

T.L. 10A-4.
W.P. 4-58

Mr. D. G. Ramsay,

July 23, 1959.

Road Design Engineer.

Materials & Research Section.

Re: Subsoil Conditions along
Storm Sewer Line Paralleling Hwy. #10,
Port Credit Creek to Lake Ontario.

Attention: Mr. H. D. McMillan.

This memo accompanies our report outlining the soil conditions along the above-noted proposed storm sewer route. The boring program was requested by the Design Engineers, Giffels & Vallet, Ltd., of Toronto.

Reference to the subsoil profile appended to this report shows that the soil types consist of a shallow surface deposit of fine to medium sand to re-worked clay till which overlies a dense glacial till stratum. Perched water table conditions were evidenced in the upper sand layers but the quantity of inflow into the conduit trench during construction, is not expected to be very appreciable.

Along the entire storm sewer line the conduit will be founded within the dense till stratum. This is an extremely competent layer and bedding conditions will be excellent. In order to ensure that local softening of the till at foundation level does not result in poor pipe performance, it has been recommended that a 6" granular base pad be placed along the entire conduit length.

Details of construction methods and probable additional conduit protective measures at the subway location cannot be defined until it is decided whether or not the sewer will be built prior to, in conjunction with, or after the subway structure.

If we can be of further assistance in connection with the design of this project, please call upon us.

LGS/MdeF
Encl.


L. G. Sederman,
PRINCIPAL SOILS & FOUNDATIONS ENGINEER.

cc: Messrs. D. G. Ramsay
H. A. Tregaskes
C. Fraser
P. F. Weber
J. Ford
Giffels & Vallet, Ltd.
Foundation Section.
Gen. Files.

SUBSOIL INVESTIGATION

for

Proposed Storm Sewer from Port Credit Creek
to Lake Ontario adjacent to Hwy. No. 10.

Drawing No. F-59-55A.

Distribution:

Mr. D. G. Ramsay,
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Gen. Files. (1)

W.J. F-59-55.

W.P. --

INTRODUCTION:

Presented in this report are the results of a subsoil investigation recently completed along the centre line location of the afore-mentioned storm sewer. The sewer line is parallel to and offset a distance of 23 feet right of existing Hwy. No. 10 centre line.

The field work commenced on June 1st, 1959 and was completed on June 3rd, 1959. The work was carried out under the general supervision of Mr. Farantatos of Giffels & Vallet, Ltd., Consulting Engineers responsible for the design of the project.

DESCRIPTION OF THE SITE & GEOLOGY:

The topography of the site and its surrounding areas are generally level. The areas on both sides of Hwy. 10 are built up residential areas.

The site, located physiographically on the Iroquois Plain is underlain by stiff silty clay followed by glacial till.

DESCRIPTION OF FIELD & LABORATORY WORK:

The investigation consisted of 9 boreholes carried out by a continuous flight auger adapted for soil sampling. Samples were recovered by means of a 2" O.D. split spoon sampler. The dimensions of this spoon sampler and the energy used in driving it, conform to the requirements of the Standard Penetration Test.

Water level observations were taken in each hole as the work progressed. In order to determine the actual source of ground water movement, water was pumped from each borehole to ascertain the exact elevation of the ground water.

DESCRIPTION OF FIELD & LABORATORY WORK: (cont'd.) ...

The results of the field tests (including water level measurements) and laboratory tests are presented in the borehole logs and are also detailed in tabular form in Appendix I.

Drawing No. F 59-55A shows the borehole locations and the estimated subsoil stratigraphy.

SUBSOIL CONDITIONS:

Boreholes numbered 1 to 7, inclusive, which are near the shore line, showed the subsoil to consist of 3 to 5 ft. of medium to coarse sand underlain by sandy clay to hard grey silty clay.

Boreholes 8 & 9, near the Port Credit Creek, also consist of 5 to 7 ft. of sand underlain by sandy clay to silty clay.

In the order of stratigraphic succession, the following soil types are defined:-

1. Sand:

The layer of sand was encountered immediately below the fill material in all borings. Its thickness ranges from four feet in holes 1 to 7, to 2 feet in holes 8 & 9. Its colour is predominantly brown and the material was wet and saturated. Ground water is perched in this material.

2. Hard Brown Clay:

This material extends below the sand for approximately 2 feet in Boreholes 1 & 3. The hard brown clay contains 25% to 30% of silt; 8% to 13% of sand. The average unit weight and moisture content were found to be 130 p.c.f. and 20%, respectively.

SUBSOIL CONDITIONS: (cont'd.) ...

