

DOCUMENT MICROFILMING IDENTIFICATION

GEOCRES No. 41J-30

DIST. 18 REGION NORTHWESTERN

W.P. No. 14-74-05

CONT. No. 77-107

W. O. No. _____

STR. SITE No. 38 5-9

HWY. No. 129

LOCATION STONEY CK BRIDGE

OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT. 1

REMARKS: @documents to be unfolded before
microfilmed

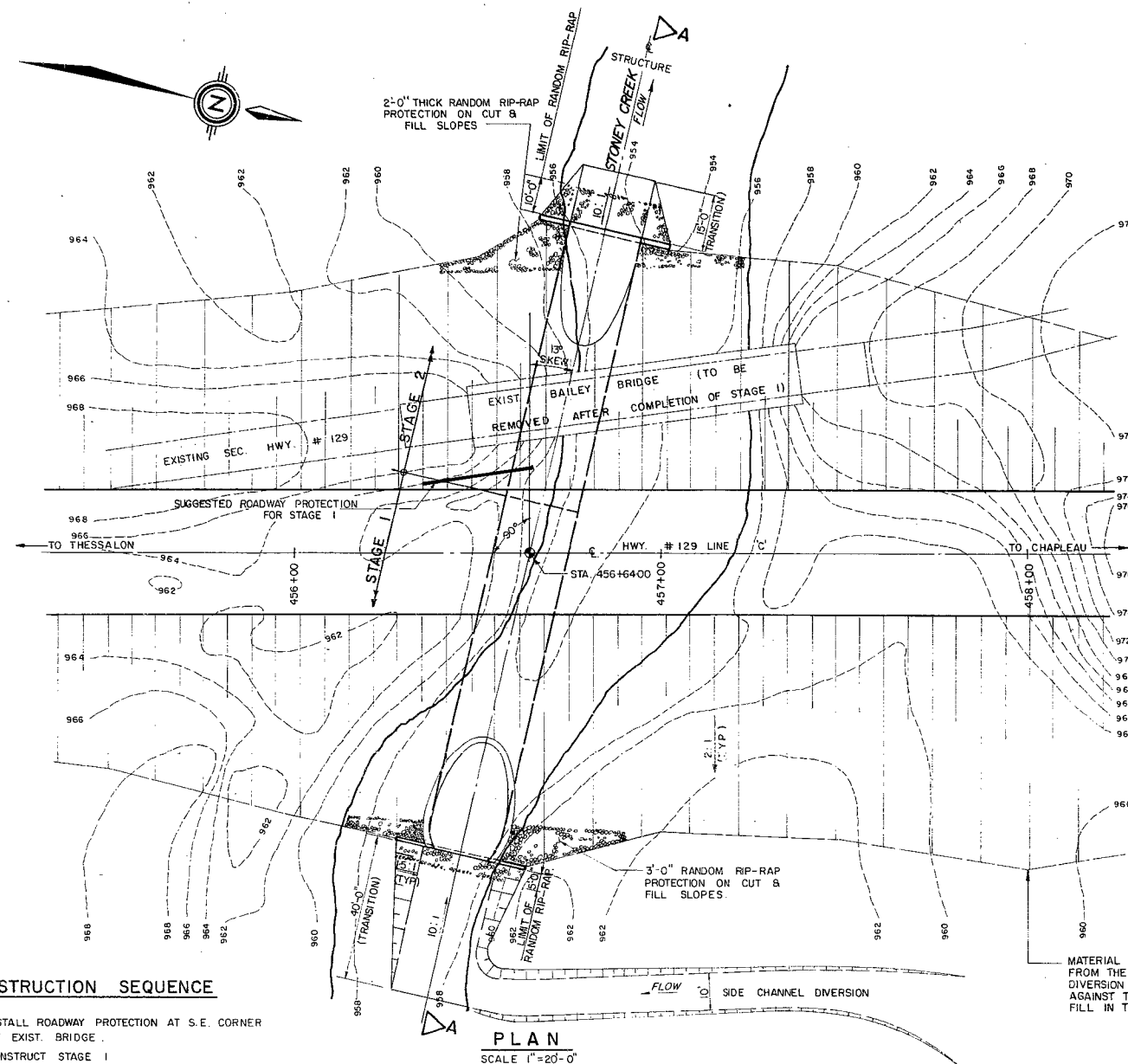
CONT No
WP No. 14-74-05

STONEY CREEK STRUCTURE
GENERAL LAYOUT
KING'S HIGHWAY #129 DIST. N° 18

SHEET

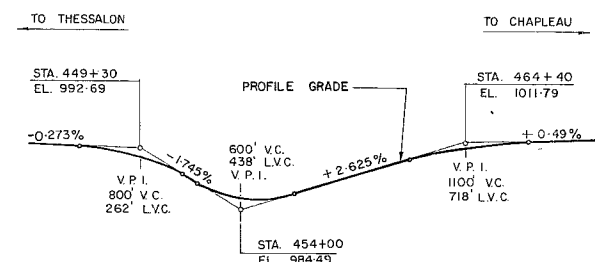
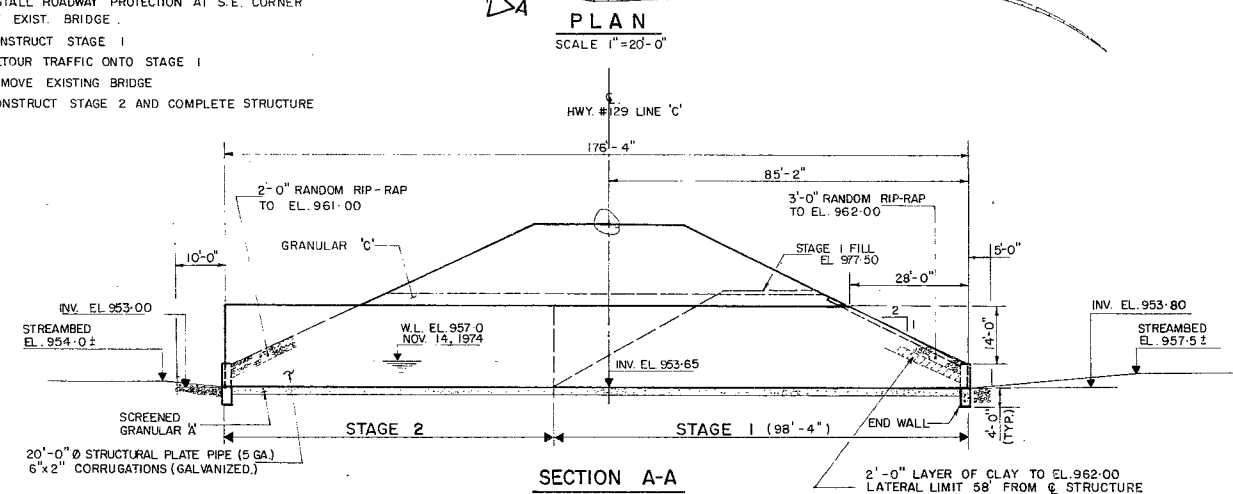
totten sims hubicki associates limited
CONSULTANTS

(17 MILES NORTH OF ST. HENRY)



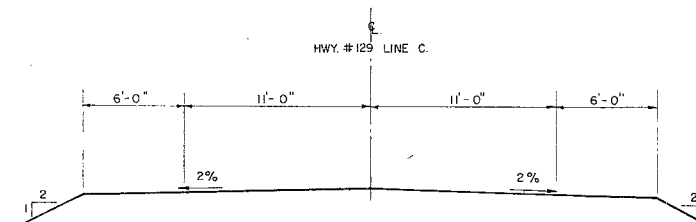
CONSTRUCTION SEQUENCE

- 1 - INSTALL ROADWAY PROTECTION AT S.E. CORNER OF EXIST. BRIDGE.
- 2 - CONSTRUCT STAGE 1
- 3 - DETOUR TRAFFIC ONTO STAGE 1
- 4 - REMOVE EXISTING BRIDGE
- 5 - CONSTRUCT STAGE 2 AND COMPLETE STRUCTURE



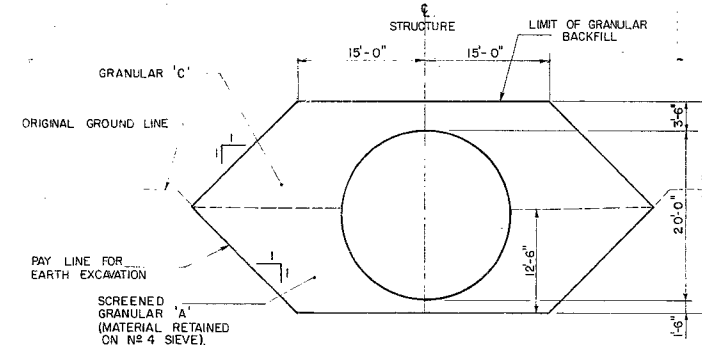
PROFILE OF HWY. #129 LINE 'C'

N.T.S.



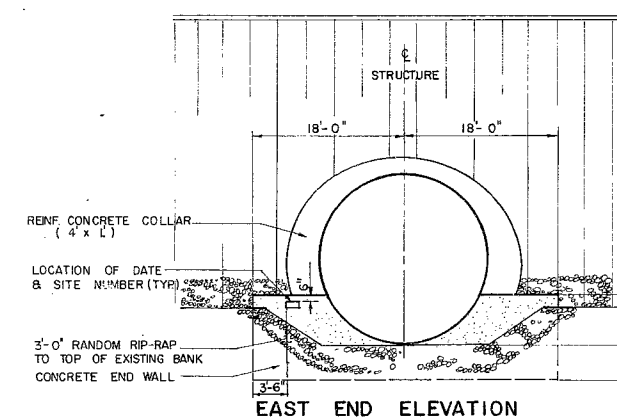
TYPICAL CROSS SECTION OF HWY. #129 LINE 'C'

N.T.S.



GRANULAR BACKFILL DETAILS

SCALE 1" = 10'-0"



GENERAL NOTES

- CLASS OF CONCRETE 3000 P.S.I.
- CLEAR COVER ON REINF. STEEL 3"
- PRIOR TO ALLOWING HEAVY CONSTRUCTION EQUIPMENT OVER THE STRUCTURE, THE DEPTH OF COVER MATERIAL MUST BE A MINIMUM OF 4 FT. COMPACTED AS SPECIFIED.

LIST OF DRAWINGS

- 385-9-1 GENERAL LAYOUT
- 2 BOREHOLE LOCATIONS & SOIL STRATA.
- 3 STAGE 1 & ROADWAY PROTECTION.
- 4 END WALL DETAILS.

