

## DEPARTMENT OF HIGHWAYS ONTARIO

## MEMORANDUM

22-65-263.

To: Mr. A. M. Tove,  
Bridge Engineer,  
Bridge Division.

From: Foundation Section,  
Materials & Testing Div.,  
Rm. 107, Lab. Bldg.

Attention: Mr. S. McCombie

Date: November 17, 1964.

OUR FILE REF.

IN REPLY TO

SUBJECT:

## FOUNDATION INVESTIGATION REPORT

For

Proposed Retaining Walls 3,4,5,6,7&8  
at Hwy #401 and Islington Avenue  
Interchange

District 6  
W.J. 64-F-99

Toronto  
W.P. 85-59-6

A request from Mr. J. Robertson of the Bridge Office to carry out a foundation investigation at the above mentioned site was received by this Section.

It is proposed to widen the existing Hwy. #401 in the City of Toronto. This requires construction of a new interchange at the crossing of Hwy 401 and Islington Ave. For this new interchange a number of retaining walls are planned. A foundation investigation to determine the subsoil conditions at the location of the proposed retaining walls 3,4,5,6,7 and 8 was carried out by this Section during November 3rd to November 6th, 1964.

No additional boreholes were drilled at the proposed retaining walls 1 and 2. However, this Section carried out a detailed foundation investigation for the proposed structure at E-W Hwy. #401 over Westbound Collector Road (our report W.J. 64-F-35).

cont'd /2....

November 17, 1964

Since the proposed retaining walls 1 and 2 are very close to the above mentioned structure, our recommendations pertaining to the structure foundations can be used.

The recommendations for the retaining structure 9 have been reported separately under W.J. 64-F-75.

The foundation investigation carried out at retaining wall locations 3,4,5,6,7 and 8 revealed that the site is generally underlain by 0.5 foot of topsoil, followed by a deposit of glacial till. Essentially the glacial deposit consists of clayey silt with sand and occasional gravel. However, some distinct layers of sandy silt with occasional gravel were observed. The exact boundaries of these layers are shown on Dwg. 64-F-99A.

The 'N' values for the overall deposit of glacial till ranged from 17 to 50/3 in.

Waterlevel observations were carried out during the time of the investigation. These observations revealed that the waterlevel varies from 19 ft. to 28 ft. below groundlevel in boreholes 1,2,3,9 and 10 while no water was observed in the other boreholes.

The subsoil conditions at the site are generally favourable for spread footing type of support. The retaining structures can therefore, be supported on spread footings with a net bearing capacity of 3 TSF. The footings may be placed as high in the glacial till stratum as frost conditions permit. It is suggested that care should be taken to prevent softening of the foundation material by surface water during construction.

cont'd /3....

November 17, 1964

The field work, together with the preparation of this report was undertaken by Mr. R. Magi, Project Foundation Engineer. The investigation was carried out under the general supervision of Mr. M. Devata, Senior Foundation Engineer, who also reviewed this report.

Equipment was owned and operated by Johnston Drilling Co. Ltd. of Ottawa.

RM/pb  
Attach.

  
A. G. Stermac  
PRINCIPAL FOUNDATION ENGINEER

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

Foundations Office  
Gen. Files -

APPENDIX I.

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DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 1

FOUNDATION SECTION

JOB 64-F-99LOCATION 411/95 88' Rt. EORIGINATED BY R.M.W P 85-59-6BORING DATE Nov. 3, 1964.COMPILED BY R.M.DATUM 480.0BOREHOLE TYPE Penndrill.CHECKED BY M.D.

SOIL PROFILE			SAMPLES			ELEV SCALE	DYNAMIC PENETRATION RESISTANCE			LIQUID LIMIT ——— WL PLASTIC LIMIT ——— WP WATER CONTENT ——— W			BULK DENSITY PCF	REMARKS
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS / FOOT		SHEAR STRENGTH P.S.F.			WP	W	WL		
480.0	Groundlevel													
0	Glacial Till													
	Clayey silt with sand and occasional gravel)		1	SS	57									
			2	SS	37									
			3	SS	25	470								
465.0	Very stiff to hard.		4	SS	41									
15	(Sandy silt with occasional gravel).		5	SS	80/7"									
			6	SS	105	460								
455.0	Very dense.													
25	End of borehole.													

