



**Foundation Investigation Report**  
**MTO Patrol Yard – New Sand/Salt Storage Structure**  
**Pearl Patrol Yard, Thunder Bay Township**  
**Highway 11/17, ON**  
**Latitude: 48.663983°, Longitude: -88.657504°**

**Assignment #7 6023-E-0030**

**Geocres No. 52A10-002**

**Prepared for:**  
**Ontario Ministry of Transportation NWR**

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## Part A - FOUNDATION INVESTIGATION REPORT

### 1 Introduction

TBT Engineering Limited (TBTE) has been retained by the Ontario Ministry of Transportation Northwest Region (MTO) to provide foundation investigation services under the Northwest Region (NWR) Geotechnical Retainer Assignment. The site is located on Highway 11/17, approximately 11.9 KM north of the intersection of Highway 11/17 and Highway 587. The site coordinates are as follows:

- Latitude: 48.663983°, Longitude: -88.657504°

A Google Earth image illustrating the site location can be seen in Figure 1.1.

The investigation consisted of advancing four boreholes to depths of 10 m within the proposed structure footprint. It is understood that the proposed structure will be used to house sand/salt. The details on the size and shape of the structure were not known at the time of this report. Planned borehole locations were provided by the MTO in the Terms of Reference, however, final borehole locations were adjusted to suit field conditions. This report describes the subsurface conditions encountered during the investigation.

The MTO Foundations Section has assigned Geocres No. 52A10-002 to this report.



**Figure 1.1: A Google Earth Image Illustrating the Site Location.**

## **2 Site Description**

The foundation investigation was conducted to investigate the subsurface conditions at the location of the proposed structure. The site is generally flat. The proposed location for the proposed structure south of the existing MTO garage at the existing sand dome location.

### **2.1 Surficial Geology**

As defined by the Ontario Ministry of Natural Resources' Northern Ontario Engineering Geology Terrain Study (NOEGTS), Map No. 52ANE, the site is in an area which primarily consists of gravel/gravelly and sand/sandy overburden. The area has low local relief and is generally dry.

Eskers are described in the NOEGTS as long, winding ridge of gravels and sands.

The presence of the above soils were confirmed from the field investigation.

## **3 Investigation Procedures**

A geotechnical site investigation was undertaken on October 30, 2024. The field investigation consisted of advancing a total of four boreholes. Borehole locations are illustrated on the Borehole Location and Soil Strata Drawing (Appendix C). The boreholes were advanced to depths of 3.1 to 3.4 m.

The borehole locations were identified in the field by TBTE personnel and service clearances were completed prior to mobilizing the drill rig to site. The boreholes were advanced using a drill rig mounted on an all-terrain carrier equipped with hollow stem augers, a casing advancement system and apparatus used to carry out Standard Penetration Testing as per ASTM D1586.

During the drilling operations for the boreholes, soil samples were obtained from the auger flights and using the techniques of the Standard Penetration Test (SPT). SPTs are typically taken at a frequency of every 0.75 m for the first 3 m of the borehole, and every 1.5 m afterwards, to the termination depth of the borehole. Sample frequency may vary due to circumstances experienced in the field.

Test hole locations were surveyed by TBTE with a level and rod and referenced to a temporary benchmark at the top of concrete by the man door of the existing MTO garage. The garage was not within the 2018 MTO base plan, as such, the borehole elevations have been interpolated from the H-370-1117-1 surface as provided by the client. A hand-held Garmin GPS device was

used in the field to record coordinates of the borehole locations, based on North American Data 1983 NAD83 (CSRS) v6 (2010 epoch).

A summary of the borehole location data is provided below and on the Borehole Location and Soil Strata Drawing (Appendix C).

**Table 3.1: Summary of Borehole Information.**

Tess Hole Number	Co-ordinates	Surface Elevation (m)	Depth of Exploration (m)
1	Lat 48.7207817 Lon – 94.5559215 N:5392623; E:403732	252.4	3.1
2	Lat 48.7207578 Lon – 94.5563558 N:5392602; E:403746	252.5	3.4
3	Lat 48.7204524 Lon – 94.5563192 N:5392580; E:403720	252.6	3.3
4	Lat 48.7204662 Lon – 94.5559661 N:5392598; E:403698	252.4	3.3

All boreholes have been backfilled and/or decommissioned with auger cuttings and bentonite in accordance with the Ontario Ministry of the Environment’s Regulation 903, as amended by Regulation 128/03 (water well regulation under the Ontario Water Resource Act).

#### **4 Laboratory Testing**

Soil samples obtained during the field investigation were subjected to routine laboratory testing. The routine testing included moisture content, Atterberg Limit tests, and grain size analysis. Typically, 100% of the recovered soil samples are tested for natural moisture content determination, and 25% of the recovered soil samples are chosen for grain size analysis and/or Atterberg limits testing, as applicable. The following test methods/standards are followed for the above testing: LS 602, LS 701, ASTM C136, ASTM D4318, ASTM D2216. The results of this testing are shown on the borehole logs (Appendix A) and on the laboratory data reports (Appendix B).

