SUMMARY OF

ELK RIVER FLOOD PLAIN MAPPING 75-F3

FERNIE, SPARWOOD AND ELKFORD AREAS

This project commenced in August 1975 and was completed the same month.

The mapping control consisted of 7 high level flights (photo scale 1 inch= 833' approx.) covering approx. 37 miles of the ~~Eagle~~ Elk River Valley from Morrissey to North of Sparwood; 25 of the 37 miles were assigned first priority. In order to produce mapping, at a scale of 1:5000 and contour interval of 1 metre, 14 horizontal and 70 vertical control points were pre-selected on the photographs in the office, as to their proximity, but properly identified in the field. Only a few cadastral ties were made since legal survey markings were difficult to locate.

Due to inaccessibility of higher order triangulation stations and project time allowance, the control traverse started at a D.T.S. survey monument of 4th order with a solar observation for direction and checked by a 2nd solar observation near the northerly end of the traverse. The traverse agreed well with graphically co-ordinated points. Not all horizontal points are enclosed in the main traverse. All angular observations consisted of 5 complete sets. The Fernie and Sparwood sections are connected by traverse. The Elkford area control is based on existing integrated survey monuments and not connected to the Sparwood section by this Department.

For final map production all positions were converted into UTM coordinates and elevations converted into metric values.

The 70 vertical points and elevation ties for the river cross sections required a level run of approx. 40 miles. Near the end of the project a faulty compensator was detected and some runs were relevelled. Loop closures were not satisfactory, showing misclosures off up to 0.5' in 10 miles. Not relying on a straight adjustment, most of the lines were re-run in the first week of November. Results showed only slight improvement on some of the lines, but accurate enough for mapping and Flood Plain Management purposes. Since the entire Elk River Valley lies at considerable height above sea level and runs in a north-southerly direction, a correction for gravity would have to be applied to the differences to transform them to orthometric differences of elevation. This correction amounts to approx. 0.03' over a 10 mile distance in the Elk River Valley, therefore, the discrepancies as shown on the sketch seem artificially high. For the purpose of this survey, this correction has been omitted and is automatically adjusted by holding the G.S.C. Bench Marks fixed. A list of elevations in feet and meters is compiled for all 113 Temporary Bench Marks (most of them identified by W.R.S. Tags) and 17 permanent Water Resources and Legal Survey monuments.

Sixty-nine cross sections were obtained over the 25 mile distance and their data compiled. A longitudinal profile was not obtained due to the low water condition. The location of the cross sections are marked on the airphotographs and the chainage taken off the airphotographs approx. scale 1" - 833'.

The office compilation was completed on May 7/76 and the mapping information is being held in obeyance until requested.

XS 1A TO XS 38 (FERNIE MORRISSEY TO HOSMER)
XS 39 TO XS 51A (SPARWOOD)
XS 1-6, 8-9 (ELKFORD)

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The field information are contained in:

Level Books 2105 A, B, C
Field Books 2105 D, F
I.B.M. Books 2105 G, H

Instrumentmen: H. Brazier
R. Edward
B. Schubert

Levelmen: P. Lacross
R. Edward
B. Schubert

Rodmen: P. May
R. Bereska
R. Darling
S. Bridgeman

Party Chief: R. Schubert

The party was accommodated in the Three Sister's Motel for 18 days.

Bernd R. Schubert