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G.I.F-30 SEPT. 1976

GEOCRES No. 30M11-101

DIST. 6 REGION Central

W.P. No. 314-65-16

CONT. No. 72-097

W. O. No. 72-F-59

STR. SITE No. _____

HWY. No. City

LOCATION Lion Head Mon. to W. Entrance
of Ontario Place

OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT. _____

REMARKS: DOCUMENT TO BE UNFOLDED
BEFORE MICROFILM.

Planning
Engineering
Project Management

FENCO

1 Yonge Street
Toronto, Canada
416-361-4722
Cable 'Foundation'
Telex 02 2814

May 8, 1972

Mr. M.S. Devata
Supervising Foundations Engineer
Ministry of Transportation & Communications
West Building
Downsview 464, Ontario

Dear Sir,

QUEEN ELIZABETH WAY
W.P. 314-65-01
LIONS" MONUMENT

We enclose for your information a sketch of Ontario Place with the approximate location for the Lions Monument. Two stakes have been set in the ground, and as discussed, please provide at your earliest convenience the necessary soils data to design the foundation for the above structure.

The approximate limits ^{are} was 24 x 37 and anticipated at 250 tons.

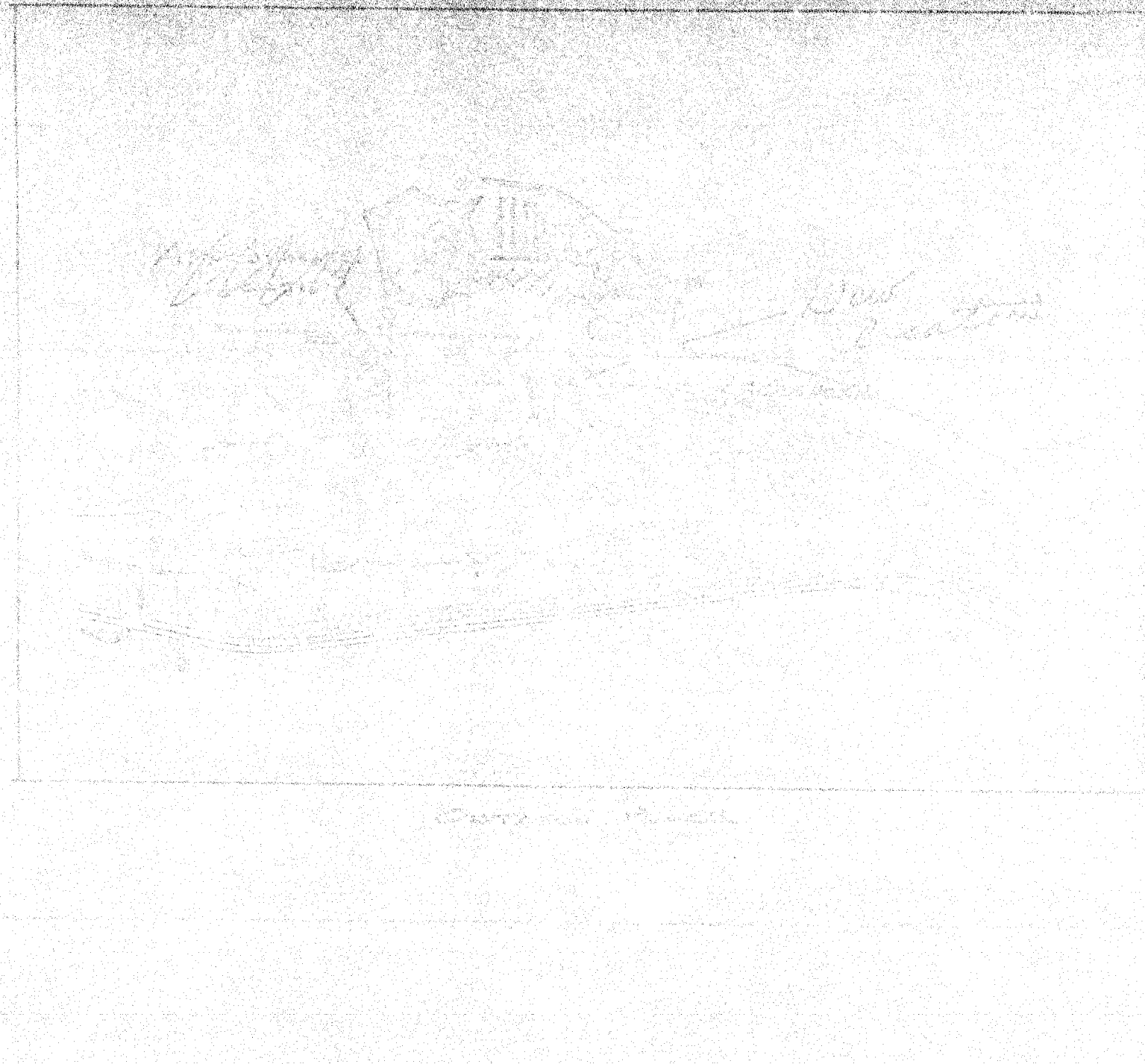
Yours very truly,
FOUNDATION OF CANADA ENGINEERING
CORPORATION LIMITED



