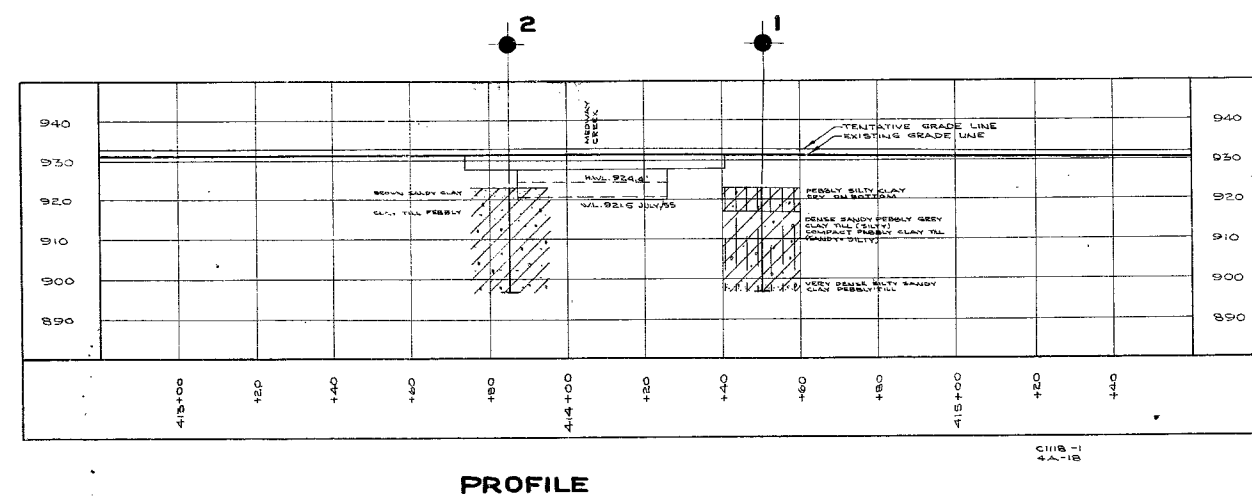
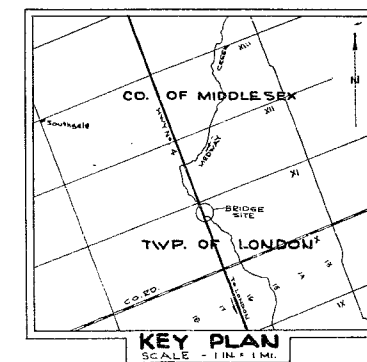
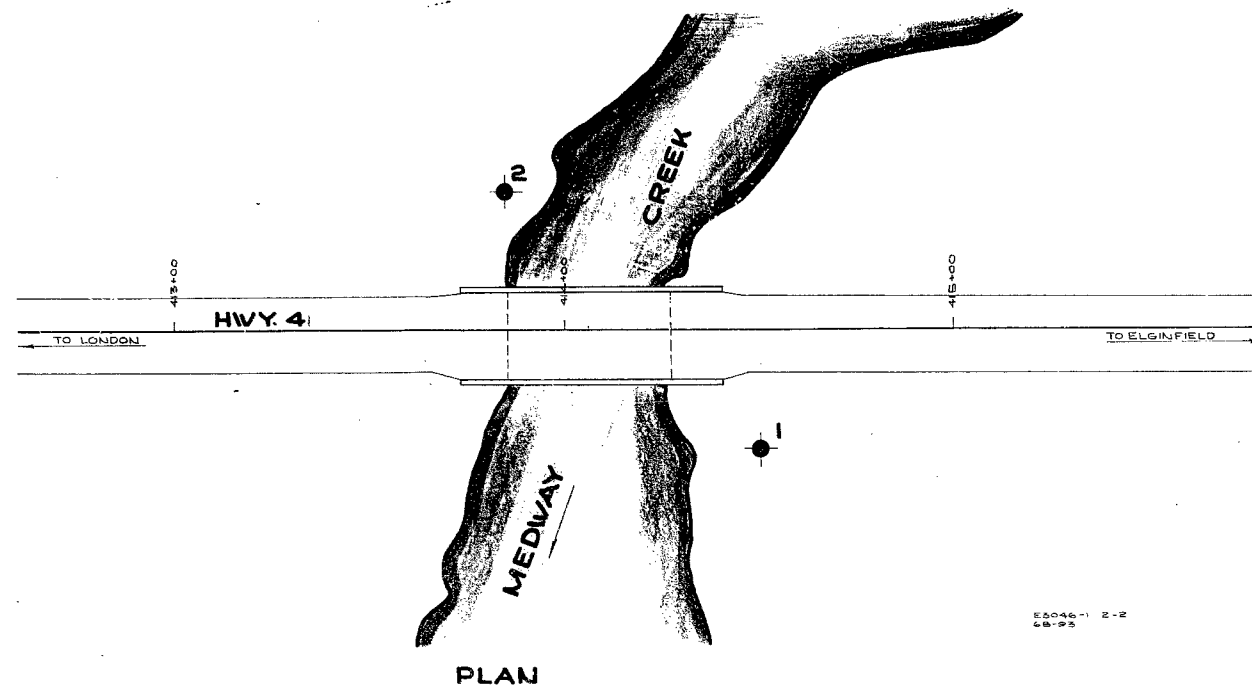