CONCRETE QUANTITIES

- CONCRETE QUANTITIES ARE LISTED BELOW FOR APPROPRIATE LUMP SUM TENDER ITEMS:
- CONCRETE IN END WALLS AND CONCRETE COLLAR 25 cu. yd. tremie concrete.
 - CONCRETE IN END WALLS AND CONCRETE COLLAR 19 cu. yd. 3,000 p.s.i.

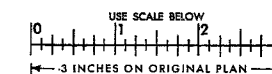
B.M. 961.31

- GEODETIC DATUM -

N.B.W. IN ROOT OF 1'-0" PINE
137' LT. OF STA. 455+99

415-30
GEOCRES No.

FOR REDUCED PLAN



REVISIONS	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGN BY: CHECK G.L.A. LOADING HS20-44 DATE JAN. 76
DRAWING J.C. CHECK G.L.A. SITE No. 385-9 DWG 1





DOMINION SOIL INVESTIGATION LIMITED

CONSULTING SOIL & FOUNDATION ENGINEERS

10 CROCKFORD BLVD., SCARBOROUGH, ONT. M1R 3C6 (416) 751-6565

m.b

May 28, 1975

Ref.Nos. 75-3-12, 75-3-13, 75-3-14

Mr. A. Rutka, P.Eng.,
Manager
Geotechnical Office
Ministry of Transportation & Communications
West Building
1201 Wilson Avenue
Downsview, Ontario

Attention: M. M. Devata, P.Eng.
Supervising Engineer

Dear Sirs:

Re: Foundation Investigations Proposed Bridges:
Snowshoe Creek - Hwy #129 - WP# 14-74-04
Stoney Creek - Hwy #129 - WP# 14-74-05
La Foe Creek - Hwy #129 - WP# 14-74-06


Under cover of this letter we are pleased to forward to you 15 copies each of our report on projects W.P. 14-74-04 and W.P. 14-74-05.

Due to unexpected and extreme difficulties encountered in advancing the boreholes at all three sites the field work was completed much later than expected and therefore we were unable to complete our report on the last site at La Foe Creek. We expect however that the report on your project W.P. 14-74-06 will be completed by Monday, June 2, 1975.

We apologize for any inconvenience we might have caused you by this delay.

Yours very truly,

DOMINION SOIL INVESTIGATION LIMITED


I.P. Lieszkowsky, P.Eng.

IPL:eh
Encls.



Memorandum

To: Mr. B.J. McKenna (2)
Reg. Structural Planning Engineer
Northwestern Region
Thunder Bay

From: Soil Mechanics Section
Geotechnical Office
West Building, Downsview

Attention:

Date: May 30, 1975

Our File Ref.

In Reply to

JUN 02 1975

Subject:

FOUNDATION INVESTIGATION REPORT

Stoney Creek Structure (17.0 miles N. of Sec. Hwy. 554), Hwy. 129
Site No. 38S-9, W.P. 14-74-05
Dist. #18 (Sault Ste. Marie)

Attached please find your copy of the Foundation Investigation Report carried out for the above mentioned structure site on our behalf by Dominion Soil Investigation Ltd., Consulting Soil and Foundation Engineers.

We have reviewed this report and consider its contents in general to be adequate for your purposes. We would, however, like to draw your attention to the following:

- 1) Construction problems are envisaged for the pier foundation construction and a positive dewatering scheme will be essential.
- 2) If steel 'H' piles are used for the perched abutment supports, then, the tips should be equipped with reinforced shoes to protect the piles from driving damage on boulders in the dense glacial till stratum.
- 3) Alternatively the entire structure may be supported on concrete caissons extended into the dense glacial till (cobbles, boulders with sand matrix) stratum. The same caissons may be continued to act as pier columns. Churn drilling technique will be necessary to advance the caissons to sufficient depth within the dense glacial till which contains boulders and cobbles.

We are forwarding a copy of this report to our Hydrology Section for their comments pertaining to hydrological requirements.

If you have any queries in connection with this project, please contact this Section.

M. Devata

M. Devata
Supervising Engineer

c.c. E.J. Orr
B.R. Davis
B.J. Giroux
G.A. Wrong
W.L. Lees
R. Morgenroth
G.E. French
R. Hore
J.D. Harris
J. Anderson) memo only
N.G. Maluzinsky)
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Record Services

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DOMINION SOIL INVESTIGATION LIMITED

CONSULTING SOIL & FOUNDATION ENGINEERS

104 CROCKFORD BLVD., SCARBOROUGH, ONT. M1R 3C8 (416) 751-6565 TELEX 06-963578 CABLES DOMSOIL

JUN 02 1975

41 J-30
GEOCRES No.

FOUNDATION INVESTIGATION REPORT FOR
PROPOSED BRIDGE REPLACEMENT
STONEY CREEK - HIGHWAY 129
WP 14-74-05

REF. NO. 74-3-13

MAY 1975

Prepared For:

Ministry of Transportation & Communications,
Downsview, Ontario

DISTRIBUTION:

15 copies - Ministry of Transportation & Communications

2 copies - Dominion Soil Investigation Limited

C O N T E N T S

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REF. NO. 75-3-13

Si

E N C L O S U R E S

Encl. No.

BOREHOLE LOCATION PLAN & SUBSURFACE PROFILE Dwg. 147405-A

BOREHOLE LOGS Encl. 1 to 6 incl.

GRAIN SIZE DISTRIBUTION CURVES Encl. 7 to 11 incl.

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1.0 INTRODUCTION

Dominion Soil Investigation Limited has been retained by The Ministry of Transportation & Communications, Ontario to carry out a soil investigation for a proposed bridge replacement on Highway #129 at Stoney Creek in the Township of Casson, Ontario. The authorization for this work was contained in a letter dated April 1, 1975 from Mr. A. Rutka, P. Eng., Manager Geotechnical Office.

At present, Highway #129 crosses Stoney Creek by means of a 90 ft. single span Bailey Bridge supported on crib foundations. The approaches to the bridge have been constructed on an embankment up to 10 ft. high.

The Ministry proposes to replace this bridge with a three span structure or, alternatively, with a large diameter corrugated steel pipe culvert. The location of the bridge or culvert will be approximately 40 ft. east of the existing bridge centre line and could also be to the south of the existing creek centre line if a proposed diversion is carried out. The approaches to the bridge are to be constructed on embankments which will be 25 to 35 ft. high.

The purpose of the investigation was to reveal the subsurface conditions and to determine the relevant soil properties for the design and construction of the bridge or culvert foundations and the approach embankments.

.../...

This report contains the factual data obtained from the investigation together with recommendations for the design and construction of the structures.

2.0 TOPOGRAPHY & GEOLOGY

Stoney Creek flows westwards for a distance of about 2 1/2 miles from Lake Frobee to the Mississagi River. The Stoney Creek water shed is approximately 1 1/2 miles wide in generally hilly country which falls approximately 300 ft. to 500 ft. in elevation towards the creek.

The proposed creek crossing is located approximately 1/4 mile east of the Mississagi River and in this area, the creek flows in a relatively shallow valley. The floor of the valley is approximately 200 ft. wide and is covered with boulders and cobbles.

The geological history of the Algoma district is not clear. However, it is known that the area is within the Canadian Shield which at one time was heavily glaciated. As the glaciers retreated they left a very hilly topography with frequent water courses and lakes. Many of these hills are glacial sand and gravel till drumlins, and others are rock spurs. The bedrock in the area is of the precambrian archean period, consisting of mainly igneous intrusions. This is confirmed by the wide range of igneous rocks on the ground surface and in the glacial till.

.../...

3.0 FIELD WORK

The field work consisted of six boreholes at the locations shown on the Borehole Location Plan, Drg. 147405-A and was carried out between April 16 to April 25, 1975. The boreholes were advanced to the sampling depths by means of wash-boring and rotary drilling techniques using both tri-cone and diamond bits. The drilling was carried out inside casing which was NW size at the surface reducing to Ax size with depth. The presence of numerous boulders and cobbles made the drilling very difficult and slow, with refusal to further drilling being finally encountered at depths of between 12.3 ft. and 34.6 ft. below the ground surface.

Standard Penetration tests were carried out at frequent intervals of depth and the results are shown on the borehole logs as N-values.

The field work was supervised by a Senior Soils Technician who also determined the ground elevation at each borehole location. These elevations were referred to a local benchmark established by the Ministry of Transport and Communications in a pine tree at Station 455 + 99, 137 ft. left of centre line. This datum has a value of El. 961.31 ft. geodetic.

All samples were transported to our laboratory for further examination and classification.

.../...

4.0 SUBSURFACE CONDITIONS

4.1 General

The subsurface conditions within the area investigated are generally uniform with the strata being essentially granular.

The site is covered by a layer of loose cobbles and boulders which extend to depths of between 1.6 ft. and 6 ft. below the ground surface. At two locations (Boreholes 1 and 3) on the south bank of the creek, the cobbles and boulders are underlain by a layer of sand and gravel 4.5 to 11.5 ft. thick. In the most southerly borehole (Borehole 1) the sand and gravel is underlain by 12.7 ft. of fine to medium grained sand. Below all of these deposits is glacial till which consists of cobbles and boulders in a matrix of medium to coarse sand and fine gravel. At all borehole locations refusal to further drilling was encountered in the till at depths of between 12.3 ft. and 34.6 ft. below the ground surface. This refusal was due to the boulders within the till, rather than due to bedrock.

4.2 Loose Cobbles & Boulders

Loose cobbles and boulders were encountered at Boreholes 1,2, 3,4,5 and extend to depths of between 1.6 and 6 ft. below the ground surface. This deposit has probably been derived from the glacial till with the sand and gravel having been washed out by the creek.

.../...

S

4.3 Sand & Gravel

At Borehole 1 and 3 there is an alluvial deposit of sand and gravel which extends to depths of between 6.5 and 14.5 ft. below the ground surface. At Borehole 1, this sand and gravel is very clean with little or no fines and it contains occasional cobbles and boulders. It also becomes more sandy with depth. At Borehole 3 the sand and gravel is dark brown in colour and is silty containing little or no cobbles and boulders. Typical grain size distribution curves for the sand and gravel are shown on Enclosure 7. The relative density of this stratum is in the dense to very dense range as indicated by "N" values of 13 to 64 blows/ft.

