

55-F-29

Hwy. # 11

PETERSONS
CREEK



MATERIALS LABORATORY-DEPARTMENT OF HIGHWAYS - ONTARIO
OFFICE REPORT ON SOIL EXPLORATION

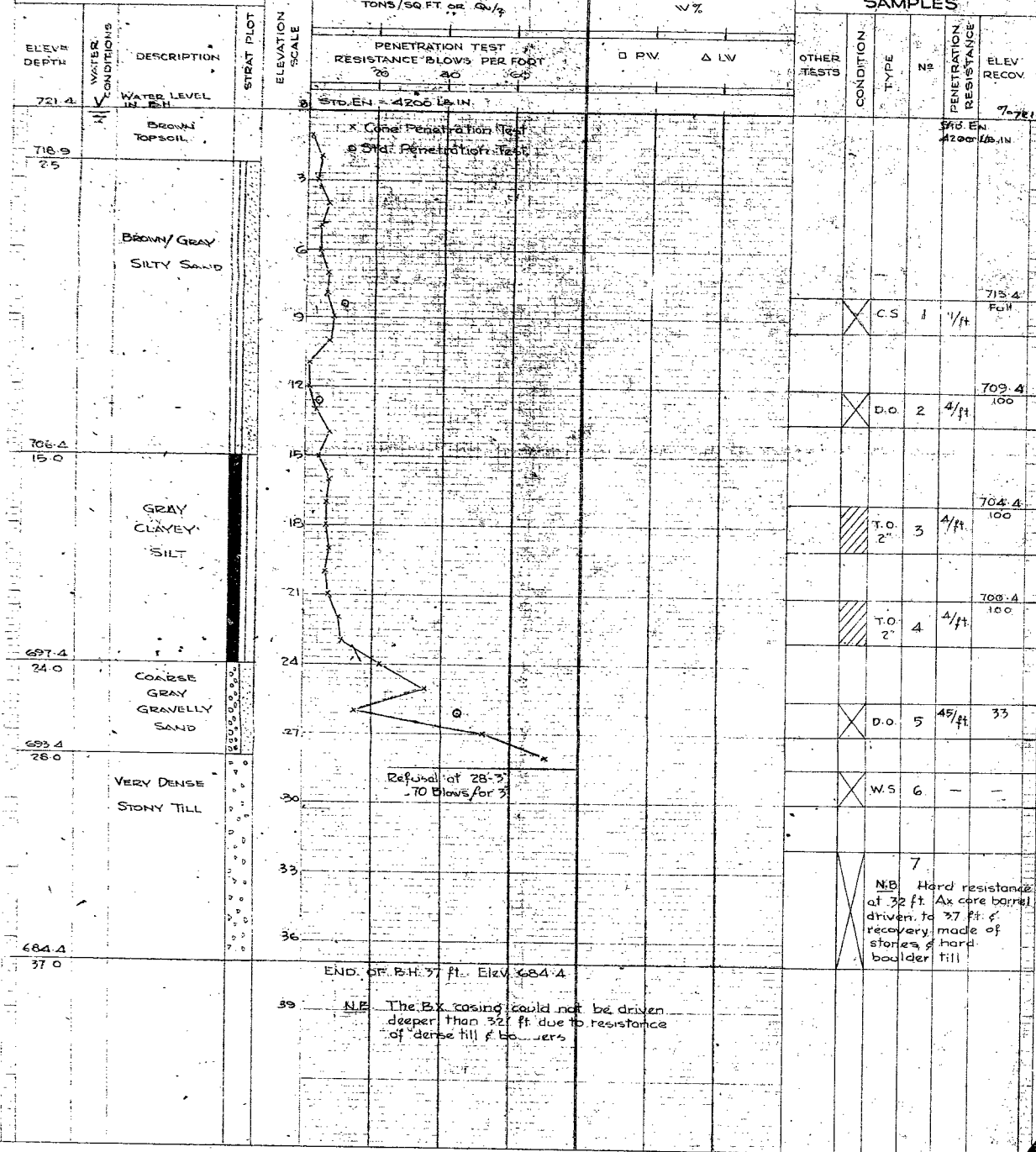
DRILL RIG - CORE DRILL 54-1
CASING - BX (STANDARD SAMPLERS TO FIT UNLESS NOTED)
SAMPLER HAMMER WT - 140
JOB 55 F 29 Highway 11 at Peterson Creek
DATUM Sta. 3778 + 10 Lt. 35 ft
DROP - 30 INCHES
BORING NO. 1
DATE REPORT
BORING DATE Nov. 14/15, 1955
COMPILED BY B.H. CHECKED BY

