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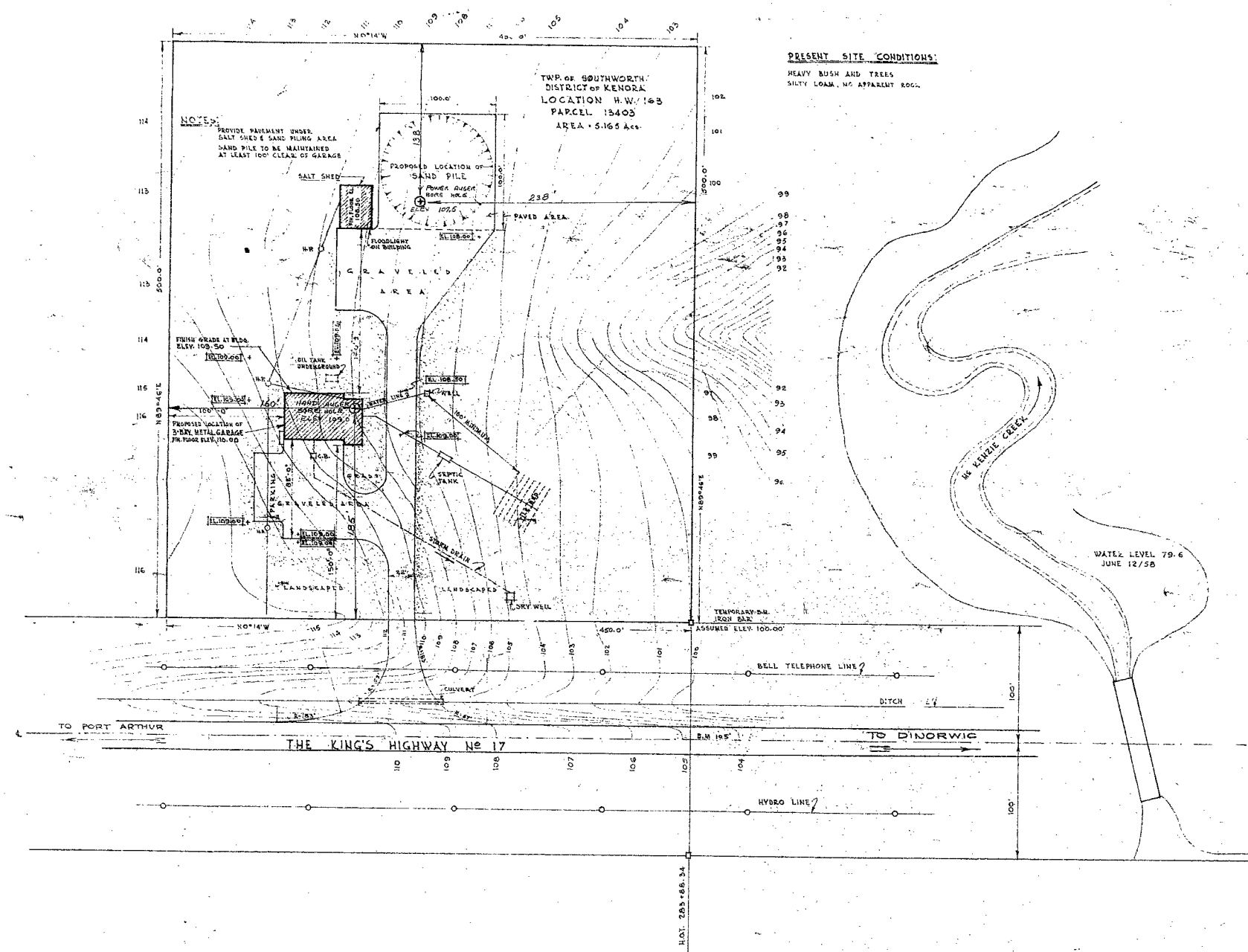
62-F-67

