

SUPPLEMENTARY
FOUNDATION INVESTIGATION REPORT
For
R.F.D. and Hwy. #22 Interchange,
Twp. of Etobicoke, County of York,
District #6 (Toronto),
W.P. 275-64-1 and W.P. 275-64-4
W.J. 65-P-104

INTRODUCTION:

Since the original foundation investigation report for the above mentioned interchange was prepared, we have received the preliminary plans for the individual structures involved which show the exact locations of each. We have reviewed these plans with respect to the available soil information, and as a result of this review, we arranged for more borings to be carried out in the field to obtain additional information.

Field work, laboratory work, and the preparation of the Record of Borehole logs, for the additional borings, were undertaken by Dominion Soil Investigation Ltd. at our request and according to a program decided upon by us.

The following pages contain a description of the subsoil conditions prevailing at each structure location, together with our final recommendations for the structure foundations.

This report was prepared by Mr. A. Barsvary, Senior Foundation Engineer, under the general supervision of Mr. K. G. Selby, Supervising Foundation Engineer.

cont'd. /2 ...

STRUCTURE #21 - W.P. 174-65-1 -- W.J. 65-F-104 -

1. Soil Conditions:

A total of 13 boreholes was placed at the site of the proposed bridge widening, and they were numbered: 155 to 167.

The existing highway fill was found to consist of silty sand and clayey silt material with some gravel, having loose to dense relative density. Underlying the fill, a deposit of sandy and clayey silt was encountered, containing some gravel and displaying very dense relative density or hard consistency.

Around el. 305 - 306 ft., an extremely weathered, broken stratum of shale bedrock was found, the upper surface of which slopes towards the creek bed. At the north side of the proposed widening, sound shale bedrock with layers of limestone follows at approx. el. 300 ft. At the south extension the sound bedrock shows some inclination to the horizontal, being found at el. 306 ft. at the east abutment, and at el. 288 ft. at the west.

Ground water level was established at or just below the upper surface of the weathered rock.

The locations and elevations of the boreholes as well as the estimated soil stratigraphy, are shown on Drawing #65-F-104N.

2. Recommendations:

Spread footings, supported on weathered or sound bedrock, are recommended for the bridge widening.

The abutments may be placed at or below el. 302 ft. in the stratum of weathered rock. A safe pressure of 4 t.s.f. may be used.

The footings of the piers should be lowered to el. 296 ft. where, in view of the presence of sound bedrock, 10 t.s.f. safe bearing capacity can be had.

cont'd. /21...

STRUCTURE #21 - W.P. 174-65-1 -- W.J. 65-F-104 - (cont'd.) ...

2. Recommendations: (cont'd.) ...

The footings of the wingwalls may be stepped from el. 302 ft. to el. 306 ft. At the latter elevation, a design load of 3 t.s.f. is recommended.

No major dewatering problem is foreseen.

Vertical expansion joints should be employed between the existing bridge and the proposed extension.

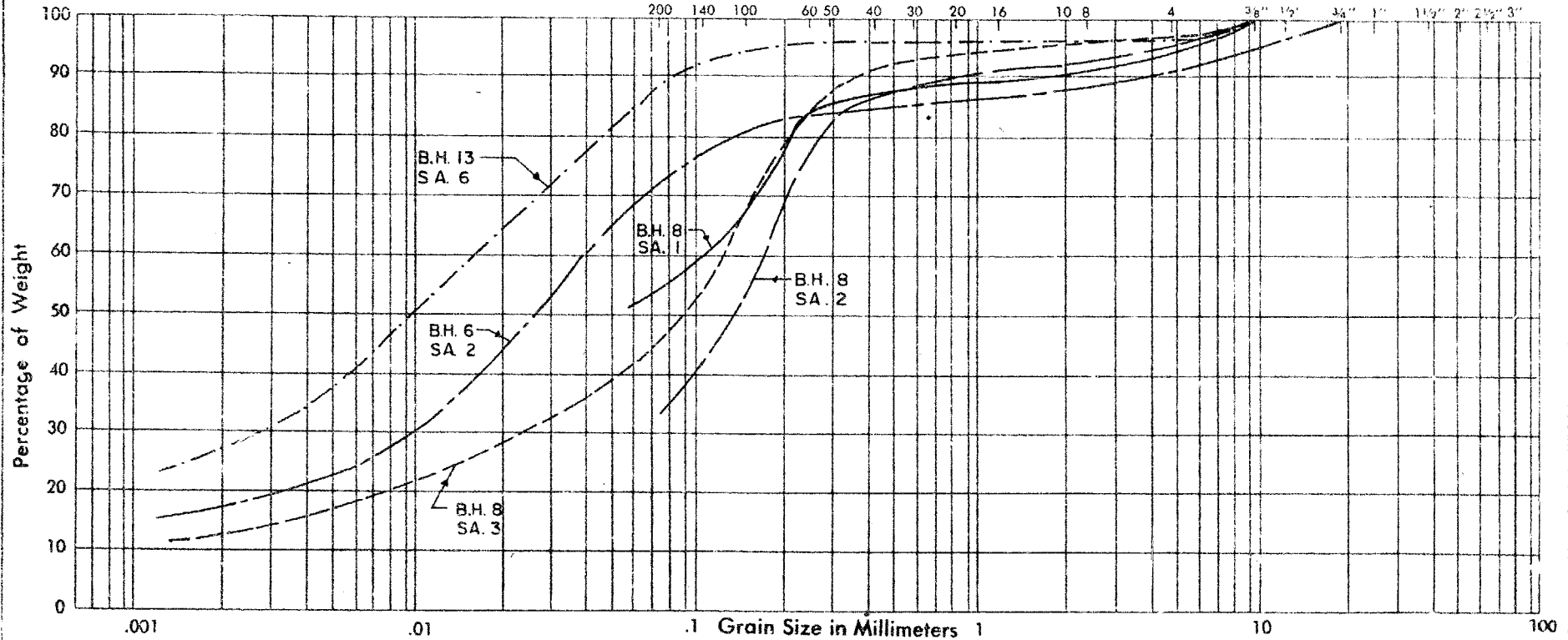
In calculating the resistance of the wingwalls against lateral earth pressure, a friction coefficient of 0.5 may be assumed to act along the bottom of the footings.