SAMPLE CONDITION
DISTURBED
GOOD
LOST

SAMPLE TYPES
CS - CHUNK
DO - DRIVE OPEN
D.F. - DRIVE FOOT VALVE
TO - THIN WALLED OPEN
VS - WASHED SAMPLE
RC - ROCK CORE

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

SOIL PROFILE



MATERIALS LABORATORY-DEPARTMENT OF HIGHWAYS - ONTARIO
OFFICE REPORT ON SOIL EXPLORATION

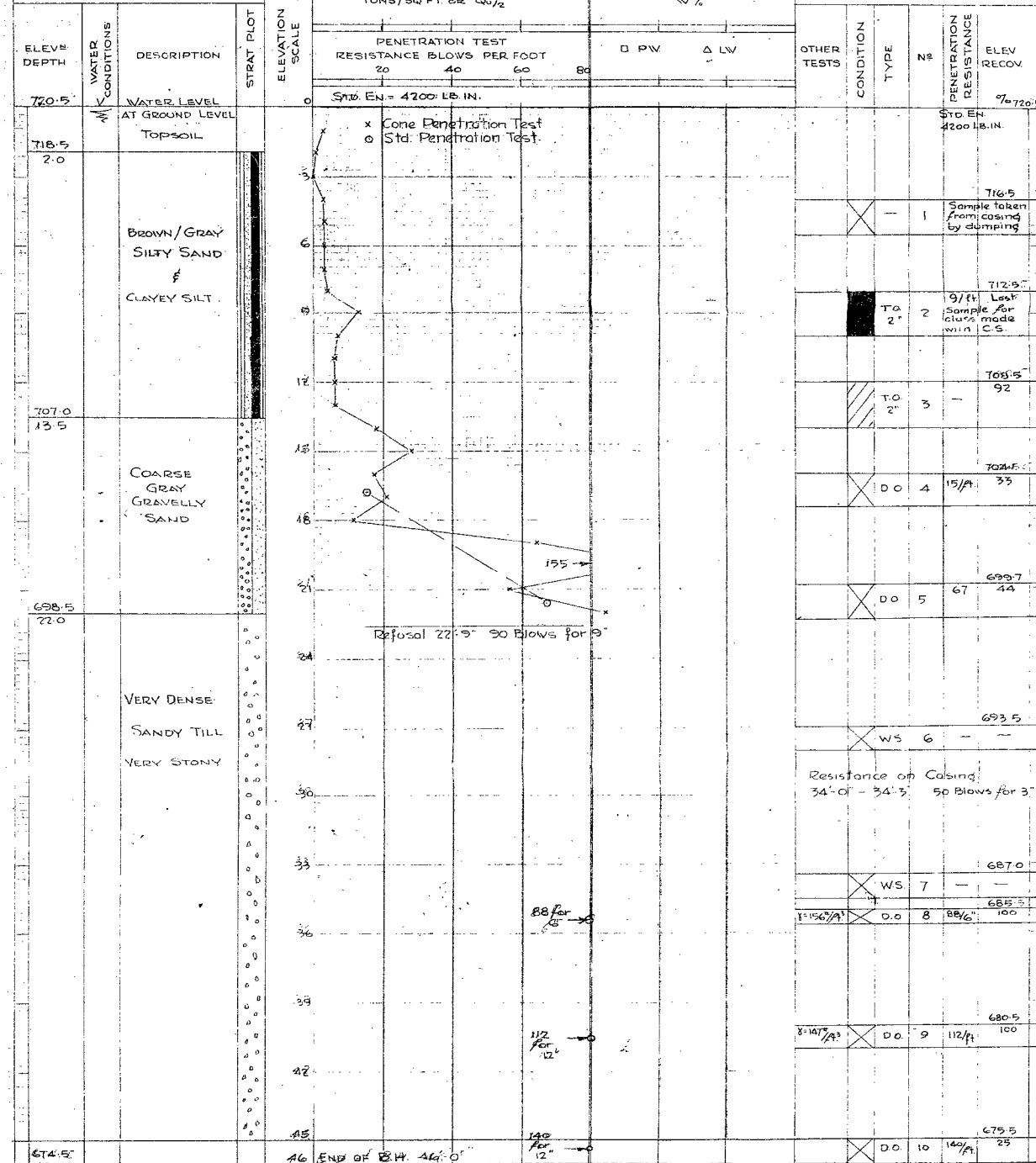
DRILL RIG - CORE DRILL 54-1
CASING - BX (STANDARD SAMPLERS TO FIT UNLESS NOTED)
SAMPLER HAMMER WT - 140
JOB 55 F 29 Peterson Cr. & Hwy. 11
DATUM Sta. 3778 + 56 Rt. 25 ft
DROP - 30 INCHES
BORING NO. 3
DATE REPORT
BORING DATE Nov. 16-18, 1955
COMPILED BY B.H. CHECKED BY