R.S. Adachi, P.Eng.
HIGHWAY ENGINEER

RSA/bhw
3552
Enc.

cc: Mr. D. Aspinwall
MTC, Downsview



72-11059
DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

MEMORANDUM

TO: Mr. A. G. Stermac,
Principal Foundation Engineer,
Room 107,
Central Building.

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

ATTENTION:

DATE: May 8, 1972.

OUR FILE REF.

IN REPLY TO

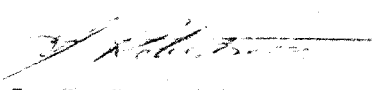
SUBJECT: Lion Head Monument,
W.P. 314-65-16, Site 37-
District 6, Highway Q.E.W.

With reference to our conversation today, this will verify the need for a foundation investigation for the relocation of the Lion Head Monument, located at present on the O.E.W. adjacent to the C.N.R. Overhead in the Humber River area.

The area of relocation will be within the grounds of Ontario Place and is being field staked by Fenco to indicate the approximate location of the intended coverage required. In the near future a detailed drawing will be made available by Fenco to assist in the final foundation report but in the meantime close liaison between R. S. Adachi and yourself should be sufficient to allow you to proceed. As indicated in our conversation, because of the tight schedule of the project any priority you might extend on this request would be greatly appreciated and a verbal report on your findings would assist to meet these ends.

Freedom of access to the site should be readily available but direction from R. S. Adachi would assist.

JSTR:lc


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

C.C. D. Aspinwall
R. S. Adachi

XXXXXXXXXXXXXX

Gordon R. Carton, Q.C.

Design Services Branch,
Downsview 464, Ontario.
May 11, 1972.

Telephone: 248-3282.

Master Soil Investigation Ltd.,
104 Kenhar Drive,
Woodbridge, Ontario.

Dear Sirs:

This is to confirm our request of May 8, 1972, for the supply of flight auger drill (Bombardier Mounted) together with all necessary equipment, as specified under the terms of our Contract Agreement, at Lakeshore Rd. near Ontario Place, Metro Toronto, on May 9, 1972.

This Project bears the Job Number 72-11059.

Mobilization to be from Woodbridge, Ontario.

Yours truly,

MD/ao

cc: W. W. Fry
(Attn: Mrs. M. Andrews)
Foundations Files
Documents

For:

M. Devata
M. Devata,
Supervising Foundations Eng.,
A. G. Stermac,
Principal Foundations Eng.



ONTARIO

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

MINISTER: HONOURABLE ~~CHARLES MONTAGNA~~

Gordon R. Carton, Q.C.

DEPUTY MINISTER: A. T. C. McNAB

Design Services Branch,
Downsview, Ontario,
Telephone: 248-3281

May 19, 1972.

Master Soil Investigation,
104 Kenhar Drive,
Woodbridge, Ontario.

Dear Sirs:

This is to confirm our request of May 5th, 1972, for the supply of Penn Drill together with all necessary equipment, as specified under the terms of our Contract Agreement, at Metro Toronto, (Lakeshore Blvd. & Ontario Place) on May 9th, 1972.

This Project bears the Job Number 72-11059.

Mobilization to be from your yard in Toronto.

Yours truly,

M. Devata,
Supervising Foundation Engineer

For: A.G. Stermac,
Principal Foundation Engineer.