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO. 6-7-15

UNIFIED SOIL CLASSIFICATION
SYSTEM



PROJECT: Q.E.W. & HWY. NO 27 INTERCHANGE

LOCATION: BRIDGE NO 21

BOREHOLE NO.: 6, 8, 162, 167

SAMPLE NO.: 2, 1, 2, 3, 6

DEPTH OF SAMPLE:

ELEVATION OF SAMPLE:

COEFFICIENT OF UNIFORMITY

COEFFICIENT OF CURVATURE

Classification of Sample and Group Symbol:

SILT with some sand and clay

PLASTIC PROPERTIES:

LIQUID LIMITED % =

PLASTIC LIMIT % =

PLASTICITY INDEX % =

MOISTURE CONTENT % =

ACTIVITY =

Enclosure No.

MEMORANDUM

To: Mr. B. R. Davis,
Bridge Engineer,
Bridge Division.
Attention: Mr. S. McCombie

FROM: Foundation Section,
Materials & Testing Div.,
Room 107, Lab. Bldg.

DATE: October 11, 1966

OUR FILE REF.

IN REPLY TO:

SUBJECT:

FOUNDATION INVESTIGATION REPORT
For
Q.E.W. and Hwy. #27 Interchange,
Twp. of Etobicoke, County of York,
District #6 (Toronto)
W.J. 65-F-104 -- W.P. 174-65-1
W.P. 174-65-2

Enclosed, please find the results of our final
foundation investigations for Structures No's 21 (W.P. 174-65-1)
and 22 (W.P. 174-65-2).

Please attach these to your copy(s) of Foundation
Report #65-F-104.

AGS/MdeF
Attach.


A. G. Stermac,
PRINCIPAL FOUNDATION ENGINEER

cc: Messrs. B. R. Davis (2)
H. A. Tregaskes
D. W. Farren
G. K. Hunter (2)
F. Allen
T. J. Kovich
W. S. Melinyshyn
A. Watt

Foundations Office
Gen. Files

DOMINION SOIL INVESTIGATION LIMITED
77 CROCKFORD BOULEVARD - SCARBOROUGH ONTARIO CANADA - TELEPHONE 751-6563

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TELEPHONE GL 3-3251



FOUNDATION ENGINEERS

ASSOCIATED COMPANY
SOIL TESTING AND ENGINEERING LTD.
34 BRENTFORD ROAD,
KINGSTON 5, JAMAICA, WEST INDIES
TELEPHONE: 66896

September 14, 1966.

Our Ref: 6-7-15
Your Ref: W.P. 174-65

Mr. A. G. Stermac,
Principal Foundation Engineer,
Materials & Testing Division,
Department of Highways, Ontario,
Downsview Avenue,
Downsview, Ontario.

Attention: Mr. K. Selby, P. Eng.

Re: Soil Investigation for Q.E.W. & Highway #27
Interchange Bridge #21

Dear Sirs:

Enclosed are the records of boreholes Nos. 1 to 13 inclusive which were put down at your request at the above proposed structure. The boreholes were located in the field and their elevations taken by a survey crew of the Department. The borehole locations indicated on the borehole logs are given as offsets from stations along the centre line of the Q. E. W. as shown on Drawing No. D5860-IP of your Bridge Division.

Also enclosed are copies of the grain size distribution curves showing the particle size distribution of the overburden in this area.

We trust you will find the forwarded information satisfactory.

Yours very truly,

DOMINION SOIL INVESTIGATION LIMITED,

I. P. Lieszkowsky
I. P. Lieszkowsky, P. Eng.,
Project Engineer.

IPL/jvm
Encls.

GEOTECHNICAL DATA SHEET FOR BOREHOLE 155

OUR REFERENCE NO. 6-7-15
W.P. 174-65

CLIENT: D.H.O.