3. Hard Grey Sandy Silty Clay (Glacial Till):

Below the brown clay in Borehole 1 & 3, and underlying the sand layer at the locations of Boreholes 2 to 9, the hard till stratum was encountered. The hard sandy silty clay or glacial till contains 20% to 30% of sand; 30% to 40% silt, and 5% to 15% of gravel. The average unit weight and moisture content were found to be 140 p.c.f. and 10%, respectively.

Laboratory and field test results have been summarized in Table No. 1 and are included in this report under Appendix I.

WATER CONDITIONS:

Observations and measurements were carried out during boring and sampling operations to indicate the exact ground water elevations. Ground water elevations, observed at each borehole, are shown on the appended borehole profile sheet. No artesian water conditions were encountered during the exploration programme. The seepage inflow during trench excavation, will be local and of minor quantities, except in the vicinity of Borehole No. 2.

Seepage inflow during trench excavation at the vicinity of Borehole No. 2, will be encountered approximately 5 ft. below ground and can be handled by ordinary pumping methods.

CONCLUSIONS & RECOMMENDATIONS:

- (1) The subsoil along the line of the proposed storm sewer, consists of an upper alluvial deposit of sand (Holes 1 to 7), and reworked clayey till (Holes 8 & 9) overlying the dense glacial till stratum.

cont'd. /4 ...

CONCLUSIONS & RECOMMENDATIONS: (cont'd.) ...

- (2) A perched water table condition can be expected in the upper sand layer. The seepage into trench excavations will vary with the seasonal precipitation prior to and during the construction period. Observations made of water table elevations, and the results of small diameter pumping tests, indicate that any inflow encountered can be readily handled by low-capacity sump pumps.
- (3) Along the entire length of the sewer line the subsoil type at and below the proposed invert grade is a dense, extremely competent glacial till.

For concrete pipe, a class 'B' type bedding is recommended. The bedding material need not be contoured to fit the pipe bottom curvature. A 6" base pad of well-compacted granular material consisting of 1/4" to 3/8" pea gravel should be placed prior to placing the pipe.
- (4) The construction schedule at the C.N.R. intersection has not yet been resolved. If the sewer line is to be constructed prior to the subway structure construction, it will be necessary to jack the pipe sections through the embankment foundation material. It is recommended that the concrete conduit consist of Class 3 steel reinforced sections between Stations 12+00 and 14+00. This pipe type has adequate structural strength to withstand the dead and live loadings

cont'd. /5 ...

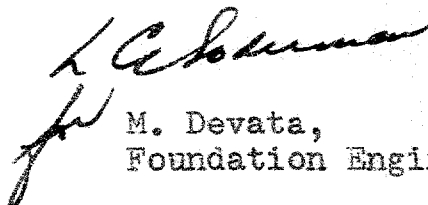
CONCLUSIONS & RECOMMENDATIONS: (cont'd.) ...

(4) (cont'd.) ...

anticipated from future highway loadings. Railway practice for jacking favours the use of an oversize C.I.P. jacked through first, then the concrete barrel installed and the clearance filled with cement grout. This procedure is not recommended and can easily be shown to be less desirable than jacking only the concrete section.

If the subway is constructed after the installation of the sewer line, a danger arises with respect to damaging the conduit with subway construction equipment. The top of the sewer pipe is only 3 feet below highway profile grade at the subway centre line. If the subway construction operations are closely supervised, the coverage appears to be adequate conduit protection.

(5) The excavated material from the conduit trench will be suitable backfill material. Backfilling procedures should be clearly specified and closely supervised.


M. Devata,
Foundation Engineer.

APPENDIX I.

SUMMARY OF FIELD & LABORATORY TESTS

JOB F 59-55

W.P. None

HOLE NO.	SAMP NO.	SAMPLE DEPTH (FEET)	MATERIAL DESCRIPTION	PENET'N RESIST. BLOWS/FT.	MOIST. CONT. %	PLASTIC LIMIT %	LIQUID LIMIT %	SHEAR STRENGTH p.s.f.	UNIT WEIGHT p.c.f.	REMARKS
1	S1 } S2 }	3.5'-5.0'	Silty Clay	38	17.7	-	-	-	-	
				-	18.9	-	-	-	131.5	
	S3	10'-11.5'	Silty clay with sand & small stones	72	10.0	-	-	-	-	
	S4	15'-16.5'	" " " " " "	40	10.8	-	-	-	-	
	S5	19'-20.5'	" " " " " "	73	10.4	-	-	-	137.2	
2	S1	4'-5.5'	Fine coarse sand.	41	-	-	-	-	-	
	S2	9'-10.5'	Sandy clay with silt	39	10.4	-	-	-	-	
	S3	10'-10.5'	" " " "	-	-	-	-	-	-	
	S4	16'-17.5'	Silty clay with some sand	70	-	-	-	-	-	
	S5	21'-22'	" " " " "	65	11.6	-	-	-	-	
3	S1	4'-5.5'	Silty clay	40	22.2	-	-	-	-	
	S2	11'-12.5'	Silty clay with some sand.	86	11.4	-	-	-	-	
	S3	15'-16.5'	Silty clay with sand & small stones	92	10.7	-	-	-	-	
	S4	19'-20'	" " " " " "	79	8.6	-	-	-	-	
	S5	22'-23.5'	" " " " " "	76	18.3	-	-	-	-	

