

Field Notes for Survey of B.C.-Alberta  
Boundary 81F to 89F -- vicinity of  
Coleman, Alberta.

G. C. Emerson, BCLS, DLS.

To accompany plans.

2346

NO. 23465.



MINING OPERATIONS FROM 89F

LOOKING NORTHERLY FROM 87F. ARROW INDICATES 85F.



LOOKING SOUTHERLY FROM 83F, ARROW INDICATES 85F.





TRAVERSE HUB



CAIRN AT 83F

8.



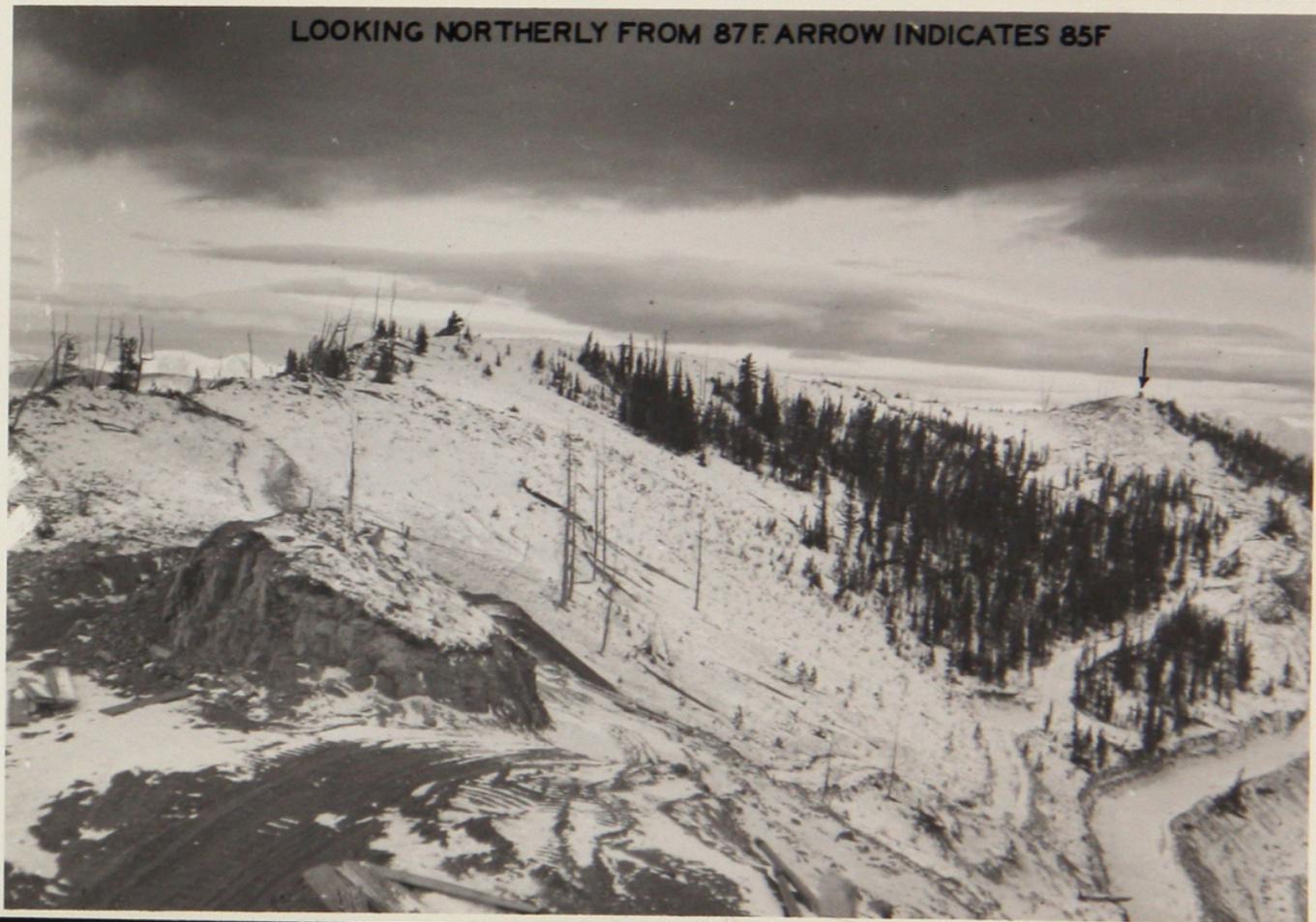
CAIRN AT B9F

B.

