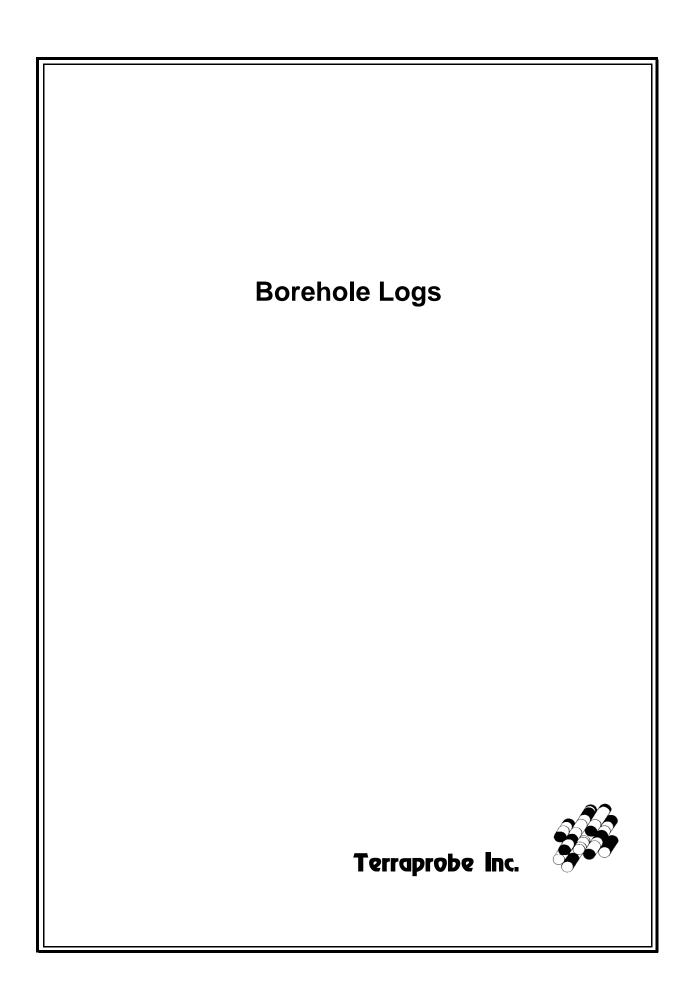
Appendix A — Borehole Logs



5291

MATCHLINE 10+260







Client : IBI Group

Project No.: 11

11-12-2098

Project : McLaughlin Road

: E: 605616, N: 4830182 (UTM 17T)

Date started: December 3, 2012 Sheet No.: 1 of 1

Location: Mississauga, Ontario Sheet No.:

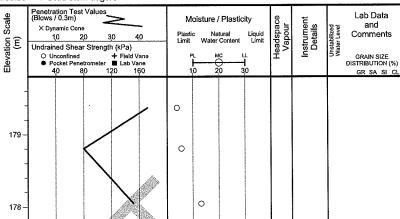
Rig type : truck-mounted

Depth Scale (m)

Drilling Method : Solid stem augers

Elevation Datum : Geodetic

| | SOIL PROFILE | | ; | SAMPL | .ES | Γ. |
|----------------------|--|-------------|--------|-------|---------------|----|
| Elev Depth (m) | Description GROUND SURFACE | Graphic Log | Number | Type | SPT 'N' Value | |
| 179.6 | 200mm ASPHALTIC CONCRETE | | | | | 1 |
| 0.2 | 910mm GRANULAR BASE / SUBBASE, compact to dense, brown, dry | • O | 1 | SS | 43 | |
| 178.7 1.1 | AMPLON T | • 0 | 2 | ss | 20 | |
| | CLAYEY SILT, some sand to sandy, trace gravel, hard, brown, moist (GLACIAL TILL) | | | | | |
| 177.8 2.0 | | | 3 | SS | 38 | |



END OF BOREHOLE



: IBI Group Client

Project No.:

11-12-2098

1 of 1

Project

Position

Rig type

Depth Scale (m)

n

: McLaughlin Road

Date started: November 30, 2012 Sheet No.:

Location: Mississauga, Ontario

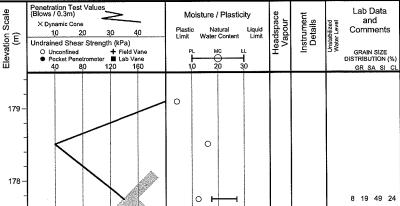
: truck-mounted

: E: 604043, N: 4831318 (UTM 17T) Elevation Datum : Geodetic

Drilling Method

: Solid stem augers

| | SOIL PROFILE | | : | SAMPL | .ES | <u>o</u> |
|----------------------|---|-------------|--------|-------|---------------|------------------------|
| Elev Depth (m) | Description GROUND SURFACE | Graphic Log | Number | Type | SPT 'N' Value | Elevation Scale (m) |
| 179.3 | 180mm ASPHALTIC CONCRETE | | | | | |
| 0.2 | 580mm GRANULAR BASE / SUBBASE, very dense, brown, dry | , () | 1 | ss | 55 | 179 |
| 178.7 | | .0. | | | | |
| 8,0 | FILL, clayey silt, some sand, trace gravel, trace organics, stiff, greyish brown, moist | | 2 | ss | 10 | |
| 178.1 | | \bowtie | | | | |
| 1.4 | CLAYEY SILT , some sand, trace gravel, hard, brown, moist (GLACIAL TILL) | | 3 | ss | 35 | 178 |
| 177.5 2.0 | | V BY | 1 | L | L | 1 |

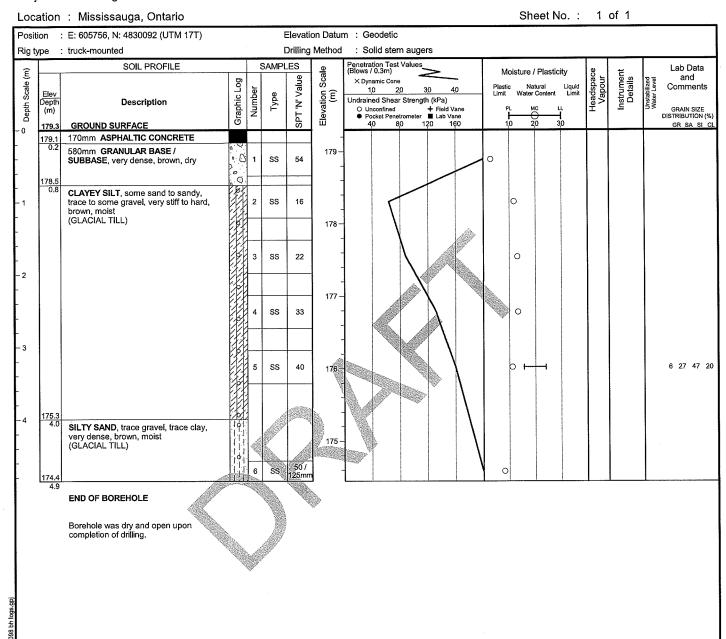


END OF BOREHOLE



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 30, 2012





: IBI Group Client

11-12-2098 Project No.:

Sheet No.: 1 of 1

Project : McLaughlin Road

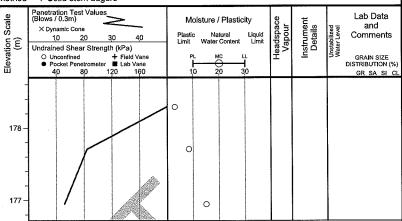
Position : E: 605831, N: 4830008 (UTM 17T)

Date started: December 3, 2012

Location: Mississauga, Ontario

Elevation Datum : Geodetic Drilling Method : Solid stem augers

Rig type : truck-mounted SOIL PROFILE SAMPLES Depth Scale (m) SPT 'N' Value Graphic Log Number Elev Depth (m) Type Description GROUND SURFACE 180mm ASPHALTIC CONCRETE 635mm GRANULAR BASE / SUBBASE, very dense, brown, dry ن ن SS 74 1 Ô SAND, some silt, trace gravel, trace clay, compact, brown, moist (GLACIAL TILL) 2 SS 21 CLAYEY SILT, some sand, trace gravel, stiff, brown, moist (GLACIAL TILL) SS 13 176.7 2.0



