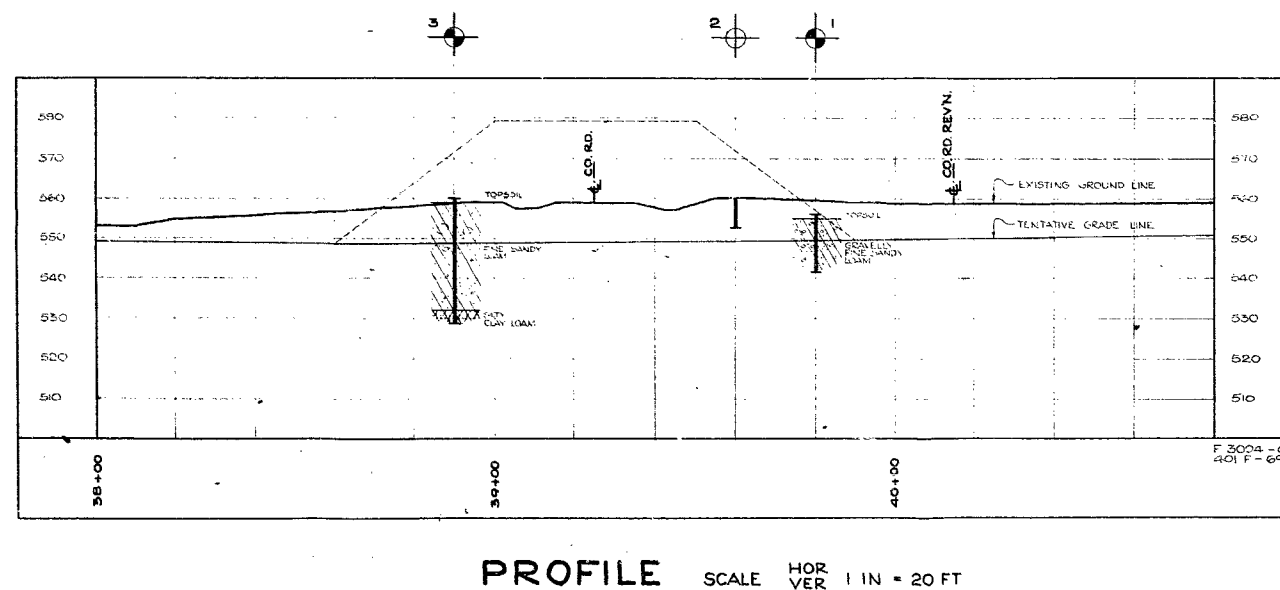
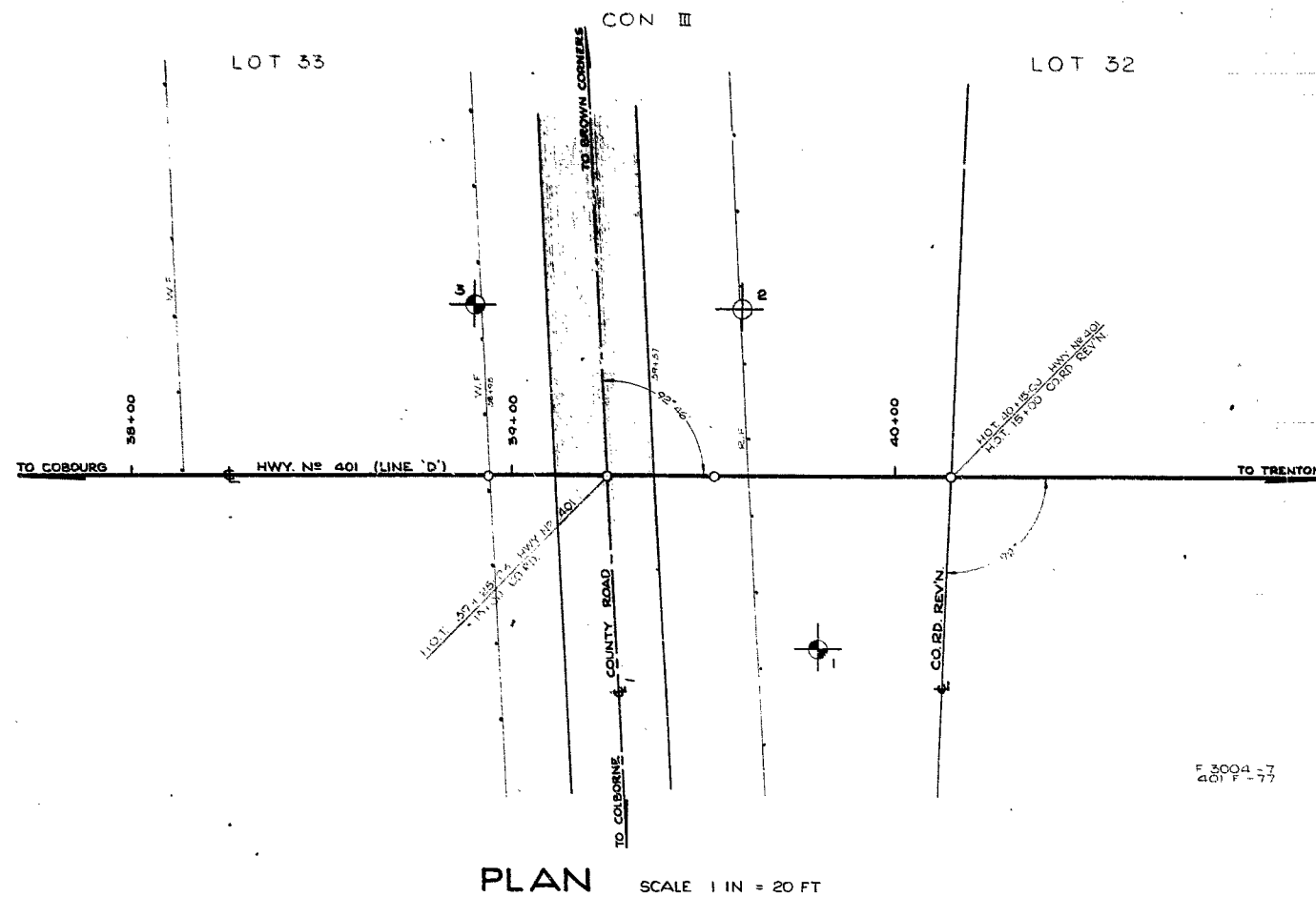


