January 26, 1982
Retyped: March 24, 1986

BELLA COOLA RIVER

PROJECT NO. 81-FDC-2

S U M M A R Y

The survey consisted of 35 cross sections of the Bella Coola River between the mouth and the confluence of the Nusatsum River, 10 cross sections of major back channels and 11 cross sections of the Salloomt River from the confluence to a point upstream. This was the first major job in which the new jet river boat was used. After initial problems of reversing, caused by two too large trim tabs (which were cut smaller by Mr. G. Roberts), the boat was found ideal for its purpose and operated without any further mechanical delay. A lot of time was spent cutting line through very dense bush for the cross sections especially on the Salloomt River. Six gauges were installed by Mr. G. Clark with the assistance of crew members along the Bella Coola River. The gauges were later tied to the level network.

Mapping control was established for the 1977 photography between the Nusatsum River and Burnt Bridge Creek which was the limit of the present mapping assignment. The horizontal control consisted of 8 control points and the vertical control of 31 points. For positioning, Stn. "SAL" (Prov. Topo.) was occupied and Stn. "FOUR MILE" used as reference origin. It was intended to observe each of the 8 horizontal stations from Stn. "SAL" but rapidly changing weather conditions on the date of the survey forced the evacuation of the crew from Stn. "SAL" (6000' el.) by helicopter before 5 remaining observations could be made. Limited funds available for helicopter rental disallowed the reoccupation of Stn. "SAL" and the crew was forced to do lengthy traverse work and star observations from the remaining control points. Three open traverses were run with closing angles read to the top of the amprodome (on top of Salloomt Peak, tied by Mr. Roberts from Stn. "SAL" by chain) and a communication 'screen' on top of a mountain near Trig. Stn. "CANOE." Fortunately, no error was found and the data accepted as computed.

A level run was made from a TBM established by Mr. T. Dignan in October 1980 through several GSC BMs looping and tieing all vertical and horizontal points with the exception of H7, H5, V26 and V28 which were left as an open run. Five GSC BMs as listed in the BM publication were destroyed by highway construction.

Seventeen monuments were set during the survey between Bella Coola and a point some 5.1 km east of Burnt Bridge Creek, 4 of which were assigned coordinates.

The survey was carried out during June-July 1981 and took 238 man days (40 man days travelling included) with an 8-man crew. The crew was satisfactorily accommodated in the Bay Motor Hotel in Hagensborg.

Crew Members: Messrs. B. Schubert, G. Roberts, H. Brazier, R. Edward, A. Naumann, J. Graves, R. Hare; Guest Member: R. Barclay.

Mapping data completed: January 26, 1982; cross section data completed.

B.R. Schubert

BRS/khh

SUMMARY OF CROSS-SECTION DATA

81 FDC-2

CROSS-SECTIONS OF

BELLA COOLA RIVER AND SALLOOMT RIVER

1. Field Survey by Surveys Sub-Section was carried out in July, 1981. Cross-sections were obtained from downstream of Bella Coola to just up stream of the Nusatsum River.

2. Survey Data:

   a) All cross-section data was obtained by means of stadia, except in deep water, where depths were established by Raytheon Depth Recorder Model 719B.

   b) Thirty-five cross-sections were obtained of the Bella Coola River.

   c) Ten cross-sections of just back channels.

   d) Eleven cross-sections of the Salloomt River.

   e) Many cross-sections contained numerous survey stations.

   f) Elevations for cross-sections were established by means of differential levelling.

   g) Chainages were obtained graphically by means of the digitizer, using the 1968 mapping sheets.

   h) Profile data, obtained at cross-section only.

      Profile data contains:

      (i) a natural boundary profile
      (ii) a water level profile adjusted to July 16, 1981.
      (iii) a thalweg profile obtained from cross-section data

   i) While the cross-sections were surveyed, pictures were taken of both left and right banks of the Bella Coola River.

   j) Traverse stations of cross-sections were plotted on the 1968 Mapping Plans and a photo mosaic.

3) DATUM:

   a) Coordinates and chainages for the cross-sections and profile were taken graphically from the 1968 mapping. These polyconic rectangular coordinates were then converted to geographical coordinates and then converted to Universal Transverse Mercator, Zone 9 Central Meridian 129°.

   b) Elevations are in metres, cross-sections were levelled from Temporary Bench Marks established in 1968 and 1981.

4) FIELD BOOKS: Survey data is recorded in field books:

   2299 F1 to F4
   2299 L1 to L2
   2299 I1

5) OFFICE COMPILATION:

   (i) 2, I.B.M. folders (3 copies of each)
   (ii) 1, photo folder (pictures of cross-sections)
   (iii) 1, role of 1968 mapping (plan compilation with cross-section locations)
   (iv) 1, photo mosaic compilation (with cross-section locations)
   (v) 1, DD sheet with profile plots.

SPECIAL NOTES: For additional cross-section data between cross-section 65 (14 + 970) to the Nusatsum River refer to the 1968 cross-section data.