

61-30 SEPT 1971

GEOCREP No. 40 P1-55

DIST. 4 REGION CENTRAL

W.P. No. 158-60-00

CONT. No. 75-130

W.O. No. 71-11110

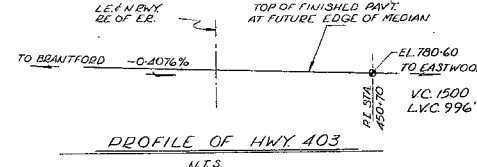
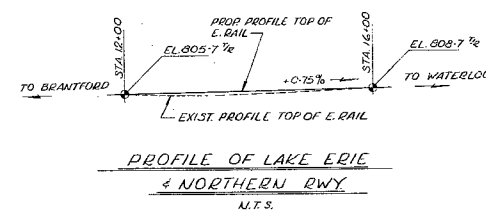
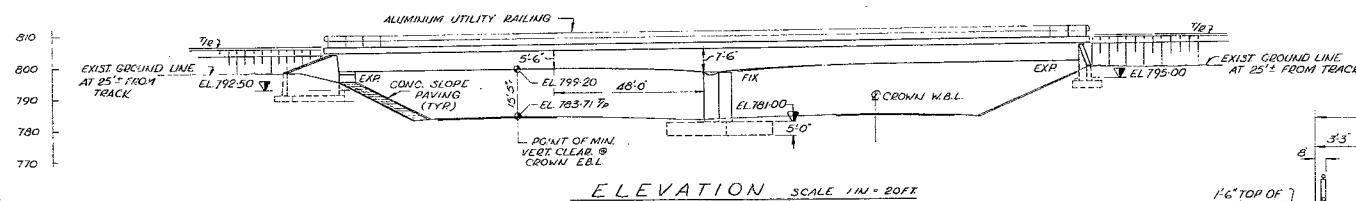
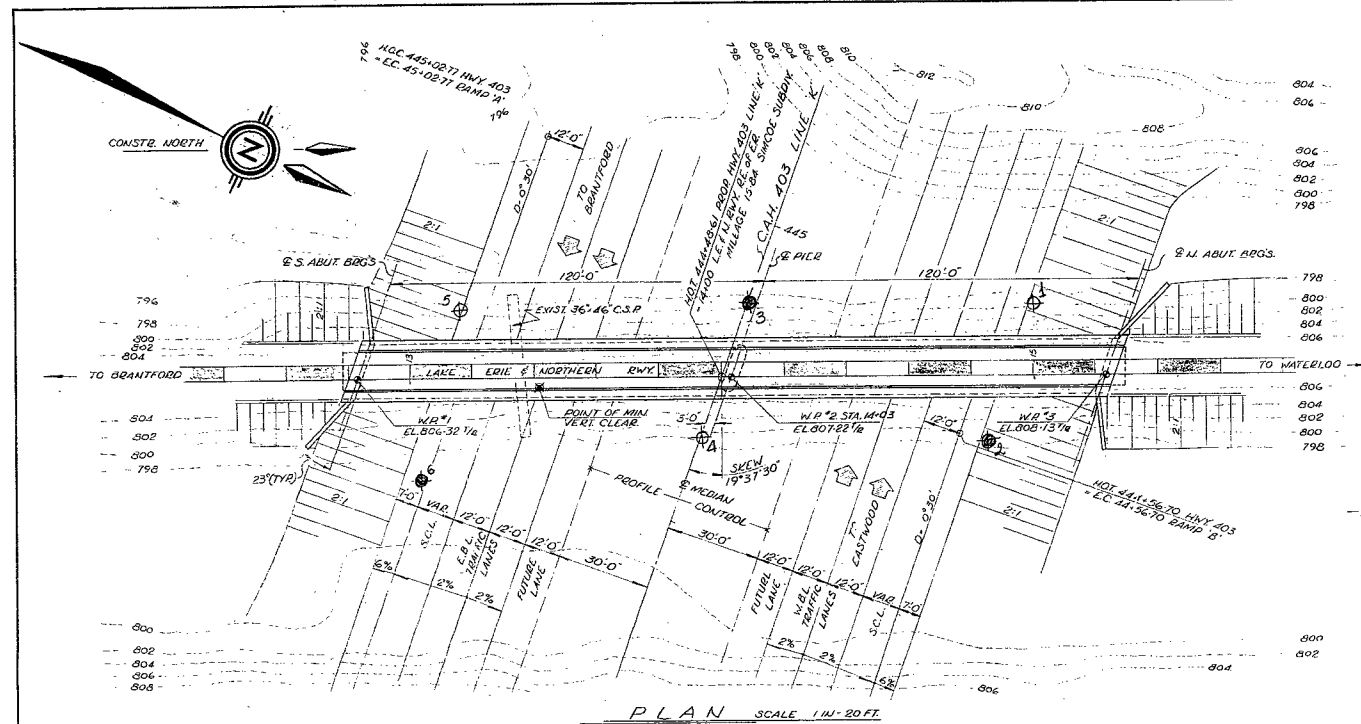
STR. SITE No. 1-158