PROJECT: Q.E.W. & HWY NO 27 INTERCHANGE, BRIDGE NO 21

METHOD OF BORING: WASHBORING

DIAMETER OF BOREHOLE 2 3/8"

ENCLOSURE NO.

LOCATION: 85' RT of STA. 258 + 97

DATE: AUG. 17 & 18, 1966

DATUM ELEVATION: G.S.C.

ELEVATION ft.	DEPTH ft.	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot		CONSISTENCY water content %		REMARKS
				NUMBER	TYPE	N or Advancement of Sampler	2.0 4.0 6.0 8.0 10.0	SHEAR STRENGTH lbs/sq ft	PL W LI		
315.4	0	GROUND SURFACE									
		Loose to Compact Brown SANDY, CLAYEY SILT (FILL)		1	SS	16					
310.0	5										
307.9	7.5	Very Dense, Brown SANDY SILT									
306.0	9.4										
305.0	10	Grey Extremely Weathered SHALE		2	S.S.	100/5					
				3	W.S.						
				4	S.S.	100/NP					
				5	R.C.	30%					
				6	S.S.	100/1					
300.0	15			7	R.C.	65%					
		Grey SHALE BEDROCK		8	R.C.	50%					
295.0	20			9	R.C.	98%					
290.0	25										
287.5	28.0	END OF BOREHOLE									
285.0	30										

W.L. El. 305.6'
AUG. 25, 1966

VERTICAL SCALE: 1 IN. TO 5 FT.

DOMINION SOIL INVESTIGATION LIMITED

MADE: D. A. M. CH'D

GEOTECHNICAL DATA SHEET FOR BOREHOLE 156..

OUR REFERENCE NO 6-7-15

W.P. 174-65-1

CLIENT: D. H. O.

PROJECT: Q.E.W. & HWY. No. 27 INTERCHANGE, BRIDGE No 21

LOCATION: 85' RT. of STA. 258 + 67

DATUM ELEVATION: G. S. C.


METHOD OF BORING: WASHBORING

DIAMETER OF BOREHOLE: 3"

DATE: AUG. 17, 1966.

ENCLOSURE NO

ELEVATION ft.	DEPTH ft	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot					CONSISTENCY water content %			REMARKS
				NUMBER	TYPE	N or Advancement of Sampler	20	40	60	80	100	PL	W	LI	
307.8	0	GROUND SURFACE													
		Dense, Brown SANDY SILT													
305.0	2.6			1	CS										
303.8	4.0	Grey, Extremely Weathered SHALE		2	SS	100/NP									
	5	Grey SHALE													
300.0	7.5	Weathered Sound		3	RC 50 %										
	10	BEDROCK													
295.0				4	RC 100 %										
	15														
290.0				5	RC 100 %										
288.5															
	20	END OF BOREHOLE													



W.L. El. 304.0 ft
Aug. 25, 1968

W.L. El. 304.0 ft
Aug. 25, 1966

GEOTECHNICAL DATA SHEET FOR BOREHOLE 157

OUR REFERENCE NO. 6-7-15
W. P. 174-65-1

CLIENT: D. H. O.

PROJECT: Q.E.W. & HWY. No 27 INTERCHANGE, BRIDGE No 21

LOCATION: 85' RT. of STA. 257+03

DATUM ELEVATION: G. S. C.

METHOD OF BORING: WASHBORING

DIAMETER OF BOREHOLE: 3"

DATE: AUG. 11, 1966

ENCLOSURE NO.

ELEVATION ft	DEPTH ft	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot					CONSISTENCY water content %		REMARKS
				NUMBER	TYPE	No. of or Advancement of Sampler	20	40	60	80	100	PL	W	
305.6	0	GROUND SURFACE												
		5" ORGANIC TOPSOIL		1	SS	75								
		Grey		2	SS	50/1/2"								
		Extremely Weathered												
		Broken SHALE												
305.6	5			3	SS	50/NP								
300.0				4	RC	70 %								
		Grey												
		SHALE												
		BEDROCK		5	RC	83 %								
295.0	10													
293.4	12.2	END OF BOREHOLE												
290.0	15													

W.L. El. 305.1
AUG. 25, 1966

Gr. 34 % ; Sa. 21 %
Sl. 27 % ; Cl. 18 %

GEOTECHNICAL DATA SHEET FOR BOREHOLE 158.

OUR REFERENCE NO. 6-7-15

W.P. 174-65-1

CLIENT: D. H. O.

PROJECT: Q. E. W. & HWY. No. 27 INTERCHANGE, BRIDGE No 21

LOCATION: 85' RT. of STA. 256 + 71

DATUM ELEVATION: G. S. C.

METHOD OF BORING: WASHBORING

DIAMETER OF BOREHOLE 3"

DATE: AUG. 10. 1966.