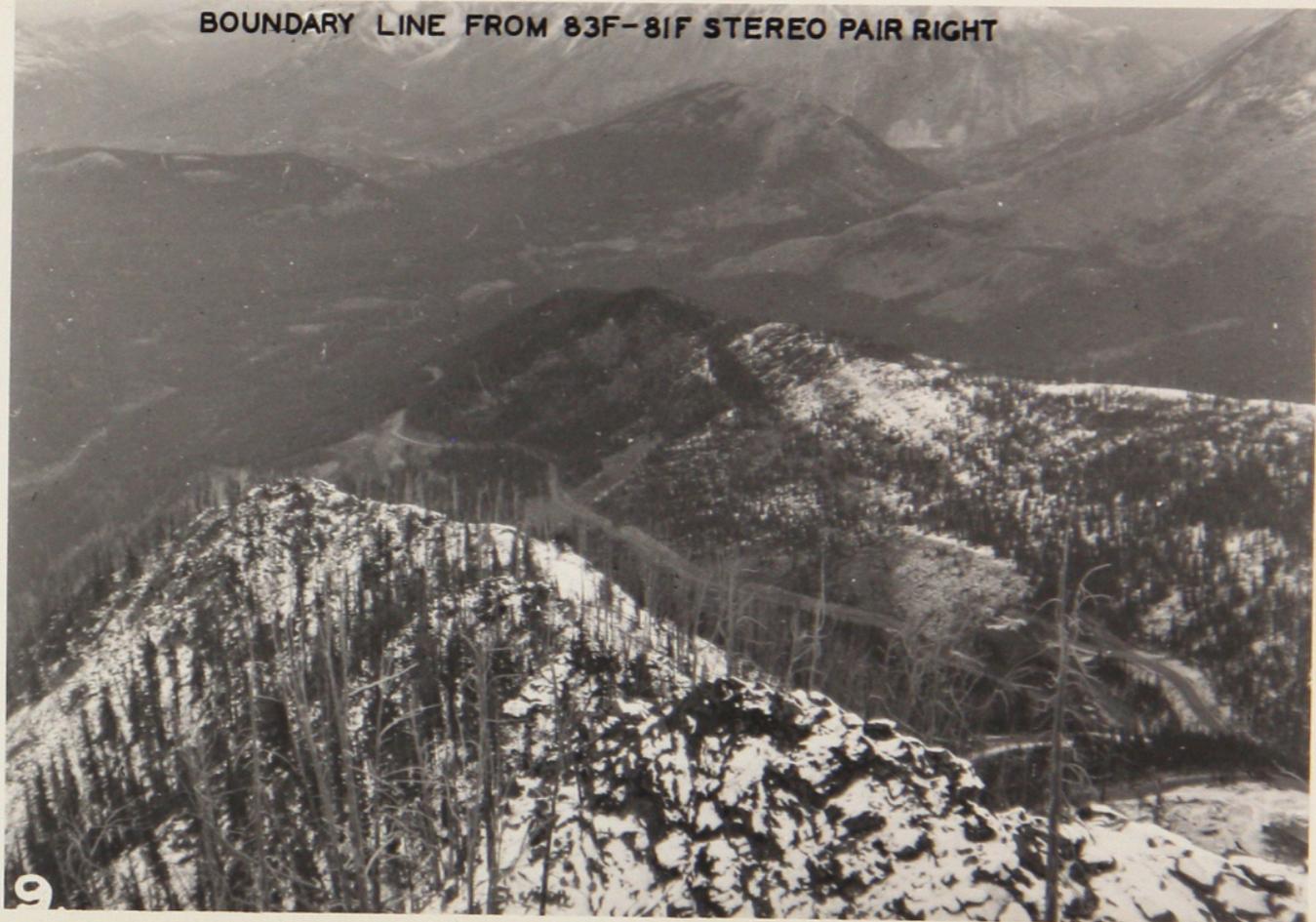
BOUNDARY LINE FROM 83F - 81F STEREO PAIR LEFT



LOOKING NORTHERLY FROM 87F. ARROW INDICATES 85F



BOUNDARY LINE FROM 83F-81F STEREO PAIR RIGHT





**BRASS BOLT 87F IN PLACE**

LOOKING SOUTHERLY. ARROW INDICATES 87F



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- (9) Other surveys:
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B. C. - ALBERTA BOUNDARY SURVEY VICINITY  
OF COLEMAN ALBERTA.

At the request of Coleman Collieries Ltd. an accurate survey was made along the height of land between monuments 81F and 89F. In addition the brass bolt and cairn at monument 87F were removed. This brass bolt was presented to Mr. G.S. Andrews, B. C. Commissioner for the B.C.-Alberta Boundary on the 4th November, 1952.

Following the instructions issued by G.S. Andrews (See Appendix a) the survey was commenced on 28th October. All distances were chained at least twice, i.e. with a foot tape northerly and a link tap southerly. These distances were corrected for temperature, sag, slope, standard and height above sea level. The angles were read with a Wild transit, reading to one second, with two left and two right face readings. An accuracy of 5 seconds was maintained between reading of the same face. The overall accuracy, from 81F to 89F, was 1 in 11,000 although individual courses were as low as 1 in 3,000. The bearings of the survey were obtained by a Polaris observation at the mining camp, directly below 81F, and an angular closure was made by completing the circuit from 89F around to camp (observation point) and back to 81F.

The field crew for this survey consisted of myself, J.J. Houston and R.M. Allen, while the office work was done by computers, M. Perks, L. Hjorslev and Draftsman J. Cambrey.

As this survey was at an elevation of 7200 feet and late in the fall, inclement weather harassed the party. High winds were frequent and hours were lost in certain sections trying to obtain the distances. Thirty traverse hubs were set but were not permanently marked as the mining company intends to prospect all along this route and ~~would~~<sup>will</sup> disturb all these points. These hubs consist of a stake set firmly in the ground with a three inch nail driven in the top. The centre of the top of the nail is the true turning point of the hub. The accommodation supplied by the mining company was good but riding to and from work in a coal truck and the proximity to the actual mine was not conducive to clean books or plot.

In addition to this booklet, two plans have been submitted:- one at a scale of 1 inch = 1 chain representing the survey tabled in this volume and another at 1 inch = 2 chains showing the work of R.W. Cautley with offsets to the height of land on which has been superimposed a plot of my survey adjusted in bearing and distance to agree with Mr. Cautley's results.

The submission of two plans was necessitated when it was found that some uncertainty exists as to the exact definition of this boundary. (See Appendix b - Act Respecting B.C.-Alberta Boundary).

*YBE*

I think the original intent as laid down in the Imperial Act 29 and 30, Victoria Chapter 67, sections 7 and 8 was to make the watershed (Height of Land) the boundary in this section. By the British Columbia-Alberta Boundary Act of 1931, a Commission was empowered to have this line surveyed. This act also makes the line surveyed under the instructions of this commission the official boundary. This part of the boundary, however, has been surveyed by a series of straight lines between monuments with right angle offsets to the height of land (see field notes of R.W. Cautley).

Therefore the point arises, does the present boundary consist of a series of straight lines joining these points of offset on the original height of land or does the existing height of land as referenced by this original survey constitute the true boundary.

*H. Emerson*

*HBC*

(11.)

APPENDICES

- (a) Instructions from G. S. Andrews
- (b) Imperial Act and B.C. Alberta Boundary Act
- (c) Diary
- (d) Expenses
- (e) Affidavit
- (f) Stereoscopic Pair of vertical photos
- (g) Cover-Map 4A of B. C. - Alberta Boundary.

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**SURVEYS AND MAPPING SERVICE**  
DEPARTMENT OF LANDS AND FORESTS

VICTORIA, B.C.