END OF BOREHOLE

Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 30, 2012

Location: Mississauga, Ontario Sheet No.: 1 of 1

Position : E: 605890, N: 4829954 (UTM 17T) Elevation Datum : Geodetic Drilling Method : Solid stem augers Rig type : truck-mounted SOIL PROFILE SAMPLES Penetration Test Values (Blows / 0.3m) Lab Data Moisture / Plasticity Instrument Details and SPT 'N' Value X Dynamic Cone Graphic Log Depth Scale Comments Natural Water Content 1,0 30 40 Number Elev Depth (m) Elevation (m) Type Description Undrained Shear Strength (kPa) O Unconfined + Field Vane
Pocket Penetrometer Lab Vane
40 80 120 160 GRAIN SIZE DISTRIBUTION (%) 178.3 **GROUND SURFACE** GR SA SI CL 0 160mm ASPHALTIC CONCRETE 178.1 0.2 620mm GRANULAR BASE / SUBBASE, very dense, brown, dry 178 ٥ ٥ SS 62 0 0 177.5 0.8 CLAYEY SILT, some sand to sandy, trace to some gravel, very stiff, brown, 2 SS 19 moist (GLACIAL TILL) 177 SS 28 176 50 / 75mm 15 34 36 15 SS ...at 2.5m, Auger grinding ...at 2.6m, Auguer grinding, very hard to 2.7m 43 0 5 SS 174 173.3 5.0 **END OF BOREHOLE** Borehole was dry and open upon completion of drilling.



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 30, 2012

Location: Mississauga, Ontario Sheet No.: 1 of 1

| Posit | ion : | E: 605971, N: 4829880 (UTM 17T) | | | | Elevati | on Datu | m : Geodetic | | | |
|-----------------|----------------------|---|-------------|--------|-------|---------------|------------------------|---|--|--|--|
| Rig ty | /pe : | truck-mounted | | | | Drilling | Method | : Solid stem augers | | | |
| ĉ | | SOIL PROFILE | | | SAMPI | | <u>e</u> | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | ø += | Lab Data |
| Depth Scale (m) | Elev Depth (m) | Description | Graphic Log | Number | Type | SPT 'N' Value | Elevation Scale (m) | X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer | Plastic Natural Liquid Limit Water Content Limit | Headspace Vapour Instrument Details | and Comments We will be a second of the sec |
| -0 | 177.8 177.6 | GROUND SURFACE 150mm ASPHALTIC CONCRETE | - | | | 0) | _ | -0 00 125 100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 1 1 | | GR SA SI CL |
| _ | 0.2 | 560mm GRANULAR BASE / SUBBASE, very dense, brown, dry | 000 | 1 | ss | 62 | - | | 0 | | |
| Γ | 177.1 0.7 | | 1.0 | - | | | 177- | | | | |
| - 1 - | 0., | SAND, some silt, trace gravel, trace clay, compact, brown, wet (GLACIAL TILL) | 10 | 2 | ss | 20 | | | 0 | | |
| - | 176,3 | | 甘油 | | | | | 1 / | | | |
| _ | 1.5 | SANDY SILT, trace gravel, trace clay, compact, brown, moist (GLACIAL TILL) | 0 | 3 | ss | 12 | 176- | | 0 | | |
| | 2.0 | END OF BOREHOLE | | | | | - | | | | |



Client : IBI Group

Project No.:

11-12-2098

Project : McLaughlin Road

Date started: November 30, 2012

Location: Mississauga, Ontario

Sheet No.: 1 of 1

| Posit | ion : | E: 606015, N: 4829846 (UTM 17T) | | | ! | Elevati | on Datu | m : Geo | odetic | | | | | | | | | | | |
|--------------------|----------------------|--|-------------|--------|-------|---------------|--------------------|---------------------------|--|----------|---------------------------------|-----------|----------------------------|-------|--------------|--|--------------------|-----------------------|-----------------------------|---|
| Rig t | ype : | truck-mounted | | | 1 | Drilling | Method | : Sol | id stem | auger | s | | | | | | | | | |
| (m) e | | SOIL PROFILE | 50 | | SAMPI | | Scale | Penetration (Blows / C | on Test ').3m) mic Cone | /alues | | - | 1 | | / Plastic | • | ace ur | nent Ils | ed /el | Lab Data and |
| Depth Scale | Elev Depth (m) | Description GROUND SURFACE | Graphic Log | Number | Туре | SPT 'N' Value | Elevation S (m) | 1,0 Undraine O Unc | 2(d Shear onfined ket Peneti | Strength | + Field Value ■ Lab Value | ane ne | Plastii Limit P 1 | Water |) | Liquid Limit 1 1 30 | Headspac Vapour | Instrument Details | Unstabilized Water Level | GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
| - 0 - - - | 177.5 0.2 | 180mm TOPSOIL FILL, silty clay, some sand, trace gravel, trace organics, firm, greyish brown, wet | | 4 | SS | 7 | - - 177 - | ha.) | | | | | | 0 | | | | | | |
| -1 | | | | 3 | ss | 8 | - - 176 | | | | | <i>^</i> | | | 0 | AMMANAN THE PROPERTY OF THE PR | | | | |

END OF BOREHOLE

: IBI Group Client

Project No.:

11-12-2098

Project : McLaughlin Road

Date started: December 3, 2012

Location: Mississauga, Ontario

Sheet No.: 1 of 1

| Posit | ion : | E: 606100, N: 4829144 (UTM 17T) | | | | Elevati | on Datu | n : Geodetic |
|-----------------|----------------------|---|-------------|--------|------|---------------|---------------------|---|
| Rig ty | /pe : | truck-mounted | | | | Drilling | Method | : Solid stem augers |
| Ê | | SOIL PROFILE | | - | SAMP | | cale | Penetration Test Values (Blows / 0.3m) Moisture / Plasticity B Lab Data |
| Depth Scale (m) | Elev Depth (m) | Description GROUND SURFACE | Graphic Log | Number | Type | SPT 'N' Value | Elevation Sc (m) | (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) O Unconfined Pocket Peneturmeter ■ Lab Varie 40 80 120 150 Moisture / Plasticity Natural Liquid Water Content Limit Water Content Strength (kPa) O Unconfined GRAIN SIZE G |
| - 0 | 177.8 | 130mm ASPHALTIC CONCRETE | | | | | | |
| - | 0,2 | 610mm GRANULAR BASE / SUBBASE, very dense, brown, dry | 0 0 | 1 | ss | 72 | - | |
| • | 177.2 0.8 | | 0 | | | |] | |
| - 1 - 2 | 0.8 | SILTY SAND, some silt, trace gravel, trace clay, compact, brown, wet (GLACIAL TILL) | 161 | 2 | SS | 26 | 177 - | 5 70 21 |
| | 176.5 | | 101 | | | | - | |
| | 1.5 | CLAYEY SILT, some sand, trace gravel, very stiff, brown, moist (GLACIAL TILL) | | 3 | SS | 18 | 176- | |
| 2 | 1 | | | 3 | | | 1/6- | |
| - | 175.7 2.3 | SILTY SAND, trace gravel, trace clay, very dense, brown, moist | | 4 | SS | 53 | | u,at 2.6m, Auger |
| _ | 175.3 | (OLACIAL TILL) | | | | |] , | m.at.2.bit, Nogel refusal, spoon bouncing |

