

PRELIMINARY
BASIC ENVIRONMENTAL DATA

HODGSON CREEK
BRIDGE

REFERENCE MILE 436 MACKENZIE HIGHWAY

DEPARTMENT OF PUBLIC WORKS
EDMONTON, CANADA



January , 1973



F. F. SLANEY & COMPANY LIMITED
Vancouver, Canada

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**BASIC ENVIRONMENTAL DATA
HODGSON CREEK BRIDGE
REFERENCE MILE 436**

**MACKENZIE HIGHWAY
NORTHWEST TERRITORIES**

**DEPARTMENT OF PUBLIC WORKS
EDMONTON, CANADA**

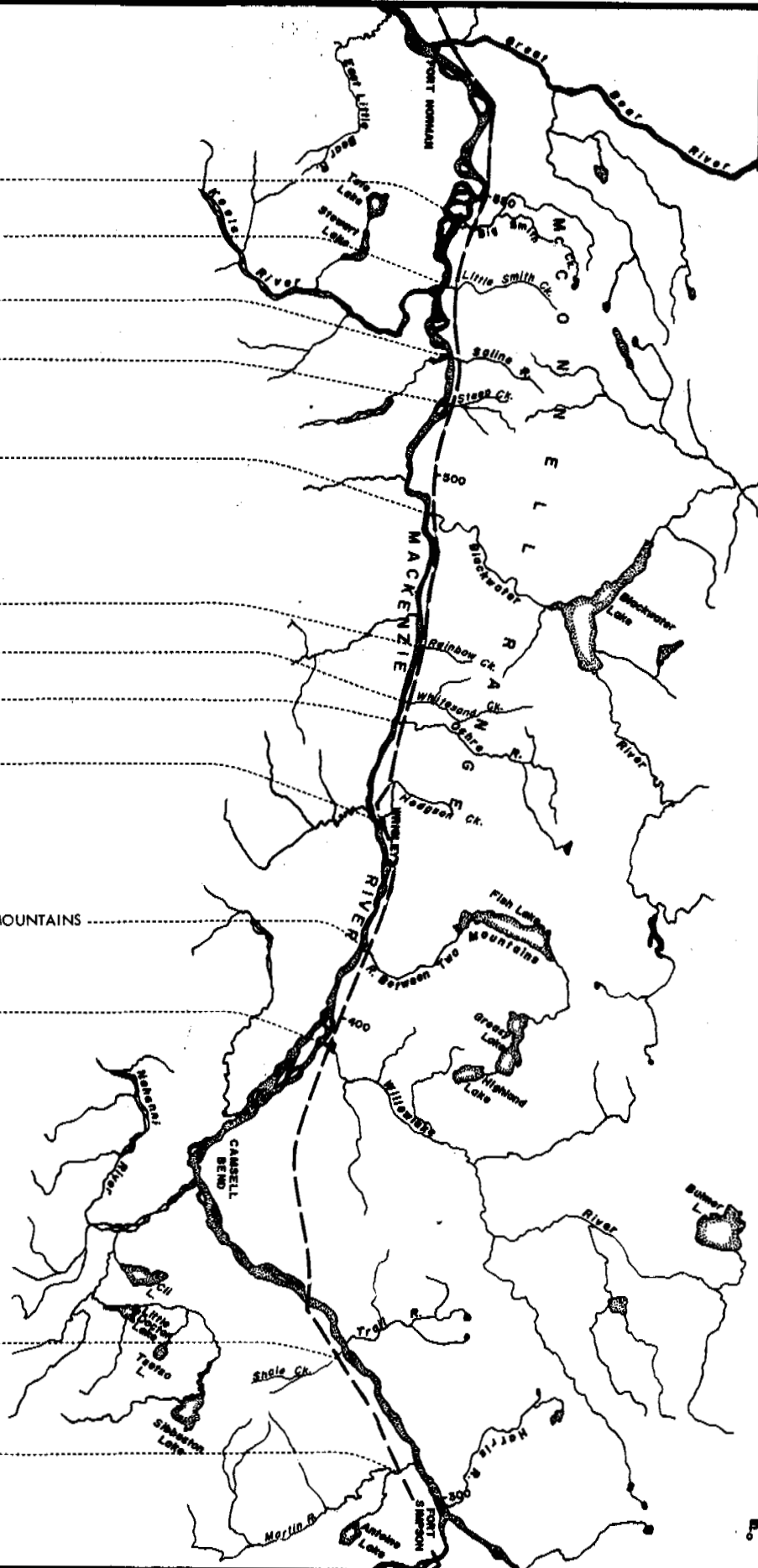
JANUARY 1973

**F.F. SLANEY & COMPANY LIMITED
VANCOUVER, CANADA**

BRIDGE SITES

KEY MAP
BRIDGES
MACKENZIE HIGHWAY
MILE 300 TO 550

BIG SMITH CREEK
LITTLE SMITH CREEK
SALINE RIVER
STEEP CREEK
BLACKWATER RIVER
RAINBOW CREEK
WHITESAND CREEK
OCHRE RIVER
HODGSON CREEK
RIVER BETWEEN TWO MOUNTAINS
WILLOWLAKE RIVER
SHALE CREEK
MARTIN RIVER



SCALE
0 10 20
MILES

MACKENZIE HIGHWAY
HODGSON CREEK BRIDGE
REFERENCE MILE 436

RIPRAP REQUIRED



PART 1

BASIC ENVIRONMENTAL DATA

1.1 SURFICIAL GEOLOGY

The channel at the bridge site is a sharply curved part of a thalweg. Erosion on the western side is expected to be severe. Also, fill on the western side appears to encroach on the active stream channel. This may cause deposition upstream from fill and erosion downstream during certain flow periods. Further study is required.

A single span should be employed to ensure free movement of debris.

1.2 SOILS

Silty soils along the north bank of the river become unstable when saturated. Precautions should be made to prevent such material from draining into the creek. Soils of the terrace are gravelly.

1.3 VEGETATION

The area supports a mixed stand of white spruce, larch, pine, aspen and birch. Slopes of the extensive fills should be revegetated rapidly to minimize soil erosion.

1.4 WILDLIFE

No abnormal impact on wildlife is apparent. This site is in close proximity to Wrigley and local utilization of game animals will have reduced the populations in this area.