COPY:-

24th October, 1952.

Memorandum to:

G. C. Emerson, Esq., B.C.L.S.  
VICTORIA, B. C.

Re: Instructions for the removal of B.C.-Alberta  
Boundary Monument 87 F.

The legal boundary in this section has been defined as the existing height of land. Therefore, it is desirable that an accurate traverse be made from 85F to 89F following all its sinuosities so that if and when the existing topography is disturbed this traverse can be deemed to be the boundary between these Provinces.

To accomplish this, the following instructions are set forth.

- (1) Run a traverse from monuments 85F to 89F with an accuracy of 1/10,000 and angular closure of 10 sec. (mean of four readings). You are to be guided by the provisions of the Manual of Control Surveys.
- (2) Insofar as it is practicable, mark by concrete monument of Type 1 as defined in the Instructions Regarding Permanent Survey Monuments issued under section 7 of the Land Act, and numbered brass bolts all traverse hubs that will not be disturbed by the mining operations.
- (3) Mark by concrete monument any other points that may be necessary to assist in the re-establishment of the said monument 87F.
- (4) Remove brass bolt 87F and return it to this office.
- (5) In order that this traverse follows as closely as possible all the irregularities of the ridge the hubs should be set so that a line joining adjacent points is not more than a horizontal distance of 20 feet from the said height of land insofar as practicable.

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G. C. Emerson, Esq.,

24 October, 1952.

Accounting Instructions

As the expense of this survey will be a direct charge to Coleman Collieries great care of the amounts expended must be taken with duplicate receipts submitted including meals.

Any money required should be drawn from your trust account #2 to cover expenses on this job and this amount will be re-imbursed by the above mentioned Company at a later date.

'G.S. Andrews'

G. S. Andrews,  
Director of Surveys and Mapping, and  
Commissioner for the B.C.-Alberta Boundary.

YBC

c/o Coleman Collieries,  
COLEMAN, Alberta.

G. S. Andrews,  
Director of Surveys & Mapping.

Dear Sir:

After talking to A. E. Graham and the General Manager of Coleman Collieries, I find the situation somewhat different from that already presented.

It appears they have been prospecting all along the ridge from 81F to beyond 89F and consider they will eventually be mining along this whole route.

What they would like me to do is to control the whole route that is now defined as "the height of land" (a distance of  $1\frac{1}{4}$  miles from 81F to 89F I believe, my map is not available) as well as remove monument 87F which is their immediate problem.

Unless I receive instructions to the contrary I intend to do the following:

- (1) Run a traverse of the accuracy outlined in my instructions of 24 Oct. over the part of the boundary now defined as "the height of land".
- (2) Take star observations to determine the bearing (or azimuth) of this line.

Owing to the fact that mining will be more extensive than at first appeared, I do not consider it advisable to place reference monuments as outlined.

The hole near 89F (see aerial photos) is apparently the result of mining operations prior to the time of Coleman Collieries.

Yours truly,

"G.C. Emerson"

copy

868

The boundary between the Provinces of Alberta and British Columbia is defined by Sections 7 and 8 of the Imperial Act 29 and 30 Victoria, Chapter 67, which are as follows:-

"7. Until the Union, British Columbia shall comprise all such territories, within the Dominion of Her Majesty, as are bounded to the south by the territories of the United States of America, to the west by the Pacific Ocean and the frontier of the Russian territories in North America, to the north by the Sixtieth Parallel of North Latitude, and to the East from the Boundary of the United States Northwards by the Rocky Mountains and the One hundred and twentieth Meridian of West Longitude; and shall include Queen Charlotte's Island and all other Islands adjacent to the said Territories, except Vancouver Island and the Islands adjacent thereto."

"8. After the Union, British Columbia shall comprise all the Territories and Islands aforesaid and Vancouver Island and the Islands adjacent thereto."

YBE



## CHAPTER 8.

An Act respecting the Boundary between the Provinces  
of British Columbia and Alberta.

[Assented to 1st April, 1931.]