6/16'

▼ W.L.  
19.5'

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 2

FOUNDATION SECTION

JOB 64-F-99

LOCATION 415/18 78' Rt. E

ORIGINATED BY R.M.

W.P. 85-59-6

BORING DATE Nov. 3, 1964.

COMPILED BY R.M.

DATUM 484.5

BOREHOLE TYPE Penndrill.

CHECKED BY M.D.

SOIL PROFILE		SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE		LIQUID LIMIT ——— WL		BULK DENSITY	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		BLOWS / FOOT	SHEAR STRENGTH P.S.F.	PLASTIC LIMIT ——— WP	WATER CONTENT ——— W		
484.5	Groundlevel										
0	Glacial Till (clayey silt with sand and occasional gravel).		1	SS	17	480					
			2	SS	34						
			3	SS	54						
	Layer of sandy silt with occasional gravel		4	SS	51	470					
	15' to 18' V. dense.		5	SS	95/6"						
			6	SS	118						
460.0	Very stiff to hard.										
24.5	End of borehole.					460					

▼ W.L.  
20.5'

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 3

FOUNDATION SECTION

JOB 64-F-99

LOCATION 432/52 145' Rt. E

ORIGINATED BY R.M.

W.P. 85-59-6

BORING DATE Nov. 4, 1964.

COMPILED BY R.M.

DATUM 516.0

BOREHOLE TYPE Penndrill

CHECKED BY M.D.

SOIL PROFILE		STRAT. PLOT	SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE		LIQUID LIMIT ——— WL		BULK DENSITY	REMARKS
ELEV. DEPTH	DESCRIPTION		NUMBER	TYPE	BLOWS / FOOT		BLOWS / FOOT	SHEAR STRENGTH P.S.F.	PLASTIC LIMIT ——— WP	WATER CONTENT ——— W		
516.0	Groundlevel											
0	Silty sand.											
511.0	Compact.		1	SS	28	510						
	Glacial Till (clayey silt with sand and occasional gravel).		2	SS	41							
			3	SS	68							
			4	SS	104							
			5	SS	78	500						
			6	SS	27							
489.5	Very stiff to hard.			SS	72/3	490						
26.5	End of borehole.											

▼ W.L.  
20.5'












DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS TESTING DIVISION

## RECORD OF BOREHOLE NO. 5

FOUNDATION SECTION

JOB 64-F-99 LOCATION 433/63 139' Rt. 6 ORIGINATED BY R.M.  
 W.P. 85-59-6 BORING DATE Nov. 4, 1964. COMPILED BY R.M.  
 ELEV. 510.0 BOREHOLE TYPE Peardrill. CHECKED BY M.D.

SOIL PROFILE		SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE				LIQUID LIMIT — W <sub>L</sub>			BULK DENSITY	REMARKS		
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		BLOWS / FOOT	BLOWS / FOOT				PLASTIC LIMIT — W <sub>P</sub>					
						SHEAR STRENGTH P.S.F.				WATER CONTENT — W						
											W <sub>P</sub>	W <sub>D</sub>	W <sub>L</sub>			
											WATER CONTENT %					
510.0	Groundlevel															
0	Glacial Till (clayey silt with sand and occasional gravel).		1	SS	23	500										
			2	SS	85											
	Layer of sandy silt with occasional gravel		3	SS	56											
	11'-14' V. Dense.		4	SS	54											
493.5	Very stiff to hard.		5	SS	50/3"											
16.5	End of borehole.															

53

4230

20

 58  
 4230  
 20

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 6

FOUNDATION SECTION

JOE 64-F-99

LOCATION 426/21 597' Rt. C

ORIGINATED BY R.M.

W P 85-59-6

BORING DATE Nov. 4, 1964.

COMPILED BY                      R.M.

DATUM 521.5

BOREHOLE TYPE Pennndrill

CHECKED BY \_\_\_\_\_ M.D.

[illegible]

CHECKED BY M.D.