END OF BOREHOLE



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 30, 2012

| Depth (m) Description Description Description Description Description (m) Description Description (m) Description Description (m) Description Description (m) Descript | atic | n | : Mississauga, Ontario | | | | | | | Sheet No.: | 1 | of 1 | | |
|--|------|----------|--|------------|-----------------|-------|---|------------|---|---------------------------|-------------|------|------------------|----------|
| SOIL PROFILE SAMPLES BY BY Common Description Common Descript | tion | : | E: 606109, N: 4829662 (UTM 17T) | | | ı | Elevati | on Datu | n : Geodetic | | | | | |
| Description Descr | уре | : | truck-mounted | | | I | Drilling | Method | | | | | | |
| Description Descr | | | SOIL PROFILE | | | SAMPL | | le | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | g, | ıt | | Lab Dat |
| 140mm ASPHALTIC CONCRETE 570mm GRANULAR BASE / SUBBASE, very dense, brown, dry 178.7 0.7 CLAYEY SiLT, some sand to sandy, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) 177.4 END OF BOREHOLE | | | | g | L | | a <u>n</u> | Sca | X Dynamic Cone | | bac off. | mer | ized | |
| 140mm ASPHALTIC CONCRETE 570mm GRANULAR BASE / SUBBASE, very dense, brown, dry 178.7 0.7 CLAYEY SiLT, some sand to sandy, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) 177.4 END OF BOREHOLE | Ele | v th | Description | 일 | ge | д | , \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | <u>ē</u> € | | Limit Water Content Limit | /ap | stru | stabil ater L | Comme |
| 140mm ASPHALTIC CONCRETE 570mm GRANULAR BASE / SUBBASE, very dense, brown, dry 178.7 0.7 CLAYEY SiLT, some sand to sandy, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) 177.4 END OF BOREHOLE | (m |) | Description | ab | Ę | 5 | <u>Z</u> | - sat | ○ Unconfined + Field Vane | | ≝_ | = = | 58 | GRAIN SI |
| 570mm GRANULAR BASE / SUBBASE, very dense, brown, dry 178.7 O.7 CLAYEY SILT, some sand to sandy, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) 177.4 2.0 END OF BOREHOLE | 179 | .4 | GROUND SURFACE | ত | | | SP | Ĭ | 40 80 120 160 | 10 20 30 | | | | GR SA |
| SUBBASE, very dense, brown, dry 178.7 O.7 CLAYEY SILT, some sand to sandy, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) 177.4 2.0 END OF BOREHOLE | | _ | 140mm ASPHALTIC CONCRETE | .نو:پ | | | | | | | | | 1 | |
| 178.7 CLAYEY SILT, some sand to sandy, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) END OF BOREHOLE CLAYEY SILT, some sand to sandy, trace gravel, very stiff to hard, brown, and the same statement of | | | 570mm GRANULAR BASE / | . 0 | 1 | SS | 70 | 179 - | | | | | | |
| 0.7 CLAYEY SILT, some sand to sandy, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) 177.4 2.0 END OF BOREHOLE | Ι. | | GUBBAGE, very defise, blown, dry | 0 | | | |] ''' . | | | | | 1 | |
| trace gravel, very stiff to hard, brown, moist (GLACIAL TILL) 2 SS 18 177.4 2.0 END OF BOREHOLE | 178 | .7 .7 | CI AVEV SILT come cand to candy | 281 | <u> </u> | | | | | | | | | |
| most (GLACIAL TILL) 177.4 2.0 END OF BOREHOLE | 1 | | trace gravel, very stiff to hard, brown, | | 2 | ss | 18 | ١. | | | | | | 4 27 44 |
| 177.4 2.0 END OF BOREHOLE | 1 | ļ | moist (GLACIAL TILL) | | Ĺ | | |] . | | | 1 | | | |
| 177.4 2.0 END OF BOREHOLE | | | (, | | | | | 178 - | | | | | | |
| END OF BOREHOLE | İ | | | | | | | ┨ | | | | | | |
| END OF BOREHOLE | | - | | | 3 | ss | 76 | Ι. | | | | | | |
| END OF BOREHOLE | 177 | .4 | | 111 | 1 | | |] | | | <u> </u> | | | |
| | 2 | 0.2 | END OF ROREHOLF | | | | | | | X | | | | |
| Borelole was dry and open upon completion of drilling. | | | END OF BONEFICE | | | | | | | | | | | |
| completion of drilling. | | | Borehole was dry and open upon | | | | | | | | | | | |
| | | | completion of drilling. | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | die. | | | | | | |
| | | | | | | | | 6 | | | | | | |
| | | | | | | | | V | | | | | | |
| | | | | | | | | Ŕ | | | | | | |
| | | | | | | | .1555 F.Tan | E., | | | | | | |
| | | | | | | 19 | | | | | | | | |
| | | | | | | AND P | | | | | | | | |
| | | | | | 4 | | A | | | | | | | |
| | | | | | ** | | AND P | gamenta (g | | | | | | |
| | | | all a | | an and a second | 4000 | | | | | | | | |
| | | | | oggenerae. | | | 100 | | | | | | | |
| | | | | | | | 100 | | | | | | | |
| | | | | | | V | | | | | | | | |
| | | | | Day. | | | | | | | | | | |
| | | | | M. | | AT I | | | | | | | | |
| | | | | 70) | M | | | | | | | | | |
| | | | | 16 | T) | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |



Client : IBI Group

Project No.:

11-12-2098

Project : McLaughlin Road

Date started: November 30, 2012

Location: Mississauga, Ontario

Sheet No.: 1 of 1

| | | | 1 1 | SAMPI | _ES | <u>o</u> | Penetration Test Values (Blows / 0,3m) | Moisture / Plasticity | lo | Lab Dat |
|----------------------|--|-------------|--------|-------|---------------|------------------------|---|---|--|--|
| Elev Depth (m) | • | Graphic Log | Number | Type | SPT 'N' Value | Elevation Scale (m) | X Dynamic Cone | Plastic Natural Liquid Limit Water Content Limit PL MC LL 10 20 30 | Headspace Vapour Instrument Details | And Commer Commer Commer Mater Property Commer Comm |
| 178.7 | 200mm ASPHALTIC CONCRETE | | | | | | | | | |
| 0.2 | 710mm GRANULAR BASE / SUBBASE, compact to very dense, brown, dry | 000 | 1 | ss | 57 | | | 0 | | |
| 178.0 | | . 0 | | | | 178 - | | | | |
| 0.9 | SANDY SILT, trace gravel, trace clay, compact, brown, moist (GLACIAL TILL) | 0 | 3 | SS | 15 | | | 0 | | |

END OF BOKEHOLE



Client : IBI Group

Project No.: 1

11-12-2098

Project : McLaughlin Road

Date started: November 29, 2012

Location: Mississauga, Ontario

Sheet No.: 1 of 1

Position : E: 606179, N: 4829669 (UTM 17T) Elevation Datum : Geodetic

Rig type : truck-mounted Drilling Method : Solid stem augers

SOIL PROFILE SAMPLES 0 Penetration Test Values_

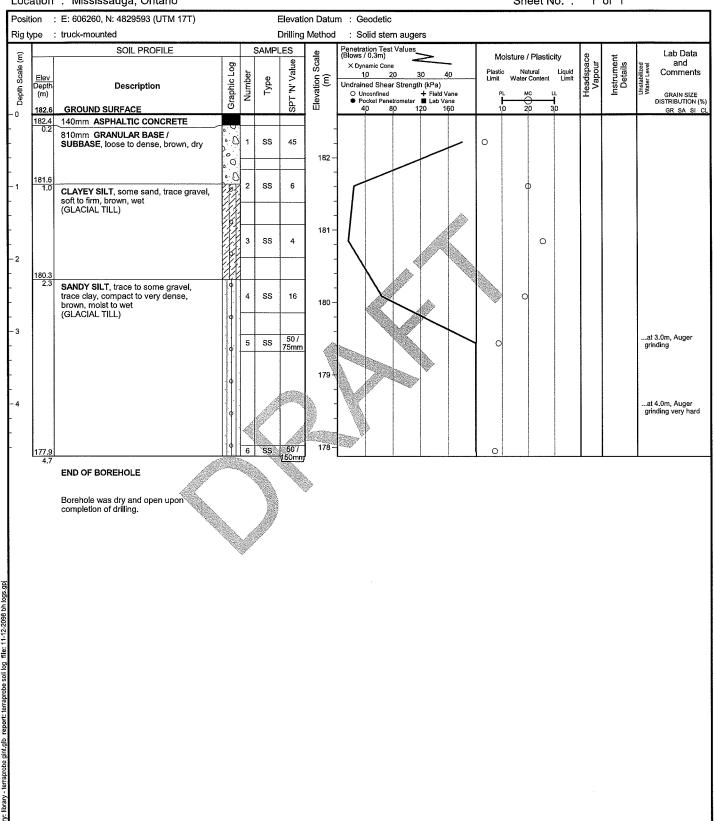
| (m) | | SOIL PROFILE | | | SAMPL | | <u>e</u> | Penetrati (Blows / | ion Test 0.3m) | Values_ | <u> </u> | | M | nisture / | Plasticity | | e . | = | | Lab | Data | 1 |
|-------------|----------------------|--|-------------|--------|-------|---------------|------------------------|-----------------------------------|--|-----------------|-------------------------------|------|----------------------|----------------|----------------------|----------------|--------------------|-----------------------|-----------------------------|-------------------|------------------------------------|---|
| Depth Scale | Elev Depth (m) | Description GROUND SURFACE | Graphic Log | Number | Туре | SPT 'N' Value | Elevation Scale (m) | X Dyna 10 Undraine O Und | mic Cone 20 d Shear confined ket Penet |) 3 Strengti | n (kPa) ♣ Field ■ Lab V | | Plasti Limit P | c Nat | ural Li Content I | iquid Limit | Headspac Vapour | Instrument Details | Unstabilized Water Level | GRAII DISTRIBU | nd nents N SIZE JTION (%) | |
| -0 | 181.1 | 150mm ASPHALTIC CONCRETE | | | | | - | | | | | | | | | | | | | 0 | | ٦ |
| | 0.2 | 685mm GRANULAR BASE / SUBBASE, compact to very dense, brown, dry to moist | | 1 | ss | 98 | 181 – - | | | | _ | | 0 | | | | | | | | | |
| | 180.5 | | 0 | | | | - | | | | | | | | | | | | | | | ı |
| -1 | 0.8 | SANDY SILT, some clay, trace gravel, compact, brown, moist to wet (GLACIAL TILL) | ا | 2 | SS | 12 | - | | | | | | 0 | | | | | | | | | |
| - | | (OL) (OL) | 6 | | | | 180 - | | | | | | | | | | | | | | | |
| - | 179.3 | | θ | 3 | SS | 22 | | | | \ | | | | o - | ı | | | | | 0 23 | 65 12 | |
| | 2.0 | | | | | | - | | | 4 | gr. | 7000 | | | | | | | | | | 1 |

