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GEOCRES No. 41N-16

W.P. No. \_\_\_\_\_

CONT. No. \_\_\_\_\_

W. O. No. \_\_\_\_\_

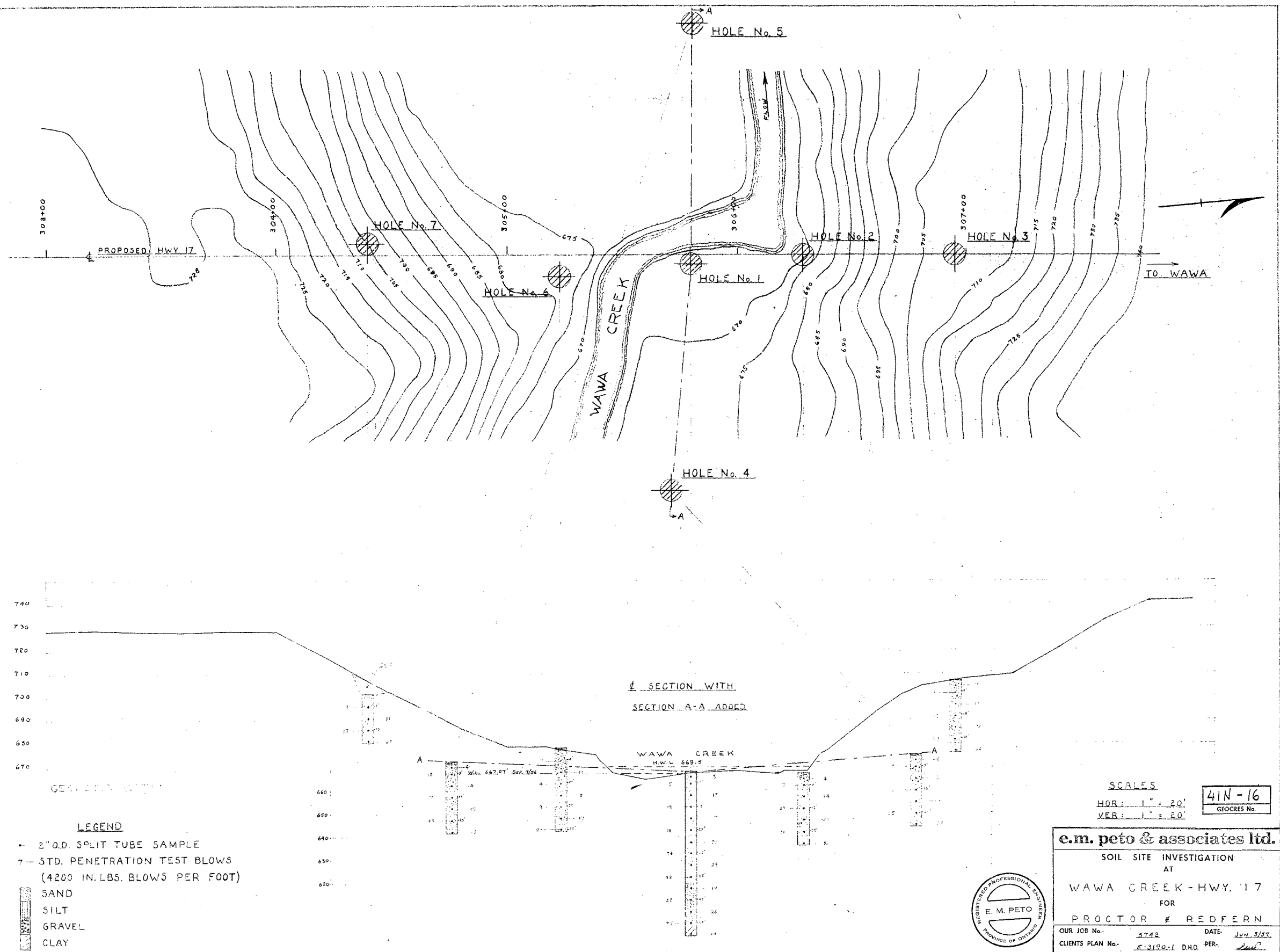
STR. SITE No. \_\_\_\_\_

HWY. No. 17

LOCATION WAWA CREEK -  
CROSSING

OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT. ONE

REMARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



BA 658

# e. m. peto associates ltd.

YOUR REFERENCE:-

OUR REFERENCE:- 5742

850 roselawn avenue,  
TORONTO, ONTARIO.  
RUssell 1 - 4955.