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS &amp; TESTING DIVISION

RECORD OF BOREHOLE NO. 8

FOUNDATION SECTION

JOB 64-F-99

LOCATION 44263 123' Lt. e

ORIGINATED BY R.M.

W. P. 85-59-6

BORING DATE Nov. 5, 1964.

COMPILED BY R.M.

DATUM 515.5

BOREHOLE TYPE Penndrill.

CHECKED BY M.D.

[illegible]



DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 9

FOUNDATION SECTION

JOB 64-F-99

LOCATION 415/27 141' Lt. E

ORIGINATED BY R.M.

W.P. 85-59-6




BORING DATE Nov. 5, 1964.


COMPILED BY R.M.

DATUM 500.0

BOREHOLE TYPE Penndrill

CHECKED BY M.D.

SOIL PROFILE			SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE				LIQUID LIMIT ——— WL PLASTIC LIMIT ——— WP WATER CONTENT ——— W			BULK DENSITY P.C.F.	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS / FOOT		SHEAR STRENGTH P.S.F.				Wp ——— W ——— WL WATER CONTENT %				
500.0	Groundlevel														
	Glacial Till (clayey silt with sand and occasional gravel).		1	SS	64	490									
			2	SS	91										
			3	SS	69										
			4	SS	59										
			5	SS	32										
	Layer of sandy silt with occasional gravel 25'-30' Very dense.		6	SS	35	480									
			7	SS	53	57									
	Hard.		8	SS	70	470									
463.5			9	SS	90										
36.5	End of borehole.														

 W.L.  
28.5'

▼ W.L.  
28.5'

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 10

FOUNDATION SECTION

JOB 64-F-99 LOCATION 410/68 140' Lt. E ORIGINATED BY R.M.  
 W P 85-59-6 BORING DATE Nov. 6, 1964. COMPILED BY R.M.  
 DATUM 492.0 BOREHOLE TYPE Penndrill. CHECKED BY M.D.

SOIL PROFILE		SAMPLES			ELEV SCALE	DYNAMIC PENETRATION RESISTANCE		LIQUID LIMIT ——— W <sub>L</sub>		BULK DENSITY	REMARKS
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		BLOWS / FOOT	BLOWS / FOOT	PLASTIC LIMIT ——— W <sub>P</sub>	PLASTIC LIMIT ——— W <sub>P</sub>		
492.0	Groundlevel							WATER CONTENT ——— W	W <sub>P</sub> ——— W <sub>L</sub>		
	Glacial Till (Sandy silt with occasional gravel.		1	SS	35	490					
483.5	Dense		2	SS	46						
8.5	Clayey silt with sand and occasional gravel.		3	SS	63	480					
			4	SS	84						
			5	SS	37						
			6	SS	47	470					
			7	SS	122						
			8	SS	50/1"	460					
455.5	Hard.										
36.5	End of borehole.										

▼ W.L.  
27'

## ABBREVIATIONS USED IN THIS REPORT

### PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE 'N' - THE NUMBER OF BLOWS REQUIRED TO ADVANCE A STANDARD SPLIT SPOON SAMPLER 12 INCHES INTO THE SUBSOIL, DRIVEN BY MEANS OF A 140 POUND HAMMER FALLING FREELY A DISTANCE OF 30 INCHES.

DYNAMIC PENETRATION RESISTANCE - THE NUMBER OF BLOWS REQUIRED TO ADVANCE A 2 INCH, 60 DEGREE CONE, FITTED TO THE END OF DRILL RODS, 12 INCHES INTO THE SUBSOIL, THE DRIVING ENERGY BEING 350 FOOT POUNDS PER BLOW.