1.5 FISH

Massive approach fills are indicated in the design profile. No evidence has been presented to indicate that the effects on water velocity of these reductions in the stream channel have been considered.

The single span alternative is preferable from the aspect of fisheries, and a considerable lengthening of the total span appears desirable from the data at hand. A longer total span would be more desirable than fewer piers.

No specific information has been assembled on the fish or fishery of Hodgson Creek. It appears to be ideal habitat for several species, though, and is probably of considerable sports fishery value due to its proximity to the village of Wrigley.

1.6 ARCHAEOLOGY

A minor chance for an archaeological find at the bridge remains. The site should be checked during initial clearing.

1.7 LANDSCAPE - RECREATION

This bridge is within walking distance of Wrigley. The bridge and river will no doubt attract children and their well-being should be considered when designing the structure.

Free passage under the bridge is desirable.

1.8 AESTHETICS

The proposed bridge is a simple design. The massive approach fills will dominate the structure.

1.9 SOCIO-ECONOMIC

Traditional access routes along Hodgson Creek should be maintained by providing passage for foot and snow vehicle traffic both across the road route and over and under the bridge.

Future growth of this community may create extensive local use of this structure and some investigation into this aspect is desirable.

1.10 CONSTRUCTION

The construction crews for this bridge should be accommodated in Wrigley. The single span structure could be built during any part of the year.

PART 2

ASSESSMENT

This bridge appears to restrict the water course unnecessarily.

Construction of the bridge will have a direct impact on the residents of Wrigley and the ramifications should be understood.

