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GR-999-040



PUBLIC WORKS
CANADA

PACIFIC REGION

WHITEHORSE, YUKON TERRITORY

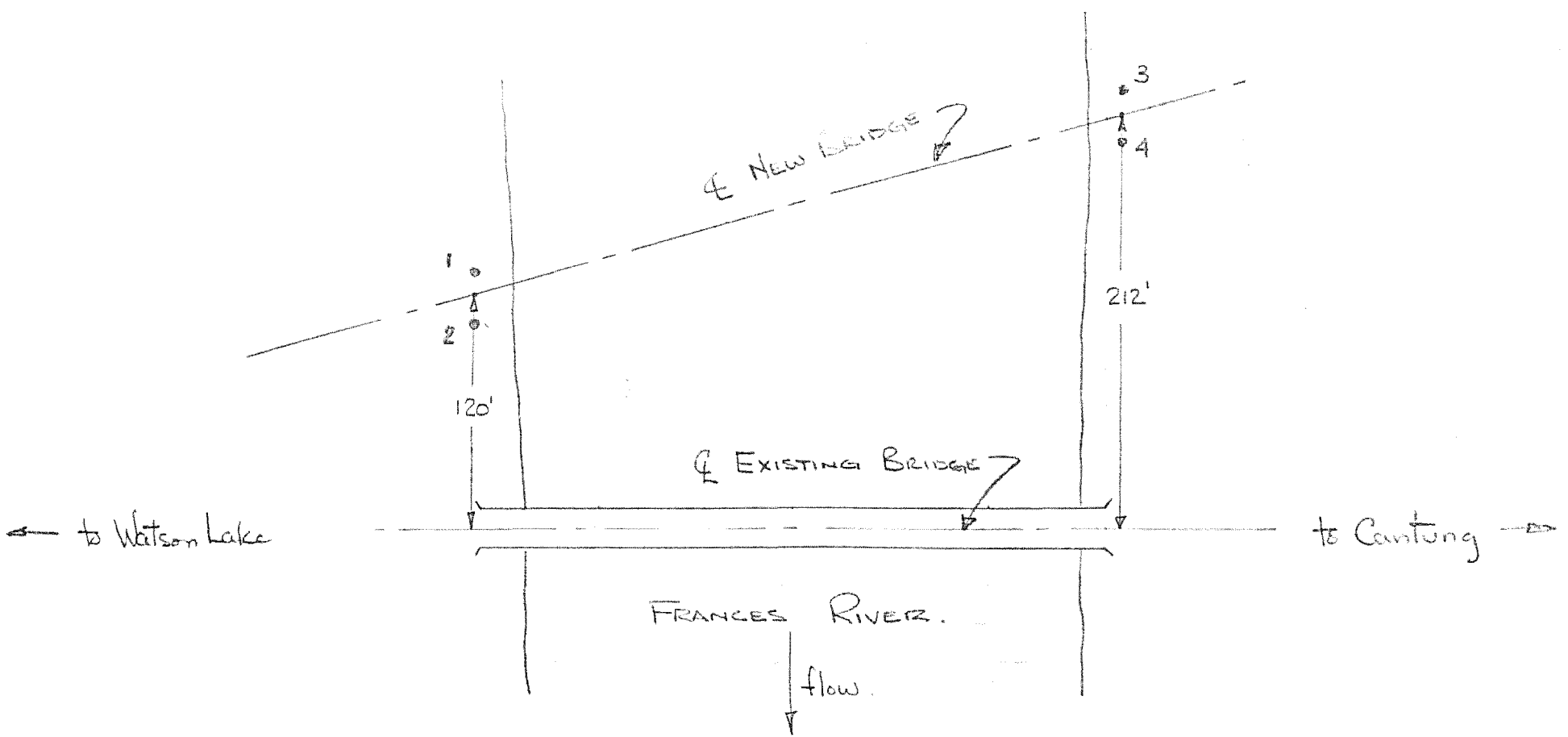


Public Works
Canada

Travaux publics
Canada

FOUNDATION INVESTIGATION
UPPER FRANCES RIVER BRIDGE
KM. 8.4 NAHANNI RANGE ROAD, Y.T.
MAY 1979

GEOTECHNICAL AND MATERIAL SERVICES
WHITEHORSE, YUKON



NEW BRIDGE?