### DESCRIPTION OF SOIL

THE CONSISTENCY OF COHESIVE SOILS AND THE RELATIVE DENSITY OR DENSENESS OF COHESIONLESS SOILS ARE DESCRIBED IN THE FOLLOWING TERMS:-

<u>CONSISTENCY</u>	<u>'N' BLOWS/FT.</u>	<u>c LB./SQ. FT.</u>	<u>DENSENESS</u>	<u>'N' BLOWS/FT.</u>
VERY SOFT	0 - 2	0 - 250	VERY LOOSE	0 - 4
SOFT	2 - 4	250 - 500	LOOSE	4 - 10
FIRM	4 - 8	500 - 1000	COMPACT	10 - 30
STIFF	8 - 15	1000 - 2000	DENSE	30 - 50
VERY STIFF	15 - 30	2000 - 4000	VERY DENSE	> 50
HARD	> 30	> 4000		

### TYPE OF SAMPLE

S.S.	SPLIT SPOON	T.W.	THINWALL OPEN
W.S.	WASHED SAMPLE	T.P.	THINWALL PISTON
S.B.	SCRAPER BUCKET SAMPLE	O.S.	OESTERBERG SAMPLE
A.S.	AUGER SAMPLE	F.S.	FOIL SAMPLE
C.S.	CHUNK SAMPLE	R.C.	ROCK CORE
S.T.	SLOTTED TUBE SAMPLE		
	P.H. SAMPLE ADVANCED HYDRAULICALLY		
	P.M. SAMPLE ADVANCED MANUALLY		

### SOIL TESTS

Q <sub>u</sub>	UNCONFINED COMPRESSION	L.V.	LABORATORY VANE
Q	UNDRAINED TRIAXIAL	F.V.	FIELD VANE
Q <sub>cu</sub>	CONSOLIDATED UNDRAINED TRIAXIAL	C	CONSOLIDATION
Q <sub>d</sub>	DRAINED TRIAXIAL	S	SENSITIVITY



# ABBREVIATIONS USED IN THIS REPORT

## SOIL PROPERTIES

$\gamma$	UNIT WEIGHT OF SOIL (BULK DENSITY)
$\gamma_s$	UNIT WEIGHT OF SOLID PARTICLES
$\gamma_w$	UNIT WEIGHT OF WATER
$\gamma_d$	UNIT DRY WEIGHT OF SOIL (DRY DENSITY)
$\gamma'$	UNIT WEIGHT OF SUBMERGED SOIL
G	SPECIFIC GRAVITY OF SOLID PARTICLES $G = \frac{\gamma_s}{\gamma_w}$
e	VOID RATIO
n	POROSITY
w	WATER CONTENT
$S_r$	DEGREE OF SATURATION
$w_L$	LIQUID LIMIT
$w_P$	PLASTIC LIMIT
$I_P$	PLASTICITY INDEX
s	SHRINKAGE LIMIT
$I_L$	LIQUIDITY INDEX = $\frac{w - w_P}{I_P}$
$I_C$	CONSISTENCY INDEX = $\frac{w_L - w}{I_P}$
$e_{max}$	VOID RATIO IN LOOSEST STATE
$e_{min}$	VOID RATIO IN DENSEST STATE
$I_D$	DENSITY INDEX = $\frac{e_{max} - e}{e_{max} - e_{min}}$
	RELATIVE DENSITY $D_r$ IS ALSO USED
h	HYDRAULIC HEAD OR POTENTIAL
q	RATE OF DISCHARGE
v	VELOCITY OF FLOW
i	HYDRAULIC GRADIENT
k	COEFFICIENT OF PERMEABILITY
j	SEEPAGE FORCE PER UNIT VOLUME
$m_v$	COEFFICIENT OF VOLUME CHANGE = $\frac{-\Delta e}{(1+e)\Delta\sigma}$
$c_v$	COEFFICIENT OF CONSOLIDATION
$C_c$	COMPRESSION INDEX = $\frac{\Delta e}{\Delta \log_{10} \sigma}$
$T_v$	TIME FACTOR = $\frac{c_v t}{d^2}$ (d, DRAINAGE PATH)
U	DEGREE OF CONSOLIDATION
$\tau_f$	SHEAR STRENGTH
$c'$	EFFECTIVE COHESION
$\phi'$	EFFECTIVE ANGLE OF SHEARING RESISTANCE, OR FRICTION
$c_u$	APPARENT COHESION
$\phi_u$	APPARENT ANGLE OF SHEARING RESISTANCE, OR FRICTION
$\mu$	COEFFICIENT OF FRICTION
$S_t$	SENSITIVITY