SUMMARY OF FIELD & LABORATORY TESTS

JOB F 59-55W.P. None

HOLE NO.	SAMP NO.	SAMPLE DEPTH (FEET)	MATERIAL DESCRIPTION	PENET'N RESIST. BLOWS FT	MOIST. CONT. %	PLASTIC LIMIT %	LIQUID LIMIT %	SHEAR STRENGTH p.s.f.	UNIT WEIGHT p.c.f.	REMARKS
4	S1	4'-5.5'	Silty clay with sand & small stones	39	16.5	-	-	-	-	
	S2	15'-15.5'	" " " " " " "	70	10.1	-	-	-	-	
	S3	20'-21.5'	" " " " " " "	92	10.6	-	-	-	144.6	
5	S1	5'-6.5'	clayey sand with small stones	17	15.5	-	-	-	-	
	S2	14'-15.5'	Silty clay with some sand	67	11.7	-	-	-	138.8	
6	S1	5'-6.5'	Sandy silt	7	31.5	-	-	-	-	
	S2	12'-13.5'	Sandy silty clay with small stones	68	9.9	-	-	-	144.5	
7										No SA.
8	S1	5'-6.5'	Silty clay with sand and small stones	51	-	-	-	-	131.5	
	S2	11'-11.5'	" " " " " " "	96	9.2	-	-	-	144.0	
	S3	22'-22.5'	Sandy silt with some clay.	33	10.8	-	-	-	-	
9	S1	5'-6.5'	Silty clay with sand & small stones	54	11.5	-	-	-	-	
	S2	15'-16'		91	9.0	-	-	-	138.0	
			S Denotes Split Spoon							

DEPARTMENT OF HIGHWAYS - ONTARIO MATERIALS AND RESEARCH SECTION

W.P. None BORE HOLE NO. 1
 JOB F 59-55 STATION 2 + 00 (23.5 Rt)
 DATUM 262.30' COMPILED BY B. K.
 BORING DATE June 1/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE _____
 2" SHELBY TUBE _____
 2" SPLIT TUBE _____
 2" DIA. CONE _____
 2" SHELBY _____
 CASING _____

LEGEND

1/2 UNCONFINED COMPRESSION (Q_u) _____ ○
 VANE TEST (C) AND SENSITIVITY (S) _____ +
 NATURAL MOISTURE AND LIQUIDITY INDEX _____ LI
 LIQUID LIMIT _____ X
 PLASTIC LIMIT _____

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE	
				P.S.F.	BLOWS/FT.
	↓ Ground level	262.3	0	50	100
	Very fine sand	258.8			
	grey silty clay, stiff with some sand.	252.3	10		
	Stiff to hard grey silty clay with and some small stones.				
	(Glacial Till)	241.8	20		
	End of borehole				

CONSISTENCY			SAMPLE	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT - % DRY WT.				
10	20	30		
	X		S1	131.5
X			S3	-
X			S4	-
X			S5	137.2

Borehole No. 1

DEPARTMENT OF HIGHWAYS - ONTARIO
MATERIALS AND RESEARCH SECTION

W.P. None BORE HOLE NO. 2
JOB F 59-55 STATION 5 / 65 (21.5 RT)
DATUM 268.5 COMPILED BY B. K.
BORING DATE June 1/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE _____
2" SHELBY TUBE _____
2" SPLIT TUBE _____
2" DIA. CONE _____
2" SHELBY _____
CASING _____

LEGEND

1/2 UNCONFINED COMPRESSION (Qu)	—	0
VANE TEST (C) AND SENSITIVITY (S)	—	+ 6
NATURAL MOISTURE AND		LI
LIQUIDITY INDEX	—	X
LIQUID LIMIT	—	—
PLASTIC LIMIT	—	—

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE	
				P.S.F.	
	↓ Ground level	268.5	0	50 100	
	Fine to very fine sand (Saturated below 5 feet) W-L ▽	264.0			
		259.5	10		
	Grey hard silty clay or clayey silt with sand and stones up to 2" diameter	251.0			
	(Glacial Till)	246.5	20		
	End of borehole		30		
			40		

