

Mr. A. M. Toye,
Bridge Engineer.
Materials & Research Section.

April 24, 1961.
D.H.O. Foundation Investigation
(W.P. 206-60,) W.P. 61-F-27.

Attention: Mr. S. McCombie.

Re: Boyne River and King's Highway #60
(Approx. 12 Miles W. of Huntsville)
Twp. of Franklin, Dist. of Muskoka
District #11.

Due to the intended improvement of Hwy. #60, the part of the highway, where the Boyne River crosses the road, is moved approx. 42 feet to the left, of the existing centre line. The chainage at this point is 165+40 for the new line.

In order to determine the soil properties and decide on the type of foundations, an investigation was carried out by this section. The field investigations have been confined to four sampled boreholes, supplemented by the same number of cone penetration holes. 5 feet of core was taken in each borehole.

The elevations as well as the locations (chainages)

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of the boreholes, are given on Drawing No. 61-F-27A, attached to this report (Appendix I).

The stratigraphy of the soil on the West side of the river was found to be quite uniform. The top 3 to 4 feet are formed by topsoil, underlain by loose to medium dense sandy silt, followed by sound light blue granite bedrock.

On the East side of the river, the bedrock was found 8'-2" below the ground elevation in borehole No. 1 and only 2'-3" below the ground elevation in borehole No. 2.

The ground water table was found very high (at the surface) due to the high water in the Boyne River. The high water also precluded the sinking of the boreholes at the indicated locations. The boreholes have been placed at the closest possible locations to those indicated on the drawing, supplied by the Planning and Design section.

Because of the loose state of the sandy silt layer, on the West bank, spread footings have to be ruled out. It is therefore recommended that steel "H" or wooden piles driven down to bedrock, be used. The safe load per steel "H" pile should not surpass 40 tons, and that of a wood pile, 20 tons.

On the East bank the foundations should be founded on exposed bedrock.

If the bridge is to be built in the summer when the ground is dry, the footing plates for formworks, can be placed on the exposed surface of the sandy silt layer. The maximum bearing load should not exceed 0.5 tons/sq. ft., provided the soil contains no organic matter and is not softened by standing or running water.

Problems due to water seeping into the excavations are likely to present some difficulty. Wooden cofferdams will have to be erected and pumping facilities employed.

REPORT PREPARED BY: *R. J. Salas*
.....
frs. Kulmatickas,
Project Foundation Engr.

REPORT APPROVED BY: *A. G. Stermac*
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A. G. Stermac,
Supervising Fdn. Engr.

Attach.
WK/tt

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H. A. Tregaskes
H. D. McMillan
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H. C. Dernier
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APPENDIX I