**W**HEREAS by Order in Council No. 812, approved on the second day of June, 1913, the invitation extended by the Government of the Dominion to the Government of this Province to participate in the joint survey of the boundary-line between this Province and the Province of Alberta was accepted, and by Order in Council No. 1051, approved on the first day of August, 1913, A. O. Wheeler, B.C.L.S., was appointed Boundary Commissioner to represent this Province on the joint survey of the said boundary-line: Preamble.

And whereas the said A. O. Wheeler, as Commissioner for this Province, with J. N. Wallace, D.L.S., as Commissioner for the Dominion up to September twentieth, 1915, and R. W. Cautley, D.L.S., as Commissioner for the Province of Alberta and after September twentieth, 1915, for the Dominion as well, did subsequently enter upon the work of the joint survey of the said boundary-line, and did complete the same in or about the year 1924 from the International Boundary on the forty-ninth parallel of north latitude northerly to a point on the one hundred and twentieth meridian of west longitude in or about latitude north fifty-seven degrees, twenty-six minutes, and forty and twenty-five one-hundredths seconds:

And whereas the said Commissioners have made due report of their said survey, and have caused the line indicating the boundary between the said Provinces to the extent aforesaid to be surveyed and marked upon the ground and to be duly laid down upon maps signed by them as such Commissioners, which said maps have been printed and copies thereof deposited in the office of the Surveyor-General of this Province:

And whereas by section 3 of "The British North America Act, 1871," it was enacted that the Parliament of the Dominion of Canada

may from time to time, with the consent of the Legislature of any Province of the Dominion, increase, diminish, or otherwise alter the limits of that Province, upon such terms and conditions as may be agreed upon by the said Legislature, and may, with the like consent, make provision respecting the effect and operation of any such increase or diminution or alteration of territory in relation to any Province affected thereby:

And whereas it is expedient that the said line so surveyed, marked, and laid down should be established to the extent aforesaid as the boundary-line between this Province and the Province of Alberta:

Therefore, His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows:—

Short title.

1. This Act may be cited as the "British Columbia-Alberta Boundary Act."

Consent to establishment of boundary-line.

2. In case the Legislature of the Province of Alberta also consents thereto with respect to that Province, the Legislature of the Province of British Columbia hereby consents that the Parliament of the Dominion of Canada do declare the line so surveyed, marked, and laid down in the manner referred to in the preamble, to the extent thereof, to be the boundary-line between this Province and the Province of Alberta, whether or not the same increases, diminishes, or otherwise alters the territory of this Province.

VICTORIA, B.C.:

Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.  
1931.

DIARY

- 23rd October - Received instructions to make survey.
- 24th October - Collected equipment and data.
- 25th October - Tested tapes, packed equipment, shipped equipment. Left for Coleman on midnight boat.
- 26th October - Spent the day on the train.
- 27th October - Arrived in Coleman at 3:50 p.m. Was met by Mr. Graham, Mining Engineer for Coleman Collieries.
- 28th October - Started running the line — completed the leg 81F to 83F. This section is very rocky and sharp.
- 29th October - Completed the section 83F to beyond 87F. Gusty winds and colder.
- 30th October - Ran about 5 chains of line. Heavy winds with sleet. Went back to camp at noon. Four inches of snow fell in afternoon.
- 31st October - Completed reading angles and measuring in a southerly direction. Started check taping with foot tape in a northerly direction.
- 1st November - Check taped back to 81F.
- 2nd November - Office plotting and second check on nine courses. High winds, temperature 12-28 degrees F. Rebuilt cairns 81F, 83F and 85F.
- 3rd November - Checked courses E27 and E28 to E26 and E30. Removed bolt and cairn at 87F. Rebuilt cairn at 89F. Left at 4 p.m. for Victoria.
- 4th November - Arrived back at office in Topographic Division.
- 4th November - 24th November - Computations by Perks.
- 24th November - 28th November - Computations by Perks and Hjorslew.
- 28th November - 10th December - Drafting on plan.
- 10th December - 15th December - Drafting on explanatory plan — Cautley and Emerson combined.

*JHE*

EXPENSES OF SURVEY.