HWY #17

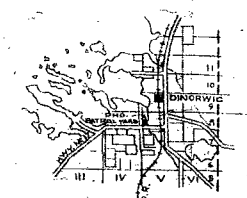
DINORWIC

PATROL

GARAGE



PRESENT SITE CONDITIONS:
HEAVY BUSH AND TREES
SILTY LOAM, NO APPARENT ROCK



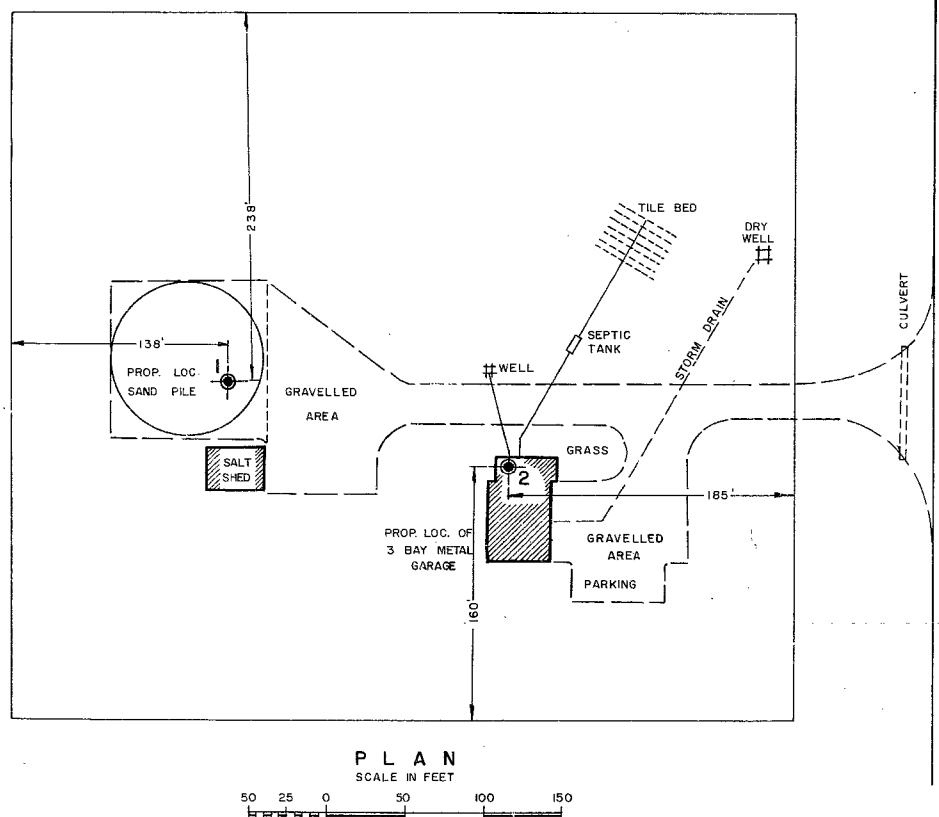
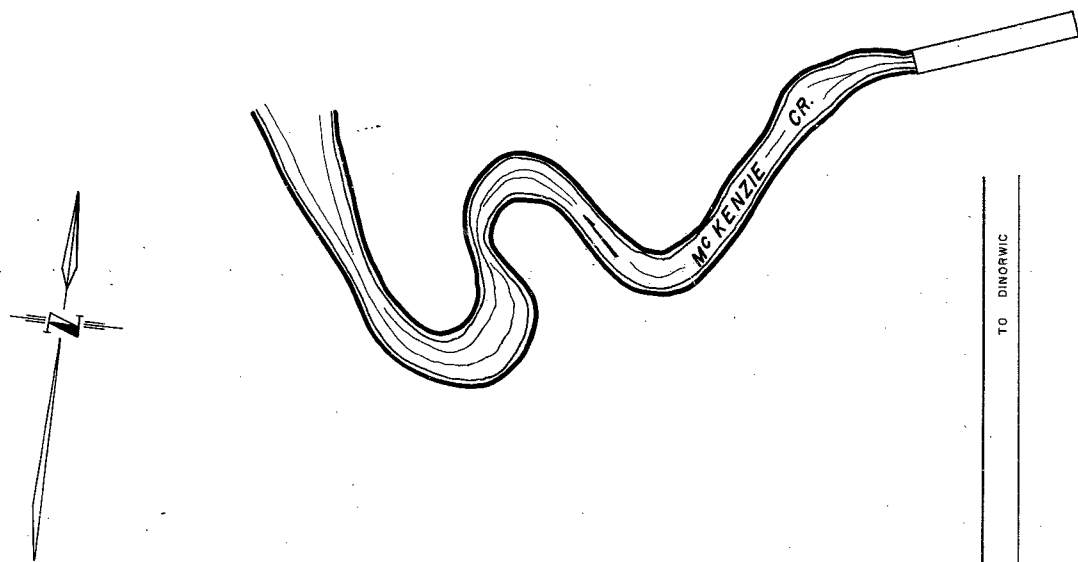
KEY PLAN
SCALE: 1" = 2 MILES

