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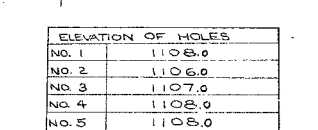
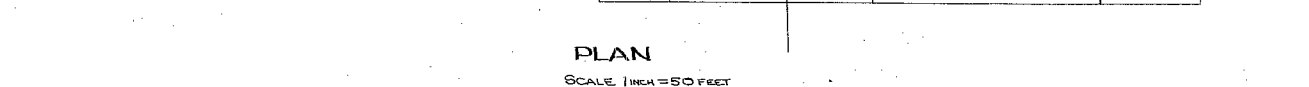
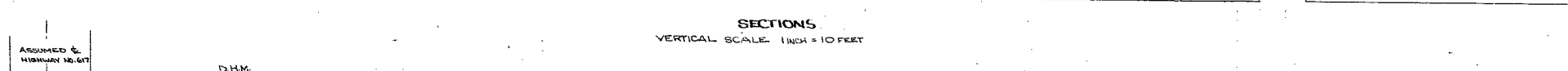
61-F-107


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HWY 11

PATROL YARD

STRATTON



DEPARTMENT OF HIGHWAYS ONTARIO			
MATERIALS & RESEARCH SECTION			
D.H.O. PATROL YARD STRATTON			
ORIGINATED R. MORGENSTERN	DISTRICT NO. 20	DATE OCT. 20, 1961	
DRAWN M. HILL	W.R. NO. H9-61	JOB NO. G-1-107	
CHECKED	SCALE	DRAWING NO.	
APPROVED 	AS SHOWN	APPENDIX NO. 1	



ONTARIO
DEPARTMENT OF HIGHWAYS

61-107
28-20

Memo to Mr. A. Stermac Date November 4th, 1961.
Principal Foundations Engineer Subject Foundation Investigation
From Materials and Research Patrol Yard at Stratton

Enclosed is the foundation report outlining the subsoil conditions and other data pertinent to the above site.

Sample result sheets, showing the results of soil tests which we considered necessary are also enclosed along with the field boring logs and the daily work records.

A shear vane suitable for use with BX casing was not available from our Regional stock, so we used a vane supplied by Canadian Longyear. A calculation of the vane constant is enclosed.

Should you require any other information in addition to that presented, please call this office.


F. NORMAN

REGIONAL SOILS ENGINEER

9452
FN;dc

c.c. Mr. G. Wrong.



ONTARIO

DEPARTMENT OF HIGHWAYS

Memo to Mr. A. Stermac Date November 6th, 1961.
Principal Foundations Engineer Subject D.H.O. FOUNDATION INVESTIGA-
From Materials and Research TION - W. J. 61-F-107

RE: Proposed Patrol Yard at Stratton,
Ontario, Hwy. #11, District #20.

WP 119-61

It is proposed to construct a light steel garage, a salt shed and a paved base for the support of a stockpile on a site located 500 feet east of the intersection of Highways 11 and 617 on the south side of Highway 11. A sketch of the site with a key plan are shown on Appendix #1.

A foundation investigation was carried out during the first week of October, 1961, by the Port William Regional Soils Section, to determine the subsoil conditions over the general area of the site.

A plan showing the locations of the proposed structures was not available at the time of the investigation.

A total of four sampled boreholes and five dynamic cone penetration tests were carried out.

Continuous samples were taken from general site elevation 1108.0 feet to a minimum depth of 10 feet and thereafter at 5 foot intervals to a depth of 32.5 feet in Borehole #1, 21.5 feet in Borehole #2 and 16.5 feet in Boreholes #3 and #4. Five dynamic cone penetration tests were also carried out to refusal which in all cases occurred between 27 feet and 32 feet below ground level. The locations of the boreholes are shown on the accompanying drawing, Appendix #1.

Elevations were referenced to the centre line elevation of Highway 11 at the junction of Highways 11 and 617 and to a Department of Highways concrete monument located on the north side of Highway 11, 200 feet west of the site.

