

57-F-246C

MOON

RIVER

TRANS CANADA Hwy

BA 446

RACEY, MACCALLUM AND ASSOCIATES LIMITED

A COMPANY OWNED, DIRECTED AND OPERATED BY

Consulting Engineers
AND ASSOCIATED STAFF

MONTREAL



VANCOUVER

TORONTO

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TORONTO DIVISION
20 CARLTON STREET

REFERENCE NO: 2-500/T-602

27 Carlton Street,
Toronto 2, Ontario.

April 26th, 1957.

57-F-246 C

Department of Highways of Ontario,
200 Davenport Road,
TORONTO, Ontario.

Attention: Mr. A. M. Tye.

RE: BEDROCK PROFILE NORTH SHORE
MOON RIVER BRIDGE CROSSING,
TRANS CANADA HIGHWAY.

Dear Sirs:

Attached hereto are the tabulated results of our probing program along the north shore of the Moon River and a drawing showing the estimated bedrock profiles. This work was carried out during the period from April 1st, to April 23rd, and consisted of 67 wash probes to refusal and 4 borings 5 feet into bedrock. The wash borings or probes were performed by jetting through the overburden using standard A-rods. Where refusal was in doubt, more than one location in the immediate area was tested.

Borehole Number 4 was performed from a raft, at station 360 + 30 and 1 1/2 feet of water covered the rock fill at the time the work was carried out. Immediately upon completion of the boring on April 23rd, the water level dropped 5 feet overnight. The surface of the rockfill was quite irregular in the vicinity and therefore, the borehole was placed in one of the depressions in order to avoid extra drilling. A small seam of soft clay was encountered in the rock fill just above bedrock, but such a condition should be expected where the fill has pushed out in such a random fashion. It would be impossible for a clay seam of this consistency to support the full weight of rockfill at present existing north of station 360 + 00.

MEMORANDUM No. 3-60/2-502

April 26th, 1957.

The estimated bedrock profile was drawn up on the basis of information obtained from a visual inspection of the site, from the four borings and from the probeings, where refusal seemed to be on either bedrock or large boulders. The results of these probeings appeared to agree well with the borehole records of bedrock and were consistent with the general character of the surface. In general bedrock was close to the surface in the hilly areas and was overlain by soft clay deposits where the land was flat. Sharp local variations in bedrock depth were encountered similar to the irregularities in evidence at the surface of the bedrock outcrops.

We trust that the attached information meets your requirements. We shall be pleased to discuss any matters that may require clarification, however, if you so require. Thank you for this opportunity to serve you.

Yours very truly,

RACEY, MACCALLUM AND ASSOCIATES LIMITED.

WAT/AMAL.
Enclosures.*W. A. Trow*
W. A. Trow, P. Eng.
Divisional Soils Engineer.

REFERENCE: N013-500/1-602MOON RIVER BRIDGE CROSSINGSummary of Borehole and Probe Measurements - North Shore.

Borehole or Probe Number	* Surface Elevation Feet.	* Refusal Elevation or depth Feet	Comment
BH 1	672	652	Sand and gravel over rock very slight artesian pressure in sand
A3		5.8	Boulders - 3 locations
A4		2.5	Bedrock or boulder - two locations
A15		8	Bedrock or boulder - overlain by sand
A16		9	Bedrock or boulder - overlain by then sand
A17		7.5	Bedrock or boulder
A18		6	Bedrock or boulder - overlain by boulders
A19		4	Bedrock or boulder
B2		5.5	Bedrock or boulder
B3		7.5	Bedrock or boulder
B4		4	Refusal in gravel
B5		3.5	Refusal 4 locations
B12		7.5	Bedrock confirmed 5 feet - overlain by gravel and boulders
B6		5	
B7		7	
B8		9.5	
B9		3.5	Bedrock or boulder - 3 locations
B10		3.5	Bedrock
B11		2.5	Bedrock