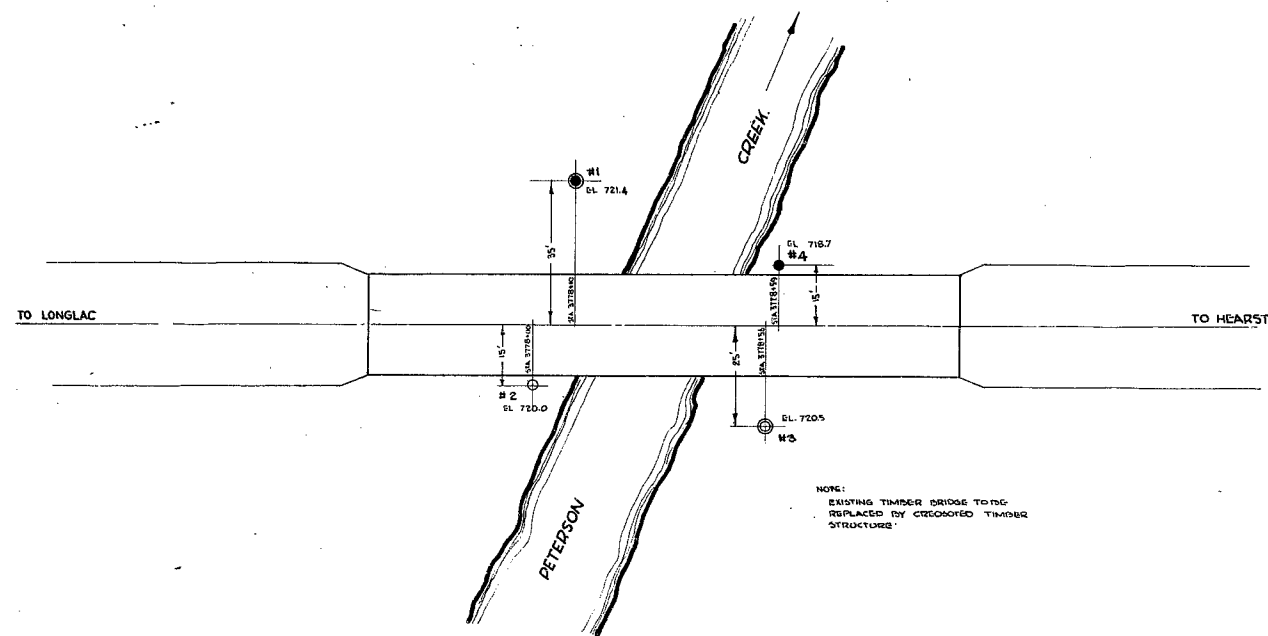
SAMPLE CONDITION
DISTURBED
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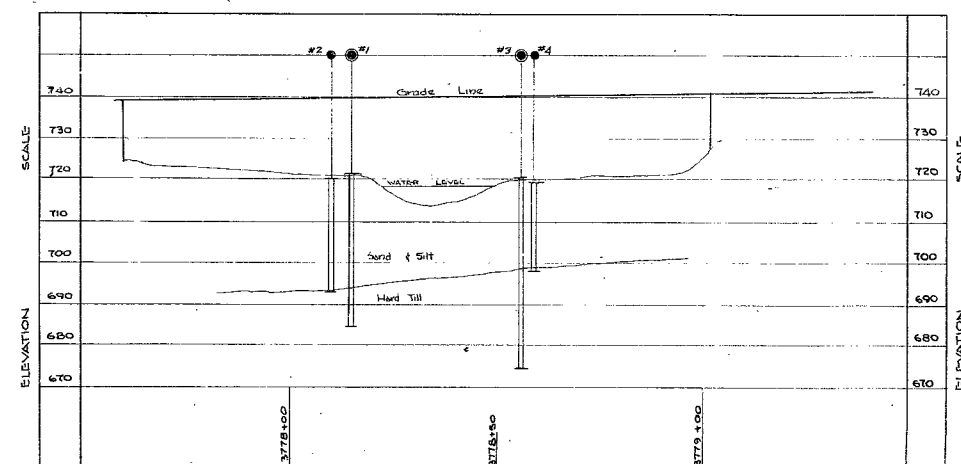
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SOIL PROFILE