61-F-27

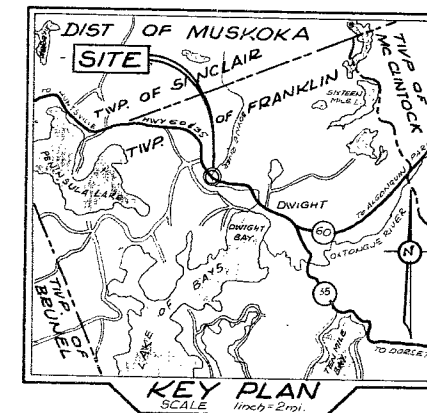
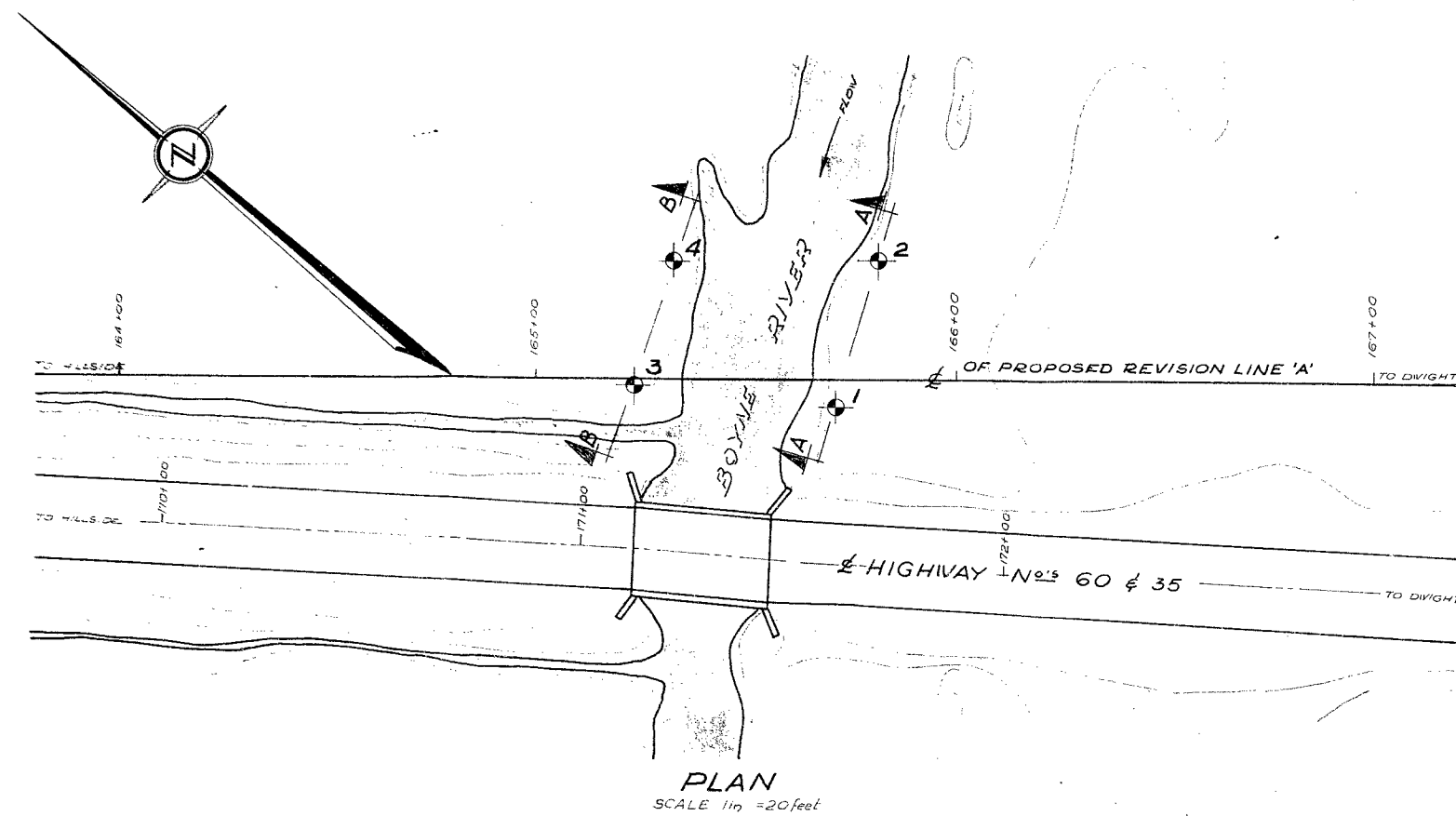
W.P. # 206-60