59-F-10
W.P.# 149-59
Hwy. # 4
PROP. CROSSING
MEDWAY CREEK
4.6 MILES S. OF
Hwy. # 7



LEGEND			
BORE HOLE			
PENETRATION HOLE			
BORE & PENETRATION HOLE			
HOLE NO.	ELEVATION	STATION	DISTANCE FROM E.
1	922.5'	414+50	30 FT.
2	923.0'	413+85	35 FT.

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.

DEPARTMENT OF HIGHWAYS - ONTARIO			
MATERIALS & RESEARCH SECTION			
MEDWAY CREEK PROPOSED CROSSING			
SHOWING POSITIONS & ELEVATIONS OF HOLES			
HWY. 4	DISTRICT 2	COUNTY MIDDLESEX	
TOWNSHIP LONDON	LOT 16	CON. XI	
LOCATION APP. 9 MI. N. OF LONDON			
DRAWN BY: T. MELLOR'S	CHECKED BY:	W.P. 149-59	
DATE: 1 JUNE 59	APPROVED BY:	DRAWING NO.	
SCALE: 1 IN. = 20 FT.		F59-10A	

BA 1326

Mr. A. M. Toye,
Bridge Engineer.
Materials & Research Division,
(Foundation Section).

December 29, 1961.

D.H.O. PRELIMINARY FOUNDATION
INVESTIGATION REPORT -
W.J. 59-F-10 -- W.P. 149-59.

Attention: Mr. S. McCombie.

Re: Proposed Crossing -
Hwy. #4 and Medway Creek,
District #2.

It is proposed to construct a new bridge at the location indicated above, to replace an existing structure. This involves a shift in Centre Line some 5 ft. to the west.

A field investigation was carried out in 1959 by this Section, to determine the subsoil conditions existing at the site.

The results of this investigation and subsequent laboratory tests, together with recommendations pertaining to the foundations for the proposed structure, are summarized as follows:-

SUBSOIL:

Subsoil at the site consists of a very dense heterogeneous mixture of clay silt sand and gravel of glacial origin. For de-watering considerations, this material may be assumed to be relatively impermeable. Ground water level may be assumed to be at creek level.

cont'd. /2 ...

FOOTINGS:

The depth of the footings is governed by hydrological requirements. It is understood that elev. 913.00 is the minimum depth necessary to fulfill these. At this elevation, a design load of 3 tons per sq. ft. may be used. Dewatering of excavations should present no major problems. If sheeting is used for scour protection, it may be incorporated in a dewatering scheme.

Little or no differential settlement is anticipated; hence, the new bridge may be any type of rigid frame structure.

APPROACHES:

No problems are anticipated with regard to the stability of the proposed approach embankments.

A complete report will follow
at a later date.

A. G. Stermac,
PRINCIPAL FOUNDATION ENGR.
Per:

K. G. Selby

(K. G. Selby,
SR. PROJECT FOUNDATION ENGR.)

KGS/MdeF

cc: Messrs. A. M. Toye (2) ✓
H. A. Tregaskes
H. D. McMillan
A. Gater
W. L. Fraser
J. Roy
T. J. Kovich
J. E. Gruspier
E. R. Saint
F. Norman
Foundations Office
Gen. Files.