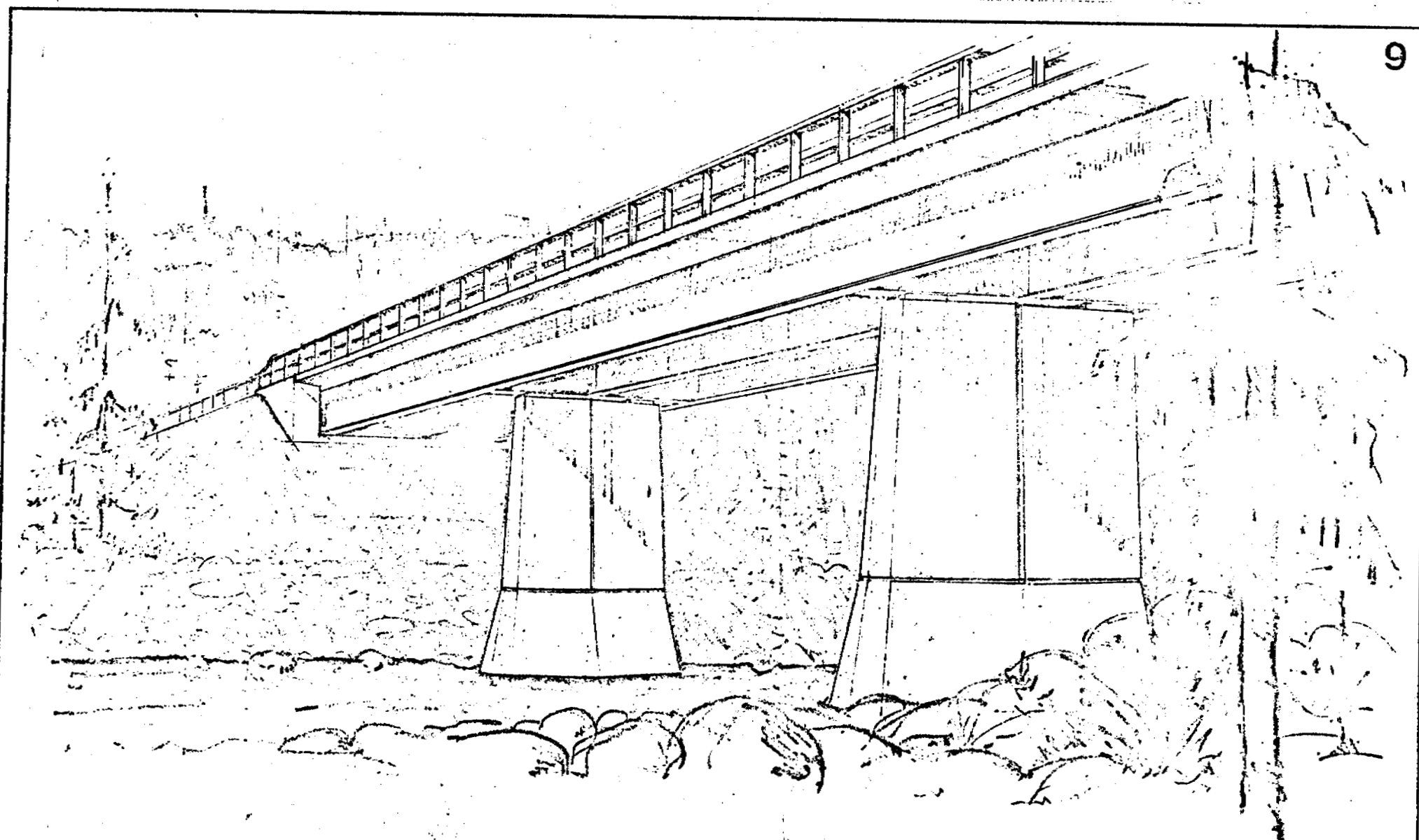


26.10.72. Hodgson Creek. Bridge site (to left in photo) abuts abandoned alluvial terrace on each side. Gradual erosion of western bank will occur. Erosion on eastern side not as severe. Rip-rap required. Vegetation is aspen, white spruce and black spruce.