PLAN



PROFILE

LEGEND

● PENETRATION HOLE
 ● PENETRATION & CORE HOLE

SCALE

HORIZONTAL 1" = 20'
 VERTICAL 1" = 20'

PRINT RECORD		
NO.	FOR	DATE

REVISIONS:	DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS-ONTARIO-			
BRIDGE OFFICE-TORONTO			
BRIDGE AT HWY 11 & PETERSON CREEK		JOB 55-F-29	
LOCATION OF CORE-HOLES			
THE KING'S HIGHWAY NO. 11		DIV. 4, 19	
CO. DISTRICT OF THUNDER BA.			
5 1/3 MI. EAST OF LONGLAC			
APPROVED			
CHIEF BRIDGE ENGINEER		CHIEF ENGINEER	
DESIGN	CHECK	CONTRACT NUMBERS	
DRAWING	CHECK	LOADING	
TRACING	CHECK	DRAWING NUMBER	55-F-29A
DATE	21-12-55		

Highways Laboratory,
c/o Room 1422,
Parliament Buildings,
Ottawa, Ontario.

January 10, 1959.

Mr. A. Toth,
Bridge Engineer.

Dear Mr. Toth:

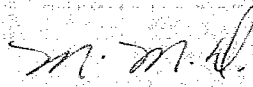
Re: Foundation Investigations, Peterboro Gravel Pier, Ill;
O.S. No. 1, of January 1958; Project 13-2-58.

Attached please find one copy of the report on the above which
is self-explanatory. One copy of this report has already been delivered to
Mr. Bruce Davis of your office.