(1) Wages:

Self 13 days @ \$20.17 -	=	\$262.21	
(Supervising) 40 days @ $\frac{1}{2}$ of			
\$20.17	=	403.40	
Houston 13 days @ \$7.15	=	92.95	
Allen 11 days @ \$6.50	=	71.50	
Perks 25 days @ \$9.13	=	228.25	
Cambrey 17 days @ \$11.78	=	<u>200.26</u>	\$1,258.57

(2) Meals: - 43.47

(3) Transportation:

2 returns Victoria to Vancouver )			
1 single Nanaimo to Vancouver )	\$202.30		
3 returns Vancouver to Coleman )			
Refund on 2 return tickets	<u>41.00</u>	161.30	
Coleman to Fernie	3.20		
Fernie to Cranbrook	4.50		
Cranbrook to Victoria	82.72		
Vancouver to Victoria	<u>8.25</u>	98.67	

(4) Taxi and Limousine - 6.90

(5) Lodging - 7.25

(6) Miscellaneous

1 gal. Harden fast	\$ 2.32	
Facing Brass bolts	2.00	
Shipping Charges	10.78	
Receipt and note book	<u>1.29</u>	<u>16.39</u>

TOTAL: \$1,592.55

BE

AFFIDAVIT

I, G. C. Emerson, of Victoria, a duly authorized  
Land Surveyor for Canada and the Province of British Columbia,  
make oath and say that I was at and did personally superintend  
the survey represented on pages / to 70 of this booklet.