ENCLOSURE NO

ELEVATION ft	DEPTH ft	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot		CONSISTENCY water content %		REMARKS
				NUMBER	TYPE	N Advancement of Sampler	20	40	60	80	
317.0	0	GROUND SURFACE									
315.0		Generally Compact to Dense Brown SANDY SILT with some gravel and a trace of clay.									
310.0	5	(FILL)		1	SS	13					
307.5	9.5			2	SS	40					
305.0	10	Grey Extremely Weathered SHALE									
303.7	13.3										
300.0	15	Grey SHALE with layers of LIMESTONE BEDROCK		3	RC 56 %						
				4	RC 87 %						
295.0	20			5	RC 79 %						
294.0	23	END OF BOREHOLE									

W.L. 307.0 ft.
AUG. 25, 1966

GEOTECHNICAL DATA SHEET FOR BOREHOLE 159...

OUR REFERENCE NO. 6-7-15

W.P. 174-65-1

CLIENT: D.H.O.

PROJECT: Q.E.W. & HWY. NO 27 INTERCHANGE, BRIDGE NO 21 DIAMETER OF BOREHOLE: 2 3/8"

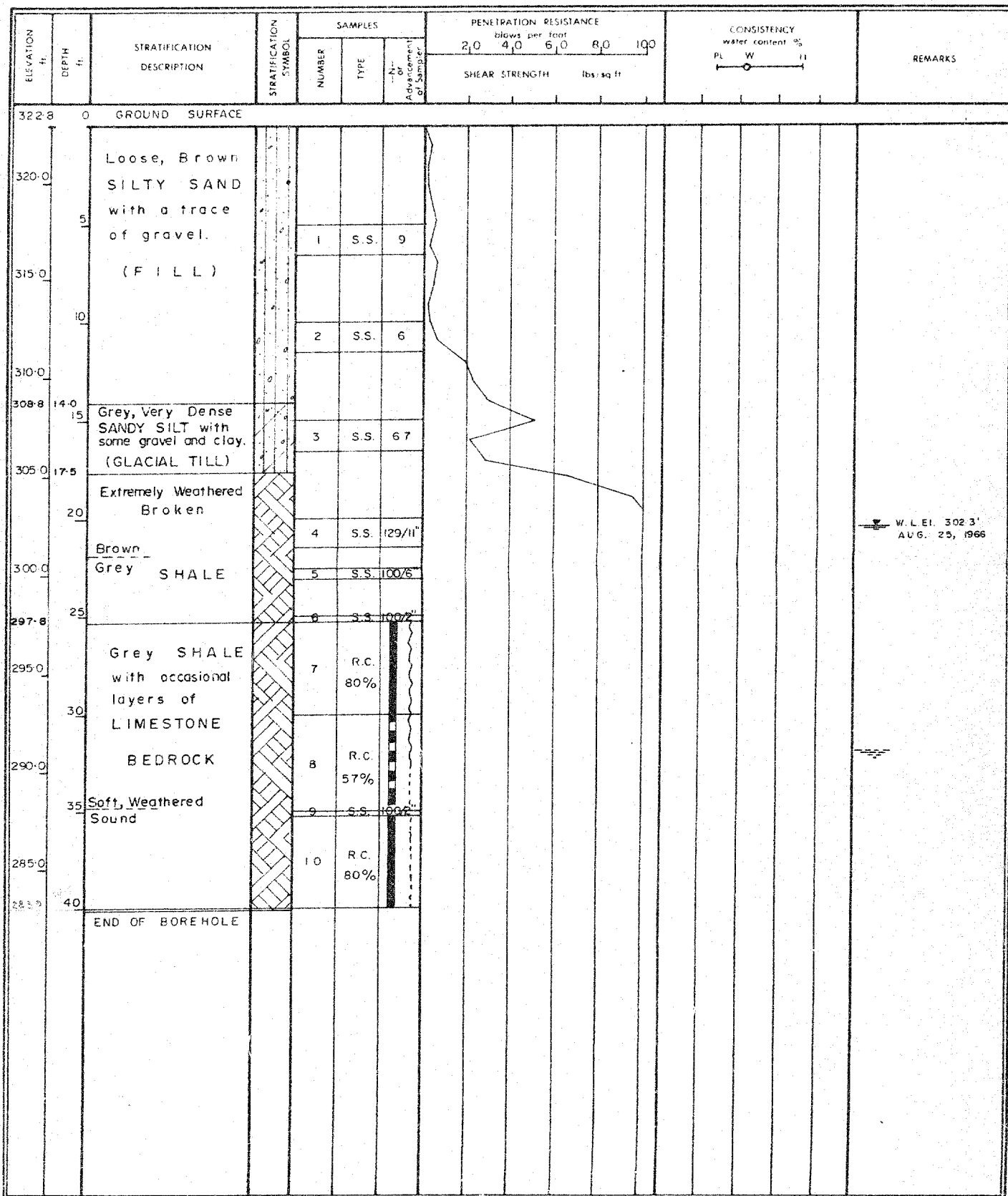
LOCATION: 73' LT. of STA. 258 + 97

DATUM ELEVATION: G.S.C.