REPORT ON  
SOIL SITE INVESTIGATION  
at  
WAWA CREEK - HWY. 17 CROSSING  
for  
PROCTOR AND REDFERN  
CONSULTING ENGINEERS

41N-16
GEOCREs No.

## TERMS OF REFERENCE:

It was originally proposed after consultation with the Client that four or more test holes should be driven at the Wawa Creek crossing to locate bedrock elevation, to determine the subsoil conditions above bedrock, and to prove the reliability of bedrock, which was believed to exist only a few feet below the creek bed. The initial two test holes were to be driven in or immediately adjacent to the creek bed on the road centre line to determine if a soft sub-soil condition existed which might preclude the suggested use of a culvert with fill instead of a bridge. On completion of the initial two test holes, one extra test hole was to be driven to locate and prove bedrock at each end of the proposed culvert location. These test hole locations were to be staked by the Client's representative on site, Mr. Gordon Smith.

The samples were to be taken at the 2 to 3 ft. depth, at 5 to 6 ft., and at 5 ft. intervals thereafter, or as otherwise instructed as a result of on site findings. The standard penetration test results were to be recorded when sampling. Shelby tube samples were to be recovered if a soft cohesive stratum was encountered. Diamond drill holes were to be cored in order to prove bedrock where encountered. Water table levels were to be noted and the degree of saturation of samples was to be given.

Since the contemplated design was based on the assumption that bedrock existed on this site at a very shallow depth, the Client was to be advised as quickly as possible if the initial test results were not in accordance with the Client's assumptions.

METHOD OF OPERATION:

This investigation was performed by our number 3 unit, a skid-mounted Sullivan "12" diamond drill rig, which was shipped to the site by rail during the first week of May. A local bulldozer was used in order to cut a trail into the crossing site and to cut a ramp down each side of the stream crossing from the hilltop above in order to enable movement of the equipment down into the stream bed and up the opposite bank.

While awaiting the arrival of the equipment, and during the clearing and bulldozing stage, the field crew drove four probe test holes by hand by driving A-red to shallow depths to investigate the immediate sub-surface soil conditions and to locate the shallow bedrock which was presumed to exist on this site. The results are given in tabular form on a following page.

The regular soil test holes were performed by driving and cleaning BX drill casing, sampling ahead of the casing with a 2" O.D. split tube sampler. The standard penetration test results were recorded when sampling, these being the number of blows of a 140 lbs. hammer falling 30" required to drive the sampling tube a distance of one foot. Samples were recovered as requested under the terms of reference. Since no cohesive strata were encountered, no Shelby tube samples were recovered on this site.

Since no bedrock was encountered within reasonable depth, no diamond drill core was recovered on this site.

Water table levels were recorded from those test holes which were located in or adjacent to the creek bed.

All samples obtained in the field were shipped to our laboratory in Toronto and carefully examined. Complete borehole logs were drawn up and are included at the rear of this report.

A cross-sectional view of the boreholes performed along or adjacent to the centre line of the road is shown on the site plan. In addition, we have also plotted test holes 4 and 5 to the same datum elevation in order to show the density variations at comparable elevations between test holes 4, 1 and 5 along which the proposed culvert was to extend. We trust that the addition of test holes 4 and 5 to the centre line cross section will not cause any confusion with regard to the test results.

Ground elevations at all the test holes were supplied us by the Client, and are probably referred to Geodetic datum.

GENERAL OBSERVATIONS:

Wawa Creek is a small meandering stream which has been cut in the general sand plain in this area. The stream flows from East to West. The stream bed itself lies some 60 to 75 ft. below the level of the approach roads to the North and to the South. The approach slopes on both banks are at very nearly a 1 to 1 grade.

At the road centre line the creek width extends to 95 feet, during flood stages. However, over much of this width the depth of water is only about 1 foot and the actual creek bed at flood time does not contain more than a 3 to 3'6" depth of water at its main water course, which is only some 25 ft. in width.