57-F-31
W.P. # 94-57
Hwy. # 401
CROSSING
GRAVEL RD.
CON. # 3
1 MILE N. OF
COLBORNE

EDITED
FOR MICROFILMING
BY *AB* DATE *4/1/72*



LEGEND			
BORE HOLE			
PENETRATION HOLE			
BORE & PENETRATION HOLE			
HOLE NO.	ELEVATION	STATION	DISTANCE FROM E.
1	556.3'	39+80'	45' RT
2	560.2'	39+60'	44' LT
3	550.0'	38+90'	45' 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.

DEPARTMENT OF HIGHWAYS - ONTARIO MATERIALS & RESEARCH SECTION - DOWNSVIEW		
COUNTY ROAD REVISION PROPOSED CROSSING 1 MILE N. OF COLBORNE SHOWING POSITION & ELEVATION OF HOLES		
HWY. NO. 401 (LINE 'D')	WP 94-57	DIV. NO. 7
CO. NORTHUMBERLAND		
TWP. CRAMAHE	LOT 32 & 33	CON. III
SCALE AS SHOWN	SUBMITTED BY	DATE 22 OCT. 57
DRAWN BY R.E.F.	APPROVED BY	DRAWING NO. F-57-31A

c.c. Foundation Section.

Mr. A. Toye.

Bridge Engineer.

Mr. F.C. Brownridge.

November 29th, 1957.

Re: Foundation Report.

New Bridge at Highway 401 crossing
the gravel road between lots 32 & 33
(Con.III) about one mile north of
Colbourne, Township of Cramah.