END OF BOREHOLE



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 29, 2012





Client : IBI Group

Project No.: 11-12-2098

Project : McLaughlin Road

Date started: December 3, 2012

Location: Mississauga, Ontario

Sheet No.: 1 of 1

| Posit | ion | : E: 606306, N: 4829536 (UTM 17T) | | | | Elevati | on Datu | m : Geodetic | | | |
|---------|---------------|--|---------|--------|-------|-----------|---------------------|--|---|-----------------------------------|------------------------|
| Rig t | уре | : truck-mounted | | | i | Drilling | Method | : Solid stem augers | | | |
| (m) | | SOIL PROFILE | | ; | SAMPI | ES | <u>a</u> | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | ω +- | Lab Dat |
| Scale | Elev Depth | Description | hic Log | Number | Fype | 'N' Value | vation Scale (m) | X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) | Plastic Natural Liquid Limit Water Content Limit | Headspace Vapour Instrument | and Commer Commer |
| O Depth | (m) 183.0 | GROUND SURFACE | Graphic | Ž | - | SPT ' | 183 - | O Unconfined + Field Vane ◆ Pocket Penetrometer ■ Lab Vane 40 80 120 160 | PL MC UL 10 20 30 | T = | DISTRIBUTIO GR SA S |
| | 182.8 | 150mm ASPHALTIC CONCRETE | . 0 | | | | 103- | | | | |
| | 0.2 | 760mm GRANULAR BASE / SUBBASE, compact to very dense, brown, dry | . 0 | 1 | SS | 78 | | | 0 | | |
| - 1 | 182.1 0,9 | SILTY SAND, trace gravel, trace clay, loose to compact, brown, moist | 191 | 2 | ss | 24 | - 182 – | | 0 | | |
| | | (GLACIAL TILL) | 11.1 | 3 | ss | 9 | | | 0 | | |
| | 181.0 2.0 | | φ | | 33 | |] | | | | |

END OF BOREHOLE



Client : IBI Group

Project No.: 11

11-12-2098

Project : McLaughlin Road

Sheet No.: 1 of 1

Date started: November 29, 2012

Location : Mississauga, Ontario

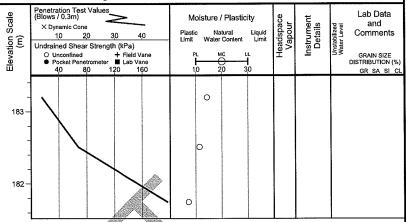
Position : E: 606413, N: 4829448 (UTM 17T)

Elevation Datum : Geodetic

Rig type : truck-mounted

Drilling Method : Solid stem augers

| - | | SOIL PROFILE | | : | SAMPL | .ES |
|-----------------|----------------------|--|-------------|--------|-------|---------------|
| Deptn Scale (m) | Elev Depth (m) | Description GROUND SURFACE | Graphic Log | Number | Type | SPT 'N' Value |
| | | 125mm TOPSOIL | 7, 1 | | | |
| | | SANDY SILT, trace gravel, trace clay, very loose to dense, brown, moist (GLACIAL TILL) | | 1 | SS | 4 |
| | | | [[]] | | | |
| | | | 0 | 2 | SS | 17 |
| | | | | | | |
| | | | | 0 | 9 | 40 |



END OF BOREHOLE

181.5 2.0



: IBI Group Client

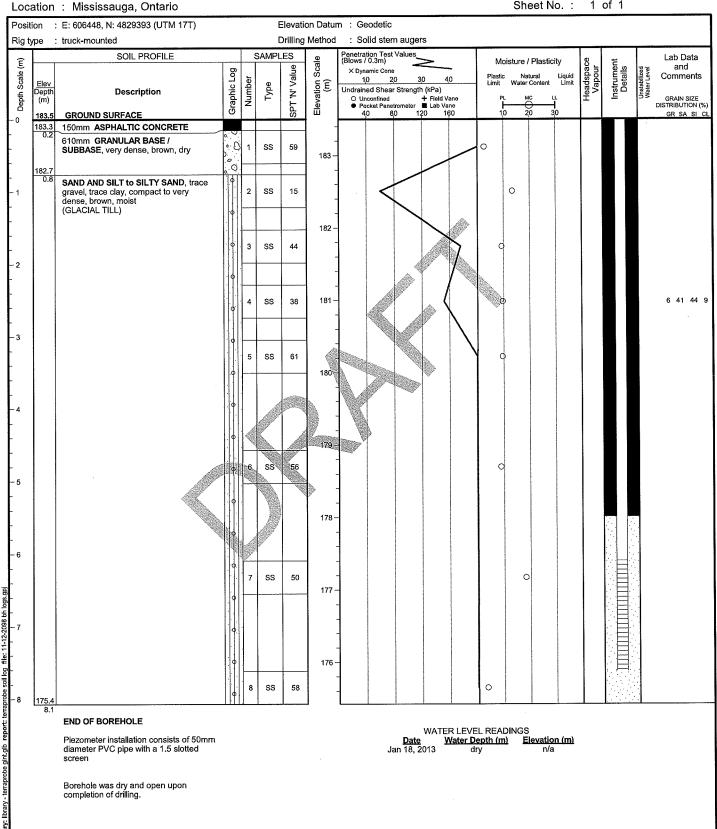
Project No.:

11-12-2098

Project : McLaughlin Road Date started: November 29, 2012

Sheet No.:

1 of 1





Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : December 3, 2012

| ocatio | n : Mississauga, Ontario | | | | | | Sheet No.: | 1 of | 1 |
|---------------------|--|-------------|------|-------------------|---------------|--|---|-----------------------------------|--|
| sition | : E: 606513, N: 4829338 (UTM 17T) | | 1 | Elevati | on Datu | m : Geodetic | | | |
| g type | : truck-mounted | | | Drilling | Method | : Solid stem augers | | | |
| T | SOIL PROFILE | T | SAMP | LE\$ | ø | Penetration Test Values (Blows / 0.3m) | Maintaine / Displicits | | Lab Data |
| Elev Dept (m) | | D) | | ne | Scale | X Dynamic Cone | Moisture / Plasticity | Headspace Vapour Instrument | |
| Elev Dept | | Graphic Log | j e | \a | 2 E | 10 20 30 40 Undrained Shear Strength (kPa) | Plastic Natural Liquid Limit Water Content Limit | apo trun | Details Unstabilized Water Level Water Level Water Level |
| Dept (m) | Description | ida k | Туре | <u>z</u> | vati (| O Unconfined + Field Vane Pocket Penetrometer Lab Vane | PĻ MC LĻ | [꽃기 때 | S GRAIN SIZ |
| 183. | | 5 6 | | SPT 'N' Value | Elevation (m) | ● Pocket Penetrometer ■ Lab Vane 40 80 120 160 | 1,0 2,0 3,0 | | DISTRIBUTION GR SA S |
| 182. | | | • | | 183 - | | | | |
| 0.: | /40mm GRANULAR DAGE/ | ° 0 1 | | | - | | | | |
| | SUBBASE, compact to very dense, brown, dry | 0 1 | SS | 55 | - | | 0 | | |
| | | ; · O · | | | - | | | | |
| 400 | | · O 2 | ss | 20 | - | | 0 | | |
| 182. | SANDY SILT, trace gravel, trace clay, | 1111 | 33 | 20 | 182 ~ | 1 \ | | | |
| | compact, brown, moist (GLACIAL TILL) | | | | | | | | |
| | (GLACIAL TILL) | | - | - | - | | | | |
| | | 3 | ss | 27 | - | | | | |
| 181. | 1 | 11.111 | | | | | | | |
| 2. | 0 END OF BOREHOLE | | | | | | | | |
| | END OF BOKEFIOLE | | | | | /// | | | |
| | Borehole was dry and open upon | | | | | | | | |
| | completion of drilling. | | | | | | | | |
| | | | | | | | | | |
| | | | | | All | | | | |
| | | | | | V | | | | |
| | | | | | V | | | | |
| | | | | | | | | | |
| | | | A | | D. | | | | |
| | | | AF | | | | | | |
| | | 4 | | A | l Laten | | | | |
| | | | | de la properiorie | | | | | |
| | All A | | . 4 | | | | | | |
| | A. P. Carlotte and | | | | h. | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | À. | M | | | | | | |
| | | | 47 | | | | | | |
| | | **** | y . | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | ÷ |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 28, 2012