Sworn before me  
this 6<sup>th</sup> day  
*of January*  
A.D. 1953

)  
*G. C. Emerson*

*Hearman*

A Commissioner for taking Affidavits  
within British Columbia



BC 1489.6

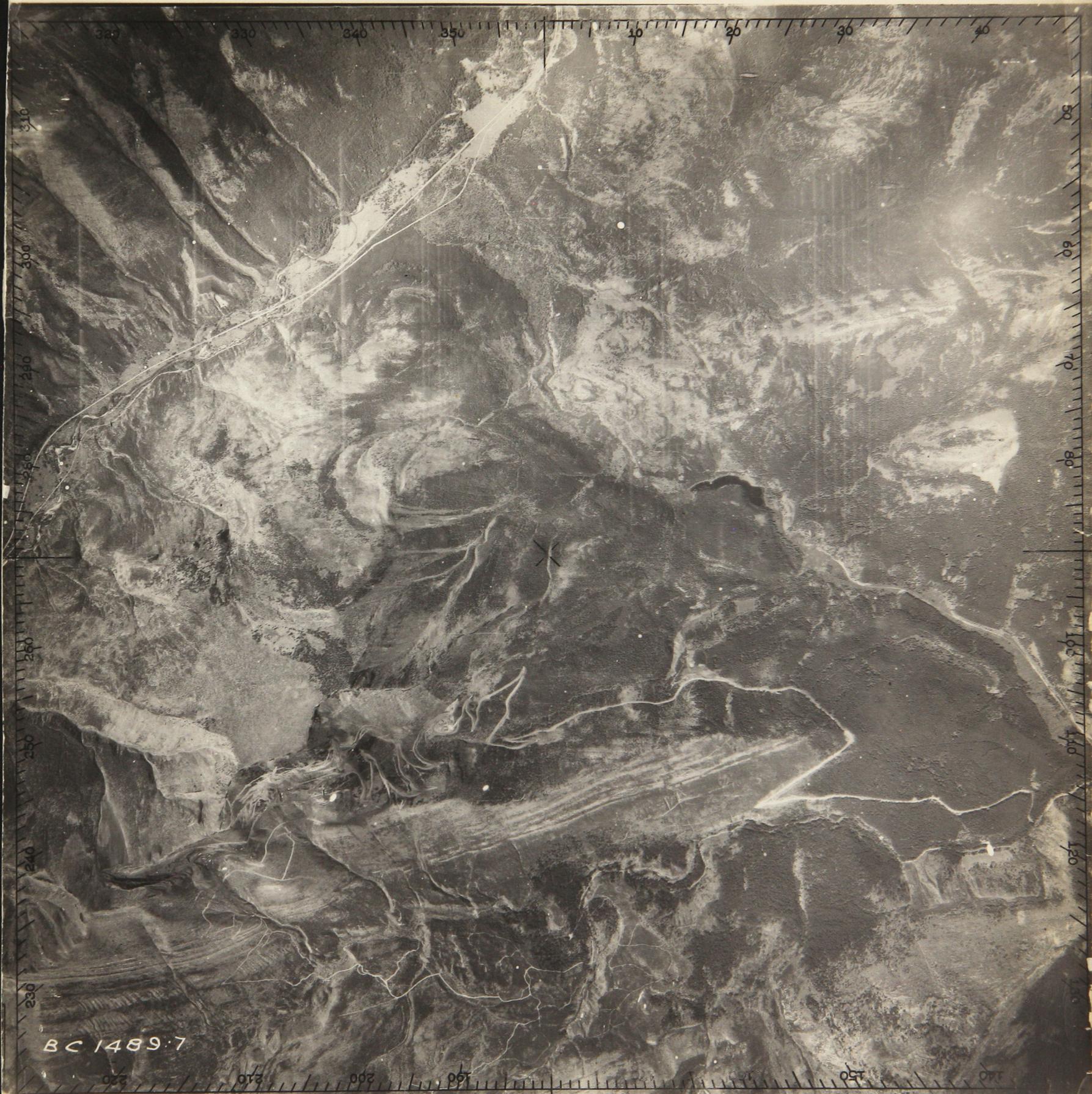