HWY. No. 403

LOCATION L.E. N.E. Railway Subway
at Hwy 403

OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT. 2

REMARKS: 2 documents to be unfolded before
microfilming

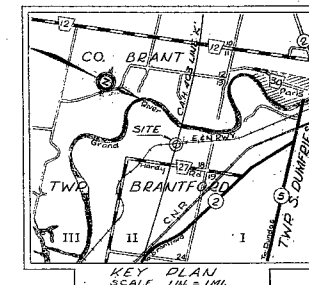
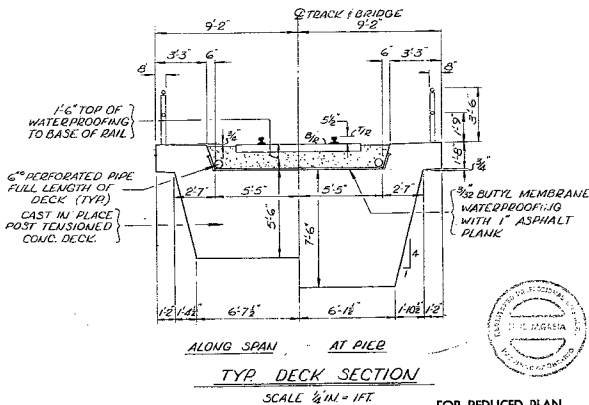


FUNCTIONS OF SKEW ANGLE
 $19^{\circ}37'30''$
 $\sin = 0.3358625$
 $\cos = 0.9419110$
 $\tan = 0.3565757$

- LIST OF DRAWINGS**
1. GENERAL LAYOUT
 2. BORE HOLE LOCATIONS & SOIL STRATA.
 3. FOUNDATION LAYOUT.
 4. FOOTING REINFORCING FOR ABUTMENTS & RET. WALLS.
 5. ABUTMENTS
 6. RETAINING WALLS
 7. PIER
 8. DECK DETAILS.
 9. CABLE DETAILS.
 10. DECK REINFORCING
 11. ALUMINUM UTILITY RAILING.
 12. DETAILS OF CONCRETE SLOPE PAVING.
 13. STANDARD DETAILS.

NOTE
 W.P. DENOTES WORKING POINT
 7/16" TOP OF FINISHED R.W.Y.
 7/16" TOP OF RAIL

CONCRETE QUANTITIES
 CONCRETE QUANTITIES ARE LISTED BELOW FOR THE APPROPRIATE CONCRETE LUMP SUM TENDER ITEMS
 CONCRETE IN PIER, ABUTMENTS & RETAINING WALLS
 PRESTRESSED CONCRETE
 BRIDGE DECK
 CONCRETE IN SLOPE PAVING



GENERAL NOTES

CLASS OF CONCRETE
 DECK AND PIER SHAFT - 5000 P.S.I.
 ABUTMENTS & PIER FTG. - 4000 P.S.I.
 REMAINDER - 3000 P.S.I.

LOADING
 COOPERS E70 IMPACT 100L %
 L.D.

CLEAR COVER ON REINFORCING STEEL
 ABUTTS, FOOTINGS & RET. WALLS - 3"
 PIER'S - 2"
 TOP OF DECK CURBS - 2"
 BOTTOM OF DECK - 1 1/2"

CONSTRUCTION NOTES
 THE CONTRACTOR IS RESPONSIBLE FOR FINISHING THE BEARING SEATS TO THE SPECIFIED ELEVATIONS WITH A TOLERANCE OF 1/8"

B.M. 801-88 GEODETIC DATUM

N.E.W. IN W. 800' 1/2" HICKORY
 325' LT. 449+53 LINE 'K'