Probe Test Results

<u>Probe</u>	<u>Station</u>	<u>Depth of Water</u>	<u>Depth below stream</u>
A	305 + 40 g	2'6"	7' (No refusal)
B	305 + 80 g	1'2"	8'4" " "
C	306 + 20 g	0'4"	9'2" " "
D	305 + 80 7'W.of g	2'6"	4'4" " "

As a result of the probe tests performed before the arrival of the main equipment on site, a pattern of test holes was decided upon after consultation with the Client, and the test holes were located as shown on the site plan at the rear of the report. It was decided to do some additional test holes along the centre line of the road on the bank at each side of the stream in case it should be necessary to change the proposed structure from a culvert to a semi-high level bridge. Test holes 4 and 5 were performed at approximately the opposite ends of the proposed culvert in order to obtain a comparison of the load bearing capacities of the strata encountered along the centre line of the proposed culvert and at each end.

SOIL CONDITIONS:

This site is entirely sand. Test hole number 1 was driven to some considerably greater depth than the other test holes and there was considerable silt content in the sand between the 50 and 60 ft. depths. There was some clay content in the sample at the 70 ft. depth, where this hole was terminated.

Broadly speaking, those test holes which were located in or adjacent to the creek bed were driven through a greyish-brown saturated fine sand which is very loose to loose for the top 10 to 15 ft., and generally becomes compact to dense at some considerable depth. Those test holes which were located further back from the creek on higher ground partly up the bank were driven through generally medium to coarse sand with some fine gravel content. The densities were generally only compact, and increased gradually with depth.

### SOIL CONDITIONS: (Cont'd)

The standard field penetration test results, uncorrected for water condition, are shown on the borehole log for each test hole as well as on the cross-sectional view of the test holes on the site plan and profile at the rear of this report.

### WATER CONDITIONS:

The stream water level was not constant during the soil investigation and fell from near high water levels from the spring runoff to elevation 667.0 on completion of the test work. Examination of the samples indicated that the ground water table throughout this site were generally close to or at the existing creek water level. Samples taken from above this elevation were generally moist to very moist and samples recovered from the fine sand below elevation 667 were saturated. We wish to point out that at test hole number 1 when the casing was left at the 30 ft. depth at the end of the first day, the fine sand backed up the casing to the 20 ft. depth overnight.

### APPROACH ROAD TEST HOLE

Several short hand driven probe holes were performed under the direction of the Client's field engineer along the South approach road. In addition, one test hole was driven to a depth of 35 ft. at Ch 301 + 60 at a point some 10 ft. East of the centre line. Since this test hole was on the approach road to the South bank of the crossing, the logs for this test hole have been attached at the rear of this report although it has no direct bearing on the actual creek crossing itself except to indicate the potential depth to which the road may be cut at that location without undue difficulty.

### CONCLUSIONS:

1. Since the original proposed design of the Consulting Engineer was for a 40' diameter arch culvert, and since this size of culvert seemed out of all proportion to the water flow requirements at Spring runoff, we suggested to the Consulting Engineer that a further check be made with regard to the drainage area information supplied by the D.H.O.
2. In view of the proposed height of embankment, some 45' above the top of culvert, and in view of the very loose to loose sand and the variable densities of the sub-soil along the centre line of the proposed culvert, it was strongly recommended that a non-rigid or Arco type culvert be used for this creek crossing. Differential settlement along a culvert some 240' long would definitely occur on this site and a very heavily reinforced base slab would be required to withstand the stresses imposed by such differential settlements.

CONCLUSIONS: (Cont'd)

3. In view of the relatively minor flood level variations at this crossing and because of the height of the approach roads, it was decided that a high-level bridge was impractical, since a pile foundation would almost certainly be required unless the abutments were located well back from the Creek, forcing the use of a long span bridge.
4. It was ultimately decided that two 14' diameter Armaco culverts would adequately handle the flow of water in this Creek under the worst conditions and this decision was tentatively approved by the D.H.O. Accordingly, based on an embankment fill of 45' above top of culvert, we have estimated that the settlement at centre of road (under maximum fill) will be 4.9". This figure was derived by taking a good average of the corrected standard penetration test results, using the full value of the load from the super-imposed fill which will be non-cohesive, medium to coarse sand with a probable density of about 120 lbs. per cu. ft., and allowing for the high water table level in the sand.
5. Cut off sheeting should be driven at the ends of the culverts to prevent scour and undermining and this sheeting can certainly be driven to at least 15' without difficulty.
6. There will undoubtedly be some difficulty with the saturated sand during stripping and grading of the culvert subgrade before the culverts are placed. The sand will certainly "run" and may tend to turn quick if any true excavation is attempted.