4.4 Sand

In Borehole 1 there is a deposit of brown sand which underlies the sand and gravel layer and extends to a depth of 27.2 ft. below the ground surface. This sand is silty, fine to medium grained and typical grain size distribution curves are shown on Enclosure 8. Standard Penetration tests carried out within this deposit gave N-values of 30 to 39 blows per foot and from these its relative density is considered to be in the dense range.

4.5 Glacial Till

As previously indicated, the main soil type is a glacial till which was encountered at all six boreholes and extends to a depth of at least 34.6 ft. from the ground surface. This deposit generally consists of numerous cobbles and boulders

in a matrix of medium to coarse sand with some fine gravel. Typical grain size distribution curves of the sand and gravel matrix are shown on Enclosures 9, 10 & 11. Standard Penetration tests carried out within this stratum gave N-values of between 49 blows per foot and 82 blows per foot. From these results, its relative density is considered to be in the very dense range.

An examination of core fragments taken from the boulders within the glacial till indicate that these boulders consist mainly of igneous rocks ranging from basalt to granite. These rock types are considered to be generally representative of the natural bedrock in this area.

5.0 GROUNDWATER CONDITIONS

During the field work water was observed within the casing at Boreholes 5 and 6 at depths of 2.8 ft. and 3.6 ft. respectively. On completion of the field work all boreholes caved in at depths of between 0 and 3 ft. below the ground surface. The water level in the creek was at Elevation 957.7 ft. and at all borehole locations the samples were observed to be wet below this elevation.

From the foregoing, together with the very pervious nature of the subsoil, we consider that the permanent groundwater table is closely related to the water level in the creek and will be subject to the same seasonal variations.

.../...

6.0 DISCUSSION & RECOMMENDATIONS6.1 General

The boreholes show that the site is generally underlain by very dense glacial till consisting of frequent cobbles and boulders in a matrix of sand with some gravel. At boreholes 1 and 2, there is dense or very dense sand and gravel or sand on top of the till.

6.2 FOUNDATION DESIGN6.2.1 Bridge Structure

We understand that a bridge structure will involve two piers and two abutments. Although the location of the bridge is unknown at present, we understand that possible locations of the piers would be at Boreholes 2,3,4, and 5 with possible locations of the abutments being at Boreholes 1,2,5, or 6.

At the piers the footings should be located below the possible scour depth or at least 5 ft. below the creek bed. This will result in the foundations being located at or below elevation 950 ft. At this elevation, the bearing stratum will be the very dense glacial till which is suitable for the use of spread footings. The footings can be designed to a maximum allowable bearing pressure of 5 t.s.f.

We understand that the abutments are to be located at or near the top of the end slopes of the approach embankments all of the loads should be founded on the natural subsoil below the embankment fill. The foundations can consist of spread

.../...

§

footings, or alternatively, steel H-piles driven through the fill.

The natural subsoil at the possible abutment locations will be either dense to very dense sand and gravel or very dense glacial till. Spread footings on these strata can be designed to a maximum allowable bearing pressure of 5 t.s.f.

Total and differential settlements of foundations designed in accordance with these recommendations will be less than 1-inch and 3/4-inch respectively. Steel H-piles driven through the fill to end bearing within the glacial till can be designed to a stress of 10 k.s.i. on the steel cross-sectional area. The capacity of the piles should be confirmed in the field by the Hiley or other approved pile driving formula (M.T.C. Standard SS-3-11).

The bearing elevations of the pile tips are difficult to determine due to the presence of the numerous boulders. However, we anticipate that the maximum penetration depth will be generally about 5 ft. into the glacial till. At Borehole 6, however there is a compact zone in the till at a depth of 13 ft. which the piles could penetrate. For estimating purposes therefore, the elevation of the pile tips at each possible abutment location can be assumed to be as follows.

.../...

<u>Borehole</u>	<u>Estimated Elevation of Pile Tip</u>
1	930 ft.
2	956 ft.
5	950 ft.
6	938 ft.

If steel H-piles are used, then, the tips should be reinforced to protect them from driving damage on boulders.

6.2.2 Culvert

The conditions at the centre of the creek are suitable for the use of a large diameter corrugated steel pipe culvert, although care should be taken to ensure that all boulders are removed from within 18-inches of the pipe perimeter.

The bedding for the culvert should conform to that specified by the Ministry of Transport and Communication Standards No. DD-808-A, Type 2.

7.0 CONSTRUCTION

7.1 Excavation

Some excavation problems can be anticipated due to the presence of the numerous boulders both on the ground surface and in the glacial till. A feasible method of constructing a mass concrete foundation may be pressure grouting of the loose boulders, the sand and gravel and the till above the .../...

frost line. This method, if successful, would eliminate many of the excavation and dewatering problems.

7.2 Dewatering

Dewatering problems can also be anticipated in excavations below the level of the water in the creek. The sand matrix of the till is highly permeable and hence it will be difficult to effectively dewater the excavations. The concrete will therefore require to be poured by a tremie method.

7.3 Embankment Construction

We do not anticipate any major problems in constructing embankments up to 35 ft. high with side slopes of 2 horizontal to 1 vertical. In view of the large number of boulders in the glacial till, it may not be possible to use on-site material as fill. This is particularly noted if piles are to be driven through the fill for the abutment foundations.

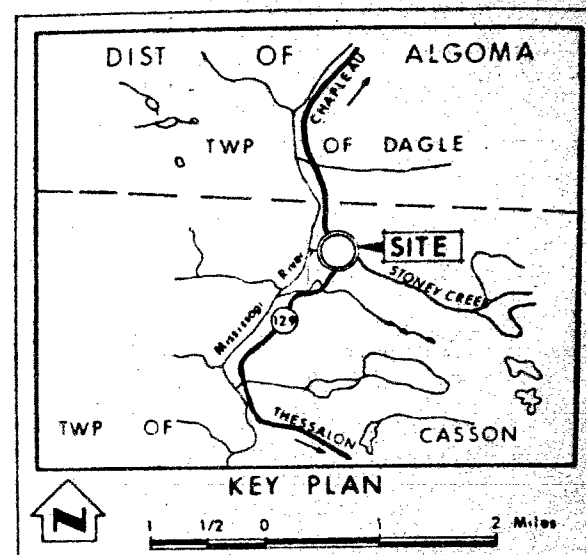
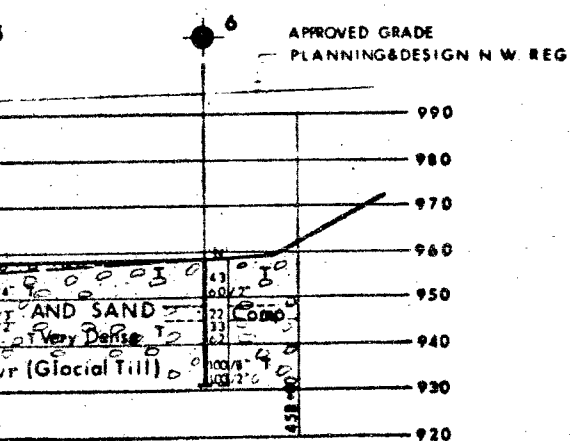
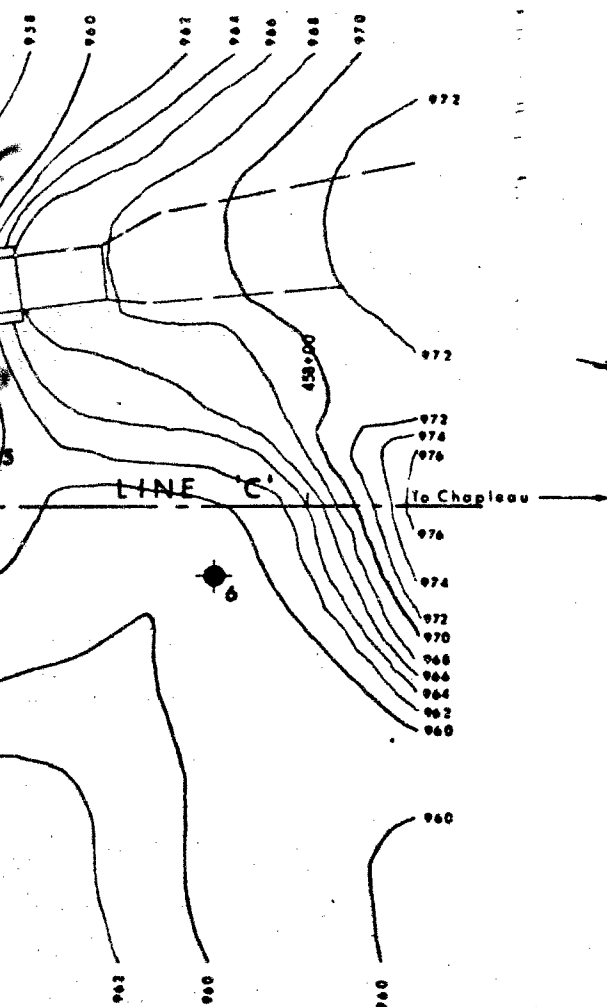
DOMINION SOIL INVESTIGATION LIMITED


V. Wood, M. Eng.

VW/ok



ENCLOSURES



LEGEND

- Bore Hole
- ⊕ Dynamic Cone Penetration Resistance Test
- ⊕ Bore Hole & Cone Test
- ⊕ Water Levels established at time of field investigation.
APRIL 16, 17, 18, 22 & 25, 1975.
Water levels were inferred due to caving ground conditions.

NO.	ELEVATION	STATION	OFFSET
1	962.9	455+50	15' RT.
2	967.5	456+00	14' LT.
3	963.2	456+50	15' RT.
4	957.7	456+94	Q
5	957.6	457+30	15' LT.
6	958.0	457+80	15' 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.

DOMINION SOIL INVESTIGATION LIMITED

REVISIONS	DATE	BY	DESCRIPTION

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS—ONTARIO
ENGINEERING SERVICES BRANCH—GEOTECHNICAL OFFICE—SOIL MECHANICS SECTION

STONEY CREEK

HIGHWAY NO. 129 LINE 'C' DIST. NO. 18
DIST. OF ALGOMA
TWP. CASSON LOT. CON.

BORE HOLE LOCATIONS & SOIL STRATA

SUBWD	CHECKED	W.P. NO. M-74-05	DRAWING NO.
DRAWN P.L.	CHECKED	W.D. NO. 75-3-13	147405-A
DATE MAY 20, 1975	SITE NO. 385-9	BRIDGE DRAWING NO.	
APPROVED	CONT. NO.		

LOG OF BOREHOLE.....2.....