CONSISTENCY		SAMPLE	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT - % DRY WT.			
10	20	30	
		S1	-
		S2	-
		S4	-
		S5	-

Borehole No. 2

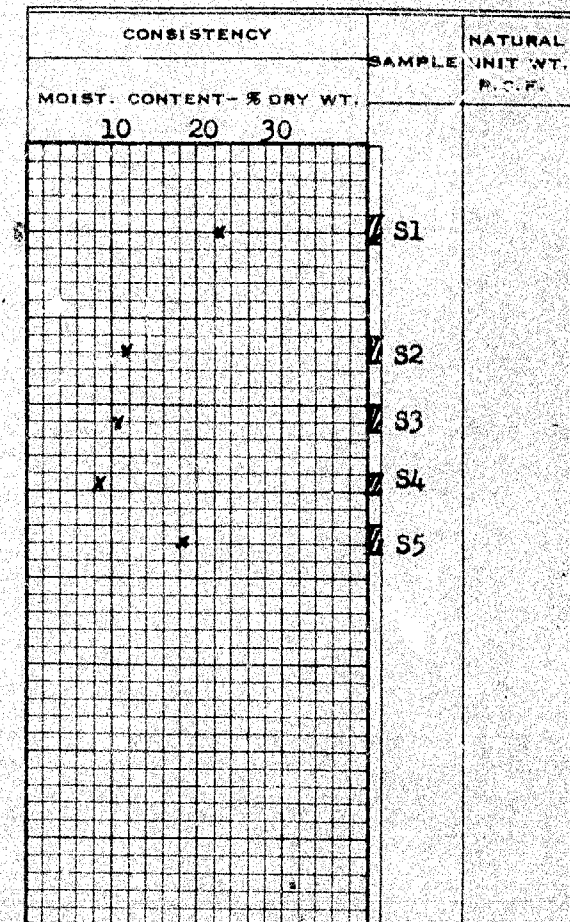
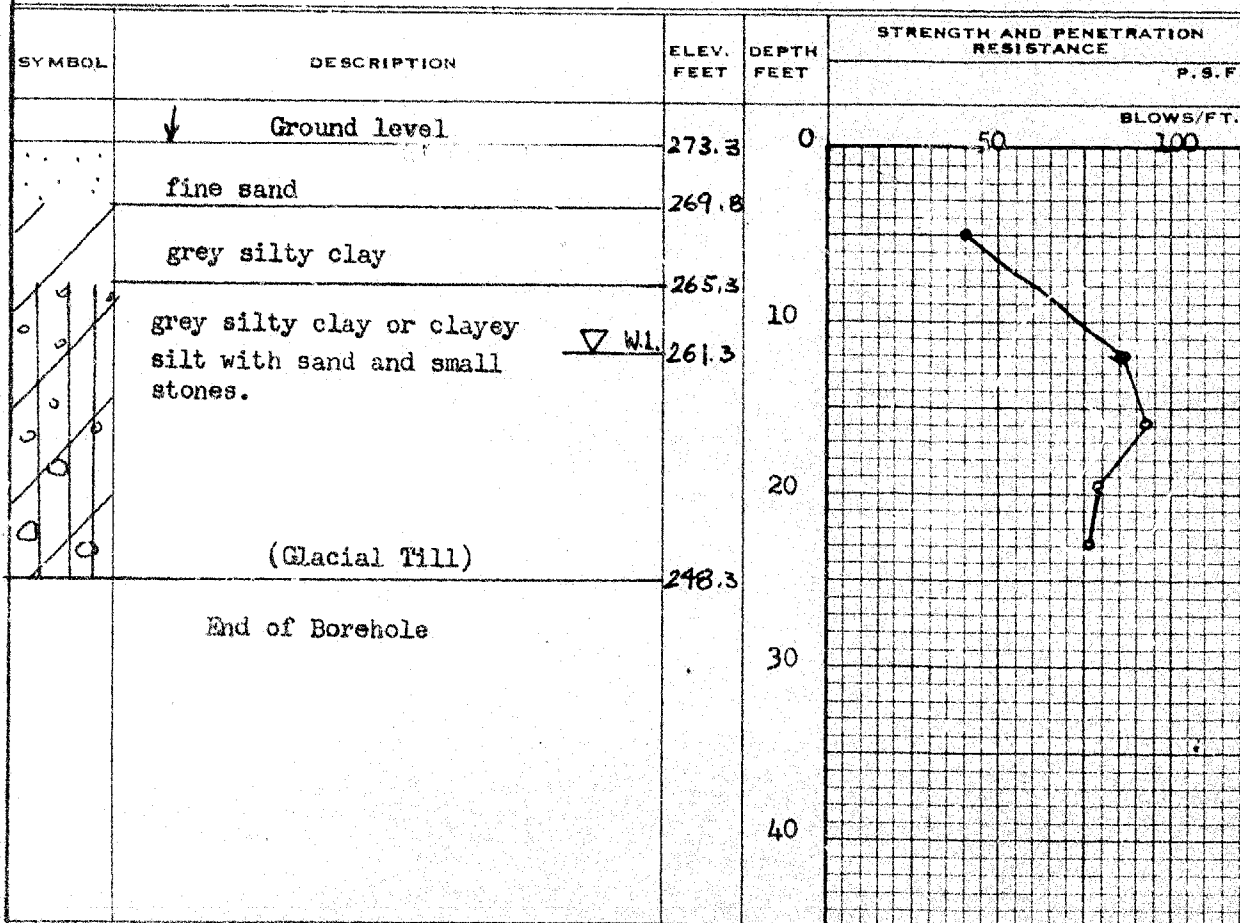
DEPARTMENT OF HIGHWAYS - ONTARIO MATERIALS AND RESEARCH SECTION