Yours truly,

F. C. Brownridge,
Materials & Research Engineer.

For:


(F. C. Brownridge)

100/10

Copies to:

Mr. A. Toth, Bridge Engineer

Mr. A. Toth, Bridge Engineer

Mr. A. Toth, Bridge Engineer, Ottawa

Mr. A. Toth, Bridge Engineer

File ✓

REPORT OF FOUNDATION INVESTIGATION
BRIDGE AT PETERSON CREEK ON HWY. # 11
3.3 MILES EAST OF LONGILAC

Project 55-F-29

Copies to:

Mr. A. Toye, Bridge Engineer	(2)
Mr. H. Tregaskes, Const. Engineer	(1)
Mr. J. Walter, Design Engineer	(1)
Mr. E. Orr, Dist. Eng. Cochrane	(1)
Mr. G. Farantatos	(1)
File	(1)

I N D E X

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INTRODUCTION

A subsoil investigation at the bridge site on Hwy. # 11 at Peterson Creek, 51.3 miles East of Longlac has been completed.

It is proposed to replace the existing timber bridge with a new crossotied timber structure, and the investigation was made to determine the foundation conditions and the depth to which the timber piles should be driven.

SITE CONDITIONS

The stream at the site is about 30 ft. wide with an average current. It is not used for logging purposes. The existing structure is 144 ft. long.

PROCEDURE

During the period Nov. 14th to Nov. 22nd. two dynamic penetration tests and a borehole were made on each bank of the river. They are located as shown on drawing 55-F-29A.

The road fill at the site is about 12 ft. above the natural ground level and the drill was set up below the bridge on the natural banks of the creek.

The logs of the two boreholes and dynamic penetration tests are found in Appendix I.

SOIL CONDITIONS

Information from the boreholes indicates the existence of a layer of soft silty material varying in nature from sand to clay, extending from ground level to a layer of coarse sand and gravel. Beneath the layer of sand and gravel, which varies in thickness from 4 to 8 ft. is a bed of very dense sandy till. On the West bank the dense till was found at 28 ft. and on the East bank at 22 ft.

SOIL CONDITIONS (continued)

The sandy till is very stony in composition, hard and compact. Driving the casing and taking samples in it was difficult but the recovery of soil from samplings was quite satisfactory for classification purposes.

WATER CONDITIONS

The water table was found to exist at about 1 ft. below the ground surface at the time of exploration. Since the ground level was only a few feet above the water level in the creek the ground water at the site approximated the creek level.

ANALYSIS OF TEST RESULTS AND DISCUSSION

The dense stony till is excellent material for the support of a timber bridge, and the piles should be driven until they are founded on this bed.

The test results show that the overlying silts and sands are soft and should offer little resistance to pile driving. They are also subject to scour in time of flood, and to prevent undermining of the structure it is necessary that the piles should be driven to a safe depth of not less than 16 ft. below the river bed. If the piles cannot be driven to this depth by ordinary driving they should be jettied down.

CONCLUSION

The subsoil on the site is good material for a timber pile foundation.

The piles should be driven until they reach hard resistance on the dense stony till which is found at approximate elevations varying from 697.0 on the East bank to 693.0 on the West bank. If hard driving resistance is met the piles may be stopped at 16 ft. below the river bed, which should be

CONCLUSION (continued)

regarded as a minimum depth because of the danger of undermining by scour.

To prevent crushing of the piles during driving the points should be protected with a suitable form of steel driving shoe.

