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61-F-80

CTy. ROAD #10

BAILEY CREEK

CROSSING

FOUNDATIONS SECTION  
AUG 22 1961

ist. 28-6.

Mr. L.O. Mander,  
District Municipal Engineer  
Materials & Research Section.

August 22, 1961.

Re: Proposed Structure Site: Simcoe County Road #10;  
W.O. 61-10603; Tecumseth Township; Lot 5, Con. X,  
Bailey Creek Crossing.

61-F-80

Attached you will find the Foundation Investigation Report prepared for the above-noted structure site. Field work and report were done by our Foundations Section.

The report is self-contained and requires no further comments.

  
T.J. Novich,  
Mun. Materials & Research Liaison Engr.

TJN/bc  
c.c.  
Messrs. McCormick & Rankin  
Foundations Office ✓  
Gen. Files

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## Foundation Investigation

at

Bailey Creek Crossing, Lot 5 Conc. X,  
Twp. Tecumseth, County Simcoe,  
County Road #10, Toronto Municipal  
District. Mun. Job #O. 10603  
R.J. 61-8-80 -- District #6.

### 1. INTRODUCTION:

A subsoil investigation was carried out by this Section at the site of a proposed new structure where Simcoe County Rd. #10 crosses Bailey Creek. The results of this field investigation are contained in this report.

### 2. DESCRIPTION OF SITE AND GEOLOGY:

The proposed structure is parallel to, and 25 ft. west of, an existing bridge crossing the Bailey Creek. The topography of this area is flat and the site is covered by grass.

The site is located in the physiographic region of the Simcoe Lowlands which consist of level plains, underlain by deep beds of sand and silt. These plains are poor draining and the Bailey Creek has cut only a shallow channel. The area south of the creek is covered by a bog, decayed moss and other vegetable matter, to an average depth of 8 ft.

### 3. FIELD INVESTIGATION PROCEDURE:

Two sampled boreholes with a deep dynamic cone penetration test adjacent to one borehole and five additional dynamic cone

3. FIELD INVESTIGATION PROCEDURE: (Cont'd.) ...

penetration tests to establish boundary and depth of the bog were carried out at this site. The densities of the material were determined by means of Standard Penetration Tests. Samples recovered in the Split Spoon were visually examined and classified at the site. The ground water level was observed in the boreholes.

Location and elevations of all boreholes are shown on Drawing No. 61-P-80A.

4. SUBSOIL CONDITIONS:

The stratigraphy of the subsoil was found to be sands varying from medium to fine sand with traces of silt. The area south of Bailey Creek is overlain by a bog, decayed vegetable matter, to an average depth of 8 ft. The relative density of the sand is medium dense to dense.

The ground water elevation at the time of the investigation was found to be at 718.0', the same as the river water level elevation.

The estimated stratigraphical profile is shown on Drawing No. 61-P-80A.

5. DISCUSSION AND RECOMMENDATIONS:

It is recommended to use spread footings with a safe bearing load of 2 T.S.F. for the abutment for this structure. The footings should be placed at elevation 714.0'.

Cont'd. /3 ...

5. DISCUSSION AND RECOMMENDATIONS: (Cont'd.) ...

As the water table lies above the proposed footing elevation, one suggested method of dewatering is the use of sheet piles driven to an equal depth below the foundation level as the height of the water table is above this elevation. The water table can easily be established at the time of construction.

The southern area of the site is overlain by about 8' of muck which should be removed and replaced by suitable fill material at the location of the approaches.

6. SUMMARY:

The site of the proposed bridge is located on a sand plain. The southern bank of the river is overlain by 8.0 ft. of muck which should be excavated and replaced by suitable fill material at the approaches.

Spread footings at elevation 714.0' are recommended for the foundations with a safe bearing load of 2.0 T. S. F. Dewatering will most probably be necessary during construction and the use of sheet piles is recommended during the excavation for the footings.

Cont'd. /4 ...