DEPARTMENT OF HIGHWAYS

Bridge Division.

Memo to	Mr. B. Davis,	Date	March 12, 1962.
	Bridge Design Engineer,		
	Administration Building,	Subject	W.P. 149-59
	DOWNSVIEW, Ontario.		Medway Creek Bridge
From	G. Scott		Hwy. #4 4.6 mi. S. of
			Hwy. #7 - District #2

Attached herewith, please find the soil report
BA1326A for the above project.

This project is now under design based on a
Preliminary Soil Report BA1326. It would appear
that the original information is confirmed, however,
we would ask that the designer verify this.

Gavin Scott

GS/ea
cc. S. McCombie
C. Grebski

G. Scott,
Bridge Location Engineer.



DEPARTMENT OF HIGHWAYS

Memo to Mr. A. M. Toye, **Date** February 27, 1962.
Bridge Engineer. **Subject** D.H.O. FOUNDATION INVESTIGATION
From Materials and Research Division, W.J. 59-F-10 -- W.P. 149-59. **REPORT**
(Foundation Section)
Attention: Mr. S. McCombie.

Re: Proposed Crossing -
Hwy. #4 and Medway Creek,
District #2.

Attached, we are forwarding to you, our detailed report on the subsoil conditions existing at the above structure site. A preliminary foundation report for this project was prepared December 29, 1961.

We believe the factual data and recommendations contained therein, should prove adequate for your future design work. If further assistance is required in connection with this project, please do not hesitate to contact our Office.

AGS/MdeF
Attach.

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

cc: Messrs. A. M. Toye (2) ✓
H. A. Tregaskes
H. D. McMillan
A. Gater
W. L. Fraser
J. Roy
T. J. Kovich
J. E. Gruspier
E. R. Saint
F. Norman
A. Watt
Foundations Office -- Gen. Files.

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 8. MISCELLANEOUS.
-

FOUNDATION INVESTIGATION

For

Proposed Crossing
Hwy. #4 and Medway Creek,
District #2.

W.J. 59-F-10 -- W.P. 149-59

1. INTRODUCTION:

A field investigation was carried out to determine the subsoil conditions at this site. The results of this investigation and laboratory test results, together with recommendations for foundations for the proposed structure, are presented in this report.

A preliminary foundation report for this project was prepared during December 1961.

2. DESCRIPTION OF SITE AND GEOLOGY:

The site is located at Hwy. No. 4 crossing Medway Creek, about 9 miles north of the City of London.

This site is located within the physiographic region referred to as "Stratford Till Plain".

The topography is flat to undulating. The geology of the subsoil is mainly moraine till composed of silty clay and gravel of glacial origin.

3. FIELD AND LABORATORY WORK:

The investigations at the site were carried out by means of a core drill machine adapted for soil sampling.

cont'd. /2 ...

3. FIELD AND LABORATORY WORK: (cont'd.) ...

Due to the difficulty of access to the site, only two boreholes were made; one hole near opposite corners of the existing two abutments.

The holes were driven by drilling BX casing, and at 5-ft. intervals, soil samples were taken.

Sampling was done by a 2" O.D. split-barrelled spoon sampler. The dimensions of this sampler and the energy used in driving it, conform to the requirements of the Standard Penetration Test.

The split spoon samples were visually examined in the field and representative samples were brought to the laboratory for further tests.

The logs of the boreholes and their respective locations are shown on Drawing #59-F-10A, attached under Appendix I.

4. SOIL TYPES ENCOUNTERED:

4.1) General:

The subsoil encountered at the site is mainly, gravelly sandy, clayey silt of glacial origin. The holes were driven down about 30 ft. in the same layer and stopped.

4.2) Dense, Gravelly Clayey Silt:

The 30 ft. of the investigated subsoil is made up of gravelly clayey silt material. The upper 5 ft. is oxidized and brown in colour, the rest is grey.

4. SOIL TYPES ENCOUNTERED: (cont'd.) ...

4.2) Dense, Gravelly Clayey Silt: (cont'd.) ...

The measured average liquid limit (22%) and Plasticity Index (10%) indicate the material is clayey silt of low plasticity.