MD/mb
c.c. W.W. Fry,
(Attn. M. Andrews)

Foundation Files ✓
Documents

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

30PM-151

MEMORANDUM

TO: Mr. G.C.E. Burkhardt, (4) FROM: Foundations Office,
Regional Structural Planning Eng., Design Services Branch,
Central Region, Central Bldg., Downsview.
90 Floral Pkwy., Downsview.

ATTENTION: DATE: May 19, 1972.

OUR FILE REF. IN REPLY TO MAY 26 1972

SUBJECT:

FOUNDATION INVESTIGATION
For
Proposed Relocation of the
Lion Head Monument to the
West Entrance to Ontario Place
Metropolitan Toronto
District 6 (Toronto)
W.O. 72-11059 - W.P. 314-65-16

Attached we are forwarding to you our detailed foundation investigation report on the subsoil conditions existing at the above-mentioned site.

We believe that the factual data and recommendations contained therein will prove adequate for your design requirements. Should additional information be required, please do not hesitate to contact our Office.

AGS/ao
Attach.

A. G. Sternac
A. G. Sternac,
PRINCIPAL FOUNDATIONS ENGINEER.

cc: Messrs. D. W. Farren
B. R. Davis
A. Rutka
P. J. Harvey
H. Greenland
B. J. Giroux
T. J. Kovich
G. A. Wrong
B. A. Singh

Foundation of Canada Engineering Corp. Ltd. (R. Adachi)

Foundations Files
Documents

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-

FOUNDATION INVESTIGATION
For
Proposed Relocation of the
Lion Head Monument to the
West Entrance to Ontario Place
Metropolitan Toronto
District 6 (Toronto)
W.O. 72-11059 -- W.P. 314-65-16

1. INTRODUCTION:

A monument, known as the "Lion Head Monument" is presently located in the vicinity of the Q.E.W. crossing at the Humber River, Metropolitan Toronto. Due to the proposed reconstruction of the Q.E.W. complex this monument will have to be moved; the location selected is at the west entrance to Ontario Place, immediately south of Lakeshore Blvd.

The Foundations Office was requested to carry out a subsurface investigation at the site of the proposed relocation. The request was contained in a memo from Mr. G.C.E. Burkhardt, Regional Structural Planning Engineer, Central Region, Structural Planning Office, dated May 8, 1972. Subsequently an investigation was carried out by this Office to determine the subsoil, bedrock and groundwater conditions at the site.

Presented in this report are the factual results obtained from this investigation, together with our recommendations pertaining to the design of the foundation for the monument.

2. SUBSOIL AND BEDROCK CONDITIONS:

2.1) General:

The site is located on a flat portion of reclaimed land

which is east of Lake Ontario and south of Lakeshore Blvd. This area forms the west entrance to Ontario Place.

In order to determine the subsurface conditions in this area three sampled boreholes, as well as two dynamic cone penetration tests were put down. The soil, bedrock and groundwater conditions encountered are presented on the borelog sheets appended to this report. The borehole and cone test locations are shown in plan on Drawing No. 72-11059A together with a typical stratigraphical profile across the site. The material encountered will be discussed in the subsections to follow.

2.2) Fill:

Fill was placed to reclaim this portion of land from Lake Ontario; the thickness of the fill varies between 11 and 12.5 feet. The composition of the fill was found to be quite variable, ranging from a clayey silt with sand and gravel in some areas to a sand and gravel in others. Random pockets of organic matter and brick fragments are present throughout the fill.

Standard penetration testing, carried out in the fill, gave 'N' values ranging from 3 to 56 blows/foot; the higher values were encountered in the upper 3 to 4 feet. Based on these results, it is estimated that the fill has been well compacted in this upper zone, but negligible compactive effort has been provided in the lower portion of the fill. This lower zone, however, is below the groundwater level recorded during the period of the investigation. It is difficult to compact material placed below water; this would explain the reason for the variability of the compactive effort with depth.

2.3) Shale Bedrock:

Underlying the fill is shale bedrock, which was proven in two of the borings by obtaining between 11.5 and 13 feet of BX size rock core samples. Elsewhere, the bedrock surface was assumed to exist at the level where the hammer-driven split-spoon

sampler or the dynamic cone test met practical refusal.

The bedrock surface, over the site, was found to vary between elevations 238 and 240. The bedrock is composed of a grey shale, the upper 2 to 3 feet of which is in a weathered condition. Below this weathered zone the shale is sound as evidenced by the relatively high percentage of core recovered.