E. M. PETO ASSOCIATES LTD.,



E. M. Peto, P. Eng.

EMP:ab





June 14th, 1957.

**e. m. peto associates ltd.**  
SOIL ENGINEERING SERVICE - TORONTO, ONTARIO  
**BOREHOLE LOG**

Job Name Wawa Creek Bridge  
Client Proctor & Redfern  
Datum Geodetic












Job No. 5742  
Casing BY  
Compiled By E. M. Peto

Borehole No. 1  
Boring Date May 6th, 1957  
Checked By M.M.

**SAMPLE CONDITION**  
 **UNDISTURBED**  
 **FAIR**  
 **DISTURBED**  
 **LOST**

**SAMPLE TYPE**  
S.S. 2" STANDARD SPLIT TUBE SAMPLE  
S.L. SPLIT BARREL WITH LINER  
S.T. THIN-WALLED SHELBY TUBE SAMPLE  
W.S. WASH SAMPLE  
R.C. ROCK CORE

**ABBREVIATIONS**  
V.T. IN SITU VANE SHEAR TEST  
Q.U. UNCONFINED COMPRESSIVE STRENGTH  
W.L. WATER LEVEL IN CASING  
W.T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOUR	Density or Consistency	Depth, Elevation	Legend	Sample No. and Condition	Sample Type	No. of Blows per ft.	WATER LEVEL, S. SOIL, MOISTURE & REMARKS
			0.0 668.2					
COARSE SAND & FINE GRAVEL	GREY-BROWN	VERY LOOSE			1 	S.S.	3	SATURATED
FINE SAND	GREY-BROWN	LOOSE	5.0		2 	S.S.	5	W.L. 5.0' CASING AT 30'
FINE SAND	BROWN	LOOSE TO COMPACT	10.0 658.2		3 	S.S.	13	"
FINE TO MEDIUM SAND	GREY-BROWN	COMPACT	15.0		4 	S.S.	14	"
FINE SAND	GRAY-BROWN	COMPACT	20.0 648.2		5 	S.S.	17	"
FINE SAND	GREY	COMPACT	25.0		6 	S.S.	14	"
								SAND BACKED UP CASING FROM 30' TO 26' OVERNIGHT
FINE SAND	BROWN-GRAY	COMPACT	30.0 638.2		7 	S.S.	26	SATURATED
FINE SAND	GREY-BROWN	COMPACT TO DENSE	35.0		8 	S.S.	34	"
FINE TO MEDIUM SAND	GREY-BROWN	COMPACT	40.0 628.2		9 	S.S.	23	"
FINE SAND	GREY-BROWN	DENSE	45.0		10 	S.S.	42	"
VERY FINE SILTY SAND	GREY	COMPACT	50.0 618.2		11 	S.S.	19	"



[illegible]

# e. m. peto associates ltd.

SOIL ENGINEERING SERVICE - TORONTO, ONTARIO

## BOREHOLE LOG

Job Name Wawa Creek Bridge  
Client Proctor & Redfern  
Datum Geodetic

Job No. 5742  
Casing PIV  
Compiled By E.M. Peto

Borehole No. 2  
Boring Date May 8th, 1957  
Checked By M.M.