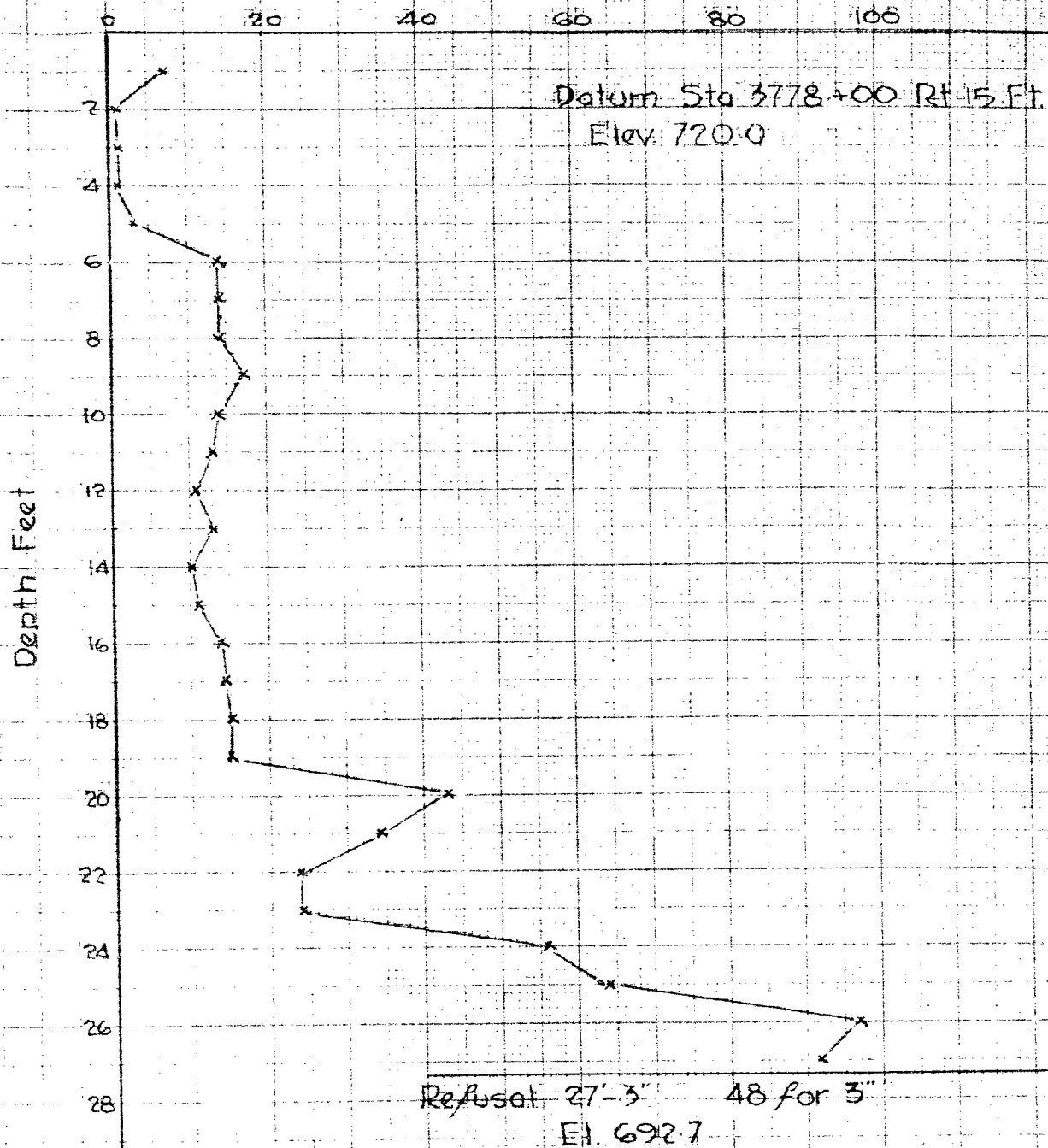
If necessary jetting should be used to drive the piles to the required minimum depth.

G. N. Parantatos,
Foundation Engineer.

APPENDIX I

Hwy #11 at Peterson Creek 55 F 29 BH #2
GRAPH OF CONE PENETRATION TEST

No. Blows of Std. En = 4200 Lp. In.



Hwy No 11 at Peterson Creek 35 F 29 BH # 4
 GRAPH OF CONE PENETRATION TEST

No Blows at Std En = 4200 Lb/In