3. GROUNDWATER CONDITIONS:

The groundwater level conditions across the site were determined by recording the water level in the open boreholes, during the period of the investigation. The results of these readings indicate that the groundwater level ranges from elevation 245 to 249, which corresponds to depths of from 3 to 8 feet below the existing ground surface.

4. DISCUSSION & RECOMMENDATIONS:

It is proposed to relocate the monument known as "The Lion Head" monument to a site at the west entrance to Ontario Place, Metropolitan Toronto. It is understood that the monument will cover a plan area approximately 24 feet by 37 feet and will weigh about 370 tons (including the weight of the foundation).

The site is covered by up to 12.5 feet of fill which, in turn, is underlain by shale bedrock. The fill has a heterogeneous composition; further, it is believed that the lower portion has been subjected to only a negligible degree of compaction. This being the case it would not be economically feasible to found the monument on a spread or mat foundation located within the fill. It is, therefore, recommended that the monument be supported on end-bearing piles driven to bedrock. The piles could be designed using the ultimate capacity of the pile section chosen; e.g. 12BP74 steel H-piles could be designed for 95 tons/pile.

A minimum of 4 feet of earth cover should be provided to the underside of the pile cap for frost protection purposes. At this level the pile cap will be located anywhere from 1 to 2 feet below the groundwater level recorded during the period of the investigation. In some areas the fill is granular in nature;

this being the case, groundwater seepage can be expected to occur in the pile cap excavation.

5. MISCELLANEOUS:

The field work for this project was carried out on May 9 and 10, 1972, under the supervision of Mr. C. S. Poon, Project Foundations Engineer, who also wrote this report. This report was reviewed by Mr. M. Devata, Supervising Foundations Engineer.

The equipment used was owned and operated by Master Soil Investigation Ltd., Toronto.

C. S. Poon
C. S. Poon, P. Eng.

M. Devata
M. Devata, P. Eng.

CSP/ao
May 18, 1972.



APPENDIX I

RECORD OF BOREHOLE No. 1

FOUNDATION SECTION

JOB 72-11059

LOCATION Co-ords. 15,853,085 N. 1,021,194 E.

ORIGINATED BY C.S.P.

W.P. 314-65-16

BORING DATE May 9, 10, 1972

COMPILED BY T.S.

DATUM Geodetic

BOREHOLE TYPE Auger

CHECKED BY S.R.

SOIL PROFILE			SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE BLOWS / FOOT				LIQUID LIMIT ——— W_L PLASTIC LIMIT ——— W_P WATER CONTENT ——— W				BULK DENSITY γ P.C.F.	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS / FOOT		SHEAR STRENGTH P.S.F.				W_P ——— W ——— W_L WATER CONTENT %					
250.8	Ground level.															
249.8	Black topsoil.	~	1	SS	14	250										
248.3	Clayey silt, sand & broken brick, Dark Grey.	X	2A, B	SS	41											
245.5	Sand, trace of silt & gravel.	X	3	SS	20											
	Very loose to compact Dark Grey.	X	4	SS	6	245										
		X	5	SS	3											
242.3	Fill.	X	6	SS	10											
8.5	Clayey silt with some sand & gravel.	X	7	SS	16											
	Broken brick pieces. Firm to stiff. Brown.	X	8	SS	26/4"	240										
238.3		X	9A, B	SS	50/5"											
12.5		X	10	BX, RC	Rec. 100%											
236.8	Weathered.	X	11	BX, RC	Rec. 100%											
14.0	Sound.		12	BX	Rec.											
	Grey shale bedrock.			RC	90%	235										
			13	BX	Rec.	230										
				RC	80%											
226.8																
24.0	End of borehole.					225										

W.L. on
May 10/72
at E. 247.0

DESIGN SERVICES BRANCH

RECORD OF BOREHOLE No. 2

FOUNDATION SECTION

JO3 72-11059

LOCATION Co-ords. 15,853,083 N. 1,021,173 E.

ORIGINATED BY C.S.P.

W.F. 314-65-16

BORING DATE May 9, 10/72.

COMPILED BY T.D.

DATUM Geodetic

BOREHOLE TYPE Auger

CHECKED BY *[Signature]*

[illegible]

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

DESIGN SERVICES BRANCH

RECORD OF BOREHOLE No. 3

FOUNDATION SECTION

JOB 72-11059

LOCATION Co-ords. 15,853,082 N. 1,021,215 E.