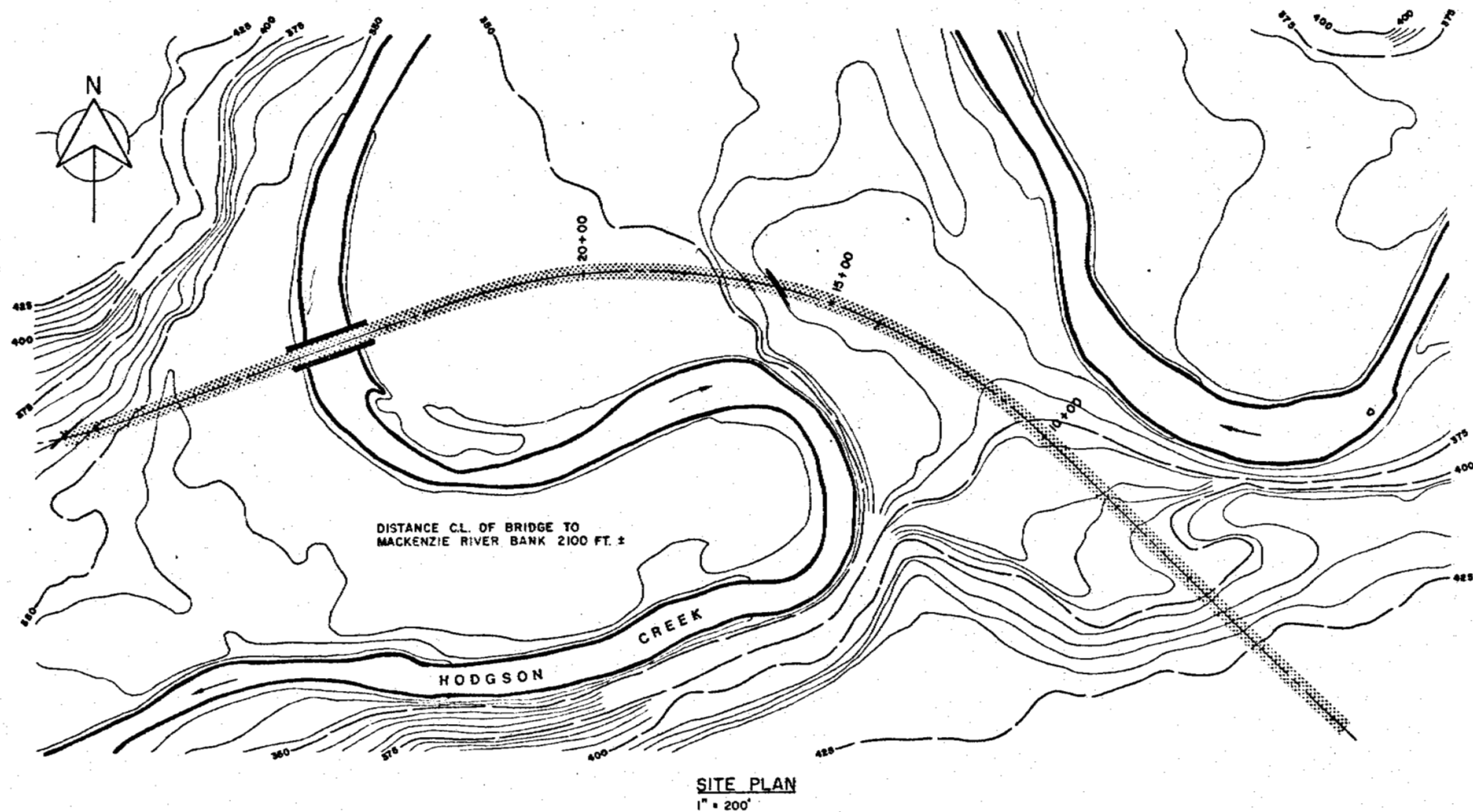


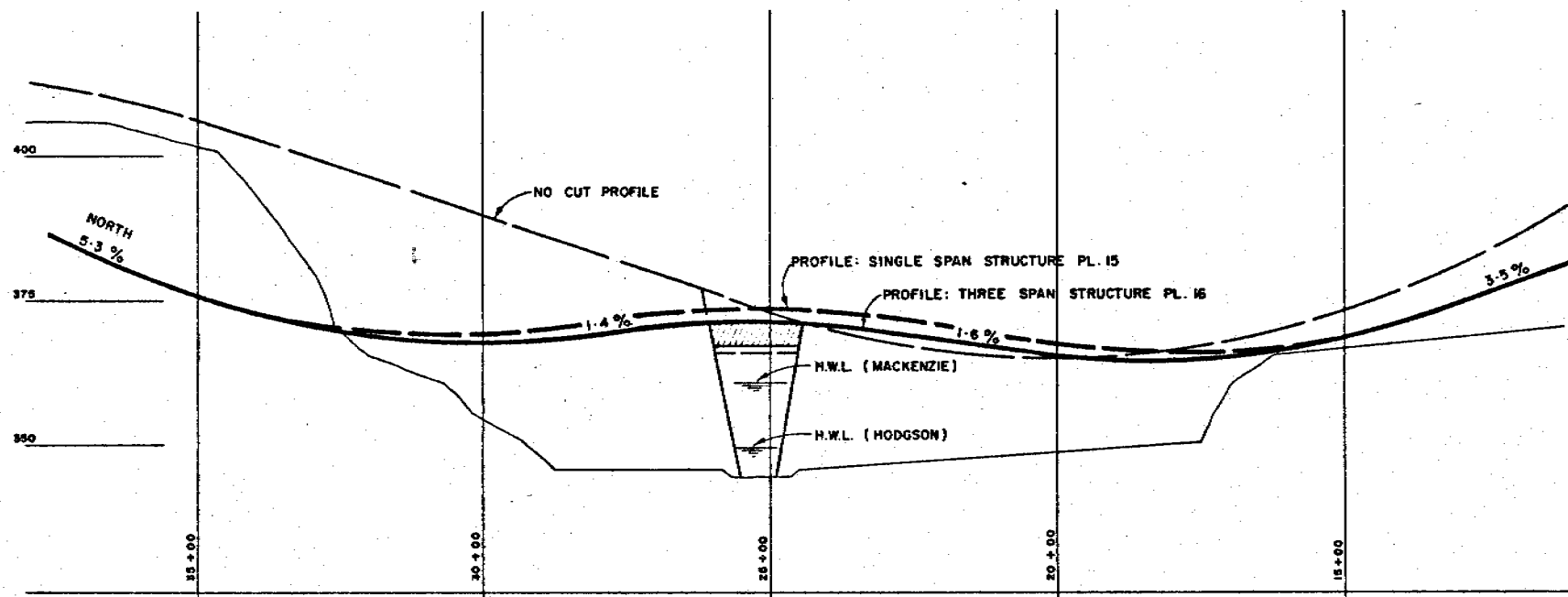
26.10.72. Looking upstream at Hodgson Creek. Highway location is just upstream of CNT landline (across center of photo). Top of south bank composed of sand and gravel of an abandoned alluvial terrace. Top of north bank is silt and sand of glaciofluvial or glaciolacustrine origin which appears well drained. The fishery resource in Hodgson Creek is probably utilized by residents of Wrigley. Precautions should be taken to prevent erosion and siltation, as well as migration blockage.