Our Reference No. 75-3-13

Enclosure No. 2

CLIENT: MINISTRY OF TRANSPORTATION & COMMUNICATIONS
PROJECT PROPOSED CREEK CROSSING
LOCATION HWY 129, STONEY CREEK, ONT
DATUM: ELEVATION: GEODETIC

DRILLING DATA

Method: DIAMOND DRILLING

Diameter.

Date: APRIL 25, 1975

[illegible]

LOG OF BOREHOLE.....1.....

Our Reference No. 75-3-13

Enclosure No. 1

CLIENT: MINISTRY OF TRANSPORTATION & COMMUNICATIONS
PROJECT: PROPOSED CREEK CROSSING
LOCATION: HWY. 129, STONEY CREEK, ONT.
DATUM ELEVATION: GEODETIC

DRILLING DATA

Method: DIAMOND DRILLING
Diameter:
Date: APRIL 25, 1975

SUBSURFACE PROFILE				SAMPLES			PENETRATION RESISTANCE Blows/Ft.					WATER CONTENT %			REMARKS	
ELEVATION Ft.	DEPTH Ft.	DESCRIPTION	SYMBOL	GROUND WATER	NUMBER	TYPE	'N' Blows/Ft.	20	40	60	80	100	PLASTIC LIMIT	NATURAL		LIQUID LIMIT
								UNDRAINED SHEAR STRENGTH p.s.f.					W _p	W		W _L
								+ FIELD VANE TEST • COMPRESSION TEST								
962.9	0	GROUND SURFACE														
		BOULDERS & COBBLES	000000													
959.9	3.0															
	5	Very Dense, clean to Dense.			1	SS	64									
		SAND & GRAVEL														
		occasional cobbles and boulders, less gravel below 10 ft.			2	SS	51									
	10															
		wet.			3	SS	32									
					4	SS	35									
948.4	14.5															
	15	Dense Brown.			5	SS	30									
					6	SS	38									
	20	SAND			7	SS	39									
		silty fine to medium moist to damp.														
	25				8	SS	33									
935.7	27.2	Very Dense			9	RC	61%									
	30	GLACIAL TILL														
		cobbles and boulders in a sand matrix.			10	RC	20%									
928.3	34.6				11	RC	50%									
	35	END OF B.H.														

NW CASING

BX CASING

AX CASING

REFUSAL AT 34.6 FT.

NW CASING

BX CASING

AX CASING

REFUSAL AT 34.6 FT.

LOG OF BOREHOLE 3

Enclosure No. 3

Our Reference No. 75-3-13

CLIENT: MINISTRY OF TRANSPORTATION & COMMUNICATIONS.

PROJECT: PROPOSED CREEK CROSSING

LOCATION: HWY. 129, STONEY CREEK, ONT.


DATUM ELEVATION: GEODETIC.

DRILLING DATA

Method: DIAMOND DRILLING

Diameter:

Date: APRIL 22, 1975

SUBSURFACE		PROFILE		SAMPLES			PENETRATION RESISTANCE					WATER CONTENT			REMARKS					
ELEVATION Ft.	DEPTH Ft.	DESCRIPTION	SYMBOL	GROUND WATER	NUMBER	TYPE	'N' Blows/Ft.	Blows/Foot					PLASTIC LIMIT	NATURAL		% LIQUID LIMIT				
								20	40	60	80	100								
								UNDRAINED SHEAR STRENGTH					p.s.f.							
								+ FIELD VANE TEST					● COMPRESSION TEST					W _p W W _L		
963.2	0	GROUND SURFACE																		
961.2	2.0	Loose			CAVE - IN AT 963.2 FT.													BX CASING 		

VERTICAL SCALE: 1 inch to feet

DOMINION SOIL INVESTIGATION LIMITED

DRAWN:

CHECKED:

LOG OF BOREHOLE 4

Enclosure No. 4

Our Reference No. 75-3-13

CLIENT: MINISTRY OF TRANSPORTATION & COMMUNICATIONS.

PROJECT: PROPOSED CREEK CROSSING.

LOCATION: HWY. 129, STONEY CREEK, ONT.

DATUM ELEVATION: GEODETIC

DRILLING DATA

Method: DIAMOND DRILLING

Diameter:

Date: APRIL 18, 1974.

SUBSURFACE		PROFILE		SAMPLES			PENETRATION RESISTANCE Blows/Foot					WATER CONTENT %			REMARKS				
ELEVATION ft.	DEPTH ft.	DESCRIPTION	SYMBOL	GROUND WATER	NUMBER	TYPE	'N' Blows/Ft.	20	40	60	80	100	PLASTIC LIMIT	NATURAL		LIQUID LIMIT			
								UNDRAINED SHEAR STRENGTH p.s.f.											
								+ FIELD VANE TEST • COMPRESSION TEST											
<div>W_P ————— W ————— W_L</div>																			
957.7	0	WATER SURFACE													<div>↓ BW CASING</div> <div>—</div> <div>↓ BICONE</div> <div>REFUSAL AT 19.1 FT.</div>				
		WATER																	
955.8	1.9	Loose COBBLES AND																	
954.2	3.5	BOULDERS, w. coarse sand																	
	5	Very Dense			1	SS	60/0"												
					2	SS	54												
					3	SS	50/4"												
	10																		
	15	cobbles and boulders in a sand matrix.																	
938.6	19.1	END OF B.H.																	
	20																		

VERTICAL SCALE: 1 inch to 5 feet

DOMINION SOIL INVESTIGATION LIMITED

DRAWN: F. L.

CHECKED:

LOG OF BOREHOLE 5

Our Reference No 75-3-13.

Enclosure No 5

CLIENT MINISTRY OF TRANSPORTATION & COMMUNICATIONS
PROJECT PROPOSED CREEK CROSSING
LOCATION HWY 129, STONEY CREEK, ONT
DATUM ELEVATION: GEODETIC

DRILLING DATA

Method DIAMOND DRILLING
Diameter:
Date: APRIL 16, 1975

SUBSURFACE PROFILE		SAMPLES		PENETRATION RESISTANCE Blows/Ft.					WATER CONTENT %			REMARKS				
ELEVATION Ft.	DEPTH Ft.	DESCRIPTION	SYMBOL	GROUND WATER	NUMBER	TYPE	'N' Blows/Ft.	20	40	60	80		100	PLASTIC LIMIT	NATURAL	LIQUID LIMIT
								UNDRAINED SHEAR STRENGTH p.s.f.					W _p	W	W _L	
								+ FIELD VANE TEST ● COMPRESSION TEST								

957.6	0	GROUND SURFACE														
955.6	2.0	Loose COBBLES AND BOULDERS.														
	5	Dense to Very Dense				1	SS	31								
						2	SS	50/4								
	10					3	SS	74								
						4	SS	60/3								
	15	GLACIAL TILL				5	SS	60/2								
	20	cobbles and boulders in a sand matrix.				6	RC	56%								
	25					7	SS	60/1								
932.4	25.2	END OF B.H.														
	30															
	35															

CAVE-IN AT 957.6 FT. APRIL 16, 1975

BW CASING

AX CASING

BICONE

REFUSAL AT 25.2 FT

BW CASING

AX CASING

BICONE

REFUSAL AT 25.2 FT

LOG OF BOREHOLE 6

Our Reference No. 75-3-13

Enclosure No. 6

CLIENT: MINISTRY OF TRANSPORTATION & COMMUNICATIONS
PROJECT: PROPOSED CREEK CROSSING
LOCATION: HWY 129, STONEY CREEK, ONT
DATUM: ELEVATION: GEODETIC

DRILLING DATA

Method: DIAMOND DRILLING
Diameter:
Date: APRIL 17, 1975

SUBSURFACE PROFILE		SAMPLES			PENETRATION RESISTANCE Blows/Ft.					WATER CONTENT %			REMARKS			
ELEVATION Ft.	DEPTH Ft.	DESCRIPTION	SYMBOL	GROUND WATER	NUMBER	TYPE	'N' Blows/Ft.	20	40	60	80	100		PLASTIC LIMIT	NATURAL	LIQUID LIMIT
								UNDRAINED SHEAR STRENGTH p.s.f.						W _p	W	W _L
								+ FIELD VANE TEST @ COMPRESSION TEST								
GROUND SURFACE																
958.0	0	6" Topsoil														
	5				1	SS	43									
		Dense to Very Dense														
	10				2	SS	60/2"									
		compact														
	15				3	SS	22									
		GLACIAL TILL														
	20				4	SS	33									
		cobbles and boulders in a sand matrix.														
	25				5	SS	62									
					6	RC	50%									
	27.3				7	RC	50%									
					8	SS	100/8"									
930.7	27.3	END OF B.H.			9	SS	100/2"									
	30															
	35															