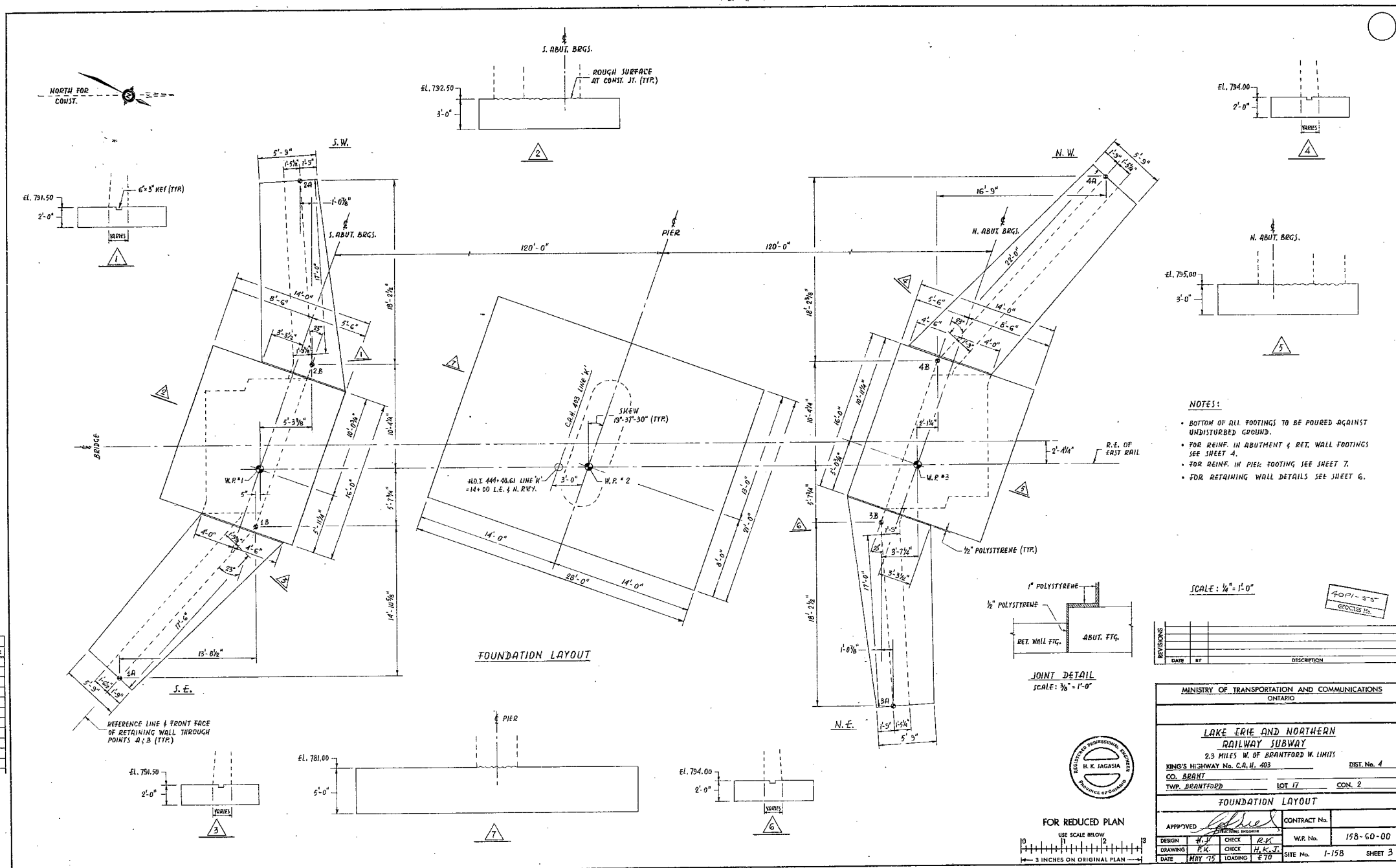
REVISIONS	DATE	BY	DESCRIPTION

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS
 ONTARIO

LAKE ERIE AND NORTHERN RAILWAY SUBWAY
 23 MILES W. OF BRANTFORD W. LIMITS
 KING'S HIGHWAY No. 403 DIST. No. 4
 CO. BRANT
 TWP. BRANTFORD LOT 17 CON. 2

GENERAL LAYOUT

APPROVED	DESIGN	CHECK	DATE	CONTRACT No.	W.P. No.	SITE No.	SHEET
				158-60-00		1-158	1



DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

MEMORANDUM

TO: Mr. G. C. E. Burkhardt, (2) FROM: Foundations Office,
Regional Bridge Planning Eng., Design Services Branch,
Central Region, Central Bldg., Downsview.
90 Floral Pkwy., Downsview.

ATTENTION: DATE: February 22, 1972.

OUR FILE REF.

IN REPLY TO

MAR 17 1972

SUBJECT:

FOUNDATION INVESTIGATION REPORT

For

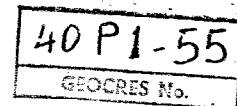
The Proposed L.E. & N.E. Railway Subway

Of Hwy. #403, Line 'K'

2.2 ³ Mi. West of Brantford West Limits Hwy. 2
District #4 (Hamilton)

W.O. 71-11110 -- W.P. 158-60-00

CONT. 75-132



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.

cc: Messrs. D. W. Farren

B. R. Davis

A. Rutka

G. K. Hunter

C. R. Robertson

B. J. Giroux

T. J. Kovich

G. A. Wrong

B. A. Singh

A. G. Stermac
A. G. Stermac,
PRINCIPAL FOUNDATION ENGINEER.

Foundations Files
Documents

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 5. MISCELLANEOUS.
-

FOUNDATION INVESTIGATION REPORT
For
The Proposed L.E. & N.E. Railway Subway
Of Hwy. # 403, Line "K"
2.2³ Mi. West of ~~Brantford West Limits~~ Hwy. 2
District # 4 (Hamilton.)
W.O. 71-11110 W.P. 158-60-00

1. INTRODUCTION:

A foundation investigation was requested at the site of the proposed L.E. & N.E. Railway Subway of Hwy. # 403 Line "K", by Mr. A. P. Watt, Regional Bridge Planning Engineer, Southwestern Region. The request was dated September 23, 1971. A previous foundation investigation was already carried out in 1965 for the proposed crossing of Line "H" some 400 ft. south of the present proposal. Since no boreholes had been placed anywhere near the present crossing of line "K" it was decided that a new investigation be carried out. Presented in this report are the results of this investigation together with recommendations concerning foundations.

