

Mr. A. M. Toye,
Bridge Engineer,
Bridge Division.

Attention: Mr. B. R. Davis

Mr. A. G. Stermac,
Principal Foundation Engr.,
Foundation Section,
Materials & Research Division.

July 5, 1963

W.P. 233-61-2-24 -- W.J. 63-F-47
Spadina Bridge #24, Hwy. #401, Dist.#6.

Following a discussion between the writer and Mr. J. Curtis on May 6, 1963, a field investigation was carried out by the Foundation Section to determine the subsoil conditions at the site of the above-mentioned proposed structure.

The results of our investigation revealed that subsoil consists predominantly of a glacial till deposit composed of a heterogeneous mixture of clayey silt, sand and fine gravel. The upper portion of this deposit varies somewhat in consistency and, therefore, each proposed footing has been considered separately with regard to bearing capacities for foundation design purposes. Our recommendations for the latter, are as follows:

West Abutment -

At elevation 605.0, a net safe bearing pressure of 4 t.s.f. may be employed. If 5 t.s.f. is required, it will be necessary to found the structure at el. 600.0.

West Pier -

At elevation 600.0 or below, a safe net bearing pressure of 5 t.s.f. may be employed.

East Pier -

At elevation 600.0, a net safe bearing pressure of 4 t.s.f. may be employed. If 5 t.s.f. is required, it will be necessary to found the structure at el. 590.0.

East Abutment -

At elevation 605.0, a net safe bearing pressure of 4 t.s.f. may be employed. If 5 t.s.f. is required, it will be necessary to found the structure at el. 602.0.

Mr. A. M. Teye,
Attn: Mr. E. F. Davis

- 2 -

July 5, 1963

Lateral Thrust on Footings -

In computing the resistance to lateral movement on the footing bases, an adhesion value of 2500 p.s.f. may be assumed to act between the footing bottom and the subsoil.

In computing the bearing capacities, a safety factor of 2.0 has been used.

It is believed that differential settlements of the structure under the above loadings, will be of a negligible order.

This report includes a drawing showing the borehole locations and subsoil stratigraphy, and the log sheets of the boreholes.

If you have any further queries in connection with this matter, please contact this Office.

KGS/Mde.
Attach.

cc: Messrs. A. M. Teye (2)
H. A. Tregaskes
H. D. McMillan
G. K. Hunter (2)
C. Fraser
T. J. Kovich
A. Watt

Foundations Office
Gen. Files ✓

K. G. Selby
K. G. Selby,
SENIOR FOUNDATION ENGR.
For:
A. G. Stermac,
PRINCIPAL FOUNDATION ENGR.

FOUNDATION SECTION

610'	Groundlevel			610
0.6	Topsoil			
	Clayey silt with some sand.	1	SS 8	
	Firm to v. stiff.			605
	Brown.	2	SS 24	
		3	SS 24	600
				595
594		4	SS 36	
16.0	Glacial Till.			
	(Clayey silt with some sand and trace of gravel).			590
		5	SS 27	
	Hard.			
	Grey.			585
583.5		6	SS 32	
26.6	End of borehole.			

RECORD OF BOREHOLE NO. 2.

ORIGINATED BY B.M.C.

COMPILED BY B.M.C.

CHECKED BY K.G.S.

DEPARTMENT OF HIGHWAYS - ONTARIO
MATERIALS & RESEARCH DIVISION

RECORD OF BOREHOLE NO. 4

FOUNDATION SECTION

JOB 63-F-47 LOCATION Stn. 115+73 and 5' to right of c of Abutment. ORIGINATED BY B.M.G.
W P 233-61-2-24 BORING DATE May 8, 1963. COMPILED BY B.M.G.
DATUM Geodetic BOREHOLE TYPE Auger - 4 1/2" Ø CHECKED BY K.G.S.

SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE					LIQUID LIMIT — WL PLASTIC LIMIT — WP WATER CONTENT — W			BULK DENSITY pcf	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLT	NUMBER	TYPE	BLOWS / FOOT	ELEV. SCALE	BLOWS / FOOT 20 40 60 80 100	SHEAR STRENGTH P.S.F.					WP — W — WL 15 30 45		
610.3	Groundlevel					610									
	Clayey silt with some sand and trace of fine gravel.		1	SS	14	605								137	
	Stiff to Hard.		2	TW	15									141	
	Brown.		3	SS	25	600								143	
			4	TW	38										
			5	SS	55										
			6	TW	44										
596.8 13.6	Glacial Till.					595									
	(Clayey silt with some sand and fine gravel). Hard Grey		7	SS	27	590									
588.8			8	SS	33										
21.6	End of borehole.					585									

W.L.
596.6

#63-F-47

W.P. #233-61-2-24

HWY #401 &

SPADINA

BRIDGE #24