EXISTING BRIDGE

FRANCES RIVER.

flow.

to Watson Lake

to Cantung

120'

212'

1
2

3
4

9-20359-145



FRANCES RIVER



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: Upper Frances River Bridge Y.T.G.

HOLE LOCATION: STA. 0+000 S.M.L.T. NEW E

DATE DRILLED: 18/19-05-79

DRILL TECHNICIAN: C.B.

PLOTTED BY: C.B.

HOLE ELEVATION:

HOLE NO.: /

HOLE DEPTH 50'

TYPE OF DRILL B 40L

WATER LEVEL

N.R.C.
PERMAFROST
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE DEPTH (FT.)	SAMPLE NUMBER (FIELD)	SAMPLE TYPE	LABORATORY NUMBER
2'		C	
3'		C	
4 1/2'		C	
7'		C	
12 1/2'		C	
18 1/2'		C	

NATURAL
MOISTURE
CONTENT
%

CONSISTENCY LIMITS

LIQUID LIMIT %
PLASTIC LIMIT %
PLASTICITY INDEX %

MECHANICAL ANALYSIS

GRAVEL %
SAND %
> 0.075 mm %
< 0.075 mm %
< 0.005 mm %

DRY DENSITY
LBS./CU. FT.

STANDARD PENETRATION RESISTANCE
BLOWS/FT.

UNIFIED CLASSIFICATION

DEPTH (FT.) SOIL DESCRIPTION

0	ORGANIC COVER 1'
5	GRAVEL-SAND-SILT MIXTURE WITH COBBLES LOOSE 7'
10	COARSE GRAVELLY TILL WITH COBBLES LOOSE DEPOSIT
15	
20	
25	





Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: Upper Frances River Bridge Y.T.G. HOLE LOCATION: STA. 0+098 S.M. (T. NEW) E

DATE DRILLED: 09-05-79 DRILL TECHNICIAN: C.B. PLOTTED BY: C.B. HOLE ELEVATION: HOLE NO.: 4

HOLE DEPTH	TYPE OF DRILL	WATER LEVEL	N.R.C. PERMAFROST CLASSIFICATION	SAMPLE IDENTIFICATION DATA				NATURAL MOISTURE CONTENT	CONSISTENCY LIMITS				MECHANICAL ANALYSIS				STANDARD PENETRATION RESISTANCE	UNIFIED CLASSIFICATION
				SAMPLE DEPTH (FT.)	SAMPLE NUMBER (FIELD)	SAMPLE TYPE	LABORATORY NUMBER		LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	GRAVEL	SAND	< 0.75 mm	< 0.075 mm	DRY DENSITY		
DEPTH (FT.)	SOIL DESCRIPTION							%	%	%	%	%	%	LBS. CU. FT.	BLOWS FT.			
25						C/P												
30						C/P												
						C/P												
						C/P												
						C/P												
						C/P												
						C/P												
40						C/P												
						C/P												
						C/P												
45						C/P												
						C/P												
						C/P												
50						C/P												

ROULERS & COBBLES
DIFFICULT ADVANCE

CLAYEY-SILTY TILL
BLUE-GREY
VERY DENSE
WITH COBBLES

40'6"



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: Upper Frances River Bridge Y.T.G. HOLE LOCATION: 5 m. S.W. of bridge 150 m. W. OF W. BRIDGE ABUT.

DATE DRILLED: 26-04-79 DRILL TECHNICIAN: C.B. PLOTTED BY: C.B. HOLE ELEVATION: HOLE NO.: 5

HOLE DEPTH	TYPE OF DRILL	WATER LEVEL	N.R.C. PERMAFROST CLASSIFICATION	SAMPLE IDENTIFICATION DATA				NATURAL MOISTURE CONTENT %	CONSISTENCY LIMITS			MECHANICAL ANALYSIS			DRY DENSITY LBS. CU. FT.	STANDARD PENETRATION RESISTANCE BLOWS FT.	UNIFIED CLASSIFICATION
				SAMPLE DEPTH (FT.)	SAMPLE NUMBER (FIELD)	SAMPLE TYPE	LABORATORY NUMBER		LIQUID LIMIT %	PLASTIC LIMIT %	PLASTICITY INDEX %	GRAVEL %	SAND %	> .005 mm %			
DEPTH (FT.)	SOIL DESCRIPTION																
0																	
2	SILTY GRAVEL WET-EASY ADVANCE ROAD SUB-BASE ROCK TO 3" Ø AUGERED UP																
4	1	A/p	25	6.6				N.P.	64.8	26.7	8.5						GW-GM
5																	
6	SILTY GRAVEL VERY DENSE-CLAY TRACE DIFFICULT ADVANCE MOIST TO WET.																
8	2	A/p	26	6.0				N.P.	53.9	32.9	13.2						GM
8	REFUSAL																



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: Upper Frances River Bridge

Y.T.G.

