

23-62-67

Mr. A. M. Toyn,
Bridge Engineer.
Materials & Research Section.

August 14, 1959.

FOUNDATION INVESTIGATION -
W.P. 301-59 - W.J. P-59-77.

Attention: Mr. E. McCombis.

Re: Supplementary Foundation Investigation -
Hwy. 401 Service Road & Dodd's Creek
Crossing, South of Highway 401.

In response to a request by your Mr. J. C. McAllister, a supplementary foundation investigation consisting of one boring, has been carried out at the above noted site. The object of this supplementary investigation was to confirm that subsoil findings at this structure location are similar to that at the crossing of Hwy. 401 & Dodd's Creek contained in our Foundation Report F-58-42.

This supplementary boring was carried out on July 28, 1959 using a continuous flight auger adapted for soil sampling. Reference to the borehole log shows that similar subsoil conditions are confirmed at both investigated sites. Recommendations pertinent to the foundation design contained in our original report F-58-42, can also be used for this proposed structure.

For your convenience, the principal comments contained in our original report F-58-42 are repeated as follows:-

- (1) The upper strata in existence at this site, vary from a loose sand to a relatively soft composite of sand and clay. It is recommended that footings be founded below these upper layers at Elev. 745.0'. At this elevation (approximately 9 ft. below existing ground surface) a stiff layer of silty

cont'd. /2 ...

Principal Comments: (cont'd.) ...

- (1) Cont'd. ...
clay was encountered. At this elevation, a safe allowable bearing pressure of 11 t.s.f. can be used for spread footing design.
- (2) The upper sand strata were found to be water-bearing at the time of the investigation. If high water table conditions are present during construction, shoring and pumping of the excavations will be necessary.
- (3) No approach fill stability problems are anticipated.

Attached, please find pertinent data for this supplementary boring. The location plan and subsoil profile are presented in Drawing No. P-59-77A.

L. G. Soderman,
PRINCIPAL SOILS & FOUNDATIONS ENGR.
per:

AKGh

AKL/MSF
Encls.

(A. K. Loh,
Project Foundation Engineer)

cc: Messrs. A. H. Toys
H. A. Fregaskes
D. C. Ramsay
A. Gater
W. L. Fraser
J. Roy
A. Watt

Foundation Section ✓
Gen. Files.

SUMMARY OF FIELD & LABORATORY TESTS

JOB F 52 - 77

W.P. 301 - 59

HOLE NO.	SAMP NO.	SAMPLE DEPTH (F.T.)	MATERIAL DESCRIPTION	PENET'N RESIST. BLOWS FT	MOIST. CONT. %	PLASTIC LIMIT %	LIQUID LIMIT %	SHEAR STRENGTH p.s.f.	UNIT WEIGHT p.c.f.	REMARKS
1	S1	5.5'-7'	5.5' to 6.5' brown clay sand 6.5' to 7' stiff brown silty clay	20	16.8	--	--	--	--	
	S2	10'-11.5'	Stiff grey silty clay (glacial till)	24	19.3	19.0	29.8	4500	135.4	
	S3	15'-16.5'	" " " " " "	28	19.6	--	--	3850	146.3	
	S4	20'-21.5'	" " " " " "	27	19.4	17.2	31.6	3750	140.1	
	S5	25'-26.5'	" " " " " "	23	20.3	17.6	32.5	3550	148.7	
	S6	30'-31.5'	" " " " " "	23	24.6	--	--	2600	142.6	
	S7	40'-41.5'	" " " " " "	54	16.2	--	--	--	140.7	
			S Denctes Split Spoon Sample							

DEPARTMENT OF HIGHWAYS - ONTARIO MATERIALS AND RESEARCH SECTION

W.P. 301 - 59 BORE HOLE NO. 1

JOB 59 - 77 STATION See Drawing

DATUM 754.2' COMPILED BY B.K.

BORING DATE July 28/59 CHECKED BY A.L.