ORIGINATED BY C.S.P.

W.P. 314-65-16

BORING DATE May 10/72

COMPILED BY T.B.

DATUM Geodetic

BOREHOLE TYPE Auger

CHECKED BY

SOIL PROFILE			SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE				LIQUID LIMIT ——— w_L PLASTIC LIMIT ——— w_p WATER CONTENT ——— w				BULK DENSITY γ P.C.F.	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS / FOOT		SHEAR STRENGTH P.S.F.				WATER CONTENT %					
250.9	Ground level.															
250.1	Black topsoil.		1	SS	55	250										
0.8	Clayey silt with some sand & gravel, occ. pockets of organics and broken brick pieces.		2	SS	40											
	Fill.		3	SS	15	245										
	Firm to stiff.		4	SS	9											
238.6	Grey-brown.					240										
12.3	End of borehole. Probable bedrock.					235										

W.L. on
May 10/72
@ El. 245.9

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

DESIGN SERVICES BRANCH

RECORD OF BOREHOLE No. 4

FOUNDATION SECTION

JOB 72-11059

LOCATION Co-ords. 15,853,065 N. 1,021,209 E.

ORIGINATED BY C.S.P.

W.P. 314-65-16

BORING DATE May 10, 1972

COMPILED BY C.S.P.

DATUM Geodetic

BOREHOLE TYPE Dynamic Cone Penetration

CHECKED BY S.R.

SOIL PROFILE			SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE					LIQUID LIMIT ——— w_L		BULK DENSITY	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS / FOOT		BLOWS / FOOT	20	40	60	80	100	PLASTIC LIMIT ——— w_p		
250.6	Ground level.						SHEAR STRENGTH P.S.F.					WATER CONTENT %			
							○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB. VANE					w_p ——— w ——— w_L			
0.0	Probably fill.					250									
						245									
						240									
238.1							Bouncing								
12.5	End of cone test. Probable bedrock.					235									

CHECKED BY *SS*

SOIL PROFILE			SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE		LIQUID LIMIT ——— w_L PLASTIC LIMIT ——— w_p WATER CONTENT ——— w		BULK DENSITY γ P.C.F.	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS / FOOT		20 40 60 80 100	SHEAR STRENGTH P.S.F.	WATER CONTENT % w_p ——— w ——— w_L			
251.2	Ground level.											
0.0	Probably fill.					250						
						245						
239.9						240						
11.3	End of cone test. Probable bedrock					235						

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 _u	UNCONFINED COMPRESSION	L.V.	LABORATORY VANE
Q	UNDRAINED TRIAXIAL	F.V.	FIELD VANE
Q _{cu}	CONSOLIDATED UNDRAINED TRIAXIAL	C	CONSOLIDATION
Q _d	DRAINED TRIAXIAL	S	SENSITIVITY

ABBREVIATIONS USED IN THIS REPORT

SOIL PROPERTIES

γ	UNIT WEIGHT OF SOIL (BULK DENSITY)
γ_s	UNIT WEIGHT OF SOLID PARTICLES
γ_w	UNIT WEIGHT OF WATER
γ_d	UNIT DRY WEIGHT OF SOIL (DRY DENSITY)
γ'	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
τ_f	SHEAR STRENGTH
c'	EFFECTIVE COHESION
ϕ'	EFFECTIVE ANGLE OF SHEARING RESISTANCE, OR FRICTION
c_u	APPARENT COHESION
ϕ_u	APPARENT ANGLE OF SHEARING RESISTANCE, OR FRICTION
μ	COEFFICIENT OF FRICTION
S_t	SENSITIVITY

GENERAL

π	$= 3.1416$
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
σ	NORMAL STRESS
σ'	NORMAL EFFECTIVE STRESS ($\bar{\sigma}$ IS ALSO USED)
τ	SHEAR STRESS
ϵ	LINEAR STRAIN
γ	SHEAR STRAIN
ν	POISSON'S RATIO (μ IS ALSO USED)
E	MODULUS OF LINEAR DEFORMATION (YOUNG'S MODULUS)
G	MODULUS OF SHEAR DEFORMATION
K	MODULUS OF COMPRESSIBILITY
η	COEFFICIENT OF VISCOSITY