#### **5 Subsurface Conditions**

Details of the subsurface conditions are provided on the borehole logs (Appendix A), and on the Borehole Location and Soil Strata Drawing (Appendix C).

The subsurface soils at this site generally consist of gravel, sand, and silt to the termination of the boreholes.

### **5.1 Possible Fill**

Sand and gravel to gravelly sand with trace to some silt was present at the surface of all borehole locations (elev. 252.4 to 252.6 m) and extended to depths of 0.7 to 1.4 m (elev. 251.1 to 251.9 m). This material could be reworked native material. Numerous cobbles and boulders were noted within this material. This material is in a compact to dense condition as indicated by SPT N-values ranging from 13 to 35 blows per 0.3 m. The results of three grain size analyses indicates that this material can consist of 28 to 36 % gravel, 54 to 59 % sand, 10 to 13 % silt/clay sized particles.

### **5.2 Sand/Gravel/Silt**

Sand and gravel with trace to some silt to silty sand with trace gravel was encountered underlying the possible fill at all borehole locations at depths 0.7 to 1.4 m (elev. 251.1 to 251.7 m) and extended to the termination of the boreholes at depths of 3.1 to 3.4 m (elev. 249.1 to 249.3 m). Numerous cobbles and boulders were noted within this material. This material is in a very dense condition as indicated by SPT N-values 100+ blows per 0.3 m, which may be attributed to the cobbles and boulders encountered. The results of four grain size analyses indicates that this material can consist of 8 to 52 % gravel, 37 to 65 % sand, 7 to 27 % silt/clay sized particles.

### **5.3 Refusal**

Auger and spoon refusal was encountered at all borehole locations at depths ranging from 3.1 to 3.4 m (elev. 249.1 to 249.3 m).

### **5.4 Groundwater**

Casing advancement with water was utilized at the boreholes during drilling operations. Elevated water levels may have been recorded due to this drilling method and water levels may not have stabilized. Water level readings were taken upon completion of the boreholes, as shown below. Observed groundwater levels have been provided in the table below. Groundwater levels may vary from season to season and from the effects of heavy precipitation events.

**Table 5.1: Observed Groundwater Levels.**

Location	Surface Elevation (m)	Groundwater Level on Completion of Drilling	
		Depth (m)	Elev. (m)
Borehole 1	252.4	1.2	251.2
Borehole 2	252.5	0.6	251.9
Borehole 3	252.6	0.7	251.9
Borehole 4	252.4	1.5	250.9

## **6 Miscellaneous**

Laboratory testing was carried out at the TBT Engineering laboratory in Thunder Bay. The drill equipment for this investigation was operated by TBT Engineering Limited. The field operations were supervised by Ian Baumann and Allan Finke. Laboratory testing was supervised by Rhyan Ariganello, P.Eng.. This report was prepared and reviewed by Dean Vale, P.Eng., and Steven Seller, P.Eng. (TBTE's designated principal contact identified for MTO Foundation Engineering).

## **7 Limitations**

Conclusions and recommendations presented in this report are based on the information determined at a limited number of borehole locations. Subsurface and groundwater conditions between and beyond these locations may differ from those encountered. Conditions may become apparent during construction that were not detected and could not be anticipated at the time of the site investigation.

The comments given in this report on potential construction problems and possible methods of construction are intended only for the guidance of the designer.

Groundwater levels indicated are based on the information described within the report. The presence of all conditions that could affect the type and scope of the dewatering procedures which may be considered during construction cannot readily be determined from site investigation or boreholes. These conditions include local and seasonal fluctuations of the groundwater level, changes in soil conditions between borehole locations, thin and/or discontinuous layers of highly permeable soils, etc.

In no way does the information contained within this report reflect any environmental aspect of the site or soil.

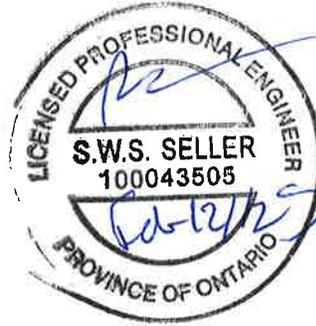
## 8 Closure

We trust the above addresses your project requirements at this time. Should you have any questions or comments, please do not hesitate to contact us at your convenience.

Yours truly,  
For TBT ENGINEERING



Dean Vale, P.Eng.  
Geotechnical Engineer



Steve Steller, P.Eng.  
Senior Engineer  
Principal Contact for MTO Foundations

**APPENDIX A**  
**Borehole Logs**

## EXPLANATION OF TERMS

**N Value:** The Standard Penetration Test (SPT) N value is the number of blows required to cause a standard 51mm O.D. split barrel sampler to penetrate 0.3m into undisturbed ground in a borehole when driven by a hammer with a mass of 63.5 kg, falling freely a distance of 0.76m. For penetrations of less than 0.3m N values are indicated as the number of blows for the penetration achieved. Average N value is denoted thus  $\bar{N}$ .