### SAMPLE CONDITION

### SAMPLE TYPE

### ABBREVIATIONS

- ☒ UNDISTURBED
- ☒ FAIR
- ☒ DISTURBED
- ☒ LOST

- S.S. 2" STANDARD SPLIT TUBE SAMPLE
- S.L. SPLIT BARREL WITH LINERS
- S.T. THIN-WALLED SHELBY TUBE SAMPLE
- W.S. WASH SAMPLE
- R.C. ROCK CORE

- V.T. IN SITU VANE SHEAR TEST
- Q<sub>u</sub> UNCONFINED COMPRESSIVE STRENGTH
- W.L. WATER LEVEL IN CASING
- W.T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOUR	Density or Consistency	Depth Elevation	Legend	Sample No. and Condition	Sample Type	No. of Blows per Ft	WATER LEVELS, SOIL MOISTURE & REMARKS
COARSE SAND, TREE ROOTS, ETC			0-2 666.9					WT - 1'-2" - STREAM LEVEL
COARSE SAND & FINE GRAVEL	GREY - BROWN	VERY LOOSE	5-2 666.9		1	<input checked="" type="checkbox"/> S.S.	4	SATURATED
FINE SAND	BROWN - GREY	LOOSE	5-2 666.9		2	<input checked="" type="checkbox"/> S.S.	7	" PUSHED CASING TO 7' BY HAND
FINE SAND	BROWN - GREY	COMPACT	10-2 656.9		3	<input checked="" type="checkbox"/> S.S.	24	SATURATED
FINE SAND	GREY - BROWN	COMPACT	15-2 656.9		4	<input checked="" type="checkbox"/> S.S.	23	"
FINE SAND	GREY-BROWN	COMPACT	20-2 646.9		5	<input checked="" type="checkbox"/> S.S.	20	"
FINE SAND	GREY-BROWN	LOOSE TO COMPACT	25-2 646.9		6	<input checked="" type="checkbox"/> S.S.	11	" LOST CASING WASH WATER AT 27'
MEDIUM SAND	GREY BROWN	COMPACT TO DENSE	30-2 635.9		7	<input checked="" type="checkbox"/> S.S.	32	SATURATED
			HOLE TERMINATED					

# BOREHOLE LOG

Checked By M.M.

V.T. IN SITU VANE SHEAR TEST  
Q/U UNCONFINED COMPRESSIVE STRENGTH  
W.L. WATER LEVEL IN CASING  
W.T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOUR	Density or Consistency	Depth Elevation	Legend	Sample No and Condition	Sample Type	No. of Blows per Ft.	WATER LEVELS, SOIL MOISTURE & REMARKS
MEDIUM TO COARSE SAND & FINE GRAVEL	BROWN	LOOSE	0' - 0" 766.8		1	X	7	
FINE TO MEDIUM SAND, SOME FINE GRAVEL	GREY-BROWN	LOOSE TO COMPACT	5' - 0" 761.8		2	X	11	
MEDIUM TO COARSE SAND & FINE GRAVEL, LAYERS OF VERY FINE SAND	GREY-BROWN	LOOSE TO COMPACT	10' - 0" 756.8		3	X	13	
MEDIUM TO COARSE SAND	GREY-BROWN	COMPACT	15' - 0" 751.8		4	X	15	
MEDIUM TO COARSE SAND, & FINE GRAVEL		COMPACT TO DENSE	20' - 0" 746.8		5	X	32	
FINE SAND	GREY-BROWN	COMPACT TO DENSE	25' - 0" 741.8		6	X	29	CASING WASH WATER LOST SURFACE TO 24'
FINE TO MEDIUM SAND	GREY-BROWN	COMPACT	30' - 0" 736.8		7	X	26	CASING FILLED AND WATER SEEPED AWAY IN 30 MIN.
			HOLE TERMINATED					

# BOREHOLE LOG

Borehole No. 4  
 Boring Date May 10th, 1957  
 Checked By M.M.

## ABBREVIATIONS

V. T. IN SITU VANE SHEAR TEST  
Q/U UNCONFINED COMPRESSIVE STRENGTH  
W. L. WATER LEVEL IN CASING  
W. T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOUR	Density or Consistency	Depth Elevation	Legend	Sample No. and Condition	Sample Type	No. of Blows per Ft.	WATER LEVELS, SOIL MOISTURE & REMARKS
DEGRADED VEGETATION			0'-0" 675.3					
FINE TO MEDIUM SAND	BROWN	LOOSE			1	SS	5	VER MOIST
FINE TO COARSE SAND & FINE GRAVEL	BROWN-GREY	LOOSE TO COMPACT	5'-0" 666.4		2	SS	9	VERY MOIST
FINE SAND, SOME GRITS & ODD PEBBLE	GREY-BROWN	LOOSE	10'-0" 655.3		3	SS	5	—WL 8'-5" HOLE TO 31' SATURATED COMPACT AT 12'
FINE SAND	GREY-BROWN	COMPACT	15'-0"		4	SS	14	SATURATED
VERY FINE SAND	GREY	COMPACT	20'-0" 644.3		5	SS	16	"
VERY FINE SAND	GREY	COMPACT	25'-0"		6	SS	25	"
FINE SAND	GREY	COMPACT	30'-0" 633.3		7	SS	27	"
			HOLE TERMINATED					