BX CASING

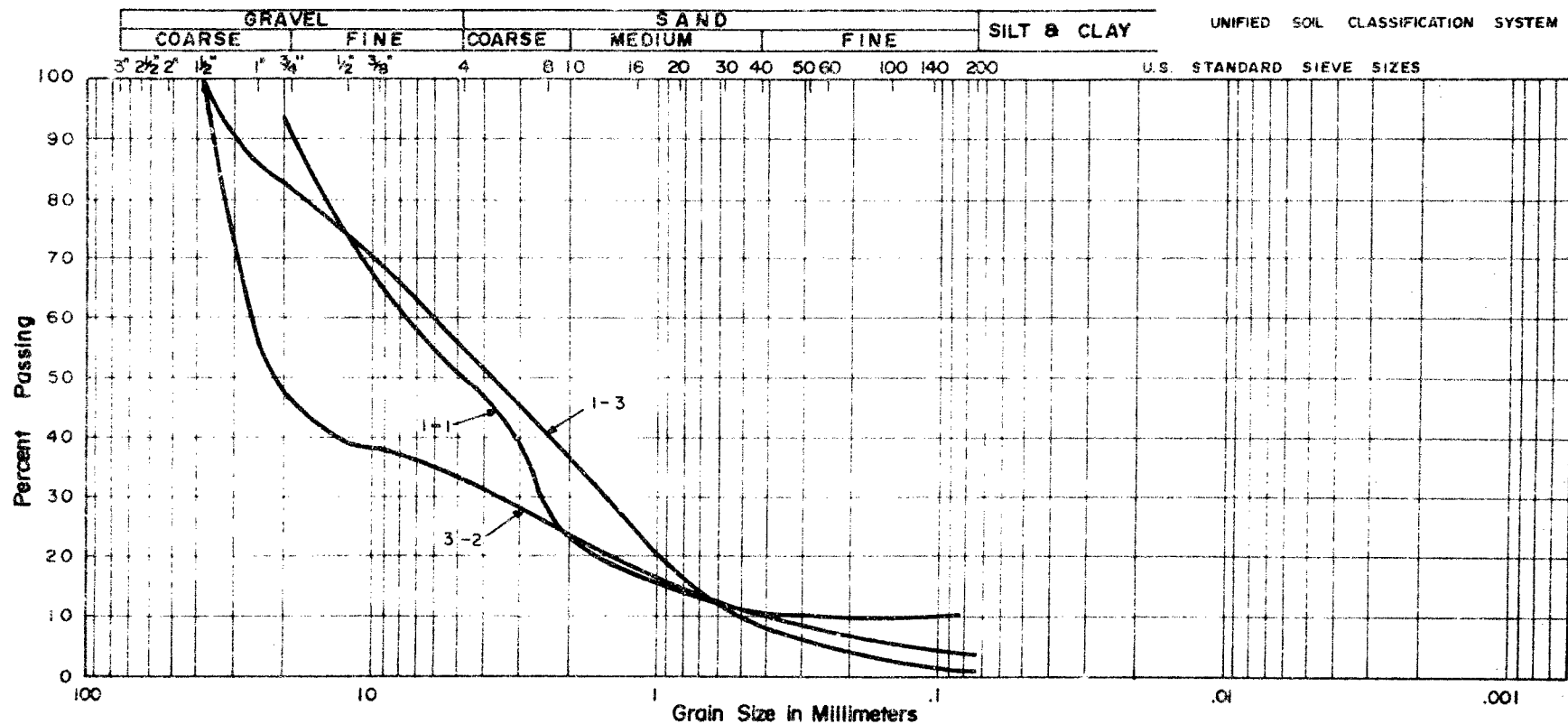
AX CASING

REFUSAL AT 27.3 FT.

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO. 75-3-13



PROJECT: PROP REPLACEMENT BRIDGE.

LOCATION: STONEY CREEK, HWY. 129

BOREHOLE NO: 1 1 3

SAMPLE NO: 1 3 2

DEPTH:

ELEVATION:

COEFFICIENT OF UNIFORMITY:

COEFFICIENT OF CURVATURE:

Classification of Sample and Group Symbol:

SAND AND GRAVEL

PLASTIC PROPERTIES

LIQUID LIMIT % =

PLASTIC LIMIT % =

PLASTICITY INDEX % =

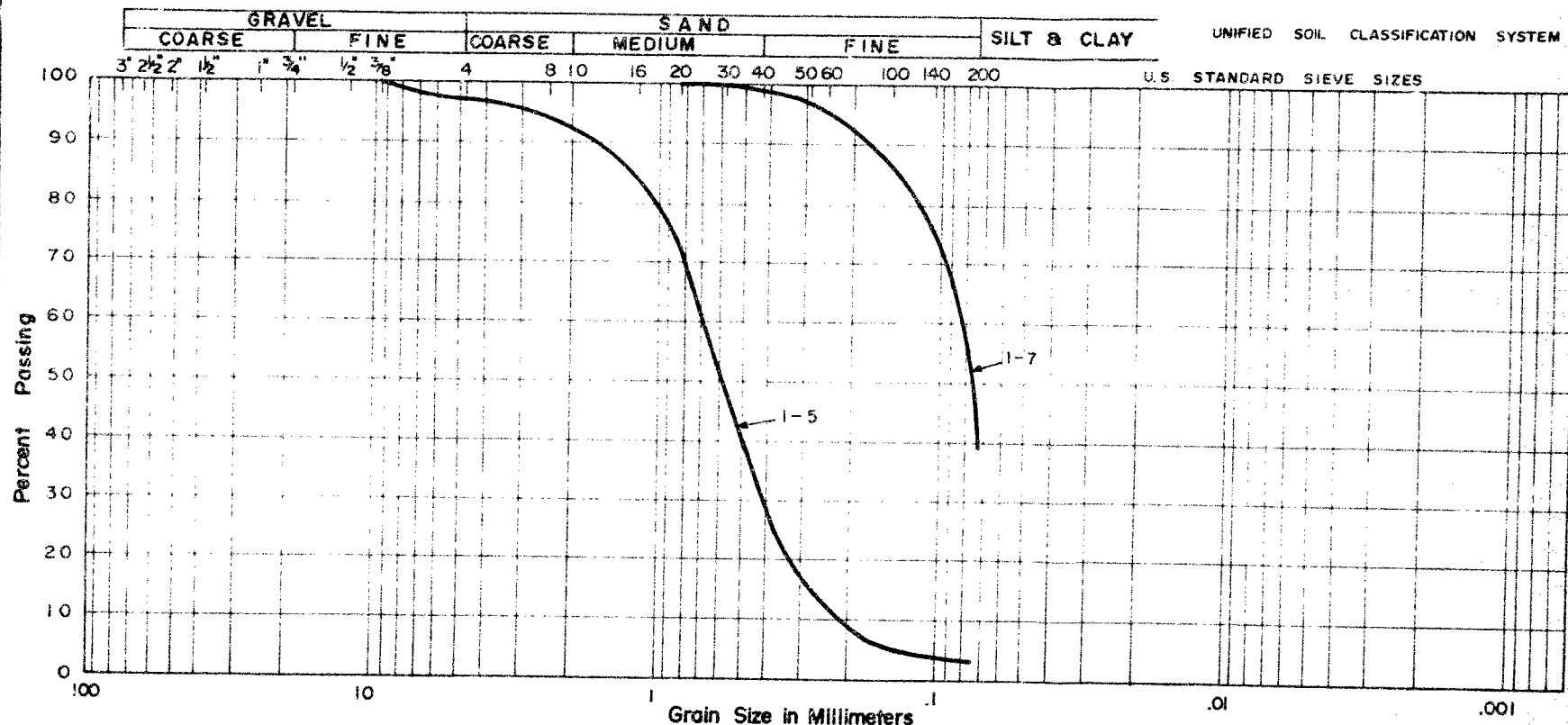
MOISTURE CONTENT % =

ENCLOSURE NO. 7

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO 75-3-13



PROJECT: PROP. REPLACEMENT BRIDGE.

LOCATION: STONEY CREEK, HWY. 129

BOREHOLE NO: 1 1

SAMPLE NO: 5 7

DEPTH:

ELEVATION:

COEFFICIENT OF UNIFORMITY:

COEFFICIENT OF CURVATURE:

Classification of Sample and Group Symbol:

S A N D

PLASTIC PROPERTIES

LIQUID LIMIT % =

PLASTIC LIMIT % =

PLASTICITY INDEX % =

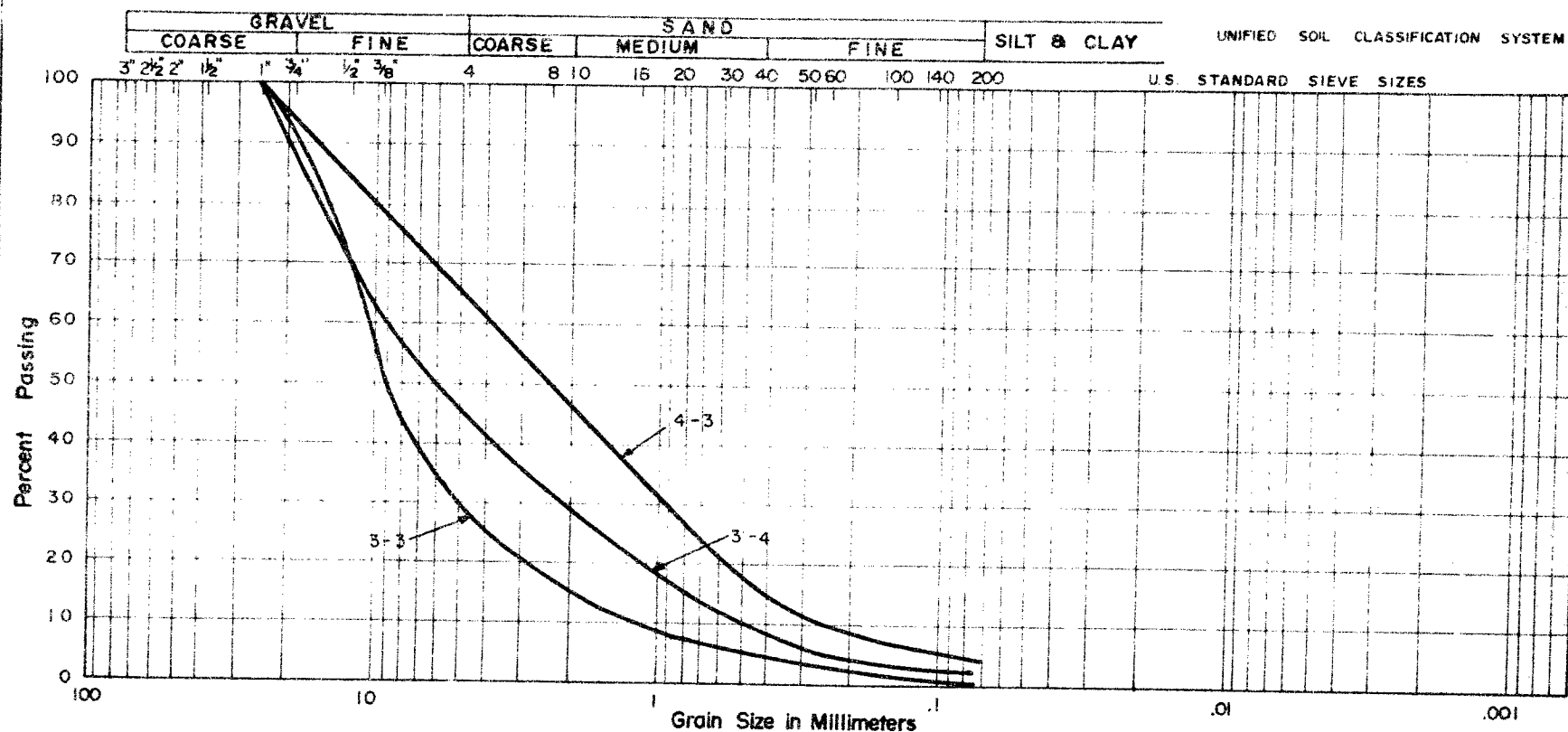
MOISTURE CONTENT % =

ENCLOSURE NO 8

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO. 75-3-12



PROJECT: PROP. REPLACEMENT BRIDGE
 LOCATION: STONEY CREEK, HWY. 129
 BOREHOLE NO: 3 3 4
 SAMPLE NO: 3 4 3
 DEPTH: 10' 6'
 ELEVATION:

COEFFICIENT OF UNIFORMITY:
 COEFFICIENT OF CURVATURE:

Classification of Sample and Group Symbol:

GLACIAL TILL MATRIX

PLASTIC PROPERTIES

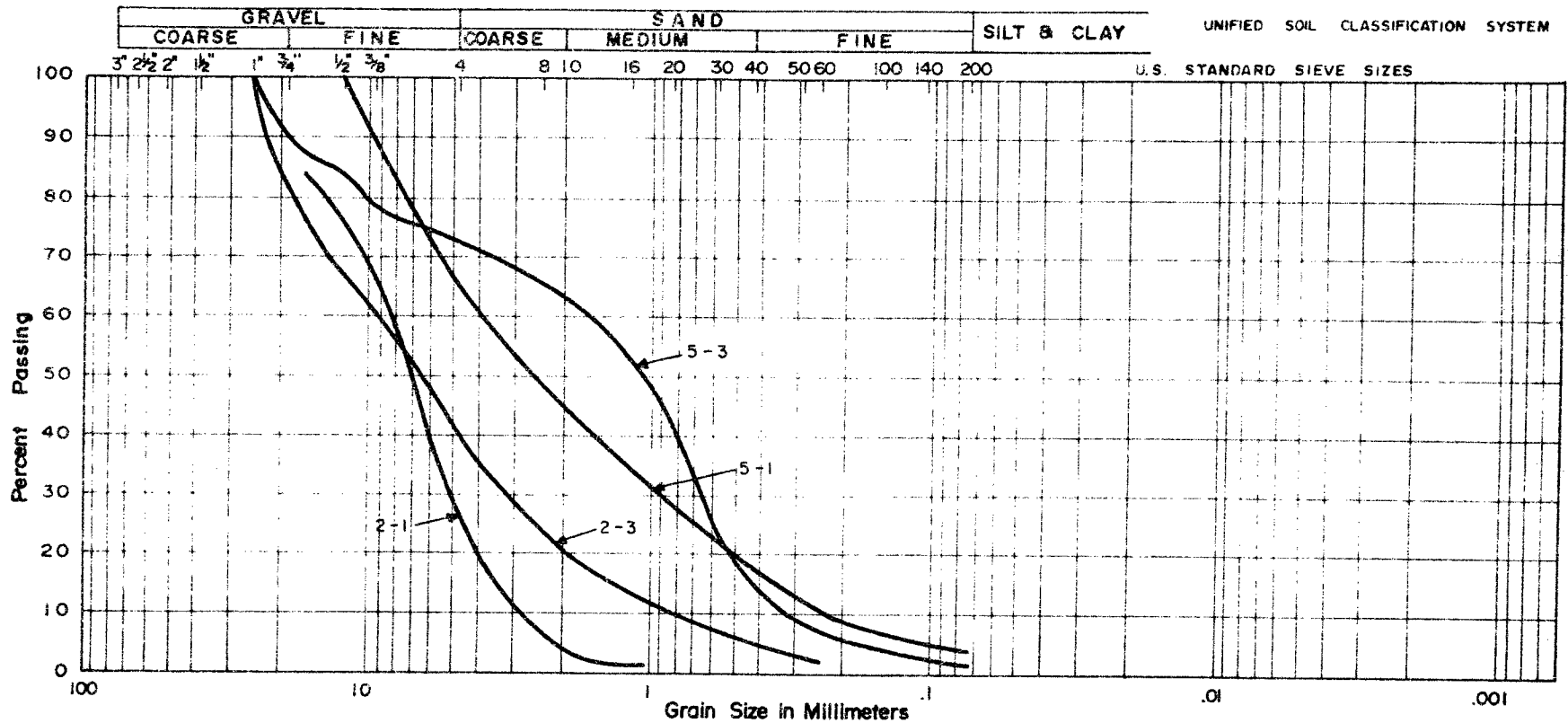
LIQUID LIMIT % =
 PLASTIC LIMIT % =
 PLASTICITY INDEX % =
 MOISTURE CONTENT % =

ENCLOSURE NO. 3

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE No 75-3-13



PROJECT: PROP. REPLACEMENT BRIDGE.

LOCATION: STONEY CREEK, HWY. 129

BOREHOLE No: 2 2 5 5

SAMPLE No: 1 3 1 3

DEPTH: 2.5' 7.5'

ELEVATION:

COEFFICIENT OF UNIFORMITY:

COEFFICIENT OF CURVATURE:

PLASTIC PROPERTIES

LIQUID LIMIT % =

PLASTIC LIMIT % =

PLASTICITY INDEX % =

MOISTURE CONTENT % =

Classification of Sample and Group Symbol:

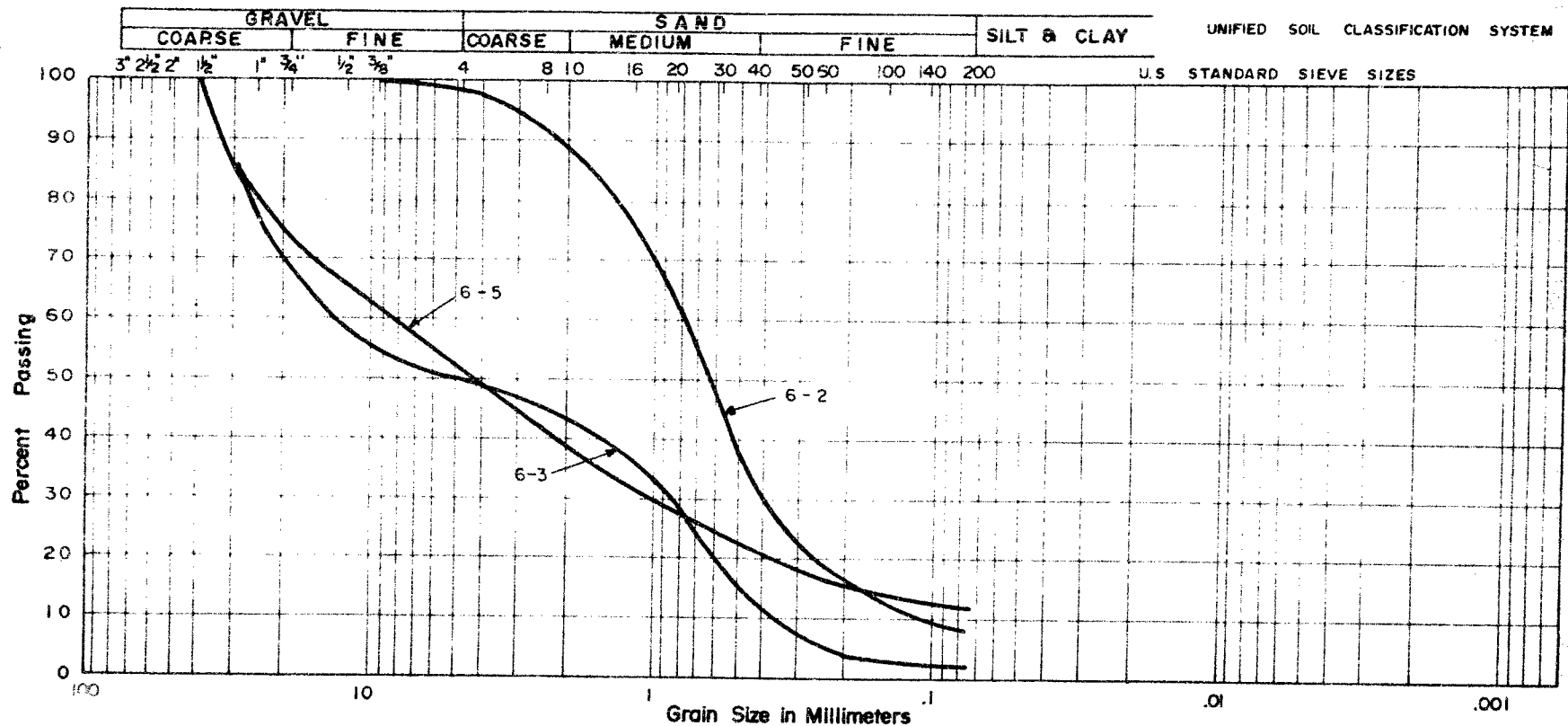
GLACIAL TILL MATRIX.

ENCLOSURE No 10

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE Nº 75-3-13



PROJ. : PROP. REPLACEMENT BRIDGE
 LOCATION: STONEY CREEK, HWY. 129
 BOREHOLE Nº: 6 6 6
 SAMPLE Nº: 2 3 5
 DEPTH: 7'
 ELEVATION:

COEFFICIENT OF UNIFORMITY :
 COEFFICIENT OF CURVATURE :

Classification of Sample and Group Symbol:

GLACIAL TILL MATRIX

PLASTIC PROPERTIES

LIQUID LIMIT	% =
PLASTIC LIMIT	% =
PLASTICITY INDEX	% =
MOISTURE CONTENT	% =

ENCLOSURE Nº 11



Ontario

Ministry of
Natural
Resources

P.O. Box 190,
Blind River, Ontario.
P0R 1B0.

November 5, 1974.

Telephone

(705) 356-2234

File number

TO: Ministry of Transportation & Communications
P.O. Box 1177,
Thunder Bay "F", Ontario.

Attn: Mr. Bob Belle
Title Processing Supervisor

FROM: Blind River District

Re: R.W. Reservations - Casson (188) Twp. and Dagle (1F) Twp.

Reference is made to your telephone conversation of to-day's date (Belle-Miller-Connell) requesting permission to carry out a soil investigation survey for alternate bridge locations on Hwy. 129, within Location R.W. 4 (Two-Camp Creek crossing) - Casson Twp. and within Location R.W. 5 (Lafoe Creek crossing) Dagle Twp.

These two R.W. locations, along with many other similar locations in the area, were established several years ago as park site reservations. These sites are crown land reservations and have been under discussion for some time, as to future deposition and use.

Your Ministry may have permission to carry out your required soil investigation surveys but we would ask that you forward an "Application for a Work Permit" form (copies attached) and a brief outline, and sketch, of your proposed work areas. A "Work Permit" will be issued at an as early as possible date outlining required conditions as to any debris disposal, control of any sludge from drill holes, etc.

Thank you for your telephone call and we will look forward to receiving an application at your convenience.

G.W. Connell
G.W. CONNELL/vh

Attach.

D.L. Hagar
D.L. Hagar,
District Manager.