W.P. None BORE HOLE NO. 3
JOB F 59-55 STATION 10 + 10 (23 Rt.)
DATUM 273.3 COMPILED BY B. K.
BORING DATE June 2/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE
2" SHELBY TUBE
2" SPLIT TUBE
2" DIA. CONE
2" SHELBY
CASING

LEGEND

1/2 UNCONFINED COMPRESSION (Qu) O
VANE TEST (C) AND SENSITIVITY (S) +
NATURAL MOISTURE AND LIQUIDITY INDEX LI
LIQUID LIMIT X
PLASTIC LIMIT —



Borehole No. 3

DEPARTMENT OF HIGHWAYS - ONTARIO
MATERIALS AND RESEARCH SECTION

W.P. None BORE HOLE NO. 4
 JOB F 52-55 STATION 7 + 00 (24' RT)
 DATUM 271.0 COMPILED BY B. K.
 BORING DATE June 2/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE 2
 2" SHELBY TUBE 2
 2" SPLIT TUBE 0
 2" DIA. CONE 0
 2" SHELBY 0
 CASING X X

LEGEND

1/2 UNCONFINED COMPRESSION (Qu) 0
 VANE TEST (C) AND SENSITIVITY (S) +
 NATURAL MOISTURE AND LIQUIDITY INDEX X
 LIQUID LIMIT 0
 PLASTIC LIMIT 1

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE
				P. S. F.
	↓ Ground level	271.0	0	50
	Topsoil	269.0		100
	FINE SAND	268.0		
	Medium brown silty clay	263.0		
	Stiff silty clay or clayey silt with sand and small stones	259.5	10	
	(Glacial Till)	248.5	20	
	End of Borehole		30	
			40	

CONSISTENCY			SAMPLE	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT- % DRY WT.				
10	20	30		
			S1	-
			S2	-
			S3	144.6

Borehole No. 4

DEPARTMENT OF HIGHWAYS - ONTARIO MATERIALS AND RESEARCH SECTION

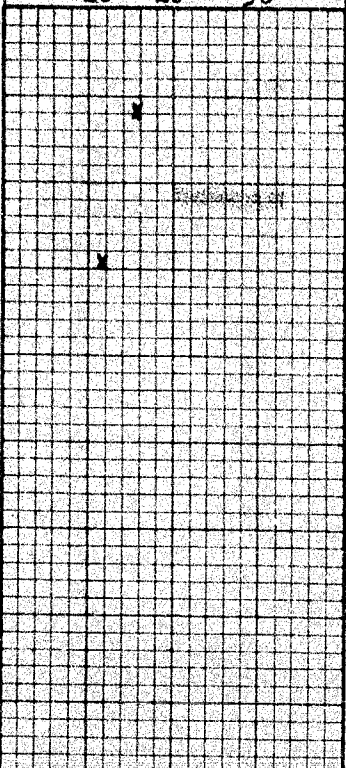
W.P. None BORE HOLE NO. 5
 JOB F 59-55 STATION -1 + 00 (24 RT)
 DATUM 257.5 COMPILED BY B. K.
 BORING DATE June 2/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE
 2" SHELBY TUBE
 2" SPLIT TUBE
 2" DIA. CONE
 2" SHELBY
 CASING

LEGEND

1/2 UNCONFINED COMPRESSION (Qu) O
 VANE TEST (C) AND SENSITIVITY (S) +
 NATURAL MOISTURE AND LIQUIDITY INDEX LI
 LIQUID LIMIT X
 PLASTIC LIMIT