W.P. 94-57. W.J. F-57-31.

Attached are two copies of the above mentioned Foundation
Report, for your use and information.

F.C. Brownridge.
Materials & Research Engineer.

per:



A. RUTKA.
Principal Soils Engineer.

c.c. Mr. A. Toye.
Mr. H. Tremaskes.
Mr. D. S. Ramsay.
Mr. H.D. Duff.
Foundation Section.
File.

Foundation Report

on

New Bridge at Highway 401 crossing
the gravel road between lots 32 & 33
(Con. III), about one mile north of
Colbourne, Township of Cramahe.

Station: 39/25

Plan No: F 3004-7

Distribution:

Mr. A. Toye
Bridge Engineer (2)

Mr. H. Tregaskes
Construction Engineer (1)

Mr. D. G. Ramsay
Design Engineer (1)

Mr. H. D. Duff
Dist. Eng. PORT HOPE (1)

Foundation Section (1)

File (1)

W.P. 94-57

W.J. F-57-31

Introduction:

A subsoil investigation was carried out to determine the bearing values of layers for supporting the foundations of the proposed structure.

The location is about one mile north of Colborne, where new highway No. 401 crosses gravel road between lots 32 & 33 (Con. III), Township of Cramahe (Station 39/25, Profile No. F 3004-6).

The job started on August 26, 1957 and was completed on September 6, 1957.

Procedure:

The subsoil explorations were carried out by means of skid mounted core-drill machine. In the course of investigations two boreholes with dynamic cone penetration tests and one separate dynamic cone penetration test were made.

The locations of the boreholes are shown on drawing No. F-57-31A, and their elevations on log sheets under Appendix I.

Subsoil Findings and Analysis:

The terrain is till plain. The subsoil explorations revealed the following stratigraphy:

Under the topsoil down to the end of the boreholes the soil is fairly uniform layer of fine sandy loam till, dense with gravel and boulders. The presence of boulders made the exploration very difficult and carrying the boreholes further down was considered unnecessary.

The samples were extracted and tested in the laboratory. From the test results the layer is very dense fine sand, loamy, and contains 10-30% gravel. It has natural moisture content of about 10%. Due to the nature of the soil liquid, plasticity, and unconfined compression tests could not be carried out. In the field during sampling Standard penetration test results were registered. These confirm the very dense nature of the strata.

Conclusions and Recommendations:

From the above discussion it will follow that:

1. The subsoil stratigraphy is fairly uniform dense fine sand, loamy and gravelly.
2. The standard penetration tests performed in the field during sampling registered about 65 blows in borehole No.1 and over 100 blows in borehole No. 3.
3. According to the profile the tentative grade line is at elevation about 549 ft. It will be convenient to support the new structure on spread footing foundations placed at elevation about 544 ft. At this elevation the layer can provide a bearing value of 3 T.s.f. with a safety factor of 3.
4. The approach fills to the new structure do not present any stability problem.

V. Korlu
Foundation Engineer.

APPENDIX I.

DRILL RIG 54-1 OPERATION BORE & PINETIN JOB F-57-31 WP 94-57 BORING 1 STA. 39+80(45' RT)
CASING 3A (standard samplers to fit unless noted) DATE REPORT SEPT. 1957
SAMPLER HAMMER WT. 250 LBS. DROP 19 INCHES COMPILED BY HS CHECKED BY AL DATE BORING 28 AUG 1957

SAMPLE TYPES

SAMPLE CONDITION

C.S. - CHUNK	S.S. - SLEEVE SAMPLE
D.O. - DRIVE OPEN	P.S. - PISTON SAMPLE
D.F. - DRIVE FOOT VALVE	W.S. - WASHED SAMPLE
T.O. - THIN WALLED OPEN	R.C. - ROCK CORE



- DISTURBED
- FAIR
- GOOD
- LOST

SAMPLES

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO
 MATERIALS & RESEARCH BRANCH - FOUNDATIONS SECTION - DOWNSVIEW
OFFICE REPORT ON SOIL EXPLORATION