Location: Mississauga, Ontario Sheet No.: 1 of 1

Position : E: 606596, N: 489259 (UTM 17T) Elevation Datum : Geodetic **Drilling Method** : Solid stem augers Rig type : truck-mounted SOIL PROFILE SAMPLES Penetration Test Values (Blows / 0,3m) Lab Data Moisture / Plasticity SPT 'N' Value and Graphic Log X Dynamic Cone Comments Depth Scale Number 10 20 30 Elevation S (m) Type Undrained Shear Strength (kPa) Description O Unconfined + Field Vane
Pocket Penetrometer Lab Vane
40 80 120 160 GRAIN SIZE DISTRIBUTION (%) 20 GROUND SURFACE GR SA SI CI 182.6 0 120mm ASPHALTIC CONCRETE 182.4 0.2 610mm GRANULAR BASE / ٥ ٥ SS 63 0 SUBBASE, very dense, brown, dry 0 182 SAND, some silt to silty, trace gravel, trace clay, compact to dense, brown, 2 SS 12 moist (GLACIAL TILL) 181 SS 29 3 - 2 SS 37 180 - 3 5 SS 37 0 179 0 - 5 **END OF BOREHOLE** Borehole was dry and open upon completion of drilling.



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 28, 2012

| cation | : Mississauga, Ontario | | | | | | Sheet No.: | 1 o | f 1 | |
|----------------------|--|--|-------|---------------|---|---|---|---------------------|-----------------------|---|
| sition : | : E: 606673, N: 4829186 (UTM 17T) | | | Elevati | on Datu | m : Geodetic | | | | |
| | truck-mounted | | | | Method | | | | | |
| | SOIL PROFILE | | SAMP | | | Penetration Test Values (Blows / 0.3m) | | | | Lab Data |
| Elev Depth (m) | OOLETTOFILE | Tal | 1 | | Elevation Scale (m) | (Blows / 0.3m) X Dynamic Cone | Moisture / Plasticity | Headspace Vapour | Instrument Details | |
| Flev | | Graphic Log | . e | SPT 'N' Value | n S (c | 1,0 20 3,0 4,0 | Plastic Natural Liquid Limit Water Content Limit | ds od | tail | and Size Size Size Size Size Size Size Size |
| Elev Depth (m) | Description | 을 | Type | ź | <u>ت</u> يَوِر | Undrained Shear Strength (kPa) | | Sa eac | T D Ist | vater Vater |
| (m) | | ja j | Z | <u>۲</u> | <u> </u> | O Unconfined + Field Vane ■ Pocket Penetrometer Lab Vane 40 80 120 160 | PL MC LL 10 20 30 | T | - | DISTRIBUTIO |
| 181.7 | GROUND SURFACE | 0 | | ß | Ш | 40 80 120 160 | 10 20 30 | | | GR SA |
| 181.5 0.2 | 150mm ASPHALTIC CONCRETE | 100 | | | - | | | | | |
| "- | 560mm GRANULAR BASE / SUBBASE, very dense, brown, dry | . 0 | 1 SS | 51 | ٠ - | | | | - 1 | |
| 1 1 | SOBBASE, very dense, brown, dry | | . | | - | | | | | |
| 181.0 0.7 | | 161- | | | 181 - | | | | | |
| " | SANDY SILT, trace gravel, trace clay, loose, brown, moist to wet | | | | | | | | | |
| 1 1 | (GLACIAL TILL) | | 2 SS | 10 | | | | | | |
| | | • - | | | | | | 1 1 | 1 | |
| | | | 1 | | l ' | | | | l | |
| | | | | | 1 - | | | | | |
| | | | 3 SS | 5 | 180 - | | 0 | | - | |
| 179.7 | | | | | | | | | | |
| 2.0 | THE OF BORELOUE | | | | | | | | | |
| | END OF BOREHOLE | | | | | | | | | |
| | | | | | | | | | | |
| | Borehole was dry and open upon completion of drilling. | | | | | | 4 | | | |
| | completion of drawing. | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | All | | | | | |
| | | | | | 1 | | | | | |
| | | | | | W | | | | | |
| | | | | | , | | , | | | |
| | | | | | b. | | | | | |
| | | | A | Managh | | N. | | | | |
| | | | Alle | | | | | | | |
| | | < | | A | | | | | | |
| | | | | M | ensemble bereit | | | | | |
| | di | 4555100c | | | | | | | | |
| | | | | Wa. | | | | | | |
| | | | | 74 | > | | | | | |
| | ₹% | | W. | | ~ | | | | | |
| | | t. | | | | | | | | |
| | | D. | AN | | | | | | | |
| | | ************************************** | AN TO | | | | | | | |
| | | - 4 | F. | | | | | | | |
| | | Ale. | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |



11-12-2098

Client : IBI Group Project No.:

Project : McLaughlin Road Date started : November 28, 2012

| | : Mississauga, Ontario | | | | | Sheet No.: 1 of 1 |
|-----------------|---|---|------|---------------|------------------------|--|
| osition | : E: 606772, N: 4829085 (UTM 17T) | | E | levati | on Datu | m : Geodetic |
| ig type | : truck-mounted | | E | rilling | Method | : Solid stem augers |
| Depth Scale (m) | ag l | | Type | SPT 'N' Value | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) |
| 178.0 | FILL, gravelly sand, compact, brown, moist | 1 | SS | 12 | ш | 40 80 120 160 10 20 30 GR SA SI |
| 177.4 0.6 | FILL, sandy silt, trace gravel, loose to compact, dark brown, moist | 2 | SS | 13 | 177 - | |
| 175.7 | | 3 | SS | 6 | 176- | |
| 2.3 175.3 | SAND, some silt, trace gravel, trace clay, loose, brown, moist | 4 | ss | 9 | | |
| 2.7 | END OF BOREHOLE | | | | | |
| | Borehole was dry and open upon completion of drilling. | | | | | |
| | | | | | | |



Client : IBI Group

Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 28, 2012

Location: Mississauga, Ontario Sheet No.: 1 of 1

: E: 606794, N: 4829062 (UTM 17T) Elevation Datum : Geodetic Drilling Method : Solid stem augers Rig type : truck-mounted SOIL PROFILE SAMPLES Penetration Test Values (Blows / 0.3m) Lab Data Moisture / Plasticity SPT 'N' Value and Graphic Log X Dynamic Cone Depth Scale Comments Natural Water Content Number 10 Elev Depth (m) Elevation (m) Type Description GRAIN SIZE DISTRIBUTION (%) 20 178.3 **GROUND SURFACE** GR SA SI CL 150mm ASPHALTIC CONCRETE 178.1 0.2 560mm GRANULAR BASE / 178 ٥. ٧ SS 27 0 SUBBASE, compact, brown, dry FILL, sandy silt to silty sand, trace gravel, very loose to loose, grey to brown, moist 2 SS 9 0 177 SS 8 0 - 2 176 4 SS 2 5 SS 3 0 6 0 SS 174 SAND, some silt to silty, trace gravel, trace clay, very loose to dense, brown SŠ 0 77 18 5 moist (GLACIAL TILL) 22 8 0 - 6 9 ss 35 172 0 171.7 **END OF BOREHOLE** Borehole was dry and open upon completion of drilling.