METHOD OF BORING: WASHBORING

ENCLOSURE NO.

DATE: AUG. 17-19, 1966



VERTICAL SCALE: 1 IN TO 5 FT.

DOMINION SOIL INVESTIGATION LIMITED

MADE: D.A.M. CHD.

GEOTECHNICAL DATA SHEET FOR BOREHOLE 160..

OUR REFERENCE NO. 6-7-15

W.P. 174-65-1

CLIENT: D.H.O.

PROJECT: Q.E.W. & HWY. No. 27. INTERCHANGE, BRIDGE No 21

LOCATION: 73' LT. of STA. 258+67

DATUM ELEVATION: G.S.C.

METHOD OF BORING: WASHBORING

DIAMETER OF BOREHOLE: 3"

DATE: AUG. 17, 1966.

ENCLOSURE NO.

ELEVATION ft	DEPTH ft	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot				CONSISTENCY water content %		REMARKS
				NUMBER	TYPE	N- or Advancement of Sampler	20	40	60	80	100	PL	
304.5	0	GROUND SURFACE											
		Compact to Dense Brown SILTY SAND & GRAV.		1	SS	43							
301.6	2.9	V. Hard, Grey, CLAYEY SILT with some sand and gravel		2	SS	100/5"							
300.0	4.2	Grey, Weathered Broken SHALE		3	RC	33 %							
298.0	6.5			4	SS	100/2"							
		Grey SHALE with layers of LIMESTONE BEDROCK.		5	RC	86 %							
295.0	10			6	RC	86 %							
290.0	15	END OF BOREHOLE											
285.0	20												

W.L. El. 301.7' AUG. 25, 1966

Gr. 39% ; Sa. 33 %
Si - Cl. 28 %

Gr. 8 % ; Sa. 20 %
Si. 53 %; Cl. 19 %

OUR REFERENCE NO. 6-7-15
W.P. 174-65-1

PROJECT: Q. E. W. & HWY. No. 27. INTERCHANGE, BRIDGE No. 21

METHOD OF BORING WASHBORING

DIAMETER OF BOREHOLE 3"

DATE: AUG. 10, 1966

DATUM ELEVATION: G. S. C.

ENCLOSURE NO

ELEVATION ft.	DEPTH ft.	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE	CONSISTENCY water content % PL W LI	REMARKS
				NUMBER	TYPE	-N- or Advancement of Sampler	blows per foot SHEAR STRENGTH lbs./sq ft.		
306.4	0	GROUND SURFACE							
305.0		Dense, Brown SANDY SILT with some gravel.	[Symbol]						
302.6	3.8			I	SS	90/4"			
301.4	5	Grey, Weathered Broken SHALE	[Symbol]						
300.0		Grey SHALE with layers of LIMESTONE.	[Symbol]	2	RC 60%				
	10			3	RC 93%				
295.0		BED ROCK	[Symbol]	4	RC 60%				
	15								
290.0		END OF BOREHOLE							
	20								

W.L. El. 302.2'
AUG. 25, 1966

GEOTECHNICAL DATA SHEET FOR BOREHOLE 162

OUR REFERENCE NO. 6-7-15

W.P. 174-55-1
CLIENT: D. H. O.

PROJECT: Q.E.W. & HWY No. 27 INTERCHANGE, BRIDGE No. 2; DIAMETER OF BOREHOLE 3"
METHOD OF BORING WASHBORING

ENCLOSURE NO.

LOCATION 73' LT. of STA. 256+71

DATE: AUG. 11, 1966

DATUM ELEVATION: G. S. C.

ELEVATION ft.	DEPTH ft.	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot					CONSISTENCY water content %			REMARKS
				NUMBER	TYPE	N or Advance of Sampler	20	40	60	80	100	PL	W	LI	
323.1	0	GROUND SURFACE													
320.0	5	Compact to Dense Brown SILTY SAND with a trace of clay and gravel.		1	SS	39									Gr. 5% ; S _a 40% Si. - Cl. 55%
315.0	10	(FILL)		2	SS	13									Gr. 4% ; S _a 62% Si. - Cl. 34%
310.0	15			3	SS	25									Gr. 3% ; S _a 52% Si. 30% ; Cl. 15%
305.7	17.4	Grey, Weathered SHALE													Refusal in Cone Test at El. 305.7 ft.
304.8	18.5														
300.0	20	Grey CALCAREOUS SHALE		4	RC	73%									W.L. El. 303.1' AUG. 12, 1966
295.0	25	BEDROCK		5	RC	60%									
290.0	30			6	RC	81%									
285.0	35	END OF BOREHOLE													

VERTICAL SCALE: 1 IN. TO 5 FT.

DOMINION SOIL INVESTIGATION LIMITED

MADE: V. G. H. CHD.

GEOTECHNICAL DATA SHEET FOR BOREHOLE 163..

OUR REFERENCE NO. 6-7-15

W.P. 174-65-1

CLIENT: D.H.O.