2. DESCRIPTION OF THE SITE. FIELD AND LABORATORY INVESTIGATIONS:

At the proposed crossing the L.E. & N.E. railway line runs on a fill of 8 - 9 ft. height. The vicinity of the site is moderately undulating, occupied by pastures, cultivated farmlands, some woods and several gravel pits. Geologically the area belongs to the physiographic region known as the Horseshoe moraines. This eastern arm of the horseshoe is more hilly and stony than the rest and the drift contains much less clay and more gravel and sand. The terraces are important sources of gravel. Some three boreholes

and three dynamic cone penetration tests were carried out during the field investigation. Holes were staked out and surveyed in the field by personnel of the Engineering Survey Office of the south-western region. Boreholes could not be placed at the locations of the proposed footings on account of the existing railway embankment, thus they were placed at the toe of the fill. Borings were advanced by means of a hollow stem auger (C.M.E.) and soil sampling was implemented by split-spoons. Standard penetration tests were carried out with every sample and penetration resistances (N = blows per foot,) recorded on the borehole sheets, together with the results of the laboratory tests.

All the soil samples were visually examined and classified in the field and again upon arrival in the laboratory. Representative samples were subjected to laboratory tests of natural moisture contents and grain-size analysis, in order to further identify soil specimens.

The locations and elevations of the bore and dynamic cone penetration holes are marked on Drawing #71-11110A in the Appendix, as well as the estimated soil profile projected to the centre line of the railway.

3. SUBSOIL CONDITIONS:

Fairly uniform soil conditions were found in the boreholes, consisting of gravelly sands to sandy gravels with occasional silt and traces of clay. Within a shallow surficial layer the relative densities of the soil were noted to be loose,

beneath which very dense relative density was recorded throughout the investigated depth. Below elevation 790 ft. all the Standard Penetration tests yielded "N" values of 100 blows for less than one foot penetration. Several grain-size analyses were performed in the laboratory. The tests resulted in gravel size particles ranging from 3% to 61%, sands from 37% to 86% and silts and clays from 2% to 12%. The upper 30 ft. of the material was found to be quite dry, natural moisture contents being around 2% - 8% by dry weight. Groundwater levels were established at approximate elevation 767 ft. - 768 ft. at every borehole.

4. DISCUSSION AND RECOMMENDATIONS:

4.1) General:

Hwy. # 403 is proposed to cross the L.E. & N.E. railway line with a two-span subway structure. It is understood that close type abutments will be constructed and the finished grade of Hwy. # 403 will be roughly at elevation 785 feet.

Subsoil at the proposed crossing consists of gravelly sands to sandy gravels with some silt and traces of clay, having very dense relative densities. The groundwater level lies around elevation 767 ft. - 768 ft., well below the design grade of Hwy. #403.

4.2) Foundations:

The very dense granular subsoil is a competent load bearing stratum, thus spread footings are recommended for the pier as well as for the abutments. It is estimated that footings placed at some four feet below finished ground will support safe

design loads up to 5 T.S.F. Settlements not exceeding 1" are anticipated under the footings placed at or below the suggested elevations.

4.3) Excavations:

The railway is planned to be detoured westward during construction of the structure. Excavations for the footings will extend some 25 ft. below the railway grade, assuming that the grade of the detour would be similar to the existing one, (elevation 806 ft.)

The vibration caused by the passing trains might have a detrimental effect on the sand slopes adjacent to the tracks. Little scientific data is available concerning designs of slopes in sand subjected to vibrations. On account of the very dense nature of the soils, excavations within the original deposits will stay temporarily stable with one horizontal to one vertical slopes, as suggested by the designer. The temporary 8 - 9 ft. high railway detour fill, however, should be built with two horizontal to one vertical slopes. By adopting the two horizontal to one vertical slopes for the fill, a distance of approximately 20 feet will be provided between the railway tracks and the upper edge of the cut excavation, which is believed to be necessary to prevent failure of the slopes caused by vibrations (see Fig. # 1.)

4.4) Supplementary Comments:

(a) Close type abutments should be designed as retaining walls and checked for horizontal sliding along the footing base.

The ratio between the resisting forces and the horizontal component of earth pressure should not be less than 1.5. The resistance against sliding can be calculated by using a coefficient of friction of $\tan \phi = 0.55$ (concrete sliding on coarse grained soil.)

(b) No dewatering problems are anticipated in the excavations, since the water level is well below the footing bases. It is assumed that the excavations will be carried out in the dry. (c) No stability problems are foreseen for the permanent cuts, provided that they are constructed with two horizontal to one vertical slopes.

5. MISCELLANEOUS:

The fieldwork carried out January 26th - 27th, 1972 was supervised by Mr. P. Korgemagi, Project Foundation Engineer. Equipment was owned and operated by P.V.K. Drilling Company, Burford, Ontario. This report was written by Mr. A.K. Barsvary, Senior Foundation Engineer and reviewed by Mr. K.G. Selby, Supervising Foundation Engineer.

A. K. Barsvary
A.K. Barsvary, P. Eng.

K. G. Selby
K.G. Selby, P. Eng.



APPENDIX I

DEPARTMENT OF HIGHWAYS- ONTARIO
MATERIALS & TESTING OFFICE

RECORD OF BOREHOLE No. 2

FOUNDATION SECTION

JOB 71-11110

LOCATION Sta. 444. + 59 86' Rt.