Memorandum

To: Mr. C. Mirza
Principal Foundation Engineer
Foundations Office
Downsview, Ontario

From: Structural Planning Section
Northwestern Region

Attention:

Date: February 12, 1975

Our File Ref.

In Reply to

Subject: Stoney Creek, W.P. 14-74-05
Site 38S-9, Hwy. 129, District 18

Enclosed please find a Reconnaissance Report along with plans, profile and photographs of the above site.

We would like to have a foundation study carried out for this site, with a report to be issued by April 16, 1975.

We are assuming that the structure will be 3-span, about 150' to 200' long, or else a large diameter CSP.

There is a possibility that a stream diversion will put the proposed structure about 50' southeast of the present. The anticipated footing locations are therefore somewhat indefinite at this stage. However, if boreholes are located at Stations 455+50, 456+00, 456+50, 457+30, 457+80 and at midstream (456+94) then sufficient data should be available for either scheme.

Please discuss alternative footing locations with Mr. A. Radkowski of Structural Design.

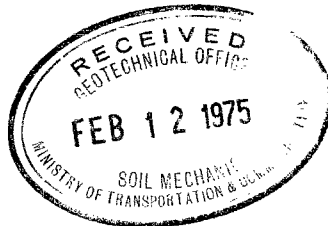
H.J.D.

H. J. Dost
REGIONAL STRUCTURAL
PLANNING SUPERVISOR
FOR:

B. J. McKenna
REGIONAL STRUCTURAL
PLANNING ENGINEER

HJD/em
Encl.

cc: Mr. N. Maluzynsky
Mr. A. Radkowski



MINISTRY OF TRANSPORTATION AND COMMUNICATIONS, ONTARIO

MEMORANDUM

TO: Mr. A. Rutka
Manager,
Geotechnical Office

FROM: Soil Mechanics Section
Geotechnical Office

ATTENTION:

DATE: February 20, 1975

OUR FILE REF.

IN REPLY TO

SUBJECT: REQUEST FOR CONSULTANT ASSIGNMENT
GEOTECHNICAL CONSULTANTS - STANDING LIST DATED:

ENGINEERING SERVICE	Routine Project <input checked="" type="checkbox"/>	TECHNICIAN SERVICE	<input type="checkbox"/>	SPECIALIST SERVICE	<input type="checkbox"/>
	Complex Project <input type="checkbox"/>				

W.P. 14-74-05 TYPE Str. & Apprs. HWY. 129 DISTRICT 18 SITE NO.38 S-9

LOCATION Stoney Creek Bridge, 17.0 mi. north of Sec. Hwy. 554

CURRENT PROGRAM YEAR 1976 VALUE 150,000 SCHEDULED DUE DATE April 16, 1975

NATURE OF ASSIGNMENT - Subsurface investigation for proposed structure and approaches, laboratory testing, engineering analyses and reporting.

JUSTIFICATION - Soil Mechanics Section has commitments to complete two feasibility studies and three foundation projects by March and April 1975 in this District. In addition, staff is also occupied with other projects in other areas. Section has two vacancies in Engineer Complement. With the present staff complement and work load commitments, it is not possible to meet the scheduled due date of this project.

RECOMMENDED CONSULTANT(S)	EST. TOTAL COST	REMARKS
1. Dominion Soil Investigation Ltd. Thunder Bay	\$7,000	1. Because of unknown nature of subsoil, the estimated cost may exceed by 50% due to additional drilling requirements.
2. Morton, Dodds & Partners Thunder Bay	\$7,000	2. This project is very close to W.P. 14-74-04 and the same consultant should be assigned to this project to minimize mobilization costs of drilling equipment.
3. Peto MacCallum Ltd., Concord	\$7,000	
4. H. Q. Golder & Associates Cooksville	\$7,000	

cc:
Files
Documents

PREPARED BY:..

-M. DEVATA, Supervising Engineer.

AUTHORIZED BY:

MEMORANDUM

W.P. 14-74-05

TO: Mr. J. B. Wilkes,
Executive Director,
Design Division.

FROM: A. Rutka

ATTENTION:

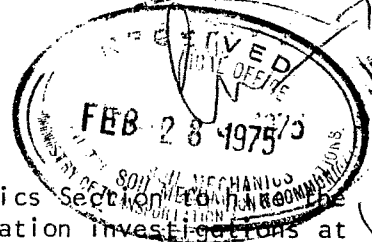
DATE: February 28, 1975

OUR FILE REF.

IN REPLY TO

SUBJECT:

FOUNDATION INVESTIGATIONS
Consultant Assignment



Attached are three requests from the Soil Mechanics Section for the services of a geotechnical consultant to carry out foundation investigations at the following structure location sites:

- 1) W.P. 14-74-04 - Snowshoe Creek - 11.6 Mi. N. of Sec. Hwy. 544
- 2) W.P. 14-74-05 - Stoney Creek - 17.0 Mi. N. of Sec. Hwy. 544
- 3) W.P. 14-74-06 - Lafoe Creek - 19.1 Mi. N. of Sec. Hwy. 544

Because the sites are close together, we would recommend that they all be assigned to one consultant.

Our first choice would be Dominion Soil Investigations Ltd. They have not had any engineering work assigned to them this year, but they have been assigned a number of drilling contracts. In view of the rugged nature of the terrain, there may be some advantage in assigning the work to a firm that has the capability of doing the drilling and engineering work for good co-ordinative purposes.

Morton, Dodds and Partners also have the facilities for drilling and engineering work, but we have not used their engineering services to date. We have, however, used their drilling services. Because they have not had any engineering work, we have not been in a position to analyze their capability in this respect and it may not be desirable to have them undertake the three jobs at one time.

Peto MacCallum, and Golder have not been assigned engineering work by the Geotechnical Office this fiscal year. Golder has, however, supplied the services of a technician on two occasions.

If the three projects can be assigned to one consultant, we believe all of those listed would provide a satisfactory product. At least three-quarters of the estimated costs will be required for drilling purposes.

Our due date for all projects is April 16. An early approval would be appreciated.

A. Rutka

AR/MdeF

Attach. (3)

cc: Mr. C. Mirza ✓

A. Rutka

Manager, Geotechnical Office



DOMINION SOIL INVESTIGATION LIMITED

CONSULTING SOIL & FOUNDATION ENGINEERS

104 CROCKFORD BLVD., SCARBOROUGH, ONT. M1R 3C6 · (416) 751-6565 · TELEX 02-21210 · CABLES: DOMSOIL

Copy -
Mr. P. Mirza
eng

April 2, 1975

REF. NO. 75-3-13

Mr. A. Rutka, P. Eng.,
Manager,
Geotechnical Office,
Ministry of Transportation
& Communications,
West Building,
Downsview, Ontario.



Attention: Mr. M. Devata, P. Eng.,
Supervising Engineer.

RE: Foundation Investigation
Proposed Bridge
Stoney Creek - Highway #129
WP# 14-74-05

Dear Sirs:

Thank you for your recent request for providing you with soil testing and engineering services on the above project.

The details and requirements of the proposed project were discussed with your Mr. M. Devata at a meeting in your offices on March 21, 1975. At this meeting we have also been provided with the following documents:

- 1) Memorandum from Mr. H.G. Dost to Mr. C. Mirza dated February 12, 1975.
- 2) Field reconnaissance report dated December 18, 1974.
- 3) Letter from the Ministry of Natural Resources to M.T.C. dated November 5, 1974.
- 4) Two photographs showing bridge site, dated November 13, 1974.
- 5) Bridge site drawing, Plan #E-5166-1.

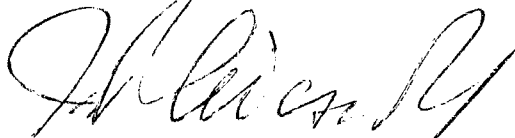
.../...

- 6) Profile Drawing, Stoney Creek - Highway #129, Drawing #C-994-129-2.
- 7) Plan, Drawing #B-994-129-2

We wish to extend our thanks for the help and assistance your department has given us on this project.

Yours very truly,

DOMINION SOIL INVESTIGATION LIMITED



I.P. Lieszkowszky, P. Eng.

IPL/ok



DOMINION SOIL INVESTIGATION LIMITED

CONSULTING SOIL & FOUNDATION ENGINEERS

104 CROCKFORD BLVD., SCARBOROUGH, ONT. M1H 3C6 • (416) 751-6565 • TELEX 02-21210 • CABLES: DOMSOIL

April 8, 1975.

WP 14-74-05
WP 14-74-06

Ministry of National Resources
P.O. Box 190
Blind River, Ontario
P0R 1B0

Attention: Mr. D.L. Hagar
District Manager

RE: Soil Investigation
R.W. Reservations
Casson (188) Township &
Dagle (1F) Townships &
Highway #129



Dear Sirs:

We have been retained by the Ministry of Transportation and Communications to carry out a foundation investigation at two proposed bridge sites located in the above reservations. We would therefore ask your permission to work at the above sites on the understanding that we will restore the ground to its original condition after completing our survey.

We are enclosing the appropriate application for a Work Permit, each accompanied by a sketch showing the locations of the proposed boreholes and the extend of the area where the soil investigation will be carried out.

Should you have any queries in connection with this matter please direct it to the attention of the undersigned.

Yours very truly,

DOMINION SOIL INVESTIGATION LIMITED

I.P. Lieszkowsky
I.P. Lieszkowsky, P. Eng.

IPL/ok

✓ cc: Mr. M. Devata, Geotechnical Office, M.T.C.,
Downsview, Ontario.

Mr. B. McKenna
Regional Structural Planning Engr.
Northwestern Region
Thunder Bay

Soil Mechanics Section
Geotechnical Office
West Building

May 14, 1975

W.P. 14-4-05

FOUNDATION REPORT (PRELIMINARY)

Stoney Creek Structure
17.0 miles North of Sec. Hwy. 554, Hwy. 129
Dist. 18 (Sault Ste. Marie), Site -
W.P. 14-4-05

We have received copies of Foundation Report (Preliminary) for the above-mentioned structure site prepared by the Geotechnical Consultants, Dominion Soil Investigation Ltd. For your information, we are enclosing a copy of this report. If you have any queries pertaining to the data contained in this report, please contact this Office before the submission of the final foundation report by the Consultant.

M. DEVATA
Supervising Engineer.

c.c. C. S. Grebski
Attn: G. Radkowski

W. L. Lees
R. Morgenroth

Files

Record Services)
J. Anderson) memo only
N. G. Maluzinsky)



Memorandum

To: Mr. B. J. McKenna,
Reg. Structural Planning Engineer, West Building, Downsview.
Northwestern Region,
Thunder Bay, Ontario.