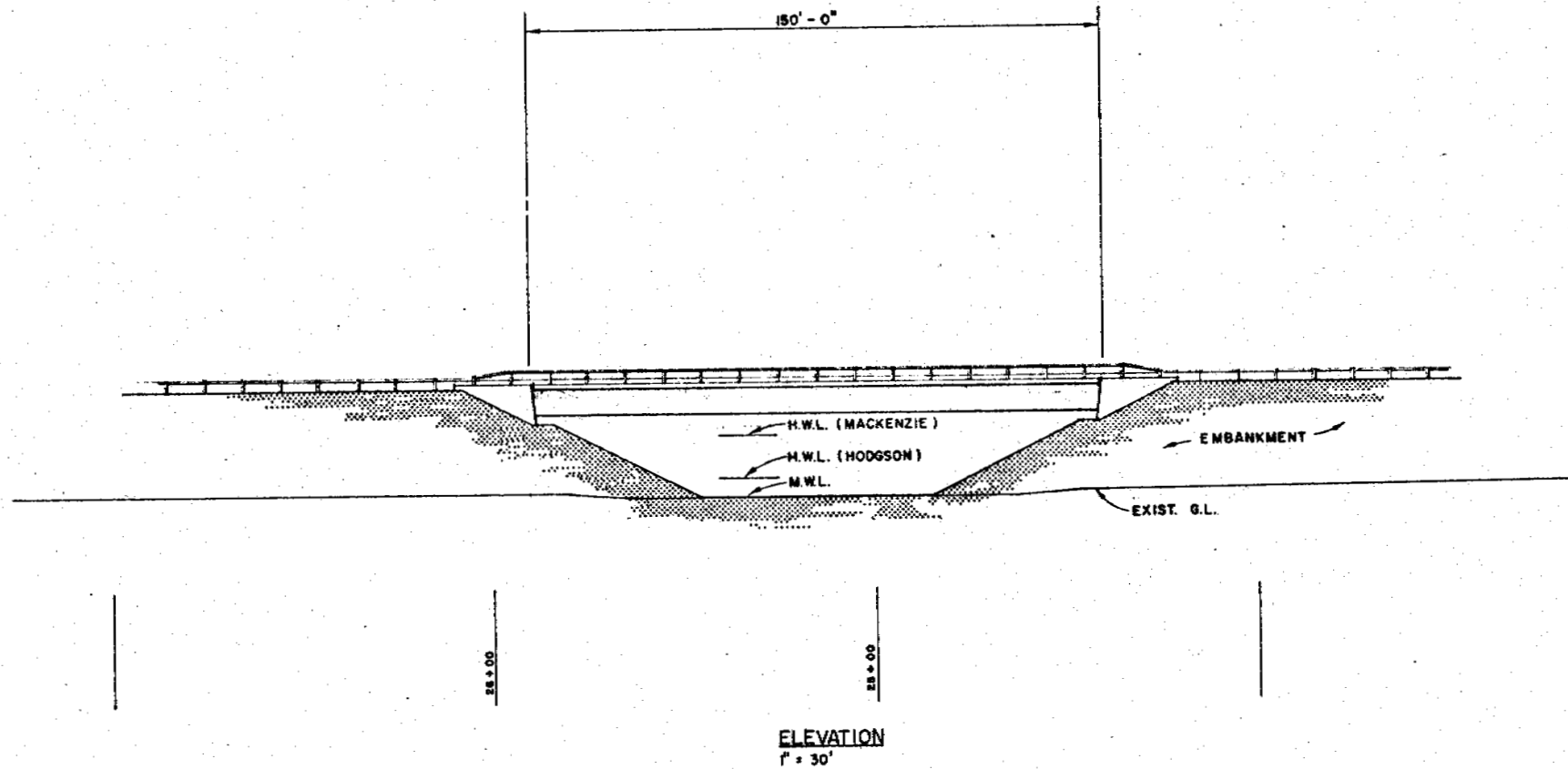
RIVER BETWEEN TWO MOUNTAINS
HODGSON CREEK
OCHRE RIVER
WHITESAND CREEK

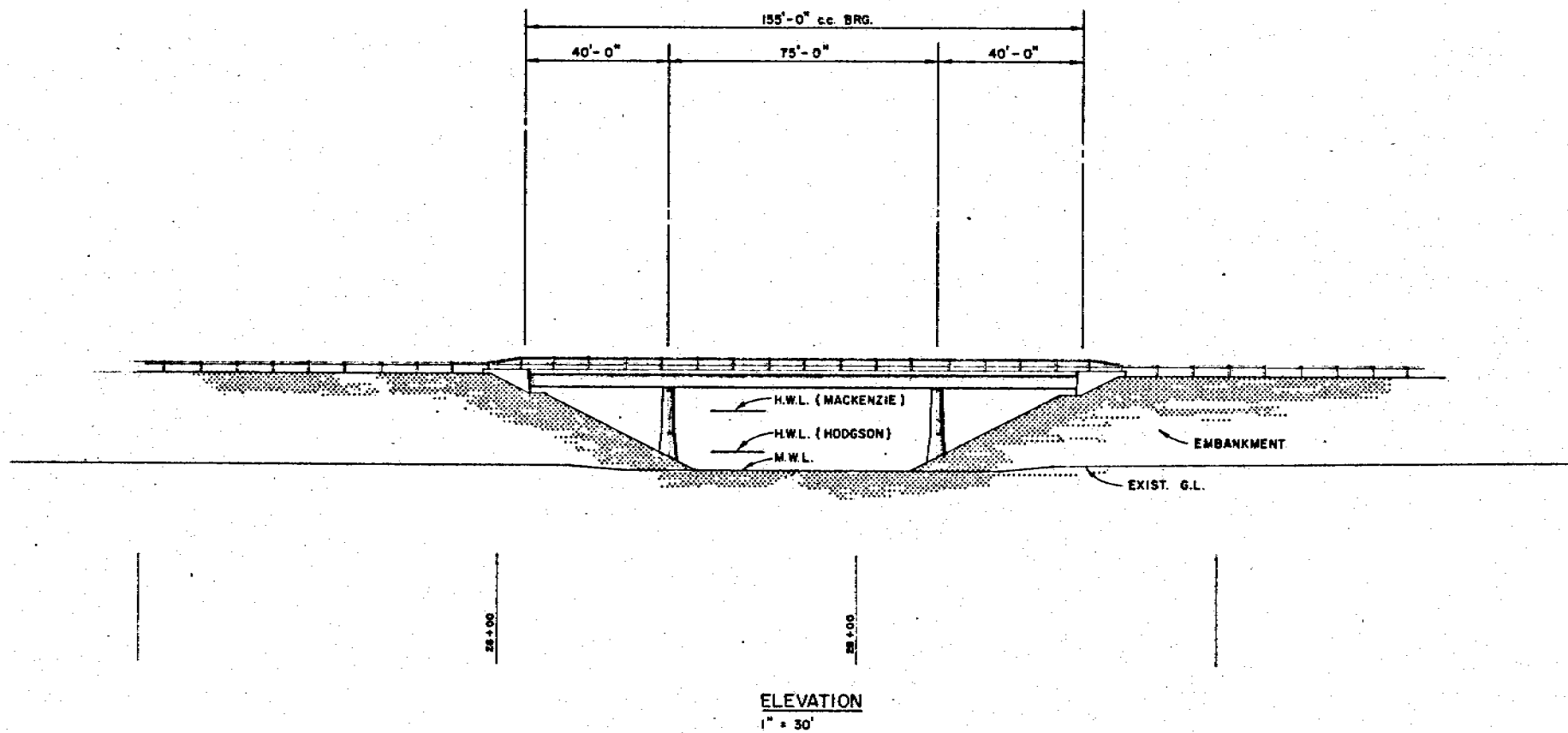




PROFILE
 VERT. 1" = 20'
 HORIZ. 1" = 200'

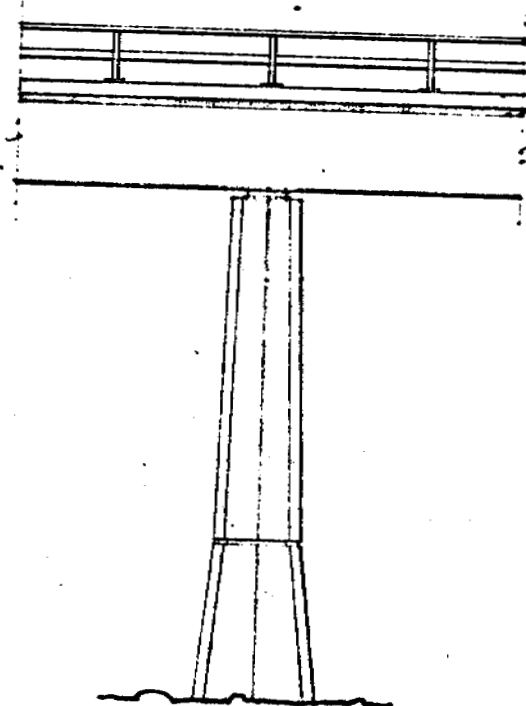