ORIGINATED BY PK

W.P. 158-60-00

BORING DATE Jan. 26, 1972 & 27 Jan/72

COMPILED BY PK

DATUM Geodetic

BOREHOLE TYPE Hollow Stem 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 %					
												w_p ——— w ——— w_L 10 20 30					
							○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL x LAB. VANE										
800.5	Ground Level					800											
0.0	Sandy gravel to gravelly sand, some silt, traces of clay. Loose to Very Dense		1	SS	6											0 52 34 14	
			2	SS	38												28 47 17 8
			3	SS	100	3 1/2"											
			4	SS	100	9"											56 40 (4)
			5	SS	100	5"	780										48 47 (5)
			6	SS	100	5"											
			7	SS	100	1 1/2"											
			8	SS	100	8"											
			9	SS	100	6 1/2"											28 68 (4)
			10	SS	100	1 1/2"											
762.7			Brown		11	SS	100	3"									
37.8	End of Borehole					760											

FOUNDATION SECTION

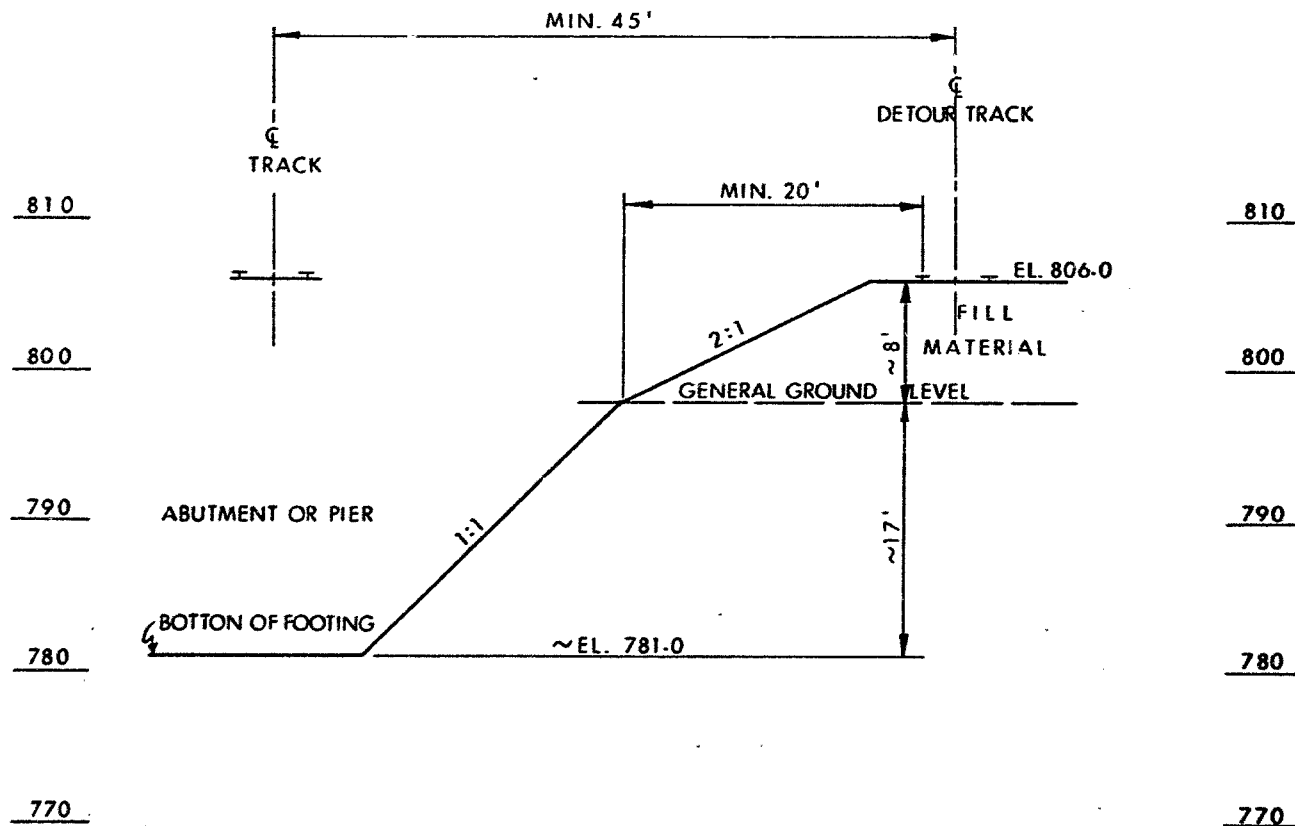
CHECKED BY

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FOUNDATION SECTION

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SUGGESTED EXCAVATIONS FOR FOOTINGS
JOB NO. 71-11110

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 _{cv}	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 INTERCEPT
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_i	SENSITIVITY

GENERAL

π	= 3.1416
e	BASE OF NATURAL LOGARITHMS 2.7183
$\log_e \sigma$ OR $\ln \sigma$	NATURAL LOGARITHM OF σ
$\log_{10} \sigma$ OR $\log \sigma$	LOGARITHM OF σ 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