SOIL ENGINEERING SERVICE - TORONTO, ONTARIO  
BOREHOLE LOG

Borehole No. 5  
Boring Date May 13th, 1957  
Checked By M.M.

## ABBREVIATIONS

V. T. IN SITU VANE SHEAR TEST  
Q/U UNCONFINED COMPRESSIVE STRENGTH  
W. L. WATER LEVEL IN CASING  
W. T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOR	Density or Consistency	Depth Elevation	Legend	Sample No. and Containing	Sample Type	No. of Blows per Ft.	WATER LEVELS, SOIL MOISTURE & REMARKS
DECAYED VEGETATION			0'-0" 672.1		S.S.			
FINE TO MEDIUM SAND	BROWN	VERY LOOSE	5'-0"		1 X S.S.		4	MOIST ONLY
COARSE SAND & FINE GRAVEL	RED-BROWN	LOOSE TO COMPACT	8'-0"		2 X S.S.		13	SATURATED
FINE SAND	GRAY-BROWN	VERY LOOSE	10'-0" 662.9		3 X S.S.		4	"
FINE SAND	GREY-BROWN	LOOSE	15'-0"		4 X S.S.		7	" COMPACT AT 17'
FINE SAND	GREY-BROWN	COMPACT	20'-0" 652.9		5 X S.S.		25	"
FINE SAND	GREY-BROWN	COMPACT	25'-0"		6 X S.S.		25	"
FINE SAND	GREY-BROWN	COMPACT	30'-0" 641.1		7 X S.S.		15	"  HOLE TERMINATED

# BOREHOLE LOG

Checked By **M.M.**

### ABBREVIATIONS

V.T. IN SITU VANE SHEAR TEST  
Q/U UNCONFINED COMPRESSIVE STRENGTH  
W.L. WATER LEVEL IN CASING  
W.T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOR	Density or Consistency	Depth Elevation	Log No.	Sample No. and Condition	Sample Type	No. of Blows per Ft	WATER LEVELS, SOIL MOISTURE & REMARKS
DECAYED VEGETATION			0-6 679.2	S.S.C				
MEDIUM & COARSE SAND			5-8					
COARSE SAND	GREY-BROWN	Loose	10-12 679.2		1 X S.S.	SS	7	Moist only
COARSE SAND & GRAVEL 1 1/4"	GREY BROWN	COMPACT	15-18 679.2		2 X S.S.	SS	19	WET
FINE SAND	GREY - BROWN	VERY LOOSE	20-22 679.2		3 X S.S.	SS	4	SATURATED
VERY FINE SAND	GREY - BROWN	VERY LOOSE	25-28 679.2		4 X S.S.	SS	3	"
FINE SAND	GREY - BROWN	LOOSE TO COMPACT	30-32 679.2		5 X S.S.	SS	9	COMPACT BELOW PT.
VERY FINE SAND, SOME SILT CONTENT	GREY - BROWN	COMPACT	35-38 679.2		6 X S.S.	SS	17	SATURATED
FINE SAND	G	COMPACT	38-40 679.2		7 X S.S.	SS	22	HOLE TERMINATED

# BOREHOLE LOG

Borehole No. 7  
 Boring Date May 15th, 1957  
 Checked By M.M.