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : December 4, 2012

| LUC | alioi | : Mississauga, Ontario | | | | | | | Sheet No. : | ' | of 1 | |
|---|---------------|--|-----------------|---------|----------|---------------|------------------------|---|---|---------------------|-----------------------|---|
| Posi | tion | : E: 606824, N: 4829035 (UTM 17T) | | | I | Elevati | on Datu | n : Geodetic | | | | |
| | | : truck-mounted | | | | | Method | | | | | |
| | 1 | ** | | _ | | | | - | | Т | | ı |
| Ē | <u> </u> | SOIL PROFILE | , <u>-</u> | | SAMPL | | Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | g . | Ę | Lab Data |
| Depth Scale (m) | I | | Graphic Log | ایرا | | SPT 'N' Value | Sc | X Dynamic Cone 1,0 20 3,0 4,0 | Plastic Natural Liquid | Headspace Vapour | Instrument Details | And Comments Age Level Age Comments GRAIN SIZE |
| Š | Elev Depth | Description | li L | Number | Type | خ ا | ēĒ | 1,0 20 30 40 Undrained Shear Strength (kPa) | Plastic Natural Liquid Limit Water Content Limit | ag de | Set Sta | stabi |
| ag. | (m) | Description | 효 | 'n | È | Z | vat | O Unconfined + Field Vane | PL MC LL | £/ | === | SS GRAIN SIZE |
| | 178.3 | GROUND SURFACE | ō | - | | SP | ä | Pocket Penetrometer ■ Lab Vane 40 80 120 160 | 1,0 2,0 3,0 | | | 5 ≸ GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
| - 0 | 1,0.3 | 125mm ASPHALTIC CONCRETE | | | | | | | | 1 | | CIT ON SI CE |
| ŀ | | 585mm GRANULAR BASE / | | | | | 178 – | | | | | |
| ŀ | | SUBBASE, brown, dry | 00 | 1 | AS | - | ''°- | | 1 0 | | | 1 |
| F | 177 4 | | 0 | | | | | | | | | |
| L | 177.6 0.7 | FILL clavey silt some sand trace | | | | | 1 - | | | | | |
| L ₁ | | gravel, trace organics, very stiff, brown, | | 2 | SS | 16 | - | | 0 | | | |
| Γ' | 177.1 | moist | \bowtie | | | | - | \ | | | | |
| ľ | 1.2 | SILTY SAND, trace clay, compact, brown, moist | 101 | | | 1 | 177 - | | | | | |
| ŀ | | brown, moist (GLACIAL TILL) | 間。 | | | |] . | | | | | |
| F | | (OLNOIAL TILL) | | | | |] | | | | | |
| F | | | 10 | 3 | SS | 25 | ' | | 0 | | | |
| | 176.3 2.0 | <u></u> | 1715 | | | |] - | | | 1 | | |
| | 2.0 | | | | | | | | | | | |
| | | END OF BOREHOLE | | | | | | | | | | |
| 1 | | D 11 | | | | | | | | | | |
| 1 | | Borehole was dry and open upon completion of drilling. | | | | | | | A. | | | |
| 1 | | completion of untiling. | | | | | | | | | | |
| 1 | | | | | | | | | | | | |
| | | | | | | | AD | n- | | | | |
| | | | | | | | | | | | | |
| - [| | | | | | | V | | | | | |
| - | | | | | | | | | | | | |
| 1 | | | | | | al Hillion | | | | | | |
| 1 | | | | | A | | | | | | | |
| 1 | | | | | 19 ja | , , | WA . | ₩ | | | | |
| | | | | | | | | | | | | |
| | | | | .46 | | M | | | | | | |
| | | | | | | | | | | | | |
| | | A. | | Man. | .400 | | | | | | | |
| | | | Allen and Allen | | | | | | | | | |
| | | | | 74 | (| 1 | * | | | | | |
| | | | | | VA. | ` | Ψ' | | | | | |
| | | | | | | | | | | | | |
| | | | ba. | | | | | | | | | |
| | | ** | | . Jilli | | | | | | | | |
| | | | | | r | | | | | | | |
| | | | 7 | 10°F | | | | | | | | |
| | | | | | | | | | | | | |
| Ē | | | | | | | | | | | | |
| library: library - terraprobe gint.glb report: terraprobe soil log file: 11-12-2098 bh logs.gpj | | | | | | | | | | | | |
| 윤 | | | | | | | | | | | | |
| 860 | | | | | | | | | | | | |
| 12-2 | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| ije: | | | | | | | | | | | | |
| Bo | | | | | | | | | | | | |
| Soil | | | | | | | | | | | | |
| ge s | | | | | | | | | | | | |
| rapro | | | | | | | | | | | | |
| : ten | | | | | | | | | | | | |
| pour | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| it.glb | | | | | | | | | | | | |
| gin | | | | | | | | | | | | |
| robe | | | | | | | | | | | | |
| ф | | | | | | | | | | | | |
| -te | | | | | | | | | | | | |
| bran | | | | | | | | | | | | |
| ≣ | | | | | | | | | | | | |
| brai | | | | | | | | | | | | |
| = | | | | | | | | | | | | |



Client : IBI Group Project No.: 11-12-2098

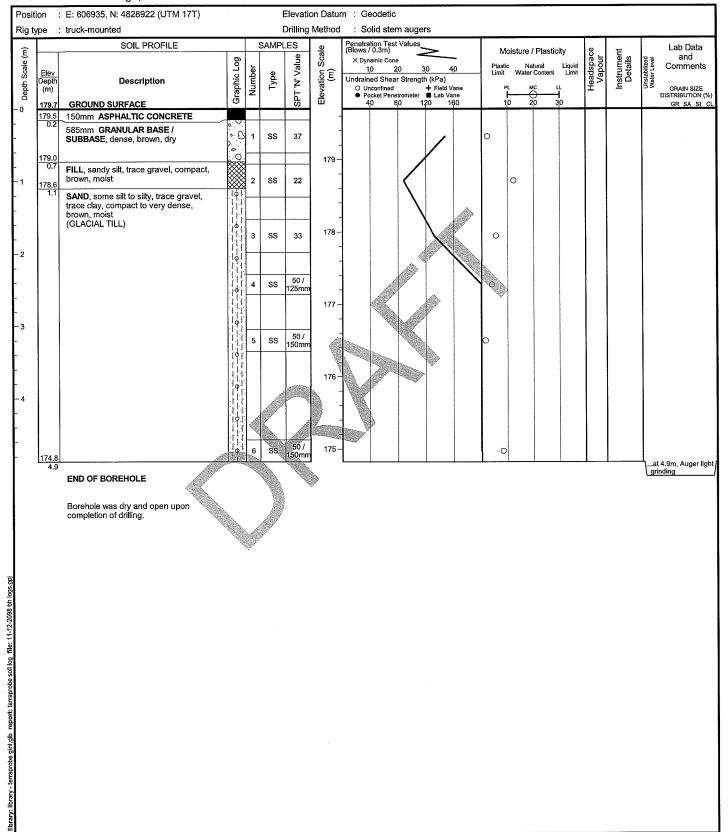
Project : McLaughlin Road Date started : December 4, 2012