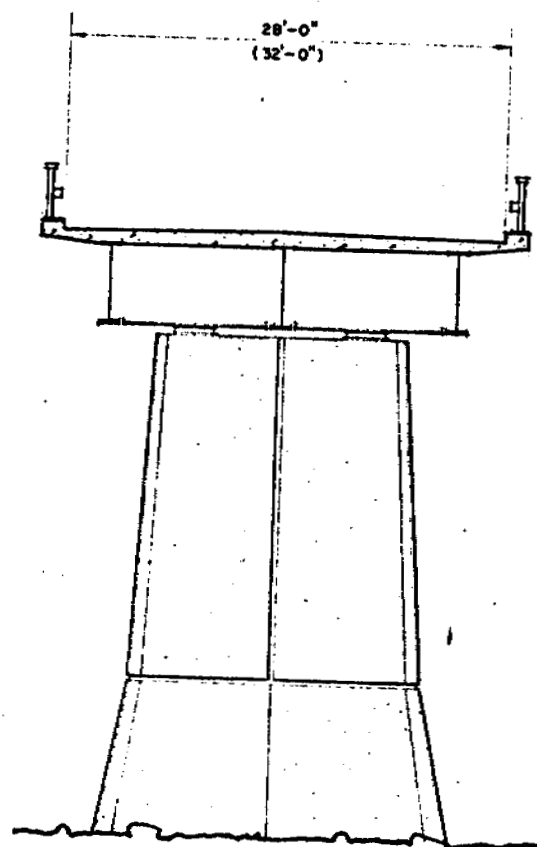
NOTE:
 ELEVATIONS ARE TO GEODETIC DATUM.
 CHAINAGES REFER TO BOLTER PARISH
 TRIMBLE LTD. DWG. No. 115-3-59





MACKENZIE HIGHWAY

HODGSON CREEK



SCALE: $\frac{1}{8}" = 1'$

MACKENZIE HIGHWAY

TYPICAL SECTION
&
PIER