## GENERAL

$\pi$	= 3.1416
e	BASE OF NATURAL LOGARITHMS 2.7183
$\log_e a$ OR $\ln a$	NATURAL LOGARITHM OF a
$\log_{10} a$ OR $\log a$	LOGARITHM OF a TO BASE 10
t	TIME
g	ACCELERATION DUE TO GRAVITY
V	VOLUME
W	WEIGHT
M	MOMENT
F	FACTOR OF SAFETY

## STRESS AND STRAIN

u	PORE PRESSURE
$\sigma$	NORMAL STRESS
$\sigma'$	NORMAL EFFECTIVE STRESS ( $\bar{\sigma}$ IS ALSO USED)
$\tau$	SHEAR STRESS
$\epsilon$	LINEAR STRAIN
$\gamma$	SHEAR STRAIN
$\nu$	POISSON'S RATIO ( $\mu$ IS ALSO USED)
E	MODULUS OF LINEAR DEFORMATION (YOUNG'S MODULUS)
G	MODULUS OF SHEAR DEFORMATION
K	MODULUS OF COMPRESSIBILITY
$\eta$	COEFFICIENT OF VISCOSITY

## EARTH PRESSURE

d	DISTANCE FROM TOP OF WALL TO POINT OF APPLICATION OF PRESSURE
$\delta$	ANGLE OF WALL FRICTION
K	DIMENSIONLESS COEFFICIENT TO BE USED WITH VARIOUS SUFFIXES IN EXPRESSIONS REFERRING TO NORMAL STRESS ON WALLS
$K_0$	COEFFICIENT OF EARTH PRESSURE AT REST

## FOUNDATIONS

B	BREADTH OF FOUNDATION
L	LENGTH OF FOUNDATION
D	DEPTH OF FOUNDATION BENEATH GROUND
N	DIMENSIONLESS COEFFICIENT USED WITH A SUFFIX APPLYING TO SPECIFIC GRAVITY, DEPTH AND COHESION ETC. IN THE FORMULA FOR BEARING CAPACITY
$k_s$	MODULUS OF SUBGRADE REACTION

## SLOPES

H	VERTICAL HEIGHT OF SLOPE
D	DEPTH BELOW TOE OF SLOPE TO HARD STRATUM
$\beta$	ANGLE OF SLOPE TO HORIZONTAL

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS

MEMORANDUM

TO: Mr. M. Devata,  
Room 107,  
Central Building.

FROM: G. C. E. Burkhardt,  
Structural Planning Office,  
90 Floral Parkway.

ATTENTION:

DATE: June 16, 1972.

OUR FILE REF.

IN REPLY TO

SUBJECT: Retaining Wall #R21,  
W.P. 218-65-5, Site 37-  
Highway 409 (Belfield Expressway), District 6.

71-11-122

This will confirm our conversation on your recommendations for foundation treatment for the above noted retaining wall. As this wall is 150' extension of the existing retaining wall #6, in the Highway 401 and Islington Avenue Interchange, the Foundation Investigation Report W.J. 64-F-99 should be sufficient to cover the extension.

The only exception to what was detailed in the report is the bearing capacity of the spread footings will be altered to 2.5 t.s.f. from 3.0 t.s.f.

It was agreed that if further boreholes would be required at a later date, this could be arranged through the normal procedures.

JSTR:lc



A handwritten signature in dark ink, appearing to read "J. S. T. Robertson".

J. S. T. Robertson,  
STRUCTURAL PLANNING SUPERVISOR,  
for:  
G. C. E. Burkhardt,  
REG. STRUCTURAL PLANNING ENG.

W.P. 85-59-6 HIGHWAY 401 IMPROVEMENT  
KIPLING AND BELFIELD AREA

MINUTES OF A MEETING HELD AT THE OFFICES  
OF DELEUW, CATHER & COMPANY OF CANADA LIMITED  
ON MAY 7, 1965 AT 11:00 A.M.