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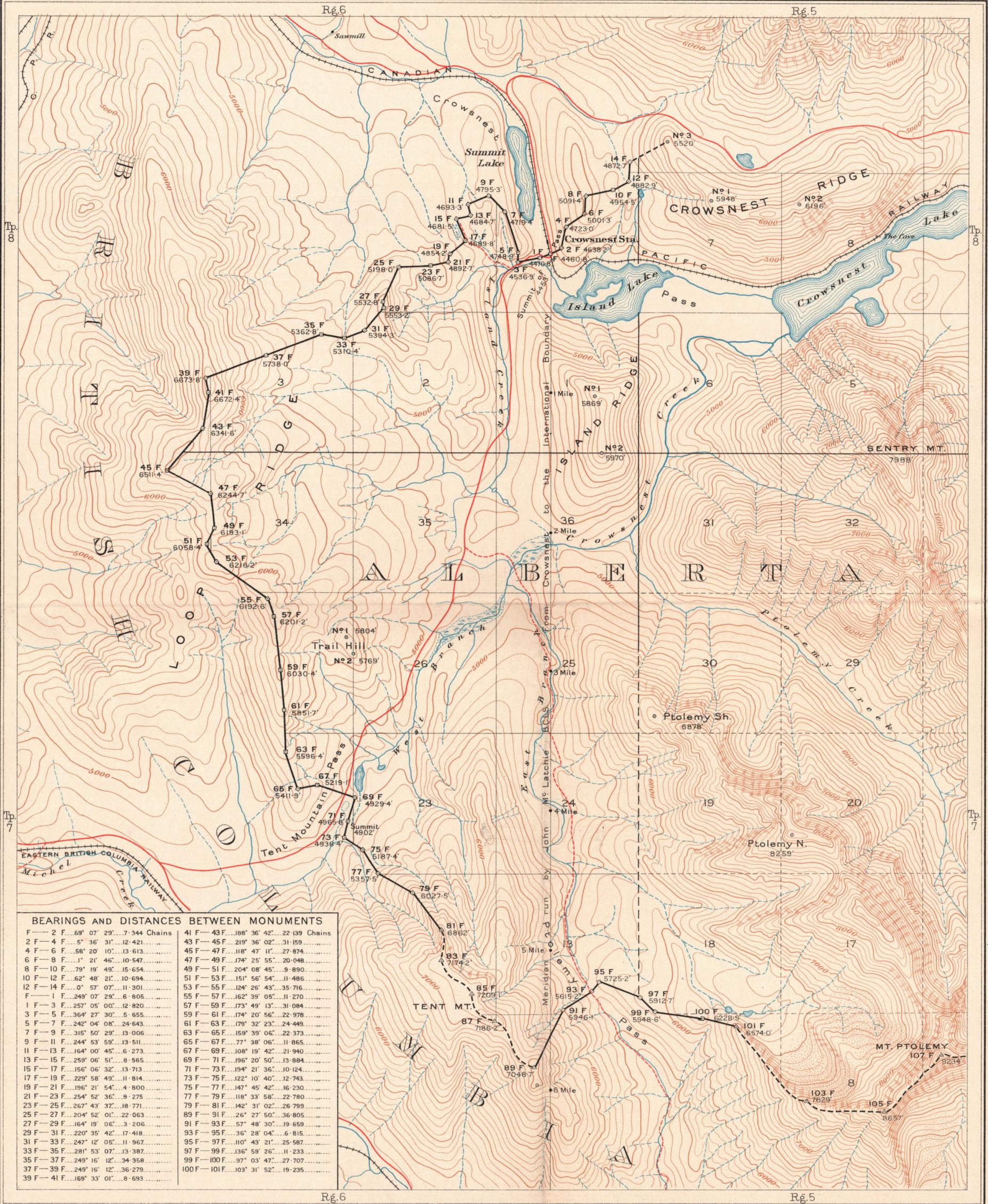
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BOUNDARY BETWEEN ALBERTA AND BRITISH COLUMBIA