From: Structural Office,

Attention:

Date: November 25, 1975.

Our File Ref.

In Reply to

Subject:

Stoney Creek Structure,
W. P. 14-74-05, Site 38S-9,
Highway 129, District #18.

Attached herewith are prints of the Preliminary Bridge
Plan Drawing 38S-9-P1 for the above mentioned structure.

The estimated cost of the proposed structure is \$85,000.00
which includes tender, materials, engineering and sundry
construction.

We have sent a copy of the Preliminary Plan to the Hydrology
Office for their comments.

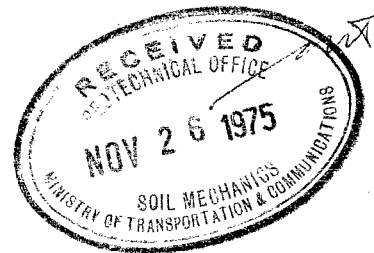
Any comments or revisions you may have should be submitted
at your earliest convenience.

CSG/cf
Attch.

C. S. Grebski,
Structural Design Engineer.

Refer to memo
H. Shuk Jan 8, 76

c.c. B. Davis
W. Birch
A. McKim
A. Radkowski
M. Stoyanoff
J. Harris
→ C. Mirza
J. Anderson
N. Maluzynsky
S. Edwards



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

Soil Mechanics Section
Geotechnical Office
West Building, Downsview

January 8, 1976

Mr. A. Radkowski

Stoney Creek Structure
W.P. 14-74-05 Site 38S-9
Hwy. 129, District #18

We present the following comments on the Preliminary Bridge Plan Drawing 38S-9-P1 received for the above mentioned structure.

The bridge plan drawing indicates that the bedding for the 20'-0" ϕ structural plate pipe to be Screened Granular 'A'. We are not aware of this term, and it is believed that this material is Granular 'A' as per Standard No. DD-808-A, Type 2.

H. Shah
Project Engineer

For: M. Devata
Supervising Engineer

cc: W. Lees
B. McKenna
Files
Record Services

use tremie concrete if not
placed in dry. O.K'd use
of Gran. C instead of Gran.
B.

H. Shah
Jan. 14, 1976



Ministry of
Transportation and
Communications

Memorandum

To: Mr. W.L. Lees,
Regional Manager,
Reg. Planning and Design,
Northwestern Region, Thunder Bay.

From: Structural Office,
West Building,
Downsview, Ontario.

Attention:

Date: February 4, 1976.

Our File Ref.

In Reply to

Subject: W.P. 14-74-05, Site 38S-9
Stoney Creek Structure
Hwy. 129, District 18

Please find enclosed four sets of prints of drawings 38S-9-1,-3 & -4 for your use.

One print of drawing 38S-9-1 is being forwarded to the Systems Design Project Review Section.

One set of prints is also being forwarded to the following:


Estimating Section
Regional Structural Planning Engineer
Assistant Construction Engineer (Structures)
District Office
Structural Maintenance Engineer
Soil Mechanics Section
Hydrology Section

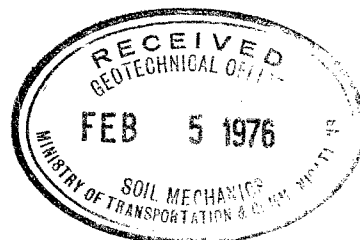
The D4 and Special Provisions will follow.

NZ/ac

Encl.

c.c. J. Wear
B. Giroux
B. McKenna
A.E. McKim
G.E. French
W. Birch
C. Mirza ✓
J. Harris
N.G. Haluzynsky
J. Anderson


N. Zaitay,
Structural Contract
Specifications Engineer.





Memorandum

M. Devata

To: Mr. N. Zoltay,
Structural Contract Specifications Engineer.

From: Structural Office,
West Building, Downsview.

Attention:

Date: February 12, 1976.

Our File Ref.

In Reply to

Subject: LaFoe Creek, Site 38S-10, W.P. 14-74-06
Stoney Creek, Site 38S-9, W.P. 14-74-05,
Highway 129, District 18.

A meeting was held on the morning of February 12th to review construction problems, and the contract documents for the above mentioned structures.

Present at the meeting were the following personnel

Messrs. A. Radkowski
M. Devata
J. Aleong (Totten, Sims, Hubicki)
M. Stoyanoff.

The following was discussed and agreed upon.

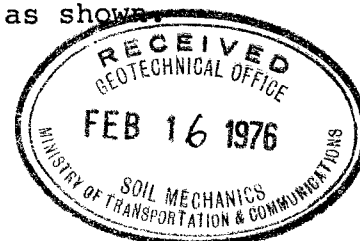
LaFoe Creek

- (a) Unwatering is feasible and an unwatering item will be provided in the contract.
- (b) As construction will be carried out in the dry the need for Screened Granular "A" Backfill is no longer required. Granular "A" as per MTC specifications will be called for.
- (c) Tremie concrete in the end walls is to be revised to normal concrete placed in the dry.

Stoney Creek


- (a) Because of stage construction and the location of the new structure in relation to the existing structure, it is almost impossible to construct in the dry. Thus construction will be permitted under water and an unwatering item will not be provided in the contract.
- (b) Screened Granular "A" backfill still applies. Some construction procedures will be required on the drawings for the backfilling operation.
- (c) Tremie concrete in the end walls remains as shown.

.....2



Please arrange to adjust the contract documents accordingly.

MS/cf


M. Stoyanoff,
Structural Contract Engineer.

c.c. A. Radkowski
M. Devata



Ministry of
Transportation and
Communications

Memorandum

To: Mr. W.L. Lees,
Regional Manager,
Reg. Planning and Design Office,
Northwestern Region, Thunder Bay.

From: Structural Office,
West Building,
Downsview, Ontario.

Attention:

Date: February 17, 1976.

Our File Ref.

In Reply to

Subject: W.P. 14-74-05, Site 38S-9
Stoney Creek Structure
Highway 129, District 18

Please find enclosed two copies of the D4 and Special Provisions for your use.

One copy of the D4 and Special Provisions is also being forwarded to the following:

District Office
Systems Design Project Review Section
Structural Material Section
Structural Design Office
Estimating Office
Assistant Construction Engineer (Structures)
Regional Structural Planning Engineer.
Structural Maintenance Engineer
Soil Mechanics Section
Hydrology Section

The following data is also submitted to the Estimating Section:

E.C.B. output for the reinforcing steel (Structure).
Hand calculation for the concrete quantities.

NZ/ac
Encl.

c.c. A. Radkowski
J. Wear
G.E. French
K.C. Howe
B. Giroux
A.E. McKim
B. McKenna
W. Birch
C. Mirza ✓
J. Harris
N.G. Maluzynsky
J. Anderson

N. Eoltay
N. Eoltay,
Structural Contract
Specifications Engineer.





Memorandum

To: Mr. W.L. Lees,
Regional Manager,
Reg. Planning and Design Office,
Northwestern Region, Thunder Bay.

From: Structural Office,
West Building,
Downsview, Ontario.

Attention: Date: February 19, 1976.

Our File Ref.

In Reply to

Subject: W.P. 14-74-05, Site 38S-9
Stoney Creek Structure
Highway 129, District 18

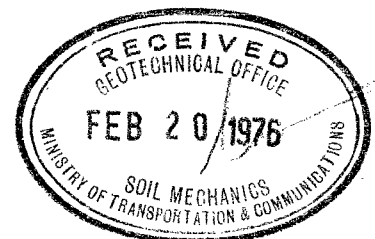
As a result of a meeting of February 12, 1976 between the Designers, Contract Engineer and Foundation Engineer, the bridge contract documents should be changed as follows:

1. Delete the tender item for Unwatering Foundations and the corresponding Special SP.
2. Delete the abbreviation S.P.P. from the title description of the granular backfill item.

N. Zoltay,
Structural Contract
Specifications Engineer.

NZ/ac

c.c. A. Radkowski
J. Wear
G.E. French
K.C. Howe
B. Giroux
A.E. McKim
B. McKenna
W. Birch
C. Mirza ✓
J. Harris





Memorandum

To: Mr. W.L. Lees,
Regional Manager,
Reg. Planning and Design Office,
Northwestern Region, Thunder Bay.

Attention:

From: Structural Office,
West Building,
Downsview, Ontario.

Date: February 20, 1976.

Our File Ref.

In Reply to

Subject:

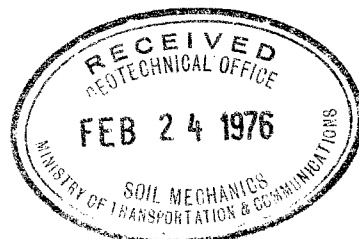
W.P. 14-74-05, Site 38S-9
Stoney Creek Structure
Highway 129, District 18

Please be advised that the dimensions of the
granular materials changed on the design drawing;
therefore, the quantities are changed to read:
Granular A = 1250 cu yd
Granular C = 1160 cu yd

N. Zoltay
N. Zoltay,
Structural Contract
Specifications Engineer.

NZ/ac

c.c. A. Radkowski
J. Wear
G.E. French
K.C. Howe
B. Giroux
A.E. McKim
B. McKenna
W. Birch
C. Mirza ✓
J. Harris





Memorandum

W.P. 14-74-05

to: Mr. A. Radkowski
Regional Structural Design Engineer
Structural Design Office
West Building, Downsview

From: Soil Mechanics Section
Geotechnical Office
West Building, Downsview

Attention:

Date: October 12, 1976

Our File Ref.

In Reply to

Subject: Beaver Creek Culvert
W.P. 490-64-03, Site 48W-75
Highway 588, District #19, Thunder Bay

Further to the Structural Review Meeting on September 29, 1976, we had a meeting on October 7, 1976 with Messrs. Radkowski, Stoyanoff and Law to resolve the unwatering requirement.

We are in agreement with Mr. Radkowski that the unwatering requirement can be waived if screened Granular 'A' is used as backfill material and tremie concrete is used in the headwalls.

The use of screened granular 'A' backfill as an alternative to unwatering has been proposed and incorporated in the design of the La Foe Creek (W.P. 14-74-06) and the Stoney Creek (W.P. 14-74-05) projects.

To facilitate placement of the granular material under water it is advisable to have a slightly oversized excavation for the culvert.

B. Ly

B. Ly
Senior Engineer

For: M. Devata
Supervising Engineer

MD/BL/gs

cc: A. McKim
E. Van Beilen
M. Stoyanoff
J. Harris
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Record Services