The matrix is mainly clayey silt, and the range of 'N' values 30 - 80 blows per foot, indicate that the layer is in a dense to very dense state.

5. GROUND WATER:

The ground water level may be assumed to be the same as the creek water level, which was 921.5 ft. at the time of the investigation.

6. DISCUSSION AND RECOMMENDATIONS:

The dense till subsoil is suitable for supporting the proposed structure on spread footings. From information received from the Bridge Office, it is understood that hydrological requirements will be satisfied if the footings are placed at elevation 913 ft. or below. At this elevation, a design load of 3 t.s.f. may be used.

Because of the relative impermeability of the subsoil, dewatering of the excavations should present no special problems.

At this site, no differential settlements are anticipated and hence, a rigid frame type structure may be used.

The proposed approach fill embankments will not present any stability problem.

cont'd. /4 ...

7. SUMMARY:

The subsoil consists of very dense sandy, gravelly clayey silt of glacial origin.

The proposed structure of rigid frame type, if desired, can be supported on spread footings with a safe bearing value of 3 t.s.f.

To satisfy the hydrological requirements, the footings should be placed at elevation 913 ft. or below.

Dewatering of the excavations should present no special problems at this location.

Approach fill embankments do not present any stability problem.

8. MISCELLANEOUS:

The field work started on Feb. 28/59 and was completed on March 5/59. The field work was supervised by Mr. V. Korlu of this Section. All laboratory testing was done by the D.H.O. Materials and Research Laboratories.

February 1962

REPORT PREPARED BY:

V. Korlu
.....
V. Korlu,
PROJECT FOUNDATION ENGR.

REPORT APPROVED BY:

K. G. Selby
.....
K. G. Selby,
SR. PROJECT FOUNDATION ENGR.

APPENDIX I.

SUMMARY OF FIELD & LABORATORY TESTS

JOB F-59-10

W.P. 149-59

HOLE NO.	SAMP NO.	SAMPLE DEPTH (FEET)	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	T1	3'-5'	Pebbly, silty clay	21	-	-	-	-	-	
	S2	6'-7.5'	Pebbly, silty clay till	89	13.0	-	-	-	-	
	S3	9'-10.5'	" " " "	50	6.9	-	-	-	-	
	S4	15'-16.5'	" " " "	76	11.4	14.3	26.2	-	144.0	
	S5	20'-21.5'	" " " "	82	12.1	-	-	-	-	
2	T1	3'-5'	Brown, sandy clay	34	-	-	-	-	-	
	T2	6'-8'	Pebbly, silty clay till	32	9.7	12.5	-	4060	-	
	T3	9'-10' 10'-11'	" " " "	50	15.9 9.2	11.0	17.6	-	-	
	S4	15'-16.5'	" " " "	46	14.3	14.0	-	5500	149.3	
	S5	20'-21.5'	" " " "	75	10.3	-	-	-	-	
	S6	25'-26.5'	" " " "	77	11.1	-	-	-	-	
			T1 - Denotes thin walled shelby sample. S1 - Denotes split spoon sample.							