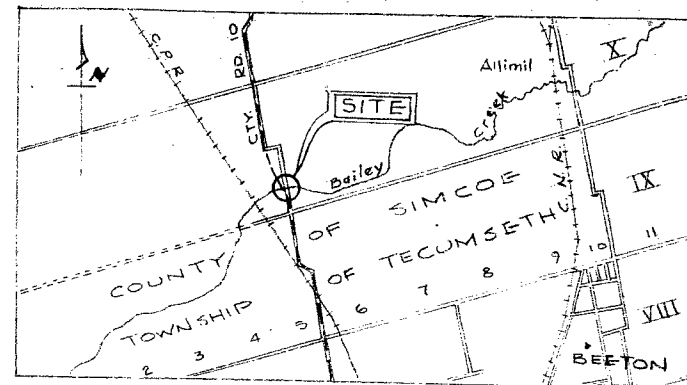
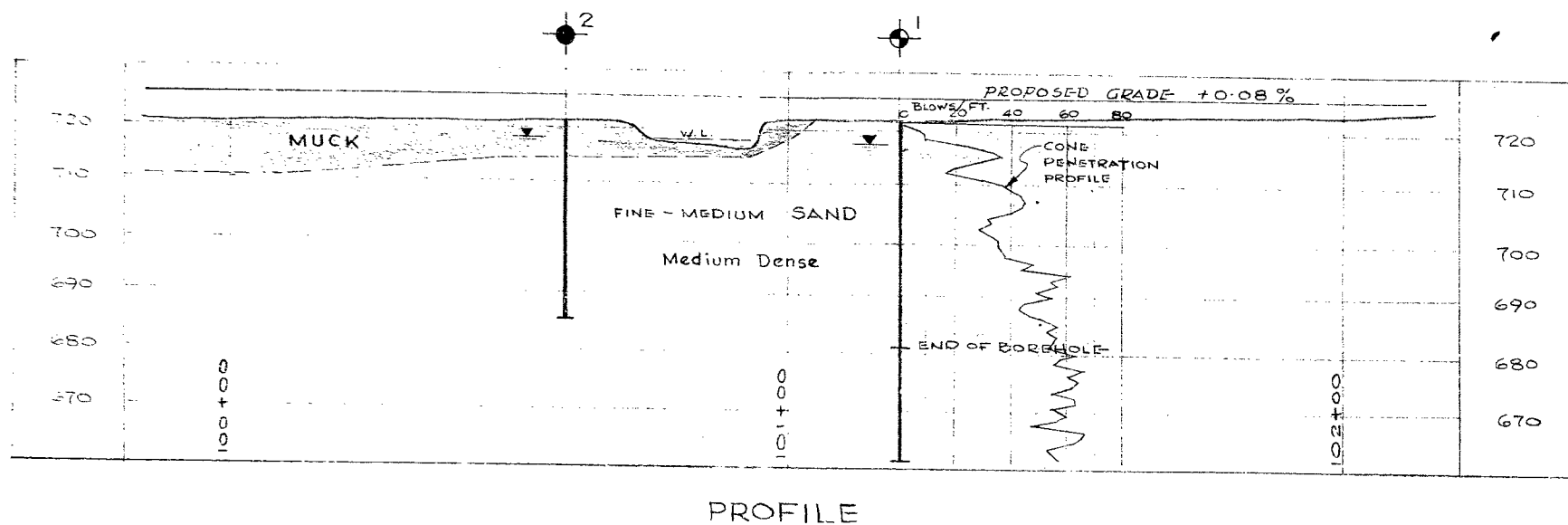
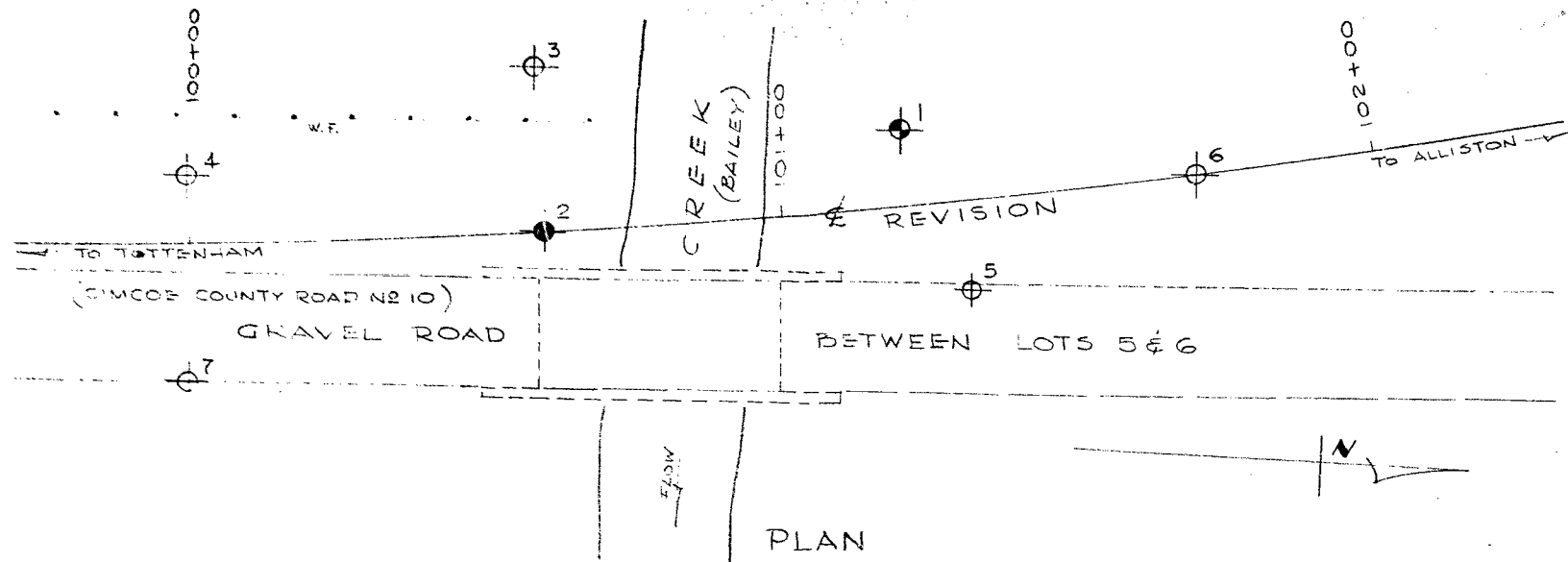
7. MISCELLANEOUS:

The field work was carried out from Aug. 14 to August 16, 1961, by the Dominion Soil Investigations Ltd., using BK casing and a diamond core drill adapted for soil testing. The work was supervised by I. Holubec, Foundation Project Engineer for the Ontario Department of Highways.

REPORT PREPARED BY: *I. Holubec*  
.....  
I. Holubec,  
Project Foundation Engr.

August 1961.

REPORT APPROVED BY: *A. G. Stermac*  
.....  
A. G. Stermac,  
Principal Foundation Engr.



KEY PLAN  
SCALE - 1" = 0.8 MI.

LEGEND			
	PENETRATION HOLE		
	BOREHOLE		
	BORE & PENETRATION HOLE		
NO	ELEVATION	STATION	OFFSET
1	720.5	101+22	23' LT.
2	720.5	100+60	£
3	721.5	100+60	28' LT.
4	720.5	100+00	12' LT.
5	726.0	101+30	15' RT.
6	721.7	101+70	£
7	724.3	100+00	23' RT.

ORIGINATED I. HOLUBEC	DEPARTMENT OF HIGHWAYS - ONTARIO	SCALE 1" = 20'
DRAWN H. D. REED	MATERIALS & RESEARCH SECTION	W.R. NO.
CHECKED <i>W. J. P.</i>	BAILEY CREEK	JOB NO. 61-F-80
APPROVED <i>R. L. Bell</i>	& SIMCOE COUNTY ROAD NO 10	DWG. NO. 61-F-80A
DATE 17 AUG. 61	PROPOSED REVISION	