DRILL RIG 84-1 OPERATION PENETRATION JOB T-57-3 WP. 94-57 BORING 2 STA. 39.60 (44' LT)
 CASING 3X (standard samplers to fit unless noted) DATUM GEODETIC DATE REPORT SEPT 1957
 SAMPLER HAMMER WT. 350 LBS. DROP 19 INCHES COMPILED BY H.S. CHECKED BY AL DATE BORING 29 AUG 1957

ABBREVIATIONS

V - INSITU VANE SHEAR TEST Q - TRIAXIAL QUICK K - PERMIABILITY
 M - MECHANICAL ANALYSIS S - TRIAXIAL SLOW C - CONSOLIDATION
 U - UNCONFINED COMPRESSION WL - WATER LEVEL IN CASING CA - CASING
 Q_c - TRIAXIAL CONSOLIDATED QUICK WT - WATER TABLE IN SOIL γ - UNIT WEIGHT

SAMPLE TYPES

C.S. - CHUNK S.S. - SLEEVE SAMPLE
 D.O. - DRIVE OPEN P.S. - PISTON SAMPLE
 D.F. - DRIVE FOOT VALVE W.S. - WASHED SAMPLE
 T.O. - THIN WALLED OPEN R.C. - ROCK CORE

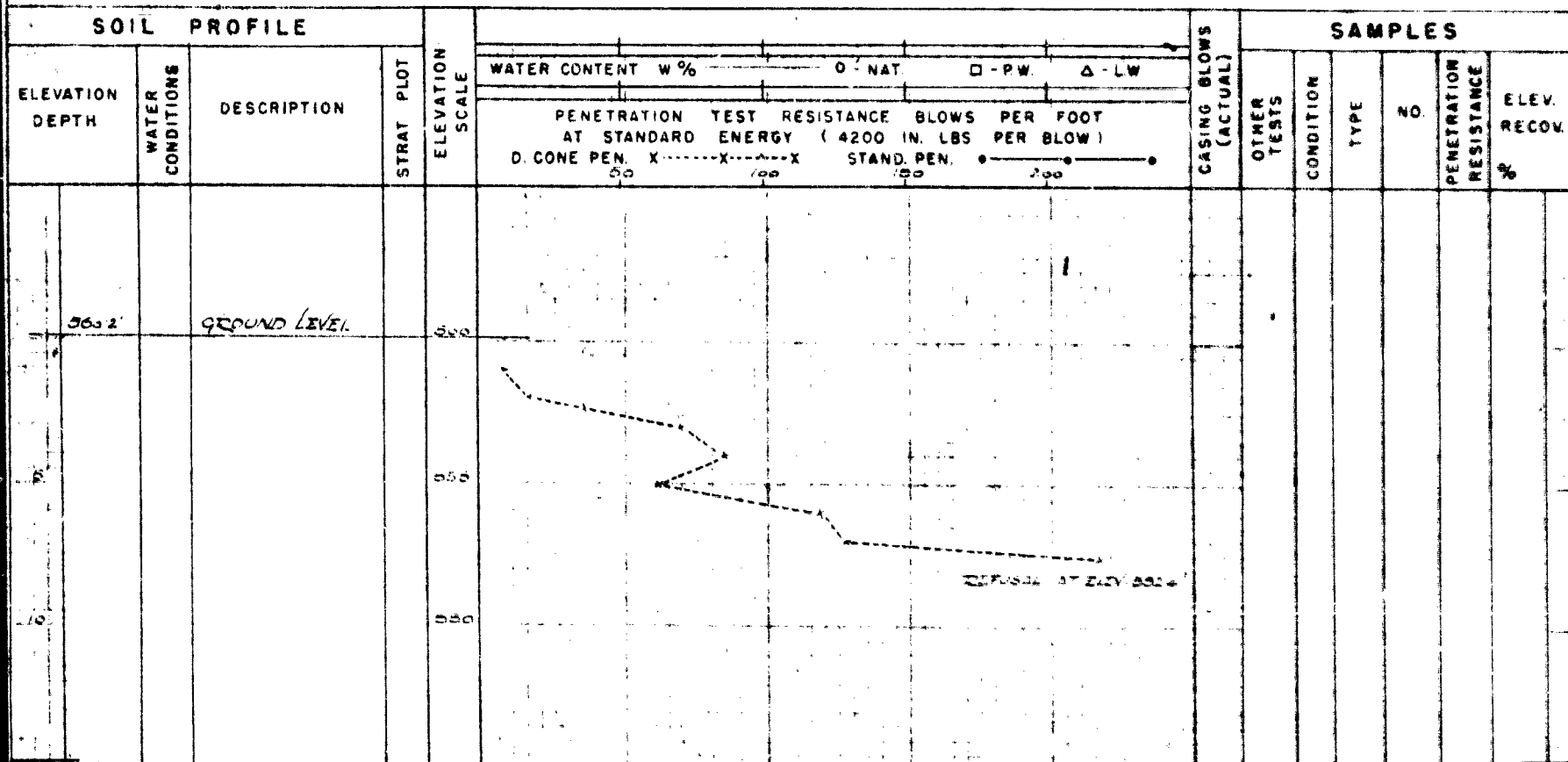
SAMPLE CONDITION



- DISTURBED
 - FAIR
 - GOOD
 - LOST

SOIL PROFILE

SAMPLES



DRILL RIG B-1 OPERATION BORE & PENET JOB T-57-31 WP 24-57 BORING 3 STA 10-9-1-3
CASING B-1 (standard samplers to fit unless noted) DATUM GIODOLIC DATE REPORT _____
SAMPLER HAMMER WT. 250 LBS. DROP 9 INCHES COMPILED BY US CHECKED BY AL DATE BORING 7 SEPT 1957

ABBREVIATIONS

V - INSITU VANE SHEAR TEST Q - TRIAXIAL QUICK K - PERMIABILITY
M - MECHANICAL ANALYSIS S - TRIAXIAL SLOW C - CONSOLIDATION
U - UNCONFINED COMPRESSION WL - WATER LEVEL IN CASING CA - CASING
QC - TRIAXIAL CONSOLIDATED QUICK WT - WATER TABLE IN SOIL γ - UNIT WEIGHT

SAMPLE TYPES

C.S. - CHUNK	S.S. - SLEEVE SAMPLE
D.O. - DRIVE OPEN	P.S. - PISTON SAMPLE
D.F. - DRIVE FOOT /ALVE	W.S. - WASHED SAMPLE