NOTE:
THE SITE LAYOUT SHALL NOT BE ALTERED WITHOUT APPROVAL OF D.H.D. SUPERINTENDENT OF SPECIAL SERVICES

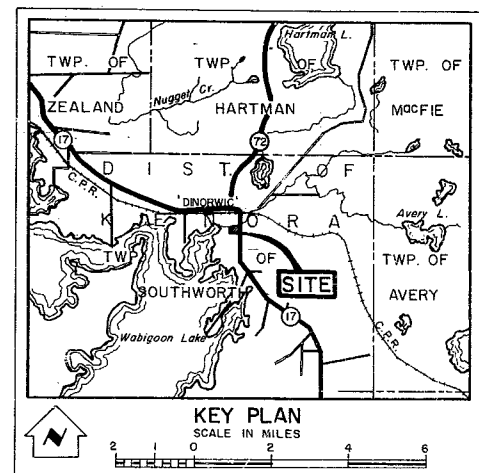
ALL ENTRANCES AND/OR EXITS SHOWN ON THIS PLAN HAVE BEEN APPROVED BY PLANNING AND DESIGN BRANCH

SITE PLAN OF PATROL YARD
DINORWIC
TWP. OF SOUTHWORTH
KENORA DISTRICT
SCALE: 1" = 50'-0"

DEPT. OF HIGHWAYS
3-BAY PATROL GARAGE
A. PLOT PLAN FOR:
DINORWIC, ONT.
AUG. 18TH, 1958
ENTRANCE ROAD WIDENED TO STANDARD JUNE 2ND, 1959
GRAVELLED AREAS REDUCED NOV. 11, 1960
WELL SHOWN ON PLAN
GARAGE ALTERED FROM MASONRY TO METAL JAN. 15-1962



PLAN
SCALE IN FEET
50 25 0 50 100 150



- LEGEND**
- 1 - POWER AUGER BOREHOLE EL. 107.5
 - 2 - HAND AUGER BOREHOLE EL. 109.0

DEPARTMENT OF HIGHWAYS - ONTARIO		
MATERIALS & RESEARCH SECTION		
DINORWIC PATROL GARAGE		
ORIGINATED F. NORMAN	DISTRICT NO. 20	DATE JUNE 19, 1962
DRAWN F. CLARK	W.P. NO. —	JOB NO. 62-F-67
CHECKED <i>[Signature]</i>	CONT. NO.	DRAWING NO.
APPROVED <i>[Signature]</i>		62-F-67A

REF. NO. 5-54

*Dist. 28-20.
23-67-157*

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

June 18, 1962.

Materials & Research Division,
(Foundation Section)

D.H.O. FOUNDATION INVESTIGATION
REPORT
W.J. 62-F-67 -- W.P. (N11)

RE: PATROL YARD AT DINORWIC, ONTARIO, HWY. #17, DISTRICT #20.

Attached, we are sending you the report for the above-mentioned site. The investigation and the preparation of the report was carried out by the Regional Soils personnel from the Fort William District.

As you will notice, the recommended foundation depth is only 2 ft. below ground level. It is felt that the importance and cost of the structure does not warrant complete and absolute frost protection which would be in the order of 8 feet. It is also believed that whatever frost heave will be encountered, will be of a more or less uniform nature and therefore, not detrimental to the structure.