**Dynamic Cone Penetration Test:** Continuous penetration of a conical steel point (51mm O.D. 60° cone angle) driven by 475 J impact energy on 'A' size drill rods. The resistance to cone penetration is measured as the number of blows for each 0.3m advance of the conical point into the undisturbed ground.

Soils are described by their composition and consistency/condition.

**Consistency:** Cohesive soils are described on the basis of their undrained shear strength ( $c_u$ ) as follows:

$C_u$ (kPa)	0-12	12-25	25-50	50-100	100-200	>200
	Very Soft	Soft	Firm	Stiff	Very Stiff	Hard

**Condition:** Cohesionless soils are described on the basis of denseness as indicated by SPT N values as follows:

N (Blows/0.3m)	0-4	4-10	10-30	30-50	>50
	Very Loose	Loose	Compact	Dense	Very Dense

**Minor Soil Components:** Terminology used to represent the amount of minor components based on their percent of the sample by weight as follows:

% by weight	0-10	10-20	20-35	35-50
	Trace	Some	"ey" or "y"	And

## ABBREVIATIONS AND SYMBOLS

### Field Sampling, Insitu Testing, Laboratory Testing

SS	Split Spoon	TP	Thin Wall Piston
AS	Auger	OS	Osterberg
WS	Wash	RC	Rock Core
ST	Slotted Tube	PH	T W Advanced Hydraulically
BS	Block	PM	T W Advanced Manually
CS	Chunk	FS	Foil
VT	Vane Test (kPa)	PP	Pocket Penetrometer (kg/cm <sup>2</sup> )
TW	Thin Wall Shelby Tube		

## EXPLANATION OF TERMS Cont'd.

### Stress and Strain

$u_w$	kPa	Pore Water Pressure
$u$		Pore Pressure Ratio
$\sigma$	kPa	Total Normal Stress
$\sigma'$	kPa	Effective Normal Stress
$\tau$	kPa	Shear Stress
$\sigma_1, \sigma_2, \sigma_3$	kPa	Principal Stress
$\epsilon$	%	Linear Strain
$\epsilon_1, \epsilon_2, \epsilon_3$	%	Principal Strains
$E$	MPa	Young's Modulus
$G$	kPa	Modulus of Shear Deformation
$m$	MPa	Constrained Modulus
$\mu$		Coefficient of Friction

### Mechanical Properties of Soil

$m_v$	kPa <sup>-1</sup>	Coefficient of Volume Change
$C_c$		Compression Index
$C_s$		Swelling Index
$C_a$		Rate of Secondary Consolidation
$c_v$	m <sup>2</sup> /s	Coefficient of Consolidation
$H$	m	Drainage Path
$T_v$		Time Factor
$U$	%	Degree of Consolidation
$P'_o$	kPa	Effective Overburden Pressure
$P'_c$	kPa	Preconsolidation Pressure
$\tau_f$	kPa	Shear Strength
$c'$	kPa	Effective Cohesion Intercept
$\phi'$	°	Effective Angle of Internal Friction
$c_u$	kPa	Undrained Shear Strength
$s$		Sensitivity

### Physical Properties of Soil

$\rho_s$	kg/m <sup>3</sup>	Density of Solid Particles	$e$	%	Void Ratio	$e_{min}$	%	Void Ratio in Densest State
$\gamma_s$	kN/m <sup>3</sup>	Unit Weight of Solid Particles	$n$	%	Porosity	$I_D$		Density Index $= \frac{e_{max} - e}{e_{max} - e_{min}}$
$\rho_w$	kg/m <sup>3</sup>	Density of Water	$w$	%	Water Content	$D$	mm	Grain Diameter
$\gamma_w$	kN/m <sup>3</sup>	Unit Weight of Water	$s_r$	%	Degree of Saturation	$D_n$	mm	n Percent Diameter
$\rho$	kg/m <sup>3</sup>	Density of Soil	$w_L$	%	Liquid Limit	$C_U$		Uniformity Coefficient
$\gamma$	kN/m <sup>3</sup>	Unit Weight of Soil	$w_P$	%	Plastic Limit	$h$	m	Hydraulic Head or Potential
$\rho_d$	kg/m <sup>3</sup>	Density of Dry Soil	$w_S$	%	Shrinkage Limit	$q$	m <sup>3</sup> /s	Rate of Discharge
$\gamma_d$	kN/m <sup>3</sup>	Unit Weight of Dry Soil	$I_P$	%	Plasticity Index = $w_L - w_P$	$v$	m/s	Discharge Velocity
$\rho_{sat}$	kg/m <sup>3</sup>	Density of Saturated Soil	$I_L$		Liquidity Index = $\frac{w - w_P}{I_P}$	$i$		Hydraulic Gradient
$\gamma_{sat}$	kN/m <sup>3</sup>	Unit Weight of Saturated Soil	$I_C$		Consistency Index = $\frac{w_L - w}{I_P}$	$k$	m/s	Hydraulic Conductivity
$\rho'$	kg/m <sup>3</sup>	Density of Submerged Soil	$e_{max}$	%	Void Ratio in Loosest State	$j$	kN/m <sup>3</sup>	Seepage Force
$\gamma'$	kN/m <sup>3</sup>	Unit Weight of Submerged Soil						