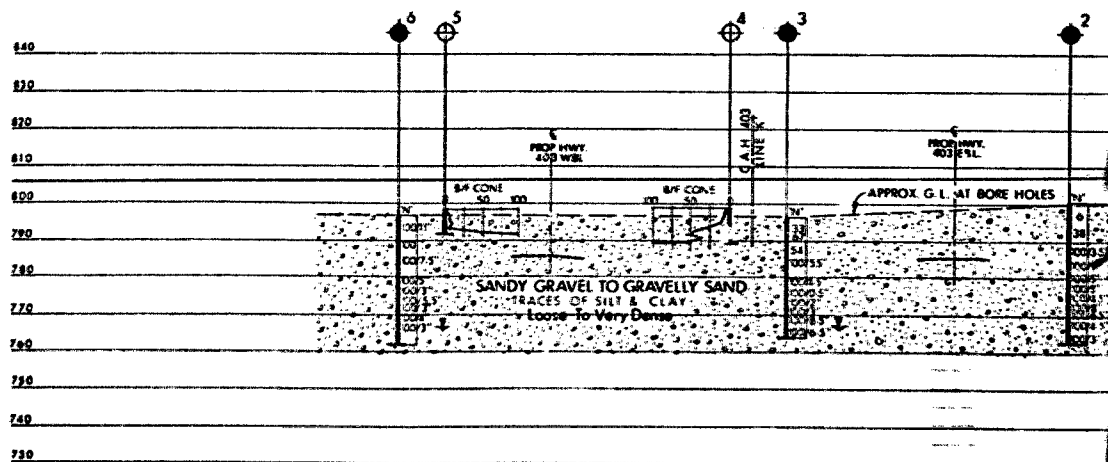
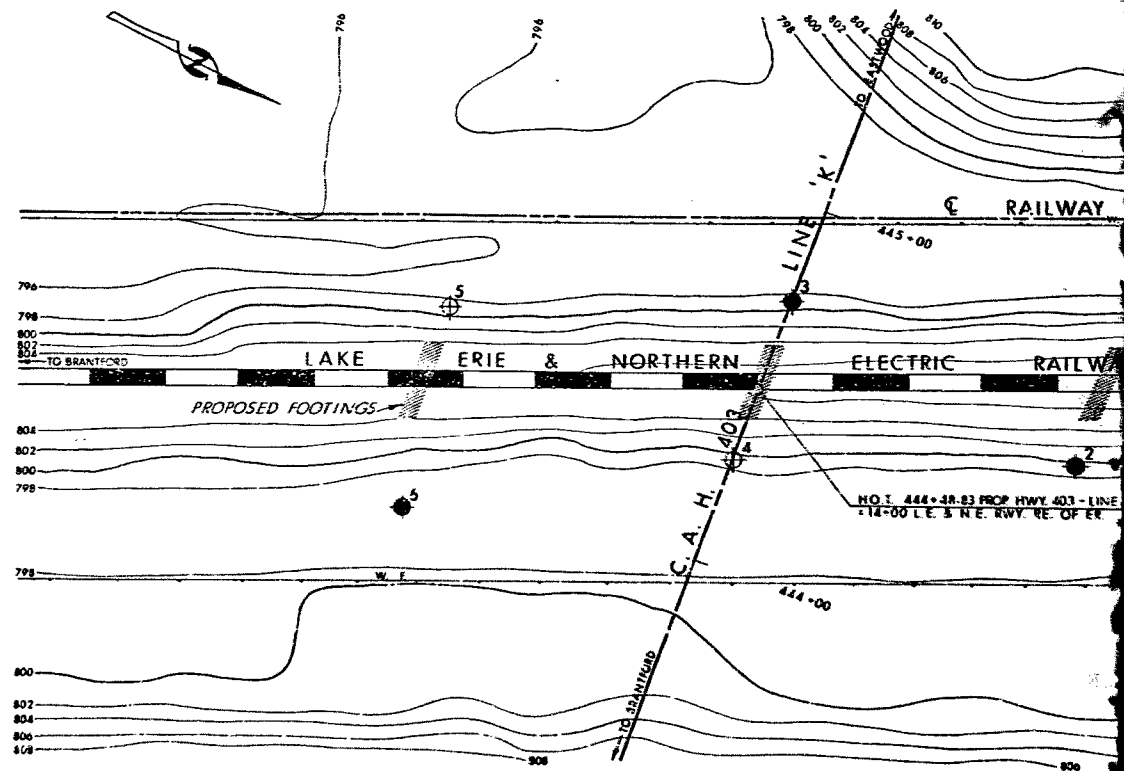
d	DISTANCE FROM TOP OF WALL TO POINT OF APPLICATION OF PRESSURE
δ	ANGLE OF WALL FRICTION
K	DIMENSIONLESS COEFFICIENT TO BE USED WITH VARIOUS SUFFIXES IN EXPRESSIONS REFERRING TO NORMAL STRESS ON WALLS
K_0	COEFFICIENT OF EARTH PRESSURE AT REST