2" DIA. SPLIT TUBE
2" SHELBY TUBE
2" SPLIT TUBE
2" DIA. CONE
2" SHELBY
CASING

LEGEND

1/2 UNCONFINED COMPRESSION (Qu)
VANE TEST (C) AND SENSITIVITY (S)
NATURAL MOISTURE AND LIQUIDITY INDEX
LIQUID LIMIT
PLASTIC LIMIT

SYMBOL	DESCRIPTION	ELEV. FEET	DEPTH FEET	STRENGTH AND PENETRATION RESISTANCE			
				1000	2000	3000	4000
	Ground level	754.5	0				
	topsoil				25	50	
	Brown clay sand	748.0					
	Stiff brown silty clay (glacial till)	745.5	10				
	Stiff grey silty clay (glacial till)						
			20				
			30				
		719.5					
	Dense grey clay silt with sand (glacial till)						
		714.5	40				
	Stiff grey silty clay (glacial till)						
	End of borehole	713.0					

CONSISTENCY			SAMPL. P.	NATURAL UNIT WT. P.C.F.
MOIST. CONTENT - % DRY WT.				
10	20	30		
			S1	--
			S2	135.4
			S3	146.3
			S4	140.1
			S5	148.7
			S6	142.6
			S7	140.7

B.H. 1

SHEAR STRENGTH IN P.S.F.