**RECORD OF BOREHOLE No 1**

1 OF 1

**METRIC**

W.P. 6021-24-00 LOCATION N:5392622.95; E:403732.01 MTM Zone:15 ORIGINATED BY \_\_\_\_\_  
 DIST NWR HWY N/A BOREHOLE TYPE Hollow Stem Auger COMPILED BY TG  
 DATUM \_\_\_\_\_ DATE 2024.10.30 - 2024.10.30 LATITUDE 48.6642619 LONGITUDE -88.6568028 CHECKED BY DV

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT $\gamma$ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa								
						20	40	60	80	100						
252.4 0.0	(Possible FILL) SAND - Gravelly, some silt, occasional cobbles & boulders, brown, compact		1	SS	13											28 59 (13)  Water level @ 1.2 m on completion.
251.7 0.7	GRAVEL - Sandy, trace gravel, occasional cobbles & boulders, brown, very dense		2	SS	100+											No Recovery.
250.2 2.2	SAND - Silty, trace gravel, occasional cobbles & boulders, brown, very dense.		3	SS	100+											8 65 (27)  Cave @ 2.8 m.
249.3 3.1	End of Borehole @ 3.1 m. Auger Refusal.		4	SS	100+											
			5	SS	100+											

ONTARIO MTO MOD 24-179-7 MTO PEARL.GPJ ONTARIO MTO.GDT 2-12-25

+<sup>3</sup>, ×<sup>3</sup>: Numbers refer to Sensitivity      ○ 3% STRAIN AT FAILURE      PP=Pocket Penetrometer (Kg/cm<sup>2</sup>)

**RECORD OF BOREHOLE No 2**

1 OF 1

**METRIC**

W.P. 6021-24-00 LOCATION N:5392602.48; E:403745.82 MTM Zone:15 ORIGINATED BY \_\_\_\_\_  
 DIST NWR HWY N/A BOREHOLE TYPE Hollow Stem Auger COMPILED BY TG  
 DATUM \_\_\_\_\_ DATE 2024.10.30 - 2024.10.30 LATITUDE 48.6640756 LONGITUDE -88.6566201 CHECKED BY DV

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa									WATER CONTENT (%)
						20	40	60	80	100	20	40	60		GR SA SI CL		
252.5	Possible FILL - SAND & GRAVEL - trace to some silt, occasional cobbles & boulders, brown, compact to dense		1	SS	35	▽										Water level @ 0.6 m on completion.	
	----- - Gravelly		2	SS	21												32 56 (12)
251.1	SAND & GRAVEL - trace to some silt, occasional cobbles & boulders, brown, very dense		3	SS	100+												Cave @ 1.3 m.
1.4			4	SS	100+												No Recovery.
249.1			5	SS	100+												40 50 (10)
3.4	End of Borehole @ 3.4 m. Auger Refusal.																

ONTARIO MTO MOD 24-179-7 MTO PEARL.GPJ ONTARIO MTO.GDT 2-12-25

+<sup>3</sup>, ×<sup>3</sup>: Numbers refer to Sensitivity      ○ 3% STRAIN AT FAILURE      PP=Pocket Penetrometer (Kg/cm<sup>2</sup>)

**RECORD OF BOREHOLE No 3**

1 OF 1

**METRIC**

W.P. 6021-24-00 LOCATION N:5392580.43; E:403719.66 MTM Zone:15 ORIGINATED BY \_\_\_\_\_  
 DIST NWR HWY N/A BOREHOLE TYPE Hollow Stem Auger COMPILED BY TG  
 DATUM \_\_\_\_\_ DATE 2024.10.31 - 2024.10.31 LATITUDE 48.6638815 LONGITUDE -88.6569805 CHECKED BY DV

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT $\gamma$ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa								
						20	40	60	80	100						
252.6 0.0	Possible FILL - SAND & GRAVEL - trace to some silt, occasional cobbles & boulders, brown, compact		1	SS	22											36 54 (10)  Water level @ 0.7 m on completion.
251.9 0.7	SAND & GRAVEL - some silt, occasional cobbles & boulders, brown, very dense		2	SS	100+											No Recovery.
249.3 3.3	End of Borehole @ 3.3 m. Auger Refusal.															