PROJECT: Q.E.W. & HWY. No. 27 INTERCHANGE, BRIDGE No 21

LOCATION: 67' RT. of STA. 258+32




DATUM ELEVATION: G.S.C.

METHOD OF BORING: WASHBORING

DIAMETER OF BOREHOLE 3"

DATE: AUG. 16. 1966.

ENCLOSURE NO.

ELEVATION ft.	DEPTH ft.	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES		PENETRATION RESISTANCE blows per foot					CONSISTENCY water content %			REMARKS
				NUMBER	TYPE	20	40	60	80	100	PL	W	LI	
304.3	0	GROUND SURFACE												
303.3	1.0	CLAYEY SILT												W.L. El. 303.3' AUG. 25, 1966
		Grey, Weathered SHALE												
301.3	3.0													
300.0	5	Grey SHALE with layers of LIMESTONE		1	RC 82 %									
		BED ROCK		2	RC 100 %									
295.0	10													
290.0	15	END OF BOREHOLE												
	20													

W.L. El. 303.3'
AUG. 25, 1966

164

W. P. 174-65-1

CLIENT: D. H. O.

METHOD OF BORING. WASHBORING

ENCLOSURE NO.

LOCATION 67' RT. of STA. 257 + 38

DATE: AUG. 12, 1966.

DATUM ELEVATION: G. S. C.

ELEVATION ft.	DEPTH ft.	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot 20 40 60 80 100	CONSISTENCY water content % PL W LI	REMARKS
				NUMBER	TYPE	N- or Advancement of Sampler			
303.1	0	CREEK WATER LEVEL							
301.6	1.5	CREEK BOTTOM							
		Weathered		1	SS	21/5"			
300.0	5	Grey CALCAREOUS SHALE		2	RC 77 %				
295.0	10	BEDROCK		3	RC 82 %				
291.0 290.0	15 20	END OF BOREHOLE							

OUR REFERENCE NO. 6-7-15

W.P. 174 - 65 - 1

CLIENT: D. H. O.

PROJECT: Q.E.W. & HWY. No. 27. INTERCHANGE, BRIDGE N° 21

LOCATION: 60' LT. of STA. 258+32

DATUM ELEVATION: G. S. C.

METHOD OF BORING WASHBORING

DIAMETER OF BOREHOLE 3'

DATE. AUG. 16, 1966.

ENCLOSURE NO

[illegible]

OUR REFERENCE NO. 6-7-15
W. P. 174 - 65 - 1
CLIENT: D. H. O.

GEOTECHNICAL DATA SHEET FOR BOREHOLE . 166 .

PROJECT: Q. E. W. & HWY. No. 27. INTERCHANGE , BRIDGE No 21
LOCATION: 60' LT. of STA. 257 + 38
DATUM ELEVATION: G. S. C.

METHOD OF BORING WASHBORING
DIAMETER OF BOREHOLE 3"
DATE: AUG. 9. 1966.

ENCLOSURE NO.

ELEVATION ft.	DEPTH ft.	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot				CONSISTENCY water content %			REMARKS
				NUMBER	TYPE	N- or Advancement of Sampler	20	40	60	80	100	PL	W	
304.9	0	GROUND SURFACE												
302.6	2-3	SAND, GRAVEL and BOULDERS												
300.0	5	Grey, Weathered Broken SHALE		1	SS	50/4"								
297.4	7-5			2	RC	17 %								
295.0	10	Grey SHALE with layers of LIMESTONE.		3	RC	60 %								
				4	RC	17 %								
290.0	15	BEDROCK		5	RC	61 %								
				6	RC	97 %								
285.0	20	END OF BOREHOLE												

W.L. EL. 302.4'
AUG. 10, 1966

Gr. 29% ; So. 14%
Si. 39% ; Cl. 18%

W.L. EL. 302.4'
AUG. 10, 1966

Gr. 29% ; So. 14%
Sl. 39% ; Cl. 18%

GEOTECHNICAL DATA SHEET FOR BOREHOLE 167.

OUR REFERENCE NO. 6-7-15

W. P. 174-65-1

CLIENT: D. H. O.

PROJECT: Q.E.W. & HWY. No. 27. INTERCHANGE, BRIDGE No. 21

METHOD OF BORING: WASHBORING

DIAMETER OF BOREHOLE: 3"

ENCLOSURE NO.

LOCATION: 44' RT. of STA. 256+60

DATE: AUG. 9, 1966.

DATUM ELEVATION: G. S. C.