1000 2000 3000 4000 5000

ELEVATION IN FEET

575

565

555

545

535

530

10

20

30

40

MOISTURE CONTENT

SHEAR STRENGTH

10

20

30

40

WATER CONTENT X NAT. — • ATTERBERG LIMITS

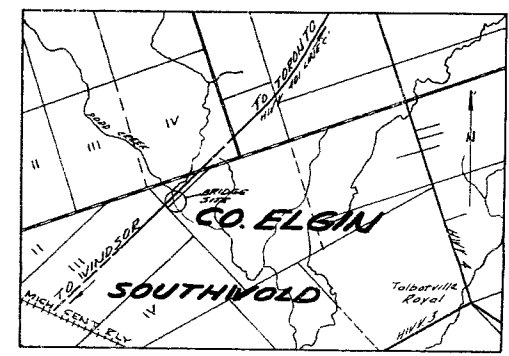
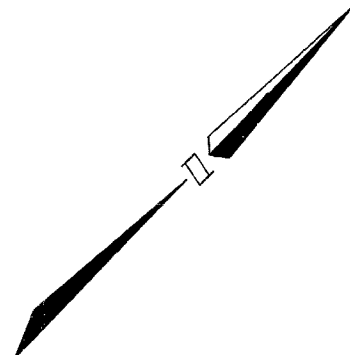
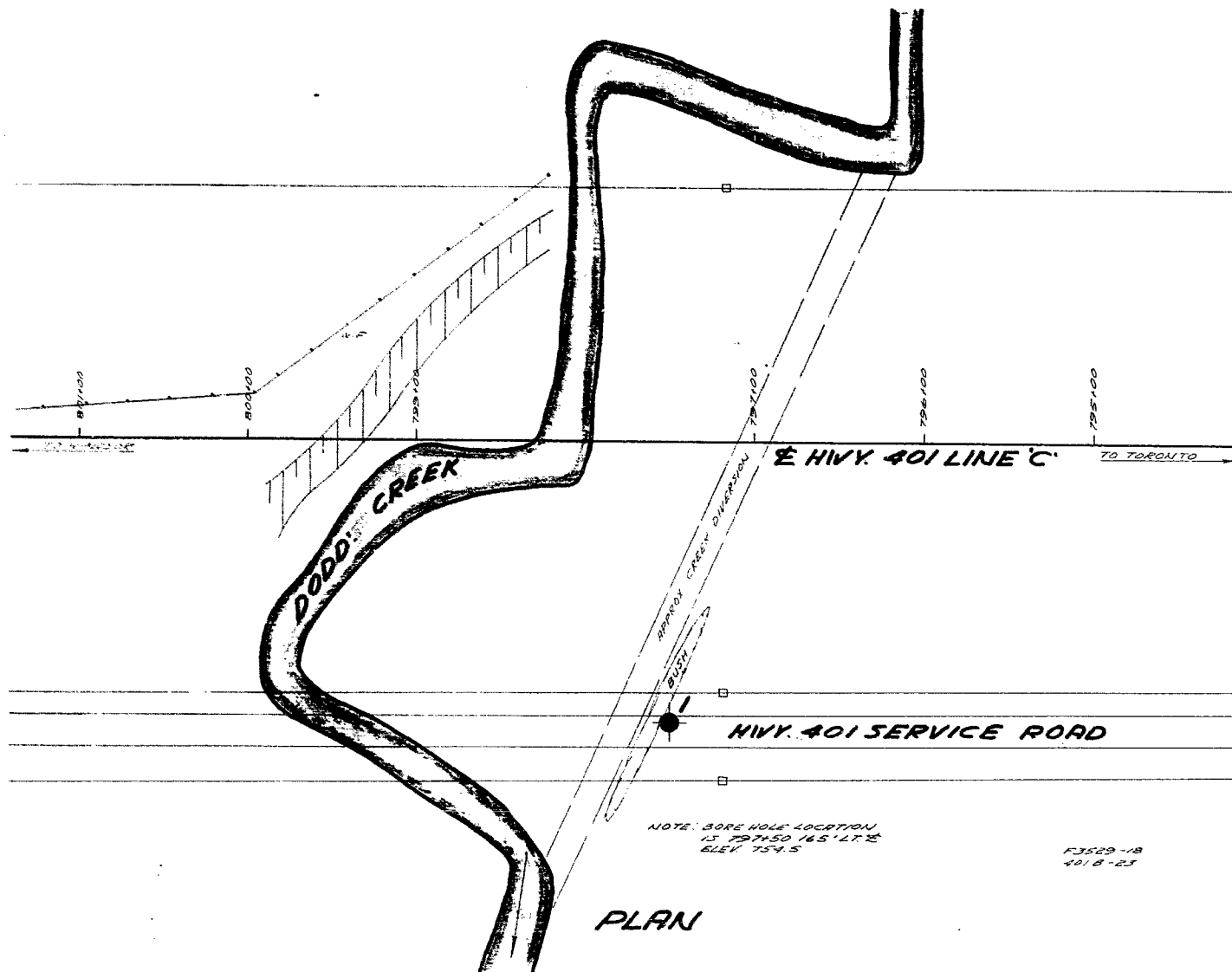
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W.P.-301-59

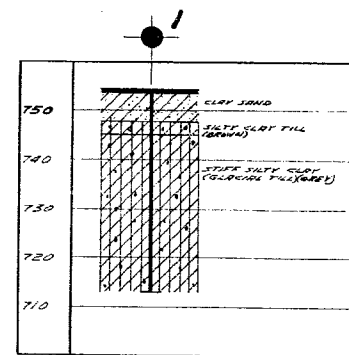
HWY. # 401

SERVICE RD.

± DODD'S CREEK



KEY PLAN
SCALE 1/4" = 1 MI.



DEPARTMENT OF HIGHWAYS - ONTARIO			
MATERIALS & RESEARCH SECTION			
DODD CREEK DIVERSION PROPOSED CROSSING			
SHOWING POSITIONS & ELEVATIONS OF HOLES			
HWY. 401 DISTRICT 2 COUNTY ELGIN			
TOWNSHIP SOUTHOLD LOT 24 CON. III			
LOCATION OPP. 3 1/2 MI. NW. OF TALBOTVILLE ROAD			
DRAWN BY T. MELLORES	CHECKED BY	W.P. 301-53	
DATE 11 AUG 53	APPROVED BY	DRAWING NO.	
SCALE 1/4" = 50 FT		F59-77A	