

#69-F-89

H.W.Y. #561

RYDAL BANK

CULVERT FAILURE

alp

69 F-89

Mr. J. H. Blevins,  
District Engineer,  
District #18,  
SAULT STE. MARIE, ONT.

Foundation Section,  
Materials & Testing Office,  
Room 107, Lab. Bldg.

Mr. W. Sawyer,  
Maintenance Engineer

July 18, 1969

Re: Culvert Failure - 10-ft. Multiplate  
1 Mile South of Rydal Bank --  
Hwy. 561 - District #18 (Sault Ste. Marie)

Following our telephone conversation of July 18, 1969, we are forwarding to you, attached to this memo, a copy of a Record of Borehole sheet for a boring carried out at the above mentioned site.

As you will note, the pipe was backfilled with clay material: the reason for the failure was therefore probably inadequate compaction under the pipe haunches. The foundation material is sand.

For the replacement, we would suggest that the new pipe be placed on a 24-inch thick granular pad ensuring that all material below the invert level, of an organic nature, is removed.

*K. G. Selby*

KGS/WdeF  
Attach.

K. G. Selby,  
SUPERVISING FOUNDATION ENGR.  
For:  
A. G. Stermac,  
PRINCIPAL FOUNDATION ENGR.

Foundations Files ✓  
Gen. Files

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS &amp; TESTING OFFICE

## RECORD OF BOREHOLE No.

FOUNDATION SECTION

JOB

LOCATION RYDAL BANK - 1 MILE SOUTH OF HWY No. 61ORIGINATED BY P.P.

V.P.

BORING DATE FEB. 17, 1969COMPILED BY P.P.

STATION

BOREHOLE TYPE WASHBORE - NX CASING

CHECKED BY \_\_\_\_\_

SOIL PROFILE			SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE				LIQUID LIMIT — $w_L$ PLASTIC LIMIT — $w_p$ WATER CONTENT — $w$			BULK DENSITY $\gamma$ P.C.F.	REMARKS
DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS / FOOT		SHEAR STRENGTH P.S.F.				WATER CONTENT % 15 30 45				
	GROUND LEVEL														
0	(SHOULDER OF ROAD)														
	SAND & GRAVEL														
5	SILTY CLAY														
	WITH TRACES OF SAND		1	SS	4										
	FILL MATERIAL		2	TV	PM										0 3 62 35
	SOFT TO FIRM		3	TV	PM										
			4	TV	PH										
	ICE		5	SS	18										0 3 64 33
	10' $\phi$ MULTIPLATE		6	TV	PH										0 3 64 33
6.0	ORG. MAT'L		7	SS	—										
8.5	MEDIUM & FINE SAND		8	SS	18										0 92 8
	COMPACT														
8.0	GRAVELLY SAND		9	SS	11										13 84 3
	COMPACT														
8.0	SILTY FINE SAND		10	SS	9										
	LOOSE														
			11	11	8										
6.5	END OF BOREHOLE														