| ition | | imuals manumend | | | | | | | | | | | |
|----------------------|-----|--|-------------|----------|------|---------------|----------------|--|---|---------------------|-----------------------|-----------------------------|------------------------|
| type | : 1 | truck-mounted | | 1 | | | | : Solid stem augers | | | | | |
| | | SOIL PROFILE | | _ | SAMP | | Scale | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | g . | ŧ | | Lab Data |
| Elev Depth (m) | | | Graphic Log | _ ا | | SPT 'N' Value | SS | X Dynamic Cone 10 20 30 40 | Plastic Natural Liquid | Headspace Vapour | Instrument Details | Unstabilized Water Level | and Commer |
| Elev Deptr | - | Description | 일 | Number | Туре | > | Elevation (m) | Undrained Shear Strength (kPa) | Plastic Natural Liquid Limit Water Content Limit | /ag | stru | stabi ater L | |
| (m) | 1 | Description | ap l | 5 | 5 | Z | vat | O Unconfined → Field Vane Pocket Penetrometer ■ Lab Vane | PL MC LL | [위기 | ۔ تے | ຣັ≶ັ | GRAIN SIZ |
| 179.0 | , | GROUND SURFACE | 5 | - | | SP | 👸 | ● Pocket Penetrometer ■ Lab Vane 40 80 120 160 | 1,0 2,0 3,0 | | | ' | OISTRIBUTIO GR SA S |
| 178.8 | | 150mm ASPHALTIC CONCRETE | | | | Ü | İ | | | | | 1 | OK OA (|
| 0.2 |) | 610mm GRANULAR BASE / | - | | | | i - | - | | | | | |
| | S | SUBBASE, brown, dry | 0.0 | 1 | AS | - | | + | | | | | |
| | | | 0 | <u> </u> | | | | 1 | | | | | |
| 178.2 | 2 | A | XXXX | _ | | | | | | | | | |
| 0.0 | | FILL, silty sand, some gravel, compact, dark brown to brown, moist | - 💥 | 2 | SS | 15 | 178 - | | | | | | |
| | " | ualk blown to blown, moist | ₩ | _ | 33 | 13 | 1/0- | 1 / . | | | | 1 | |
| Ì | | | **** | | | | | 1 / | | | | | |
| | | | **** | | | | • | | | | | | |
| | | | - XX | | | | 1 . | | | | | 1 | |
| 177.2 | - | 200 | XXX | 3 | SS | 10 | | | | | | 1 | |
| 177.0 | | SAND, some silt, trace clay, loose, brown, wet | آها ا | | | | J | | | | | | |
| 2.0 |) \ | | _ | | | | | | . | | | | |
| | E | END OF BOREHOLE | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | Е | Borehole was dry and open upon | | | | | | AT A | *** | | | | |
| | C | completion of drilling. | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | *** | | | | | |
| | | | | | | | A | | | | | | |
| | | | | | | | All | ************************************** | | | | | |
| | | | | | | | W | The state of the s | | | | | |
| | | | | | | | W | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | 3 | | | | | | |
| | | | | | | | 3 | | | | | | |
| | | | | | å | | D _a | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | 4 | 1 | | | | | | | | |
| | | | | 4 | | | | | | | | | |
| | | | | 4 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | · | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |



Client : IBI Group Project No.: 11-12-2098

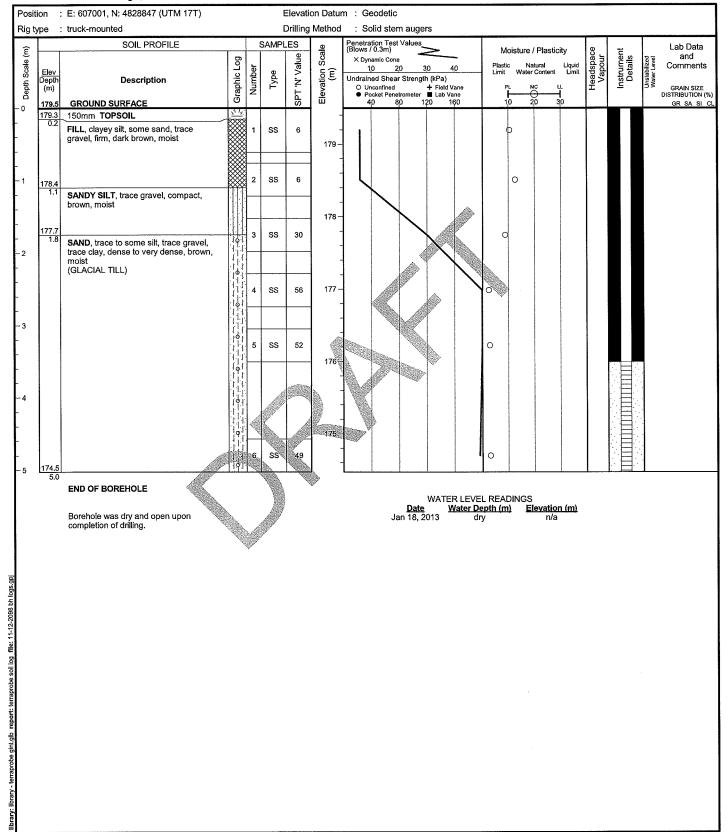
Project : McLaughlin Road Date started : November 28, 2012





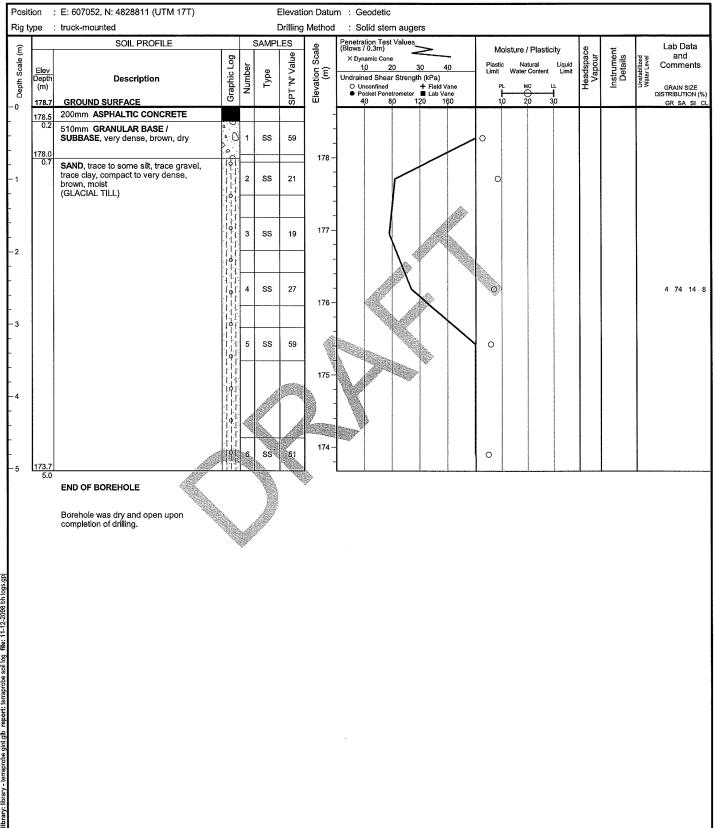
Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : November 28, 2012



Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : December 4, 2012





Client : IBI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : December 3, 2012

| Lo | cation | n: Mississauga, Ontario | | | | Sheet No.: | 1 of 1 | |
|--|--------------|--|-------------------------------|---------------------------------------|--|---|--|--|
| Ро | sition | : E: 607116, N: 4828741 (UTM 17T) | | Elevation Datu | m : Geodetic | | | |
| | | : truck-mounted | | Orilling Method | | | | |
| | | SOIL PROFILE | SAMPL | | Penetration Test Values (Blows / 0.3m) | | | Lab Data |
| Denth Scale (m) | : | SOIL PROFILE | | | (Blows / 0.3m) X Dynamic Cone | Moisture / Plasticity | Headspace Vapour Instrument Details | Lab Data যুভ and |
| 8 | Elev | | Graphic Log Number Type | SPT 'N' Value Elevation Sca (m) | 1,0 20 30 40 | Plastic Natural Liquid Limit Water Content Limit | dsp apor | Unstabilized Water Level Water |
| 4 | Depti | Description | raphic Lo Number Type | atio T | Undrained Shear Strength (kPa) | 1 | Dist Ka | Unstr Water |
| ğ | (m) | | | PT SPT | O Unconfined + Fletd Vane Pocket Penetrometer Lab Vane 4,0 8,0 12,0 16,0 | PL MC LL 1,0 2,0 3,0 | | 5 ≯ GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
| - 0 | 176.4 | | | | | | | GR SA SI CL |
| | 0.2 | | | - | | | | |
| ŀ | 1 | SUBBASE, dense, brown, dry | • O 1 SS | 34 - | 1 \ \ | 0 | | |
| ŀ | 175.9 | | | 176 - | \\ | | | |
| ŀ | 0.7 | SILTY SAND, trace gravel, trace clay, compact to dense, brown, moist | | - | \ | | | |
| - 1 | | (GLACIAL TILL) | 2 SS | 40 - | | 9 | | |
| ŀ | | , | 2 SS | - | 1 | | | |
| ŀ | | | 特別 | - | | | | |
| ŀ | | | 3 SS | 175 - | | | | |
| - | 174 | | 3 SS | 16 | | 0 | | |
| 1 | 174.6 2.0 |) | 1,713.1 | | | <u> </u> | | |
| 1 | | END OF BOREHOLE | | | A TOTAL TOTA | | | |
| | | | | | | | | |
| | | Borehole was dry and open upon completion of drilling. | | | AL A | | | |
| | | completion of arming. | | | | | | |
| | | | | | | | | |
| | | | | Ġ. | | | | |
| | | | | | | | | |
| | | | | * | | | | |
| | | | 4 | | | | | |
| | | | AN P | | N. | | | |
| | | | All | M | | | | |
| | | | | 1 1/2 | | | | |
| | | | | | | • | | |
| | | | | | | | | |
| ı | | | | | | | | |
| - | | | | Alle | | | | |
| | | | | | | | | |
| | | * | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| igp. | | | | | | | | |
| logs.(| | | | | | | | |
| 8 bh | | | | | | | | |
| 5-209 | | | | | | | | |
| 11-12 | | | | | | | | |
| <u>≡</u> | | | | | | | | |
| 8 | | | | | | | | |
| e soi | | | | | | | | |
| aprob | | | | | | | | |
| : terr | | | | | | | | |
| port | | | | | | | | |
| 鱼 | | | | | | | | |
| library: library - terraprobe gint, gib report: terraprobe soil log file: 11-12-2088 bh logs | | | | | | | | |
| robe | | | | | | | | |
| епар | | | | | | | | |
| iry - ts | | | | | | | | |
| : libra | | | | | | | | |
| rary | | | | | | | | |
| ≓ا | | | | | | | | |