Should there be any additional information required, please do not hesitate to call on our Office.

AGS/MdeF
Attach.

cc: Messrs. F. E. Cavell (4)
H. A. Tregaskes
H. D. McMillan
F. B. Whiteley
J. Roy
J. E. Gruspier
F. Norman
E. R. Saint
T. J. Kovich
Foundations Office ✓
Gen. Files.

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



ONTARIO

DEPARTMENT OF HIGHWAYS

Memo to Mr. A. Stermac Date June 13th, 1962
Principal Foundations Engineer Subject D. H. O. FOUNDATION
From MATERIALS AND RESEARCH INVESTIGATION - W.J. 62-F-67
W.P. (Nil)

RE: Patrol Yard at Dinorwic, Ontario
Highway #17. District 20.

It is proposed to construct a light 3-bay steel garage and a paved base for the support of a stockpile on a site located about 1/2 mile east of Dinorwic on Highway 17.

The salt shed, as shown on the site plan No. 5-54, attached, was constructed in 1960. The foundations are founded near ground level just below the topsoil and are re-inforced with 3/4 inch bars. An inspection of the foundation walls indicated no cracking has taken place.

A preliminary investigation was carried out in mid-April 1962, at the above site to determine the sub-soil types, using a power-auger.

Because of the nature of the clay subsoil encountered, it was decided that a coredrill investigation was not warranted.

On May 24th, 1962, a hand boring was done from ground elevation 109.0 feet to a depth of 21 feet near the south west corner of the proposed garage. Samples were taken at 5 feet intervals with a peat sampler to determine the consistency and texture of the subsoil.

Insitu vane tests were also attempted to depths of 5 and 10 feet.

The subsoil at the south west corner of the proposed garage consists of a stiff varved clay to a depth of 18 feet. The varves vary in thickness but average about 1/4 to 1/2 inch thick and consist of alternating layers of clay and silt. The varves in the upper 5 feet of this stratum are less distinct than they are below 5 feet. The

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average liquid limit and plastic limit for this material are 51 and 23 per cent respectively. The natural moisture content increases slightly from 35 per cent at 5 feet to 42 per cent at 15 feet. The moisture content being well below the liquid limit confirms the field decision that this stratum is of a stiff consistency with a shear strength in the order of 1 ton per square foot. This material was sufficiently stiff so that insitu vane tests could not be performed. This also confirms the above field decision.

A soft to medium stratum of grey clay was encountered from 18 to 20 feet. The moisture content of this material is 44 per cent. Insufficient quantity of this material was received to do the Atterberg Limits tests but test results from samples of similar material taken previously on other projects in this area indicated a liquid limit of 47 per cent and plastic limit of 23 per cent.

A stiff reddish clay with thin grey clay varves at about 3 inches intervals was encountered from 20 to 21 feet. The natural moisture content, liquid limit, and plastic limit for this material was found to be 54, 57 and 21 per cent respectively.

The water level soon after completing the bore hole was 4 feet below ground level.

The power auger boring in the proposed stockpile area encountered stiff varved clay to a depth of 15 feet. From this and also from the geological features of the area, subsoil conditions over the entire site should be fairly consistent and as described above.

RECOMMENDATIONS

1. In view of the satisfactory performance of the new salt shed which has its foundations founded at ground level, the proposed garage could also be supported on spread footings with a minimum width of 2 feet at a depth of 2 feet below existing ground level, that is, at about elevation 107.0 as per site plan 5-54.

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

2. No major dewatering problems are anticipated although some water may be encountered.
3. Drainage of the site can be realized through the natural slope of the ground by adequate ditching and drains.
4. It is recommended to remove all topsoil from the areas where structures or gravelling is proposed.

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5. It is recommended that a total depth of 18 inches (14 inches sand cushion and 4 inches G. B. C. Class "A") of granular material be placed on roadways, parking areas and under stock-pile areas. All granular material should be compacted to 100 per cent Proctor density in not more than 6 inch layers.
6. Surfacing for the paved areas should consist of 2 inches of HL-4.

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

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

RM;dc

c.c. Mr. G. Wrong

APPENDIX I.