ONTARIO MTO MOD 24-179-7 MTO PEARL.GPJ ONTARIO MTO.GDT 2-12-25

+<sup>3</sup>, ×<sup>3</sup>: Numbers refer to Sensitivity      ○ 3% STRAIN AT FAILURE      PP=Pocket Penetrometer (Kg/cm<sup>2</sup>)

### RECORD OF BOREHOLE No 4

1 OF 1

**METRIC**

W.P. 6021-24-00 LOCATION N:5392597.59; E:403697.97 MTM Zone:15 ORIGINATED BY \_\_\_\_\_  
 DIST NWR HWY N/A BOREHOLE TYPE Hollow Stem Auger COMPILED BY TG  
 DATUM \_\_\_\_\_ DATE 2024.10.31 - 2024.10.31 LATITUDE 48.6640392 LONGITUDE -88.6572709 CHECKED BY DV

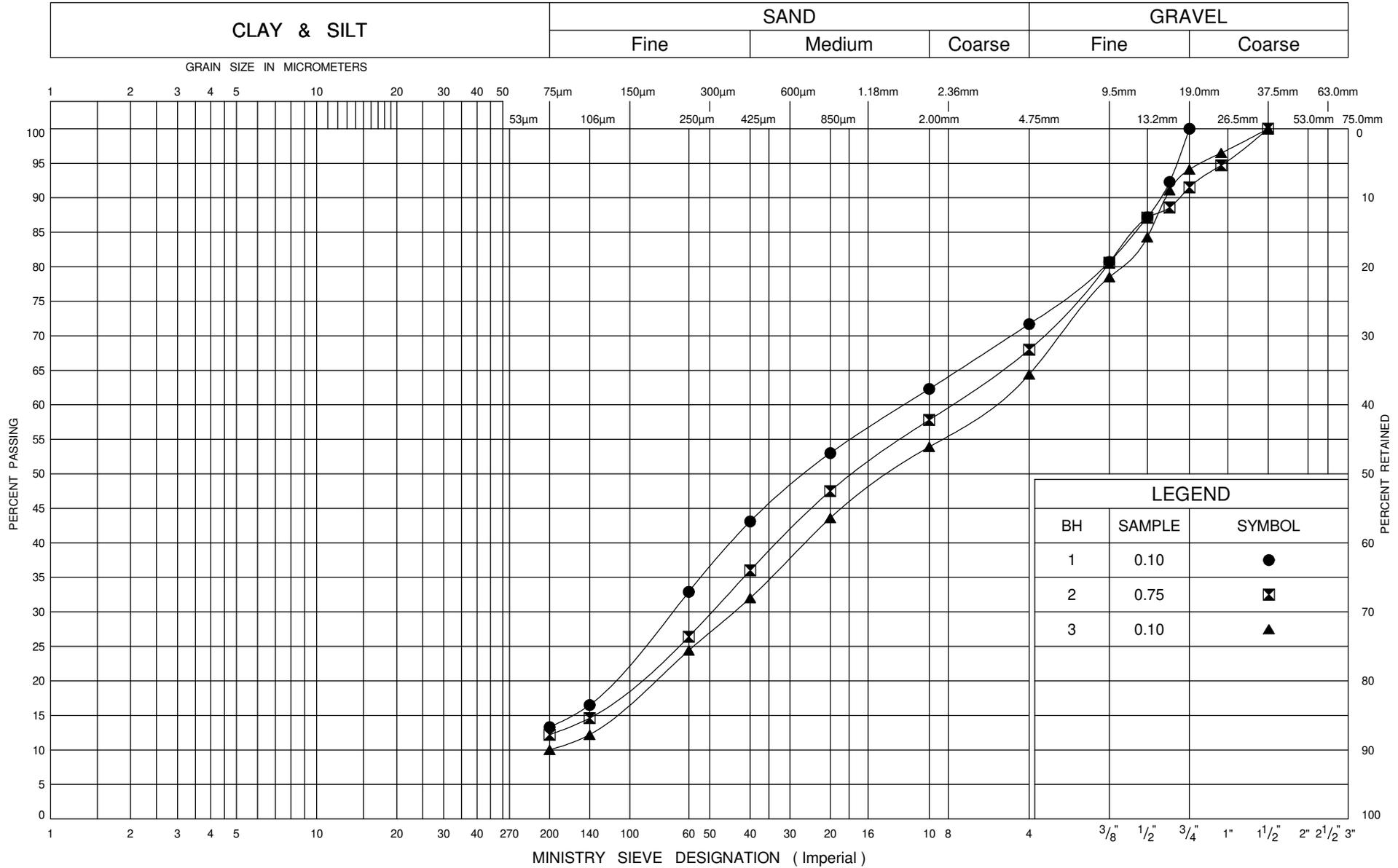
SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT $\gamma$ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80	100	W <sub>p</sub>	W		
252.4 0.0	Possible FILL - SAND & GRAVEL - trace to some silt, occasional cobbles, brown, compact		1	SS	29											Water level @ 1.5 m on completion.
251.7 0.7	SAND & GRAVEL - trace to some silt, occasional cobbles & boulders, brown, very dense		2	SS	100+											No Recovery.
																No Recovery.
			3	SS	100+											Cave @ 2.0 m.
																49 44 (7)
			4	SS	100+											No Recovery.
			5	SS	100+											No Recovery.
249.1 3.3	End of Borehole @ 3.3 m. Auger Refusal.															