DEPARTMENT OF HIGHWAYS - ONTARIO

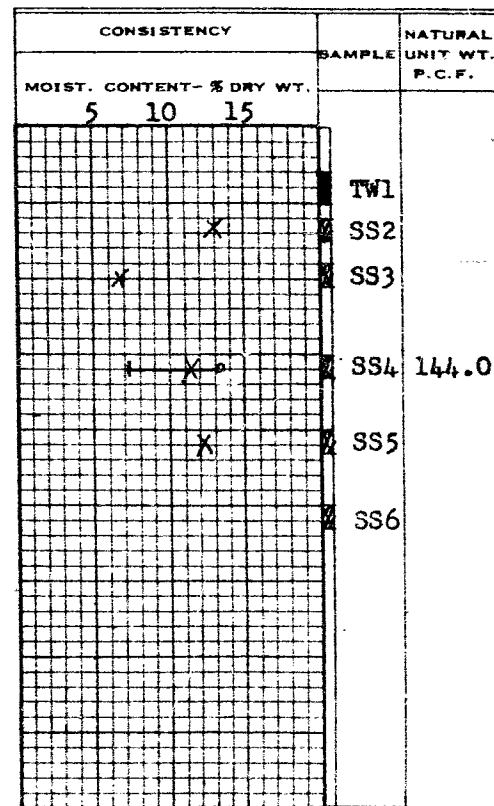
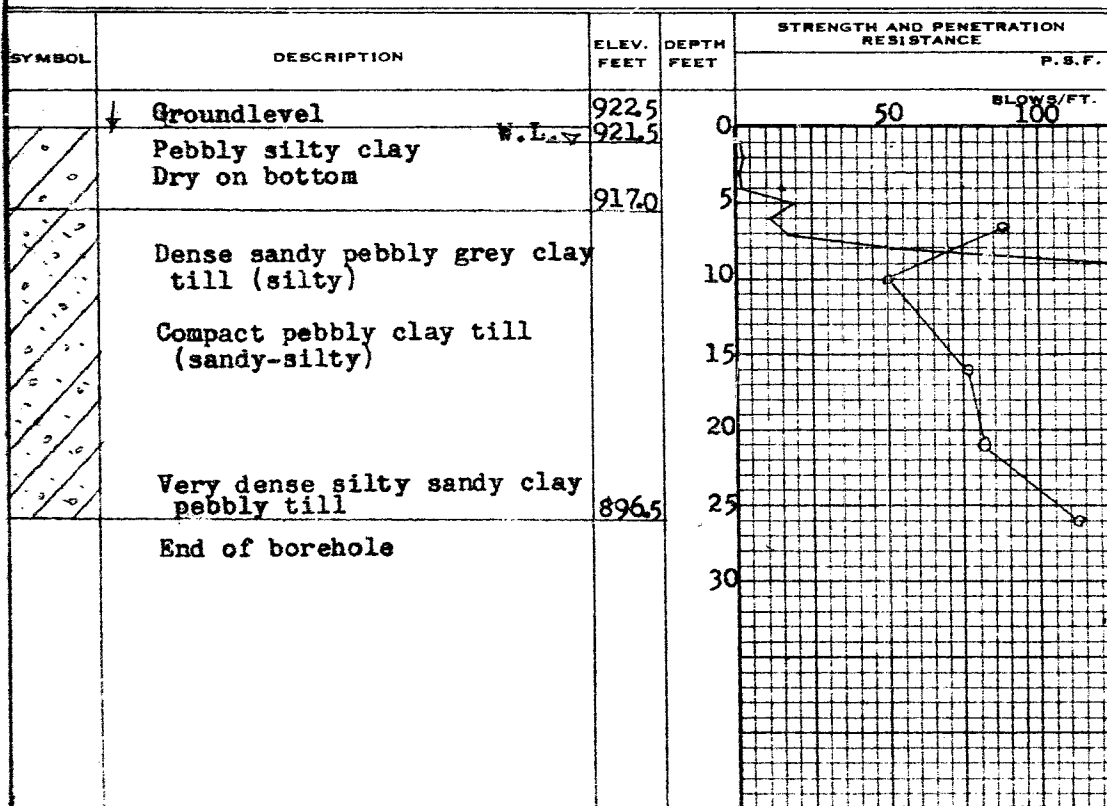
MATERIALS AND RESEARCH SECTION

W.P. 149-59 BORE HOLE NO. 1
 JOB F-59-10 STATION 414/50 (30' R.)
 DATUM Geodetic COMPILED BY _____
 BORING DATE Feb. 28/59 CHECKED BY V.K.

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



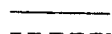
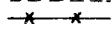
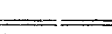

LEGEND

1/2 UNCONFINED COMPRESSION (Q_u) _____ O
 VANE TEST (C) AND SENSITIVITY (S) _____ +
 NATURAL MOISTURE AND LIQUIDITY INDEX _____ LI
 LIQUID LIMIT _____ X
 PLASTIC LIMIT _____







DEPARTMENT OF HIGHWAYS - ONTARIO
MATERIALS AND RESEARCH SECTION

W.P. 149-59 BORE HOLE NO. 2JOB E-59-10 STATION 413+85 (35' Lt.)DATUM Geodetic COMPILED BY _____BORING DATE Mar. 3/59 CHECKED BY V.K.

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

LEGEND

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