

DOCUMENT MICROFILMING IDENTIFICATION

G.I.-30 SEPT. 1976

GEOCRES No. 52A-122

DIST. 19 REGION

W.P. No.

CONT. No.

W. O. No. 79-12006

STR. SITE No. 48W-77

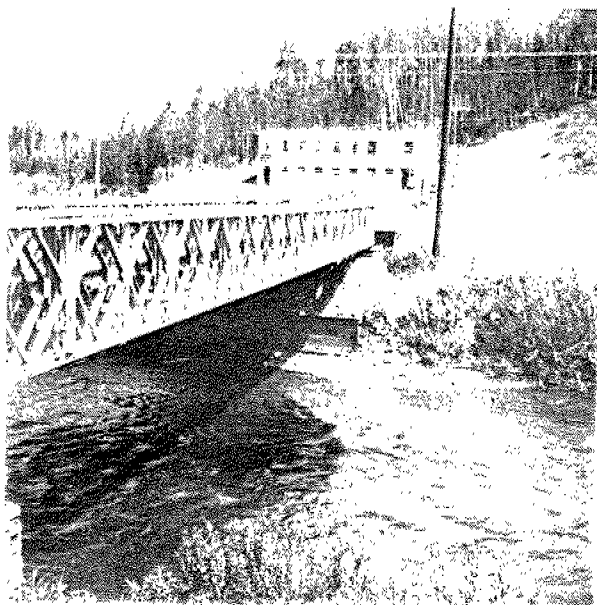
HWY. No.

LOCATION Whitefish River at
Nolalu

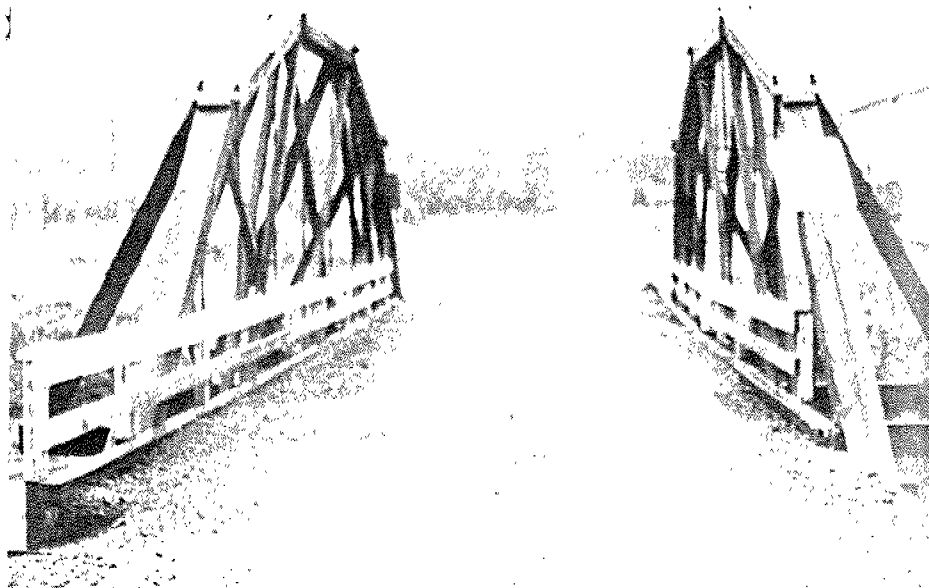
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OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT.

REMARKS:



Looking
48W -77 North, along
new bailey bridge



Previous structure
which failed Spring/77



HIGHWAY ENGINEERING DIVISION-ENGINEERING MATERIALS OFFICE-SOIL MECHANICS SECTION

RECORD OF BOREHOLE No 1

W 0 79-12006

LOCATION 39' East and 12' South of
Southeast corner of replacement bailey bridge ORIGINATED BY R.J.

DIST 19 HWY Township Road

BOREHOLE TYPE Washboring N x Casing, B x Rock Coring COMPILED BY T.K.

DATUM Geodetic

DATE June 28, 1979

CHECKED BY

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT Σ					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	'N' VALUES			20	40	60	80	100					
(assumed) 95.6	Gravel surface																
0.0	Sand + gravel (Fill)		1	SS	6												
5	trace wood chips		2	SS	4												
	- occ. clayey silt		3	SS	8												
10	Loose		4	SS	46												
11.9	Bedrock		5	BxL Rec.													
				Core	100%												
16.8	End of borehole																
20																	
25																	
30																	
35																	

49-27-17-7



Memorandum

To: Mr. W. Kulmatickas
Head, Structural Section
Northwestern Region
Thunder Bay

Attention:

From: Soil Mechanics Section
Engineering Materials Office
Room 315, Central Building

Date: 79 07 25

Our File Ref.

In Reply to

Subject: Re: Foundation Investigation for Whitefish River at Nolalu
W.O. 79-12006 Site 48W-77
District 19, Thunder Bay

As part of Northwestern Region's municipal bridge program for unorganized townships it was proposed to replace the existing Whitefish River structure. However, due to excessive ice loads, the structure failed during the spring and was replaced with a bailey bridge founded on rock filled timber cribs. This memorandum will present the results of a limited foundation investigation carried out at the site on June 28, 1979 for a possible replacement structure. No final report will be issued until a new structure replacement scheme is formalized.

The fieldwork consisted of one sampled borehole advanced by means of a diamond drill adapted for washboring operations to a depth of 11.9 feet. Bedrock was proven by rock coring technique for a depth of five feet.

Subsurface Conditions

Bedrock is exposed on the north side along the river bank and river bottom at an approximate distance of 12 feet below the bailey bridge deck. Overlying competent bedrock is generally a loose sand and gravel fill with traces of wood chips and occasional clayey silt pockets. This granular material was found to extend for a total depth of 12 feet on the south side of the river.

Bedrock is competent, generally dipping at a shallow angle to the south.

Groundwater levels over the site can be assumed to approximate the river water level.

Borehole Record information for this site will be retained on file with the Soil Mechanics Section.

Recommendations

Depending upon the final profile grade of the structure, foundations can be supported on spread footings founded on bedrock for an allowable bearing pressure of 10 t.s.f. Alternatively, footings can be built up from bedrock to the required elevation using mass concrete.

cont'd...

The underside of all footings should have a minimum of eight feet of earth cover for frost protection purposes.

A positive dewatering system for footing excavations may be required depending on water levels in Whitefish River. Tremie concrete may be used for the mass concrete portion of the footing, however, the spread footings should be poured in the dry.

Adequate precautions should be taken to protect the river banks and approach embankment from river scour action. This may be achieved by suitably placed rip-rap.

No stability problems are anticipated for embankment slopes in the forward direction provided they are constructed not steeper than 2:1.



T. Kazmierowski
Project Engineer

TK/gaa

cc: C.M. Smith
D.A. Jarvis
W.A. Stewart
E. Van Beilen
G.A. Wrong
B.J. Giroux
R. Hore (Ministry of the Environment)

Files ✓