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE	
				P. S. F.	BLOWS/FT.
	↓ Ground level				
	coal dust mixed with fine sand and gravel	257.5	0		50
	Grey hard silty clay or clayey silt with sand and stones.	253.5			100
	(Glacial Till)	245.5	10		
	End of borehole	242.0	20		
			30		
			40		

CONSISTENCY			SAMPLE	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT - % DRY WT.				
10	20	30		
			S1	-
			S2	138.8

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS AND RESEARCH SECTION

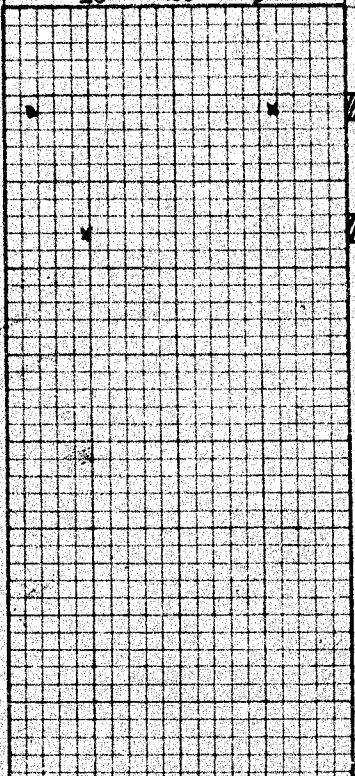
W.P. None BORE HOLE NO. 6
 JOB F 59-55 STATION 3 + 30 (23' Rt.)
 DATUM 255.4 COMPILED BY B. K.
 BORING DATE June 3/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE ☒
 2" SHELBY TUBE ☒
 2" SPLIT TUBE ☐
 2" DIA. CONE ☐
 2" SHELBY ☐
 CASING ☒ ☒

LEGEND

1/2 UNCONFINED COMPRESSION (Q_u) ☐
 VANE TEST (C) AND SENSITIVITY (S) ☒
 NATURAL MOISTURE AND LIQUIDITY INDEX ☒
 LIQUID LIMIT ☒
 PLASTIC LIMIT ☒

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE	
				P. S. F.	
				BLOWS/FT.	
	↓ Ground level	255.4	0	50	100
	coal dust	252.4			
	fine to coarse sand W.L. <input checked="" type="checkbox"/>	250.0			
		248.4			
	grey hard sandy silty clay with stones up to 4" (Glacial Till)	241.9	10		
	End of borehole		20		
			30		
			40		

CONSISTENCY			SAMPLE	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT- % DRY WT.				
10	20	30		
			S1	-
			S2	141.5

DEPARTMENT OF HIGHWAYS - ONTARIO
MATERIALS AND RESEARCH SECTION

W. P. None BORE HOLE NO. 7
 JOB F 59-55 STATION - 4 / 90 (25' RT)
 DATUM 253.5' COMPILED BY B. K.
 BORING DATE June 3/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE _____
2" SHELBY TUBE _____
2" SPLIT TUBE _____
2" DIA. CONE _____
2" SHELBY _____
CASING _____

LEGEND

1/2 UNCONFINED COMPRESSION (Qu)	---	O
VANE TEST (C) AND SENSITIVITY (S)	---	+s
NATURAL MOISTURE AND		
LIQUIDITY INDEX	---	LI
LIQUID LIMIT	---	X
PLASTIC LIMIT	---	

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION	
				RESISTANCE	P.S.F.
	↓ Ground level	253.5	0	BLOWS/FT.	
○ ○ ○ ○ ○ ○	Coarse sand with boulders W.L. ▽	248.5			
	End of Borehole		10		
			20		
			30		
			40		

[illegible]

Borehole No. 7

DEPARTMENT OF HIGHWAYS - ONTARIO MATERIALS AND RESEARCH SECTION

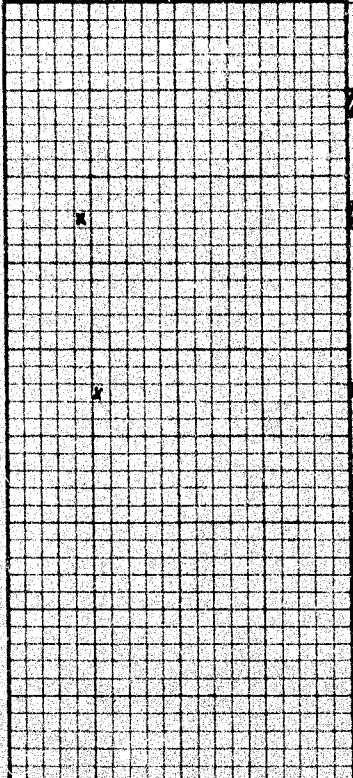
W.P. None BORE HOLE NO. 8
 JOB F 59-55 STATION 15 + 05 (19.5 Rt.)
 DATUM 276.0 COMPILED BY B. K.
 BORING DATE June 3/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE
 2" SHELBY TUBE
 2" SPLIT TUBE
 2" DIA. CONE
 2" SHELBY
 CASING