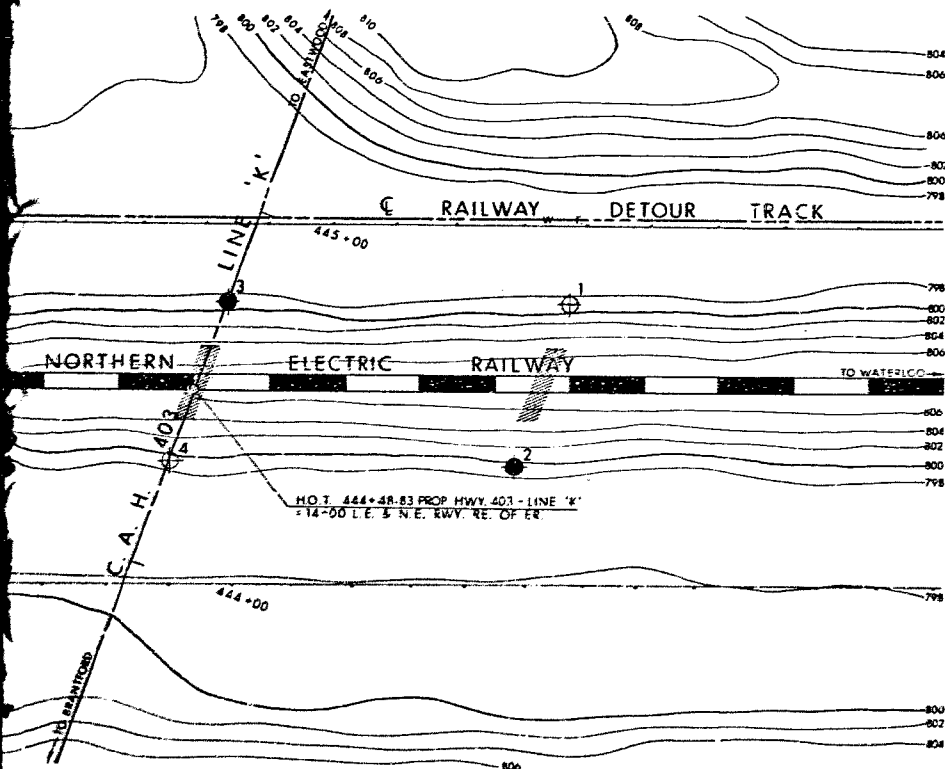
FOUNDATIONS

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

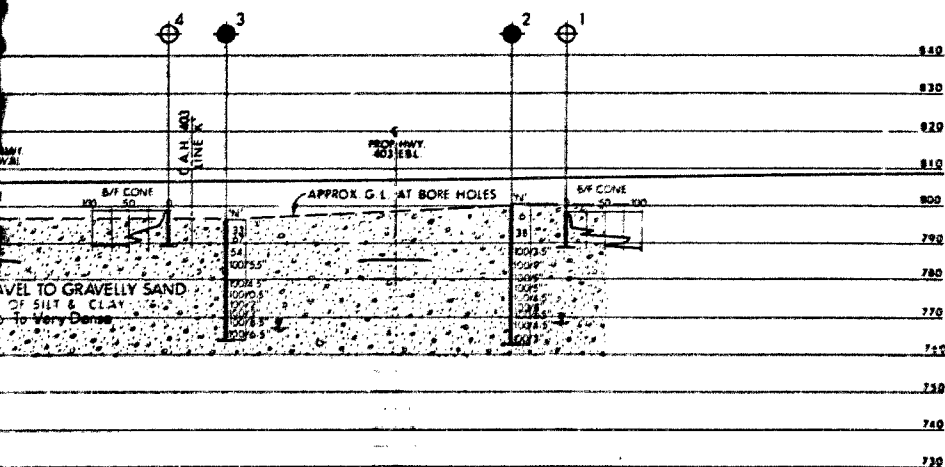
SLOPES

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

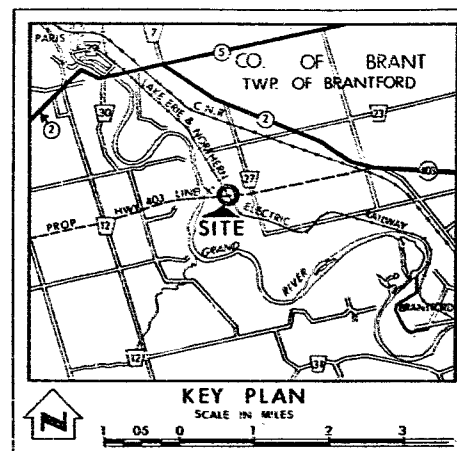




PLAN
SCALE 0 20 40 FT



PROFILE
SCALE 0 20 40 FT



LEGEND

- Bore Hole
- ⊕ Cone Penetration Test
- ⊕ Bore Hole & Cone Test
- ⊕ Water Levels established at time of field investigation JAN 1972

NO	ELEVATION	STATION	OFFSET
1	798.3	445+05	86'RT
2	800.5	444+59	86'RT
3	796.4	444+75	€
4	799.0	444+29	€
5	798.3	444+41	86'LT
6	797.0	443+86	79'LT

— 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.

REVISION	DATE	BY	DESCRIPTION

DEPARTMENT OF TRANSPORTATION & COMMUNICATIONS
DESIGN SERVICES BRANCH — FOUNDATION OFFICE

LAKE ERIE & NORTHERN ELECTRIC RWY.

HIGHWAY NO. C.A.H. 403 LINE 'K' DIST. NO. 4
CO. BRANT
TWP. BRANTFORD LOT 17 CON. 2

BORE HOLE LOCATIONS & SOIL STRATA

SUBNO. P.K. <u>CHECKED</u>	W.P. NO. <u>158-00-00</u>	DRAWING NO. <u>71-11110A</u>
DRAWN BY <u>CHECKED</u>	JOB NO. <u>71-11110</u>	PROG. DRAWING NO.
DATE <u>MARCH 3, 1972</u>	SITE NO.	
APPROVED <u>[Signature]</u>	DATE NO.	