### ABBREVIATIONS

V.T. IN SITU VANE SHEAR TEST  
Q/C UNCONFINED COMPRESSIVE STRENGTH  
W.L. WATER LEVEL IN CASING  
W.T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOR	Density or Consistency	Depth Elevation	Legend	Sample No. and Condition	Sample Type	No. of Blows per Ft.	WATER LEVELS, SOIL MOISTURE & REMARKS
ORIGINAL GROUND SURFACE		(APPROX.)	706.5					
APPROX. 10' CUT FOR TEMPORARY ROAD								
NEW GROUND SURFACE			9'-0" 701.5					
LAYER OF MEDIUM & COARSE SAND			5'-0"					CASING WASH WATER WAS SEEPING AWAY THROUGH OUT DEPTH OF TEST HOLE
MEDIUM & SOME COARSE SAND	GREY-BROWN	LOOSE TO COMPACT			1 <input checked="" type="checkbox"/> SS	9		MOIST ONLY
MEDIUM & COARSE SAND	GREY-BROWN	LOOSE TO COMPACT	10'-0" 691.3		2 <input checked="" type="checkbox"/> SS	11		"
MEDIUM & COARSE SAND	GREY-BROWN	COMPACT	15'-0"		3 <input checked="" type="checkbox"/> SS	17		"
MEDIUM & COARSE SAND & SOME FINE GRAVEL	GREY BROWN	COMPACT	20'-0" 21'-0" 680.3		4 <input checked="" type="checkbox"/> S.S.	23		"
			HOLE TERMINATED					

**e. m. peto associates ltd.**  
SOIL ENGINEERING SERVICE - TORONTO, ONTARIO  
**BOREHOLE LOG**

Job Name Wawa Creek Approach  
Client Proctor & Redfern  
Datum Geodetic

Job No. 5743  
Casing BX  
Compiled By E. M. Peto

Borehole No. 8 (Bridge Series)  
Boring Date May 16th, 1957  
Checked By MM

**SAMPLE CONDITION**

☒ UNDISTURBED  
☒ FAIR  
☒ DISTURBED  
☒ LOST

**SAMPLE TYPE**

S.S. 2" STANDARD SPLIT TUBE SAMPLE  
S.L. SPLIT BARREL WITH LINERS  
S.T. THIN-WALLED SHELBY TUBE SAMPLE  
W.S. WASH SAMPLE  
R.C. ROCK CORE

**ABBREVIATIONS**

V.T. IN SITU VANE SHEAR TEST  
Q/C UNCONFINED COMPRESSIVE STRENGTH  
W.L. WATER LEVEL IN CASING  
W.T. GROUND WATER TABLE IN SOIL

SOIL DESCRIPTION	COLOUR	Consistency or Compaction	Depth (Feet)	Log	Sample No. and Correlation	Sample Type	No. of Blows per Ft.	WATER LEVELS, SOIL MOISTURE & REMARKS
ORGANIC LOAM			0'-0" 781.6					
MEDIUM & COARSE SAND, SOME PEBBLES	RED-BROWN	Loose to COMPACT	0'-0" 781.6		1	<input checked="" type="checkbox"/> S.S.	9	MOIST ONLY
COARSE SAND & GRAVEL TO 3/4"	RED-BROWN	COMPACT	0'-0" 781.6		2	<input checked="" type="checkbox"/> S.S.	26	" " (PIECES OF WOOD)
MEDIUM & COARSE SAND & PEBBLES TO 1/2"	GREY-BROWN	DENSE	0'-0" 781.6		3	<input checked="" type="checkbox"/> S.S.	36	
MEDIUM & COARSE SAND & GRAVEL TO 1 1/2"	GREY	VERY DENSE	0'-0" 781.6		4	<input checked="" type="checkbox"/> S.S.	69	
MEDIUM & COARSE SAND & FINE GRAVEL	GREY	EXTREMELY DENSE	0'-0" 781.6		5	<input checked="" type="checkbox"/> S.S.	100 Bls 9"	
MEDIUM & COARSE SAND, SOME FINE GRAVEL	GREY	DENSE	0'-0" 781.6		6	<input checked="" type="checkbox"/> S.S.	40	WASH WATER DID NOT SEEP AWAY WHEN CLEANING CASING THROUGHOUT DEPTH OF TEST HOLE
FINE TO COARSE SAND	GREY	DENSE TO VERY DENSE	0'-0" 781.6		7	<input checked="" type="checkbox"/> S.S.	54	DROVE OPEN ROD ONLY FOR LAST 4'
			35'-0" 656.6					HOLE TERMINATED