LEGEND

1/2 UNCONFINED COMPRESSION (Qu) O
 VANE TEST (C) AND SENSITIVITY (S) + S
 NATURAL MOISTURE AND LIQUIDITY INDEX LI
 LIQUID LIMIT X
 PLASTIC LIMIT

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE
				P.S.F.
	↓ Ground level	276.1	0	50
	Fine sand with some clay	271.6		
		269.1		
	Sandy silty clay with some stones		10	
	(Glacial Till)		20	
	End of Borehole	253.6	30	
			40	

CONSISTENCY			SAMPLE	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT- % DRY WT.				
10	20	30		
			S1	131.5
			S2	144.0
			S3	-

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS AND RESEARCH SECTION

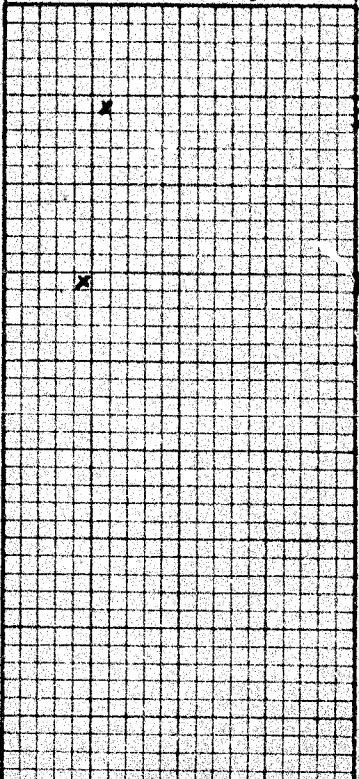
W.P. None BORE HOLE NO. 9
 JOB F 59-55 STATION 18 + 05 (23° Rt)
 DATUM 275.2 COMPILED BY B. K.
 BORING DATE June 3/59 CHECKED BY K. P.

2" DIA. SPLIT TUBE _____
 2" SHELBY TUBE _____
 2" SPLIT TUBE _____
 2" DIA. CONE _____
 2" SHELBY _____
 CASING _____

LEGEND

1/2 UNCONFINED COMPRESSION (Qu) _____ O
 VANE TEST (C) AND SENSITIVITY (S) _____ +
 NATURAL MOISTURE AND LIQUIDITY INDEX _____ LI
 LIQUID LIMIT _____ X
 PLASTIC LIMIT _____

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE	
				P. S. F.	BLOWS/FT.
	Ground level				
	Fill	275.2	0	50	100
		273.2			
	SANDY CLAY	271.2			
		270.2			
	Grey silty clay with sand and small stones		10		
	(Glacial Till)				
		259.2			
	End of Borehole		20		
			30		
			40		

CONSISTENCY			SAMPLE	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT - % DRY WT.				
10	20	30		
				