Hwy. # 60 E

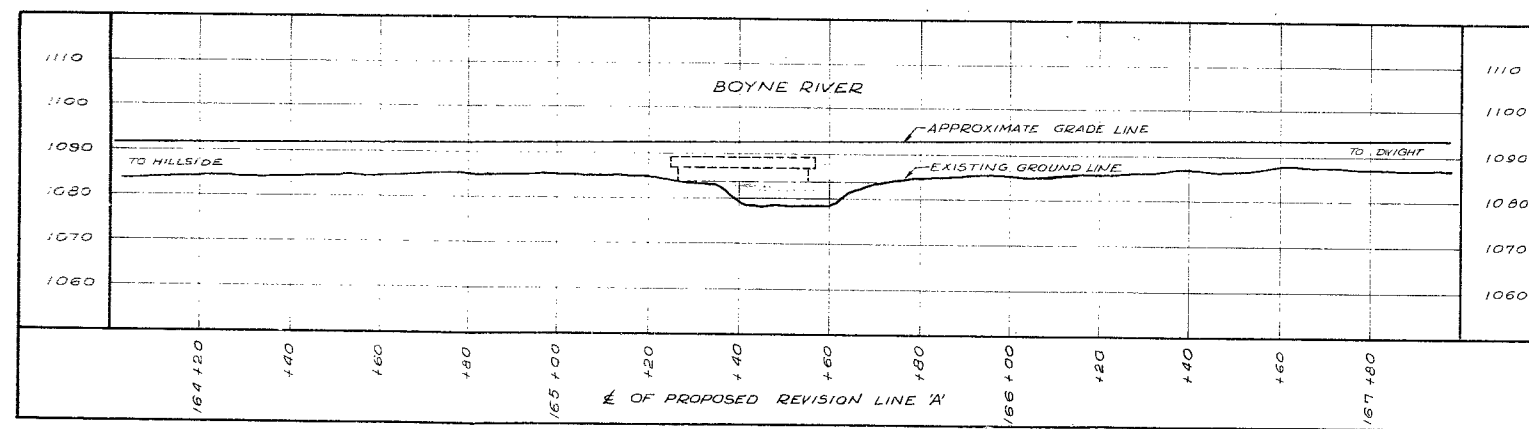
BOYNE RIVER

12 MILES W. OF

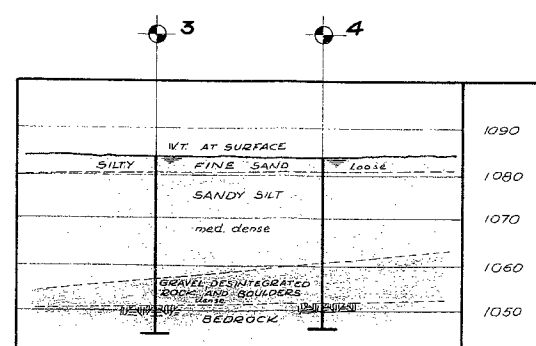
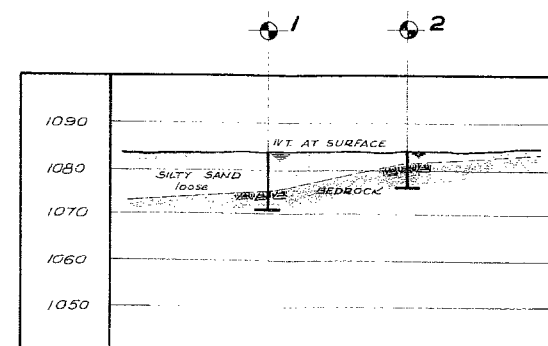
HUNTSVILLE



653900
-22550
3125



LEGEND			
BORE AND PENETRATION HOLE			
HOLE	ELEVATION	STATION	DISTANCE FROM E
1	1084.1	165+71 'A' 171+58	6' RT 'A' 37' LT
2	1084.2	165+79 'A' 171+66	28' LT 'A' 72' LT
3	1084.3	165+22 'A' 171+11	1' RT 'A' 39' LT
4	1084.2	165+31 'A' 171+18	27' LT 'A' 69' LT



DEPARTMENT OF HIGHWAYS - ONTARIO		
MATERIALS & RESEARCH SECTION		
BOYNE RIVER & HWY 60 & 35		
LINE 'A' REVISION		
AT STATION 165+40		
ORIGINATED W KULMATICAS	DISTRICT NO 11	DATE 3 MAY 1961
DRAWN 7. J. J. Gray	WP NO 206-60	JOB NO 61-F-27
CHECKED 10/11	SCALE 1 inch = 20 feet	DRAWING NO 61-F-27A
APPROVED		