ONTARIO MTO MOD 24-179-7 MTO PEARL.GPJ ONTARIO MTO.GDT 2-12-25

+<sup>3</sup>, X<sup>3</sup>: Numbers refer to Sensitivity      ○ 3% STRAIN AT FAILURE      PP=Pocket Penetrometer (Kg/cm<sup>2</sup>)

**APPENDIX B**  
**Laboratory Test Data**

### UNIFIED SOIL CLASSIFICATION SYSTEM



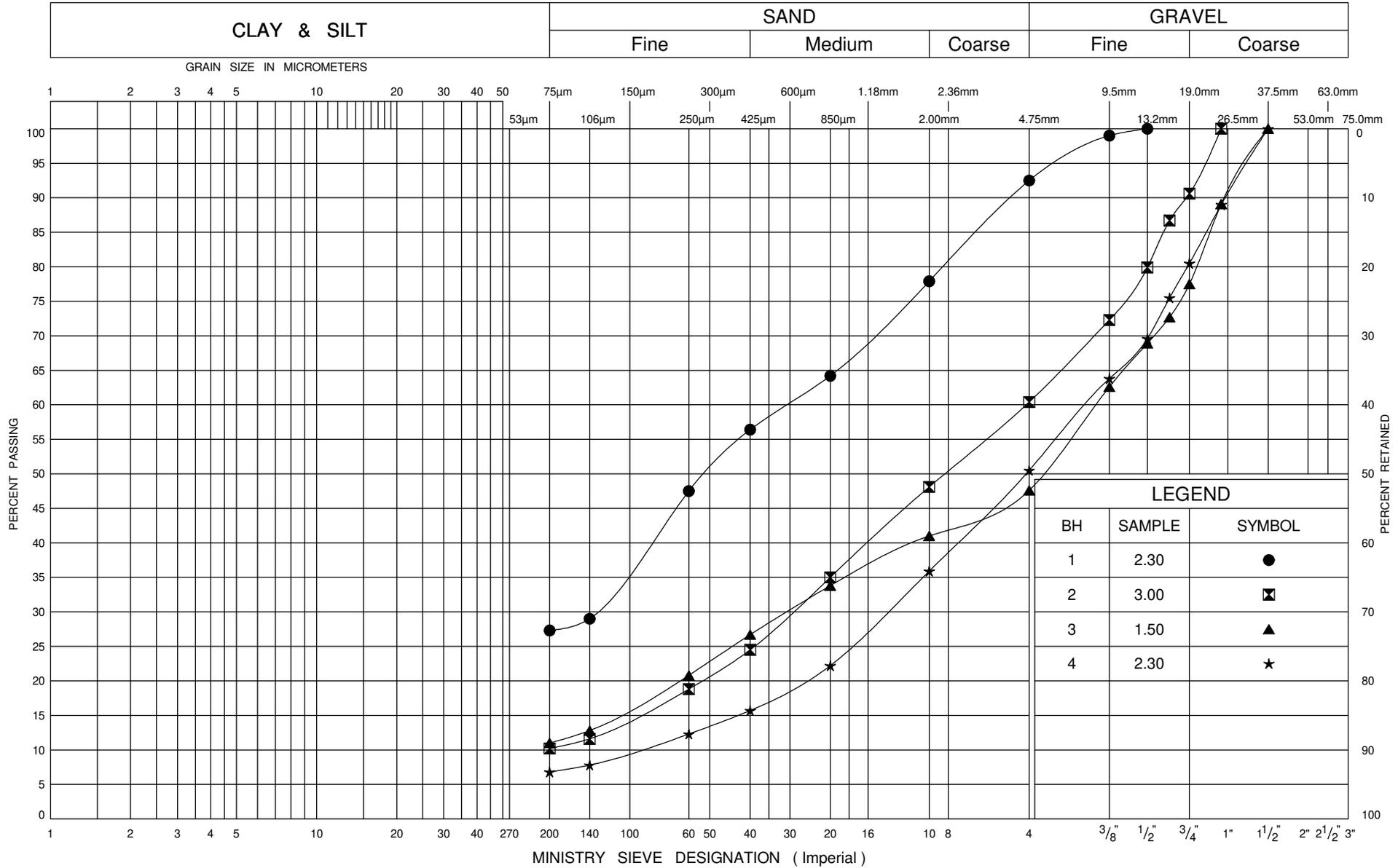
LEGEND		
BH	SAMPLE	SYMBOL
1	0.10	●
2	0.75	⊠
3	0.10	▲