ELEVATION ft.	DEPTH ft.	STRATIFICATION DESCRIPTION	STRATIFICATION SYMBOL	SAMPLES			PENETRATION RESISTANCE blows per foot					CONSISTENCY water content %			REMARKS
				NUMBER	TYPE	N- or Advance- ment of Sampler	20	40	60	80	100	PL	W	LI	
327.7	0	GROUND SURFACE													
325.0	5	Compact, Brown GRAVELLY SAND with some silt.		1	SS	11									
320.0	10	(F I L L)		2	SS	11									
315.0	15			3	SS	8									
310.0	20			4	SS	12									
308.2	21.5	Very Hard CLAYEY SILT with a trace of sand and gravel.		5	SS	18									
305.0	24.2			6	SS	63									
303.5	25	Grey Extremely Weathered SHALE		7	SS	75/3"									
300.0	27.5														
295.0	30	Grey CALCAREOUS SHALE BEDROCK		8	RC	71%									
290.0	35			9	RC	86%									
290.0	40	END OF BOREHOLE													

Gr. 37% ; Sa. 55%
Si. 8%

Cave - In
El. 311.2 ft.
Aug. 25, 1966

Gr. 3% ; Sa. 9%
Si. 57% ; Cl. 31%

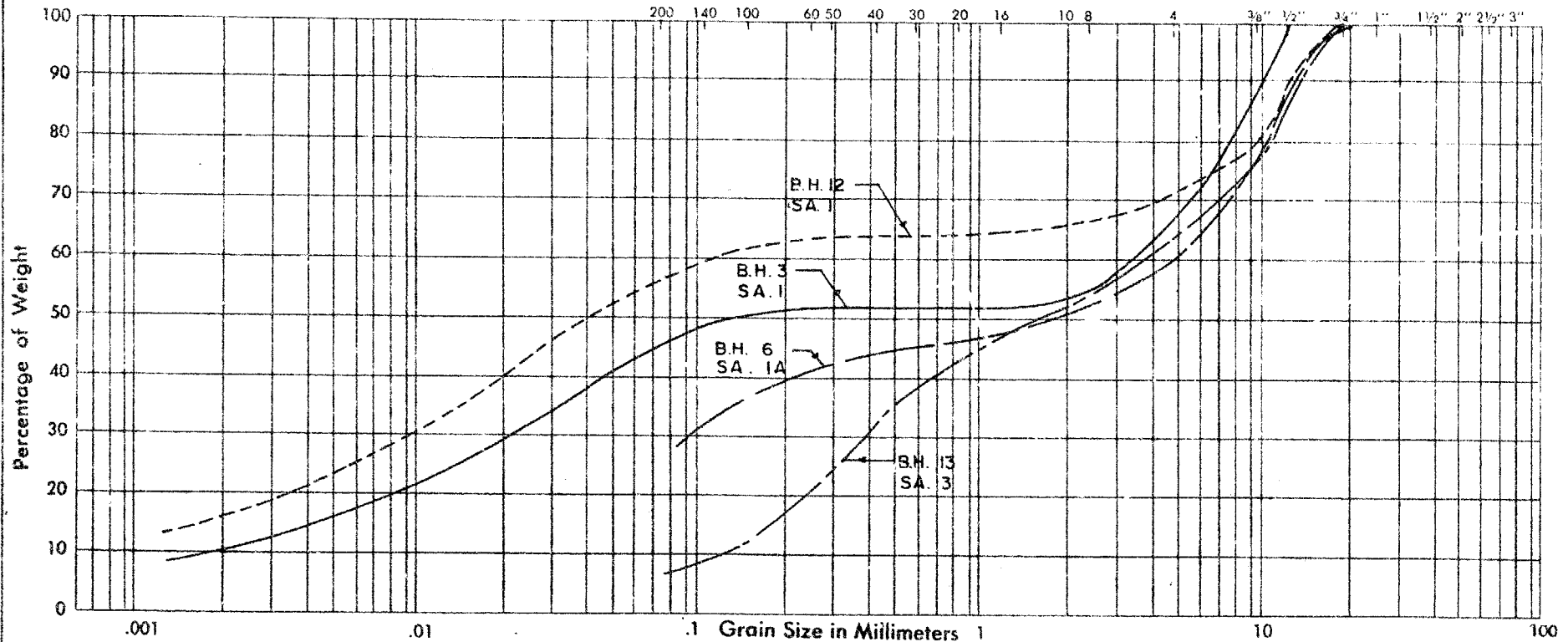
DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO 6-7-15

UNIFIED SOIL CLASSIFICATION
SYSTEM

SILT AND CLAY	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE



PROJECT: Q.E.W. & HWY. NO 27 INTERCHANGE

LOCATION: BRIDGE NO 21
157, 160, 166, 167

BOREHOLE NO.: 3, 6, 12, 13

SAMPLE NO.: 1, 1A, 1, 3

DEPTH OF SAMPLE:

ELEVATION OF SAMPLE:

COEFFICIENT OF UNIFORMITY

COEFFICIENT OF CURVATURE

Classification of Sample and Group Symbol:

GRAVELLY SAND & SILT
with a trace of clay.