X			S1	-
X			S2	130.0

#59-F-55

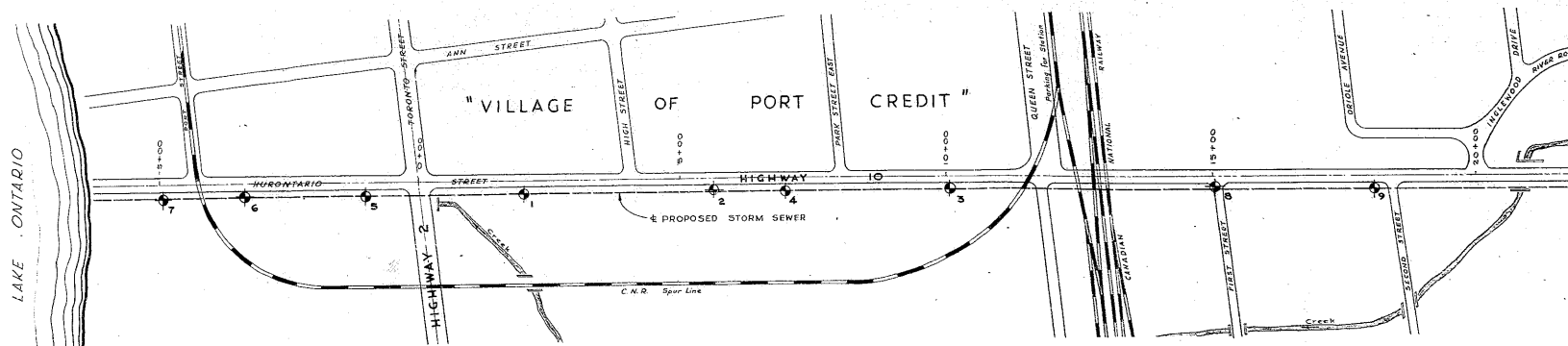
HWY #10

W. P. 4-58

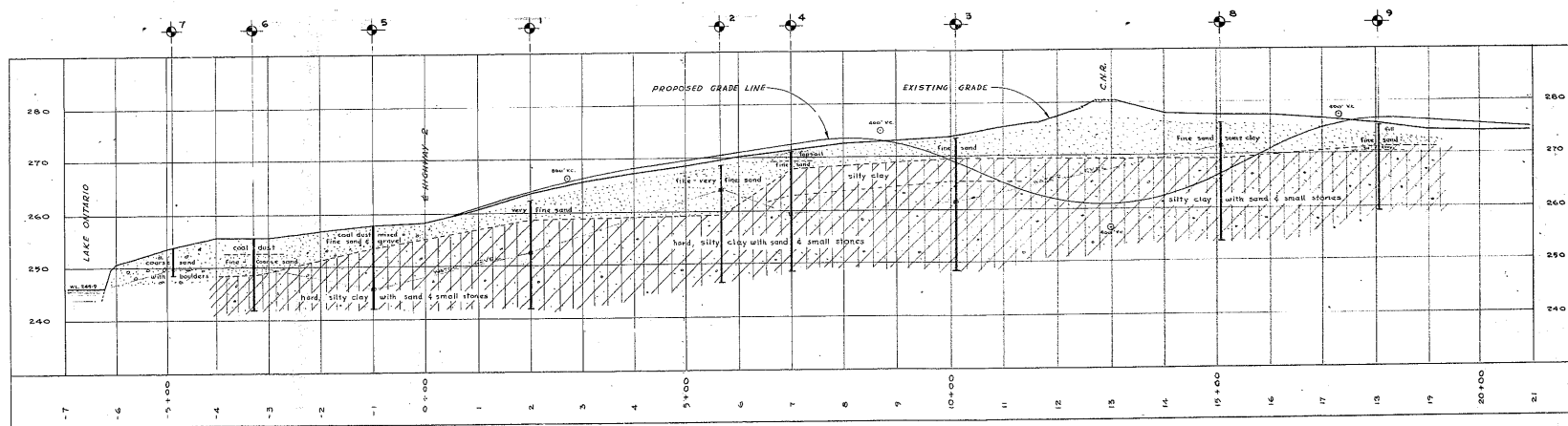
PROP. STORM

SEWER

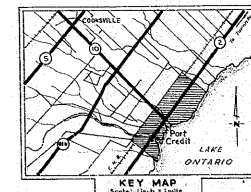
PORT CREDIT



PLAN
Scale: 1 inch = 100 feet



PROFILE of HIGHWAY 10
Scale: Vert. - 1 inch = 10 feet
Horiz. - 1 inch = 100 feet



LEGEND			
Bore & Penetration Hole			
HOLE NO.	ELEVATION	STATION	DISTANCE FROM S.
1	262.3	2+00	25.5' RT.
2	268.5	5+60	21.5' RT.
3	275.3	10+10	29' RT.
4	271.0	7+00	24' RT.
5	257.5	-1+00	24' RT.
6	255.4	-5+30	25' RT.
7	253.5	-4+90	25' RT.
8	275.1	15+05	19.5' RT.
9	275.2	18+05	23' RT.

NOTE
THE BOUNDARIES BETWEEN SOIL STRATA HAVE BEEN ESTABLISHED ONLY AT SOME HOLE LOCATIONS. BETWEEN SOME HOLES THE BOUNDARIES ARE ASSUMED FROM GEOLOGICAL EVIDENCE AND MAY BE SUBJECT TO CONSIDERABLE ERROR.

DEPARTMENT OF HIGHWAYS - ONTARIO
NATURAL & RESEARCH SECTION

PROPOSED STORM SEWER

SHOWING POSITIONS & ELEVATIONS OF HOLES

HWY. 10	DISTRICT 6	COUNTY P.E.
TOWNSHIP TORONTO	LOT	CON.
LOCATION PORT CREDIT		
DRAWN BY: R. S. BIRD	CHECKED BY: [Signature]	W.P.
DATE 17 July 1951	APPROVED BY: [Signature]	DESIGNING NO.
SCALE AS SHOWN		F-59-55 A