Client : IBI Group

Project No.:

11-12-2098

Project : McLaughlin Road

Date started: December 3, 2012

Location : Mississauga, Ontario

Sheet No.: 1 of 1

| I | | : E: 607194, N: 4828673 (UTM 17T) | | | | zievatio | on Datui | n : Geodetic | | | | |
|-----------------|---------------------|--|-------------|--------|-------|---------------|------------------------|---|---|---------------------|-----------------------|--|
| Rig | ype | : truck-mounted | | | Į. | Orilling | Method | | | | | |
| 5 | | SOIL PROFILE | · | Ş | SAMPL | | lle | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | g l | ¥ | Lab Data |
| Depth Scale (m) | Elev Dept (m) | Description | Graphic Log | Number | Туре | SPT 'N' Value | Elevation Scale (m) | X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined | Plastic Natural Liquid Limit Water Content Limit PL MC LI. 10 20 30 | Headspace Vapour | Instrument Details | and Comments Agent Comments Agent Comments GRAIN SIZE DISTRIBUTION (%) GR SA SI CI |
| -0 | 175. | 6 170mm ASPHALTIC CONCRETE | | | | | | | | | | |
| _ | 175. | SUBBASE, dense, brown, dry | , () | 1 | ss | 34 | - | | 0 | | | |
| ŀ | 0. | 6 CLAYEY SILT, sandy, trace to some | | | | | 475 | | | | | |
| -1 | | gravel, very stiff to hard, brown, moist (GLACIAL TILL) | | 2 | SS | 22 | 175 - - - | | 0 | | | |
| | | | | | | | | | | | | |
| - -2 | | | | 3 | SS | 35 | 174 - | | | | | 8 28 45 19 |
| | 470 | 5 | | | | | . | | h. | | | |
| - | 173. 2. | SAND, trace to some silt, trace gravel, trace clay, compact, brown, moist (GLACIAL TILL) | 131 | 4 | SS | 34 | - | | | | | |
| - - 3 | | | jφ; | | | | 173 - | | | | | |
| - | | | 101 | 5 | SS | 34 | | | 0 | | | |
| ļ | | | 0 | | | | 172- | | | | | |
| -4 - | | | 101 | | | | | | | | | |
| - - -5 | 170. | .8 | | 6 | SS | 33 | 171 - | | 0 | | | |

END OF BOREHOLE



Client: BI Group Project No.: 11-12-2098

Project : McLaughlin Road Date started : December 3, 2012

Location: Mississauga, Ontario Sheet No.: 1 of 1

Position : E: 607273, N: 4828691 (UTM 17T) Elevation Datum : Geodetic **Drilling Method** : Solid stem augers Rig type : truck-mounted SOIL PROFILE Penetration Test Value (Blows / 0.3m) SAMPLES Lab Data Moisture / Plasticity Depth Scale (m) and Comments SPT 'N' Value X Dynamic Cone Graphic Log Natural Water Content Number 30 10 20 Elevation (m) Elev Type Undrained Shear Strength (kPa) Description Depth (m) O Unconfined + Field Vane
Pocket Penetrometer Lab Vane
40 80 120 160 GRAIN SIZE DISTRIBUTION (%) GR SA SI CL **GROUND SURFACE** - 0 180mm ASPHALTIC CONCRETE 530mm GRANULAR BASE / . O. AS SUBBASE, brown, dry 0 FILL, silty sand, some gravel, compact, 174 greyish brown, moist 2 SS 30 0 SILTY SAND, trace gravel, trace clay, 3 ss 24 0 compact, brown, moist (GLACIAL TILL) 173

END OF BOREHOLE



: IBI Group Client

Project No.: 11-12-2098

Project : McLaughlin Road

Date started: December 4, 2012

Location · Mississauga Ontario

Sheet No.: 1 of 1

| ocation | : Mississauga, Ontario | | | Sheet No. : | 1 of 1 | |
|--------------|---|---|--|--|--|--|
| osition | : E: 607182, N: 4828599 (UTM 17T) | Elevation Datu | m : Geodetic | | | |
| | : truck-mounted | Drilling Method | : Solid stem augers | | | |
| (III) | SOIL PROFILE | Graphic Log Number SPT 'N' Value SPT 'N' Value Elevation Scale (m) | Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 | Moisture / Plasticity Plastic Natural Liquid Limit Water Content Limit | Headspace Vapour Instrument Details | Comment Commen |
| 175.8 | GROUND SURFACE | Graphic Log Number Type SPT 'N' Value Elevation Sca (m) | Undrained Shear Strength (kPa) ○ Unconfined | PL MC LL 10 20 30 | Hea V% Inst | 명 등 등 GRAIN SIZ DISTRIBUTION GR SA S |
| 175.6 0.2 | | | | | | |
| 175.1 0.7 | 560mm GRANULAR BASE / SUBBASE, brown, dry | 0 1 AS - | | | | |
| 0.7 | FILL, clayey silt, some sand, trace gravel, firm, brown, moist | 2 SS 5 | | 0 | | |
| 174.3 1.5 | SILTY SAND, trace gravel, trace clay, dense, brown, moist | 101 111 111 111 3 SS 37 | | φ | | |
| 173.8 2.0 | (GLACIAL HLL) | | | | | |
| 2.0 | END OF BOREHOLE | | | | | |
| | Borehole was dry and open upon completion of drilling. | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |



: IBI Group

Project No.: 11-12-2098

Project : McLaughlin Road

Date started: December 4, 2012

Location · Mississaura Ontario

Sheet No : 1 of 1

| ig ty | ре | truck-mounted | | | | Drilling | Method | | | | |
|-----------------|----------------------|---|-------------|--------|------|---------------|------------------------|---|---|--|--|
| ē. | | SOIL PROFILE | SAMPLES | | | | <u>e</u> | Penetration Test Values (Blows / 0.3m) | Moisture / Plasticity | 9 + | Lab Data |
| Depth Scale (m) | Elev Depth (m) | Description GROUND SURFACE | Graphic Log | Number | Туре | SPT 'N' Value | Elevation Scale (m) | X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer | Plastic Natural Liquid Limit Water Content Limit PL MC LL PL MC LL 1,0 20 30 | Headspace Vapour Instrument Details | and Comments Comments GRAIN SIZE DISTRIBUTION GR SA SI |
|) | 174.5 | 150mm ASPHALTIC CONCRETE | | | | |] . | | | T | |
| | 0.2 | 560mm GRANULAR BASE / SUBBASE, brown, dry | 0 | 1 | AS | - | | | 0 | | |
| | 174.0 | | | | | | 174 - | | | | İ |
| i | 0.7 | CLAYEY SILT, some sand, trace gravel, very stiff, brown, moist (GLACIAL TILL) | | 2 | AS | - | 1/4- | | 0 | | |
| | 172,7 | | | 3 | AS | - | 173 - | | 0 | | |
| | 2.0 | **** | I ZIZ P | 1 | | | 3 | | | | 4- |
| | | END OF BOREHOLE Borehole was dry and open upon completion of drilling. | | | | | | | | | |