EARTH PRESSURE

d	DISTANCE FROM TOP OF WALL TO POINT OF APPLICATION OF PRESSURE
δ	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

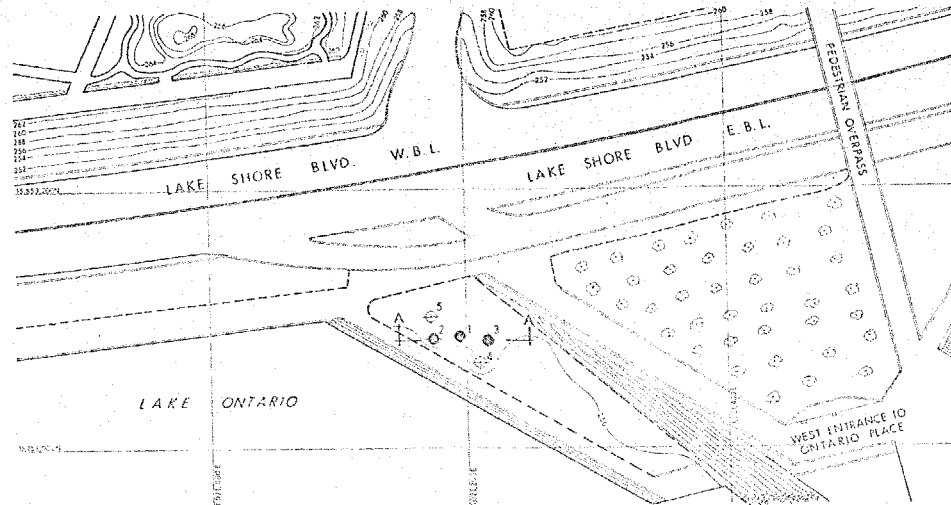
B	BREADTH OF FOUNDATION
L	LENGTH OF FOUNDATION
D	DEPTH OF FOUNDATION BENEATH GROUND
N	DIMENSIONLESS COEFFICIENT USED WITH A SUFFIX APPLYING TO SPECIFIC GRAVITY, DEPTH AND COHESION ETC. IN THE FORMULA FOR BEARING CAPACITY
k_s	MODULUS OF SUBGRADE REACTION

SLOPES

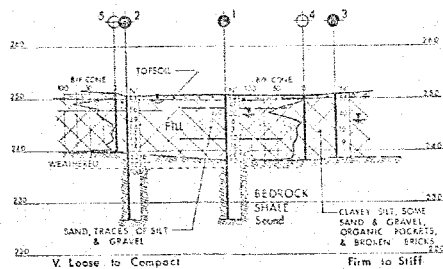
H	VERTICAL HEIGHT OF SLOPE
D	DEPTH BELOW TOE OF SLOPE TO HARD STRATUM
β	ANGLE OF SLOPE TO HORIZONTAL



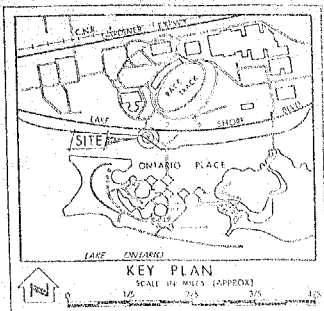
CITY OF TORONTO



PLAN
1" = 40' SCALE



SECTION A-A
1" = 10' SCALE



LEGEND

- Bore Hole
- ⊕ Cone Penetration Test
- Bore Hole & Cone Test
- Water Levels established at time of field investigation - 10 MAY 1977

NO.	ELEVATION	U.T.M. COORDINATES	
		EASTING	NORTH
1	250.8	15,853,283	1,020,194
2	250.5	15,853,283	1,021,173
3	250.9	15,853,282	1,021,215
4	250.6	15,853,265	1,021,207
5	251.2	15,853,266	1,021,170

NOTE

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

DATE	
BY	
FOR	
FILE NO.	



MINISTRY OF TRANSPORTATION & COMMUNICATIONS
CUSTOM SERVICES BRANCH - REGISTRATION UNIT

RELOCATION OF LION HEAD MONUMENT

HIGHWAY NO. LAKE SHORE BLVD. DIST. NO. 6
ONTARIO PLACE METRO TORONTO
LOT 101

BORE HOLE LOCATIONS & SOIL STRATA

DESIGNED BY: [Signature] DRAWN BY: [Signature]
CHECKED BY: [Signature] DATE: 23 MAY 1977
PROJECT NO. 72-11059
SHEET NO. 1 OF 1