REFERENCE NO: S-500/T-602

Borehole or Probe Number	* Surface Elevation Feet	* Refusal Elevation or depth Feet	Comment
C2		2	Refusal 3 locations
C3		3.5	Refusal, gravel
C4		4.2	Refusal, gravel
C5		1	Gravel - 4 locations
C6		4.5	
C7		4.7	
C8		6.5	Boulder
C9		3.5	Refusal - 5 locations
D3		4	Gravel or boulders
D4		2.5	Bedrock or boulder
D5		6.5	Sand in wash water
D6		5	Gravel or boulders
DH3	671	663.5	Bedrock confirmed 5 feet
A ₁ 16		7	Bedrock
A ₁ 17		3.5	Bedrock or boulder
A ₁ 18		1.5	Bedrock or boulder
A ₁ 19		3.5	Bedrock or boulder
A14		19.5	Bedrock or boulder overlain by 1½ feet topsoil, 14 feet soft clay, 4 feet of fine sand
A15		17	Bedrock or boulder overlain by 2 feet topsoil, 12 feet soft clay, 3 feet of gravel
A16	673.4	664.4	Bedrock or boulder - 4 feet of clay - 5 feet of fine brown sand

REFERENCE NO: S-500/T-602

Boreshole or Probe Number	* Surface Elevation Feet	* Refusal Elevation or depth Feet	Comment
A17	677.8	673	Bedrock or boulder overlain by sand and gravel
A18	678.2	673.7	Bedrock or boulder - 2 locations - fine sand some gravel
A19	675.8	672.3	Bedrock or boulder overlain by sand and gravel
A20		6.5	Bedrock or boulder - 4 feet soft clay underlain by boulders
A21		18	Bedrock or boulder - 16 feet soft clay underlain by sand and gravel
A22		19	Bedrock or boulder overlain by 3 feet sand, then by soft clay and finally by dense sand and gravel
A23		17.5	Bedrock or boulder - 3½ feet brown sand, 13 feet soft clay, then gravel
B12		4.2	Bedrock or boulder
B14		15.5	Bedrock or boulder - 2½ feet topsoil, 10 feet clay, 3 feet of gravel
B15		10.5	Bedrock or boulder
B16		9.5	Bedrock or boulder 6 feet clay, overlying sand and gravel
B17		9.5	Bedrock or boulder
B18		12.5	Bedrock or boulder
B19		13.5	Refusal in gravel - 6 feet brown sand overlying stiff brown clay
B20		7	Bedrock or boulder - surface layer of soft brown clay underlain by sand and gravel
B21		18	Bedrock or boulder - 3½ feet brown sand, 10 feet soft clay, 4 feet of gravel

REFERENCE: NO. S-500/A-602

Borehole or Probe Number	* Surface Elevation Feet	* Refusal Elevation or depth Feet	Comment
B22		16.5	Bedrock or boulder - 4 feet brown sand, underlain by soft clay, then sand and gravel
B23		17	Bedrock or boulder - 1 1/2 feet soft clay, underlain by sand and gravel
C13		13	Refusal in sand or clay
C14		8	Boulder
C15		11.5	Bedrock or boulder - 6 feet brown sand, then clay and gravel
C16		5.5	Bedrock or boulder - fine brown sand underlain by gravel
C17		3.5	Bedrock or boulder - fine brown sand, and coarse gravel
C19		14.5	Bedrock or boulder - 10 feet very stiff brown clay - 4 feet sand and gravel
C20		11.5	Bedrock or boulder - 8 feet stiff brown clay
C21		9	Bedrock or boulder - 7 feet stiff brown clay underlain by sand and gravel
C22		7.5	Bedrock or boulder - stiff brown clay underlain by sand and gravel
C23		4.5	Bedrock or boulder - overlain by brown sand
D13		4.2	Bedrock or boulder - overlain by stiff brown clay
D14		5.5	Bedrock or boulder - overlain by gravel
D19		4.5	Bedrock or boulder - overlain by sand and gravel
D24	669.5	649.1	Surface of rockfill quite irregular; elevation 655 at this location. Ran BK casing through loose rockfill to elevation 650.5 ft. where 1 foot of soft clay encountered. This clay probably mixed with the broken rock fill.

* Estimated from surface contours established by DHO except where noted.