The area in which the site is located is known as the Rainy River District and lies at the margin of the great Laurentian Plateau region of Canada. Bedrock, chiefly of the Pre-Cambrian era,

is generally covered by glacial drift and lacustrine deposits. The area has very little relief and has been partly cleared chiefly for dairy farming. The remaining tree growth consists mainly of small poplar.

The subsoil conditions are uniform over the entire site.

The topsoil varies in depth from 6 to 9 inches. Being derived from clay it becomes soft when wet and vehicles have difficulty in moving over it under these conditions.

A stratum of medium to stiff clay occurs from 6 inches to an average depth of 6 feet. The shearing resistance of this material is about 2200 PSF as determined from an in-situ vane test.

Beneath this stratum a layer of grey-brown medium sandy silty clay was encountered which varied from 3 feet to 8 feet in thickness. The 'N' value for this material was found to be 6.

Dark-grey stiff sandy clay was then encountered to the bottom of each borehole. The 'N' value of this material was found to be an average of 11.

No free water was encountered in any of the boreholes. Most wells in the area are about 70 feet deep.

RECOMMENDATIONS

1. It is recommended that the garage and the salt shed be supported on spread footings placed at elevation 1100.0, that is, at an average of 7 feet below ground level on the sandy silty clay stratum.

A design load of 1.0 tons per square foot may be used.

2. No dewatering problems are anticipated.

3. It is recommended that all topsoil be removed over the whole site to a depth of 12 inches and the site crowned to allow for surface drainage on the clay layer. This will obviate the need for subdrains under the roadways and paved areas.

4. It is recommended that 12 inches of sand cushion and 4 inches of G.B.C. Class "A" be placed on roadways, parking areas and under stockpile areas. All granular material should be compacted to 100 per cent proctor density in not more than 6 inch layers.

5. Surfacing for the paved areas should consist of a 2 inch layer of HL-4.

REPORT PREPARED BY: *R. Morgenroth*.....

R. MORGENROTH

Project Soils Engineer

REPORT APPROVED BY: *F. Norman*.....

F. NORMAN

Regional Soils Engineer

RM;dc

c.c. Mr. G. Wrong

Mr. F. E. Cavell,
Superintendent,
Special Services Section.

Materials & Research Division,
(Foundation Section).

Attention: Mr. E. Hobby.

November 15, 1961.

D.H.O. FOUNDATION INVESTIGATION
REPORT
W.J. 61-F-107 -- (W.P. Hill).

Re: PROPOSED PATROL YARD AT STRATTON, ONT.,
HIGHWAY 30. 11 -- DISTRICT NO. 20.

Attached, we are forwarding to you, the detailed foundation report prepared at our request, by the Materials and Research Division at the North-Western Region, Fort William. The report was prepared by Mr. R. Hergenroth, Project Soils Engineer, and approved by Mr. F. Norman, Regional Soils Engineer.

We believe the information contained in this report 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.

AMH/MCF
Attach.

cc: Messrs. F. E. Cavell (2)
E. Hobby

H. A. Trogaskes
H. D. McMillan
H. C. Tackaberry
F. B. Whiteley
F. Norman
T. J. Kovich
J. E. Gruspiet
E. R. Saint
J. Ray
Foundations Office
Gen. Files. ✓

A. G. Starnes
A. G. Starnes,
PRINCIPAL FOUNDATION ENGINEER



ONTARIO

DEPARTMENT OF HIGHWAYS

Memo to Mr. A. Stermac Date November 6th, 1961.
Principal Foundations Engineer Subject D.H.O. FOUNDATION INVESTIGA-
From Materials and Research TION - W. J. 61-F-107

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REPORT PREPARED BY: *R. Morgenroth*
R. MORGENROTH
Project Soils Engineer

REPORT APPROVED BY: *F. Norman*
F. NORMAN
Regional Soils Engineer

RM;dc
c.c. Mr. G. Wrong

APPENDIX I.