HOLE LOCATION: ZOM. DISTRICT # 100M. W. OF W. BRIDGE ABUT.

DATE DRILLED: 26-04-79

DRILL TECHNICIAN: C.B.

PLOTTED BY: C.B.

HOLE ELEVATION:

HOLE NO.: 6

HOLE DEPTH	TYPE OF DRILL	WATER LEVEL	N.R.C. PERMAFROST CLASSIFICATION	SAMPLE IDENTIFICATION DATA				NATURAL MOISTURE CONTENT %	CONSISTENCY LIMITS			MECHANICAL ANALYSIS				UNIFIED CLASSIFICATION	
				SAMPLE DEPTH (FT.)	SAMPLE NUMBER (FIELD)	SAMPLE TYPE	LABORATORY NUMBER		LIQUID LIMIT %	PLASTIC LIMIT %	PLASTICITY INDEX %	GRAVEL %	SAND %	>0.075mm %	<0.075mm %		<0.005mm %
0																	
6"																	
5																	
7'																	
10																	
12'																	
15																	

ORGANIC COVER 6"

SILTY GRAVEL
VERY DENSE - MOIST TO WET
ROCK TO 3" Ø AUGERED UP

FINE SILTY GRAVEL
WET - CLAY TRACE
EASY ADVANCE

SILTY GRAVEL
CLAYEY - WET
RELATIVELY EASY ADVANCE

END HOLE 15'

2
5
7
10
12
15

1 A/P 27 5.3

2 A/P 28 11.0

3 A/P 29 11.4

N.P. 50.0 36.8 13.2

N.P. 33.3 27.9 32.0 6.8

N.P. 30.2 33.0 36.8

GM

GM.

SM.



Public Works
Canada

MATERIALS QUALITY CONTROL LABORATORY
WHITEHORSE, Y.T.

SUBSURFACE TESTING REPORT

PROJECT: Upper Frances River Bridge

Y.T.G.

HOLE LOCATION: 6m. N. of Ave. 4

DATE DRILLED: 26-04-79

DRILL TECHNICIAN: C.B.

PLOTTED BY: C.B.

HOLE ELEVATION:

HOLE NO.: 8

HOLE DEPTH 15'

TYPE OF DRILL B 40L 6" AD

WATER LEVEL _____

DEPTH (FT.) SOIL DESCRIPTION

N.R.C.
PERMAFROST
CLASSIFICATION

SAMPLE IDENTIFICATION DATA

SAMPLE DEPTH (FT.)	SAMPLE NUMBER (FIELD)	SAMPLE TYPE	LABORATORY NUMBER
1	1	A/P	32
7	2	A/P	33
12	3	A/P	34

NATURAL MOISTURE CONTENT
%

CONSISTENCY LIMITS

LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
9.6		N.P.
9.0		N.P.
9.0		TRACE

MECHANICAL ANALYSIS

GRAVEL	SAND	> 0.075 mm	< 0.075 mm	< 0.005 mm
18.6	42.2	25.0	14.2	
31.2	30.9	37.9		
12.5	41.7	45.8		

DRY DENSITY
LBS / CU. FT.

STANDARD PENETRATION RESISTANCE
BLOWS / FT.

UNIFIED CLASSIFICATION

0
5
10
15

SILTY GRAVEL
DENSE-MOIST
RELATIVELY EASY ADVANCE
LT. (RUSTY BROWN)

GRAVEL-SILT MIXTURE
DENSE-MOIST
CLAYEY
DIFFICULT ADVANCE

GRAVELLY SILT
MOIST-CLAYEY
FEW PEBBLES
VERY DENSE

END HOLE

DEPTH (FT.)	UNIFIED CLASSIFICATION
1	SM
7	GM
12	SM