REF NO. E-4863-1

MEMORANDUM

71-11110

To: Mr. J. E. Starnac,
Technical Foundation Engineer,
Engineering Services Branch,
West Side, DOLMVILLE, Ontario.

FROM: Bridge Planning,
Southwestern Region,
London, Ontario.

ATTENTION:

DATE: September 23, 1971.

OUR FILE REF.

IN REPLY TO

SUBJECT: E.P. 158-60-00, Bridge Site 1-158
L.E. & N.E. Railway Subway
2.2 miles west of Brantford west limits
Hwy. 403
District 4, Hamilton

Would you kindly arrange to have a foundation investigation conducted at the above location.

I have enclosed two copies of the bridge site plan E-4863-1 with the probable footing locations marked in red. In blue I have indicated the proposed Centre Line of the detour track and in pencil the track protection criteria used.

In addition to the foundation report, may we also have your comments on the railway detour track protection.

I have also enclosed the Field Reconnaissance Report.

I would like to bring to your attention that a foundation investigation has been undertaken for the L.E. & N.E. Railway on Line 'H' approximately 400 feet south of Line 'K' and a report issued on August 23, 1965 (05-F-12).



S. Jants,
Bridge Planning Technician

BJ/fs
Encls.

For: A. P. Latt,
Regional Bridge Planning Engineer,
Southwestern Region.

cc: Mr. C. Grebski
Mr. A. Crowley

~~JAN 12/72~~

MAR 22/72

- NEW INVESTIGATION REQUIRED

DP

Design Services Branch,
Downsview, Ontario.
January 7, 1972.

Telephone: 248-3282.

Mr. S. W. McCurry,
Superintendent,
Lake Erie and Northern Electric Railway,
101 King St.,
Preston, Ontario.

Dear Sir: Re: Hwy. 403 Bridge Over the
 L.E. & N.E. Tracks

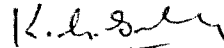
71-11-110

This is to confirm the telephone request with your representative for permission to enter the L.E. & N.E. property at the location of the proposed Hwy. 403 bridge over the L.E. & N.E. tracks between Paris and Brantford. Our purpose in entering the L.E. & N.E. property is to carry out a soils investigation by means of boreholes. As was discussed, arrangements for your flagman will be made at the site meeting next week with your representative.

Attached please find a purchase order (P 06589) for charging of the flagman.

Your cooperation in this matter will be greatly appreciated.

Yours very truly,



KGS/ao
Attach.

K. G. Selby,
SUPERVISING FOUNDATION ENGINEER.

cc: Foundations Files ✓
Documents



Memorandum

To: Mr. C. Mirza,
Head, Soils Mechanics Office,
West Building, Downsview.

From: Structural Office
West Building, Downsview.

Attention:

Date: May 14, 1975.

Our File Ref.

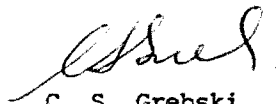
In Reply to

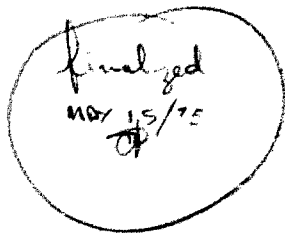
Subject:

Lake Erie & Northern Railway Subway
W.P. # 158-60-00 Site # 1-158
Highway # 403 District #4

Attached herewith we are submitting the final bridge
drawings which show the foundation design for this structure.
Kindly give us your comments at your earliest convenience.

CSG/cf
Atch.


C. S. Grebski,
Structural Design Engineer.



NO COMMENTS

PP
MAY 23/75



Mr. C. S. Grebski
Structural Design Engineer
Structural Office
West Building

Soil Mechanics Section
Geotechnical Office
West Building

May 23, 1975

W.P. 158-60-00

LAKE ERIE & NORTHERN RAILWAY SUBWAY
Site 1-158, Hwy. 403
District 4 (Hamilton)
W.P. 158-60-00

We have reviewed the final bridge drawings (sheet 1 & 3) for the above structure. The designer appears to follow the recommendations contained in our Foundation Report (W.O. 71-11110).

We have no further comments.

P. PAYER
Senior Engineer

for: K. G. SELBY
Supervising Engineer

c.c. Files
Record Services

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS, ONTARIO

Copy for the information of Mr. K. Selby

~~Mr. C. W. Pritchard~~
Area Manager
Reg'l Planning & Design Office
Southwestern Region
Mr. E. Stevenson
Project Manager

Structural Planning Office
Southwestern Region

June 11, 1975

W.P. 158-60-00, Bridge Site 1-158
Lake Erie and Northern Railway Subway
2.3 miles west of Brantford west limits
Highway 403
District 4, Hamilton

Further to our discussion regarding the 27"Ø concrete pipe near the pier footing for the above structure, I wish to advise that the Soil Mechanics Section has recommended that this pipe be placed before the pier footing and the trench for the pipe be braced for a distance of approximately 12' each way from the centreline of the pier. The distance from centreline of pipe to edge of footing shall be 18' (see attached sketch). The trench shall be backfilled immediately after the pipe is placed. This procedure shall be covered in the special provisions.

The area over the exposed pier footing shall be false graded to provide 6" to 1' cover.

S. Jants

S. Jants
Structural Planning Supervisor

SJ:sm
Enc.

cc K. Bassi
K. Selby