**GRAIN SIZE DISTRIBUTION**  
Possible FILL - SAND & GRAVEL/SAND - Gravelly

FIG No 1  
W P 6021-24-00  
Pearl



### UNIFIED SOIL CLASSIFICATION SYSTEM



GS2 24-179-7 MTO PEARL.GPJ ONTARIO MOT.GDT 12-20-24



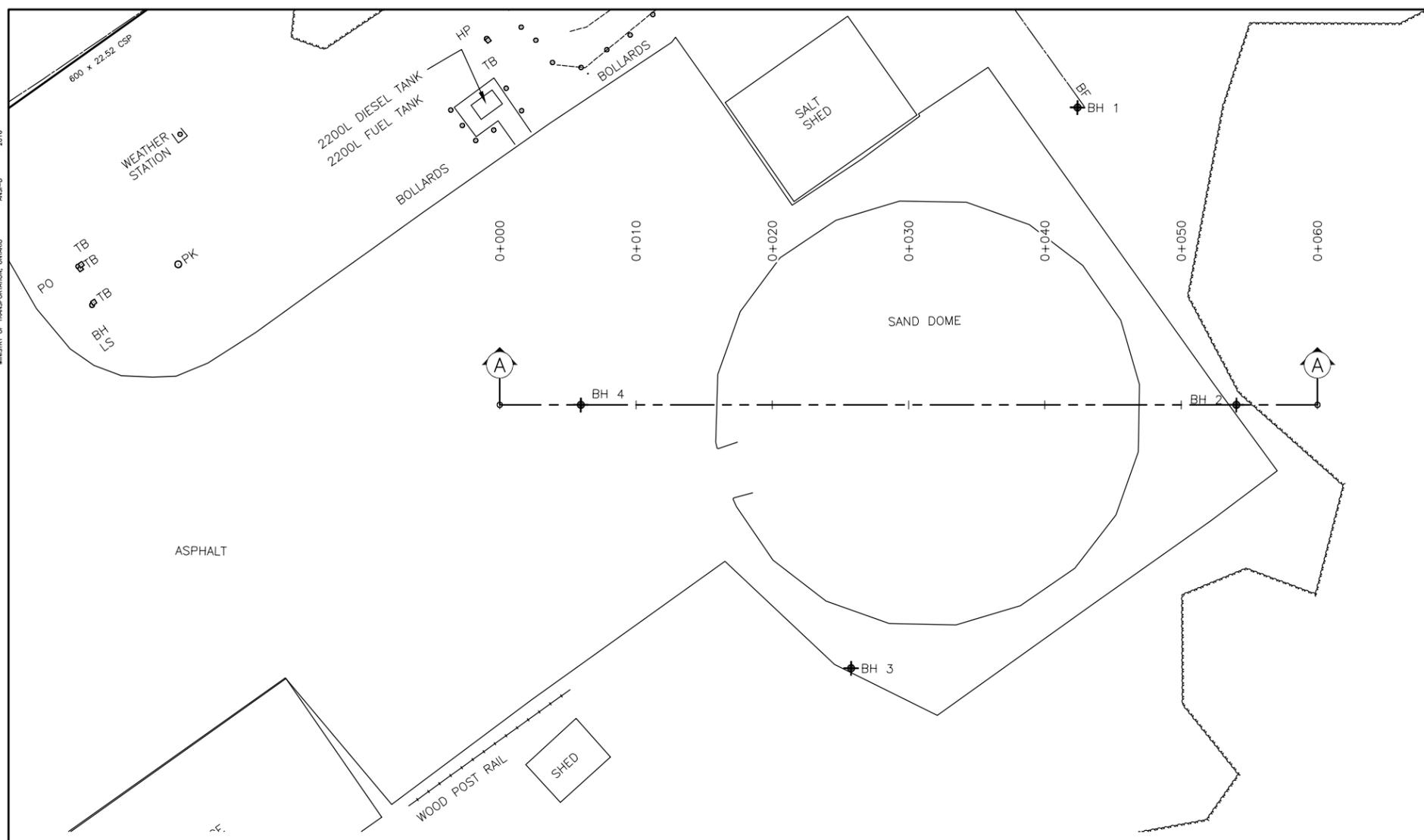
**GRAIN SIZE DISTRIBUTION**  
**SAND & GRAVEL/GRAVEL - Sandy/SAND - Silty**

<b>FIG No 2</b>	
W P	6021-24-0
Pearl	0

**APPENDIX C**  
**Borehole Location and Soil Strata Drawing**

2016  
ANSI-D  
MINISTRY OF TRANSPORTATION, ONTARIO

FILE NAME: Y:\Projects\2024\24-179-MTO, Geotech Retainer NWO\24-179-7 FIRs for Maintenance Pearl Yards\Pearl\Drawings\43701171 - Strata - final.dwg  
MODIFIED: 2025-02-12 15:51