PRESENT

G. Bruce	-	Metro Toronto Roads Department
F. Sansom	-	Metro Toronto Traffic Department
W. Swann	-	Township of Etobicoke
A. Bernard	-	Township of Etobicoke
W. Friedmann	-	Department of Highways of Ontario
J. Blevins	-	" " "
R. Walker	-	De Leuw Cather & Company of Canada Limited
R. Barr	-	" " " " "

PURPOSE OF MEETING

The meeting was called to discuss

(a) Treatment of the Kipling Belfield Intersection.

(b) Access to Property at Kipling south of C.N.R.

1. Three functional plans prepared by De Leuw Cather were reviewed. These plans dealt with the heavy left turn movements from North on Kipling to East on Highway 401 as follows:

1. A single left turn lane for present design.
2. A double left turn for future requirements.
3. A grade separated left turn for future requirements.

2. Discussion on scheme 2 covered the following points.

It would be necessary to erect an overhead sign structure to indicate lane control. The island between through and left turning traffic should be clearly visible. One method of doing this might be to suspend a dummy post over the island from the overhead structure. A minimum width of 4 feet would be required for the island with the possibility of using a low mountable curb to facilitate snow plowing.

It was noted that scheme 2 would function whether or not the Belfield Expressway is built.

3. It was decided that until the decision has been made as to the location of the proposed Belfield Expressway, Scheme 3 should not be considered. There are grade problems in this scheme as the left turn ramp after crossing under Kipling has to join to the Eastbound Ramp which is rising at 4%.

4. Department of Highways will inform Metro when a final decision on the Belfield Expressway has been reached. The functional report for this area should be completed in about 2 months time.
5. Due to the uncertainties as to channelization of Kipling and Belfield, the effect of the proposed Expressway on this area, and the fact that Metro will probably install the grade separation at the C.N.R., it was decided that the Limit of Contract for Islington Avenue-Highway 401 Interchange should end just east of Kipling Avenue. The balance of the work on Belfield and on Kipling will be added to either the D.H.O. contract from Kipling to Highway 27 or to the Metro Contract along with the grade separation.
6. Two schemes to provide access to Law Construction were reviewed.
  1. On a structure across Kipling and along the Ontario Hydro Right of Way to Belfield.
    - if this scheme is used the access road would have to be maintained by Etobicoke Township and the Structure by Metro. This scheme affects 3 property owners.
  2. Extension of Greensboro Drive through under Ramp WE 401 and EW 401. It was agreed that this scheme would be quite acceptable being more conventional than the previous one. Mr. Swan said he would not hesitate to recommend that Etobicoke take over the extension of Greensboro Drive.

These schemes will be referred to the Functional Planning Section of the Department of Highways for a decision as to which will be used.

RJAB:sg

*Russell Barr*

R.J.A. Barr

Assistant Highway Engineer.

cc: W. Friedmann (16)  
B. Davis (3)  
J. Thatcher (1)  
R. Strain (1)  
J. Curtis (1)

G.G. Stewart  
W.E. Carroll  
C.M. Bishop  
F. Sansom  
G. Bruce  
W. Swann  
A. Bernard

S. Cumming  
R.J.A. Barr  
M.R. Rethy  
R.J. Walker

MEMORANDUM

To: Mr. A. G. Sternac,  
Principal Foundation Engineer,  
Room 107, Lab. Bldg.

From: Bridge Division,  
Downsview, Ontario.

Date: October 8, 1964.

Our File Ref.

In Reply To

SUBJECT:

Retaining Walls 64-F-99  
Highway 401 near Islington Avenue  
Interchange  
W.P. 85-59-6  
District #6

Attached please find one copy of a 100 scale drawing showing the layout for the above noted retaining walls. We have received foundation reports for all the bridges in this area and feel we should have your comments as to the foundation conditions under the proposed walls.

Your early consideration of this project would be very much appreciated.



JBC/es

J. B. Curtis,  
Regional Bridge Location Engineer.

*It was decided a foundation investigation will be carried out as early as possible*

*M. Devada  
Oct 12/64*

# 64-F-99

W.P. # 85-59-6

Hwy. # 401 E.

ISLINGTON AVE.

RETAINING

WALLS # 3 TO

# 8