PLASTIC PROPERTIES:

LIQUID LIMIT % =

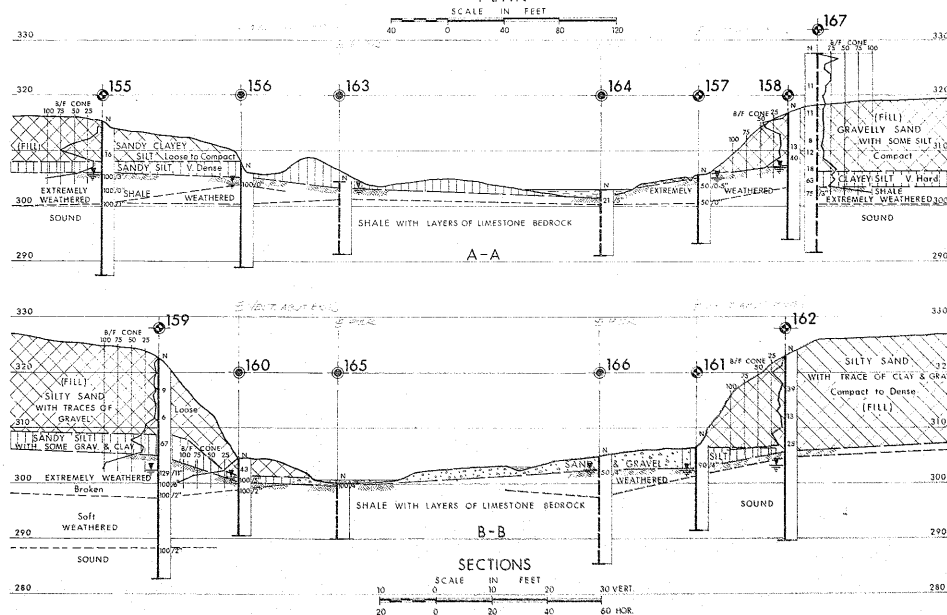
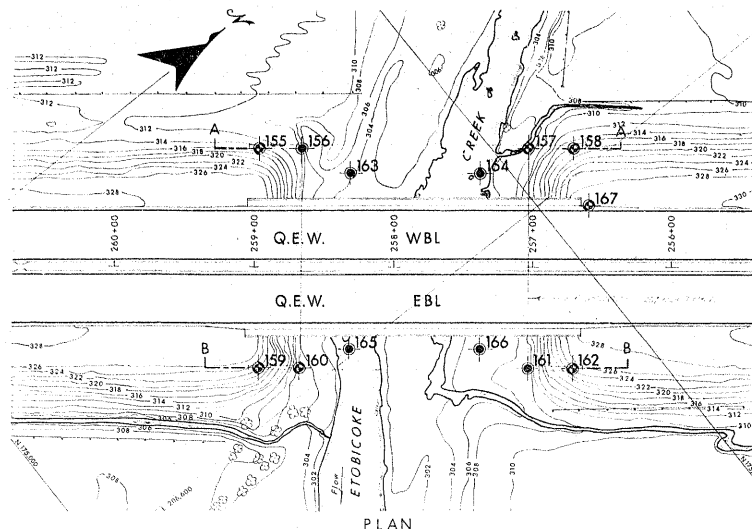
PLASTIC LIMIT % =

PLASTICITY INDEX % =

MOISTURE CONTENT % =

ACTIVITY =

Enclosure No.









SEE DRAWING No. 65-F-104 A

KEY PLAN

SCALE IN MILES

LEGEND.

-  Bore Hole
 Cone Penetration Hole
 Bore & Cone Penetration Hole
 Water Levels established at time of field investigation.
 Bore Hole
 Bore & Cone } Dom. Soil Ltd.

NO.	ELEVATION	STATION	OFFSET
-155	315.4	258+97	85' RT
-156	307.8	258+67	85' RT
-157	305.6	257+03	85' RT
-158	317.0	256+71	85' RT
-159	322.8	258+97	73' LT
-160	304.5	258+67	73' LT
-161	306.4	257+03	73' LT
-162	323.1	256+71	73' LT
-163	304.3	258+32	67' RT
-164	303.1	257+38	67' RT
-165	300.0	258+32	60' LT
-166	304.9	257+38	60' LT
-167	327.7	256+60	44' RT

- NOTE -

The boundaries between soil strata have been established only at Bore Hole locations. Between Bore Holes the boundaries are assumed from geological evidence and may be subject to considerable error.

REVISIONS	DATE	BY	DESCRIPTION
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DEPARTMENT OF HIGHWAYS - ONTARIO
MATERIALS & TESTING DIVISION - FOUNDATION SECTION

BRIDGE N-21

BRIDGE No.21

Q.E.W. & ETOBICOKE CREEK

KING'S HIGHWAY NO. Q.E.W. DIST. NO. 6

CO. PEEL & YORK METRO TORONTO

CO. FULL & CORR.	DATE	TIME
TWP. ETOBICOKE	LOT	CON.

BORE HOLE LOCATIONS & SOILS STRATA

SUBMD K.S.	CHECKED	W.P. NO. 174-65-1	M.S.T. DRAWING NO.
DRAWN DM	CHECKED <i>AK</i>	JOB NO. 65-F-104	65-F-104N
DATE 23 SEPT. 1966	SITE NO.	BRIDGE DRAWING NO.	
APPROVED <i>W.B. Thomas</i>	CONT. NO.		

PRINCIPAL FOUNDATION ENGINEER	
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