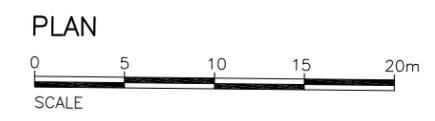
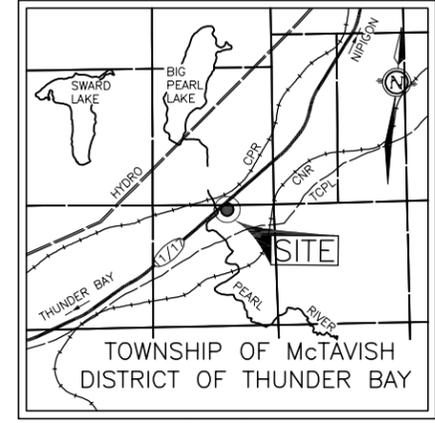
METRIC  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES UNLESS  
OTHERWISE SHOWN

**Ontario** Ministry of Transportation

**GEOCRES** 52A10-002  
**CONT** -  
**GWP** 6021-24-00

BOREHOLE LOCATIONS AND SOIL STRATA  
PEARL PATROL YARD  
HWY 11/17, TOWNSHIP OF McTAVISH

SHEET -



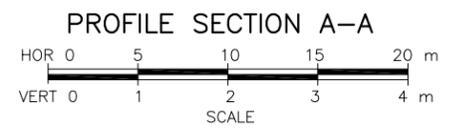
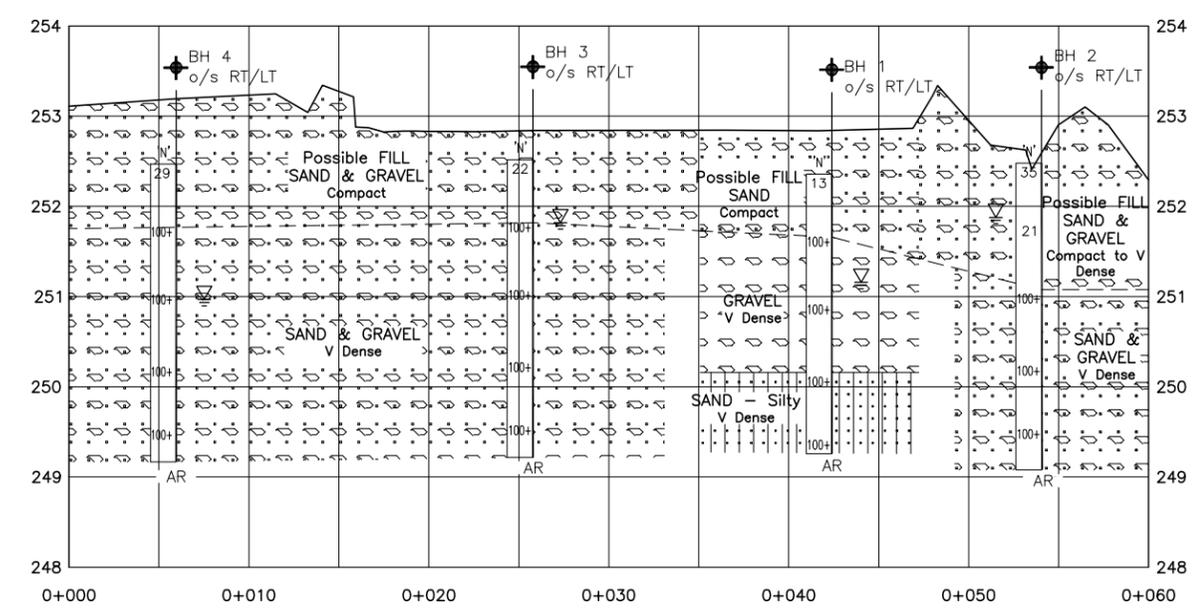
**SOIL STRATA SYMBOLS**

- Possible FILL
- SAND & GRAVEL
- GRAVEL
- SAND - Silty

**LEGEND**

- Borehole
- 'N' Std Pen Test (Blows/0.3m)
- Water Level on Completion
- AR Auger Refusal

No	ELEVATION	CO-ORDINATES (MTM 15)	
		NORTH	EAST
BH 1	252.4	15 5 392 623	403 732
BH 2	252.5	15 5 392 602	403 746
BH 3	252.6	15 5 392 580	403 720
BH 4	252.4	15 5 392 598	403 698



**-NOTE-**  
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

**REVISIONS**

NO	DATE	DESCRIPTION

DESIGN XX CHK XX CODE XXXXXX LOAD XXXX DATE DD/MM/YY  
DRAWN XX CHK XX SITE XXXXXX DWG XXXXXX