T.O. - THIN WALLED OPEN	R.C. - ROCK CORE

SAMPLE CONDITIO



DISPATCH
FILE
GOOD
LOST

SOIL PROFILE

ELEVATION DEPTH	WATER CONDITIONS	DESCRIPTION	STRAT PLOT	ELEVATION SCALE	WATER CONTENT W %		O - NAT		□ - PW. △ - LW		CASING BLOW (ACTUAL)	OTHER TESTS	CONDITION	TYPE	NO.	PENETRATION RESISTANCE
					PENETRATION TEST RESISTANCE BLOWS PER FOOT AT STANDARD ENERGY (4200 IN. LBS. PER BLOW) D. CONE PEN X-----X STAND. PEN. ●-----●											
519 000		GROUND LEVEL TOP OF OIL		519							12					
				555							18					
		FINE SANDS LOAM		565							20					
				575							22					
				585							24					
				595							26					
				605							28					
				615							30					
				625							32					
				635							34					
				645							36					
				655							38					
				665							40					
				675							42					
				685							44					
				695							46					
				705							48					
				715							50					
				725							52					
				735							54					
				745							56					
				755							58					
				765							60					
				775							62					
				785							64					
				795							66					
				805							68					
				815							70					
				825							72					
				835							74					
				845							76					
				855							78					
				865							80					
				875							82					
				885							84					
				895							86					
				905							88					
				915							90					
				925							92					
				935							94					
				945							96					
				955							98					
				965							100					
				975							102					
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