CROWSNEST, TENT MOUNTAIN AND PTOLEMY PASSES.



**BEARINGS AND DISTANCES BETWEEN MONUMENTS**

F-2 F-69° 07' 29" 7.344 Chains	41 F-43 F-188° 36' 42" 22.139 Chains
2 F-4 F-5° 36' 31" 12.421	43 F-45 F-219° 36' 02" 31.159
4 F-6 F-58° 20' 10" 13.613	45 F-47 F-118° 47' 11" 27.874
6 F-8 F-1° 21' 46" 10.547	47 F-49 F-174° 25' 55" 20.048
8 F-10 F-79° 19' 49" 15.654	49 F-51 F-204° 08' 45" 9.890
10 F-12 F-62° 48' 21" 10.694	51 F-53 F-151° 56' 54" 11.486
12 F-14 F-0° 57' 07" 11.301	53 F-55 F-124° 26' 43" 35.716
1 F-3 F-249° 07' 29" 6.805	55 F-57 F-162° 39' 05" 11.270
3 F-5 F-257° 05' 00" 12.820	57 F-59 F-173° 49' 13" 31.084
5 F-7 F-242° 04' 08" 24.643	59 F-61 F-174° 20' 56" 22.978
7 F-9 F-315° 50' 29" 13.006	61 F-63 F-179° 32' 23" 24.449
9 F-11 F-244° 53' 59" 13.511	63 F-65 F-159° 39' 06" 22.373
11 F-13 F-164° 00' 45" 6.273	65 F-67 F-77° 38' 06" 11.865
13 F-15 F-259° 06' 51" 8.565	67 F-69 F-108° 19' 42" 21.940
15 F-17 F-156° 06' 32" 13.713	69 F-71 F-196° 20' 50" 13.884
17 F-19 F-229° 58' 49" 11.814	71 F-73 F-194° 21' 36" 10.124
19 F-21 F-196° 21' 54" 4.800	73 F-75 F-122° 10' 40" 12.743
21 F-23 F-254° 52' 36" 9.275	75 F-77 F-147° 45' 42" 16.230
23 F-25 F-267° 43' 37" 18.771	77 F-79 F-118° 33' 58" 22.780
25 F-27 F-204° 52' 01" 22.063	79 F-81 F-142° 31' 02" 26.799
27 F-29 F-164° 19' 06" 3.206	81 F-83 F-26° 27' 50" 36.805
29 F-31 F-220° 35' 42" 17.418	83 F-85 F-57° 48' 30" 19.659
31 F-33 F-247° 12' 05" 11.967	85 F-87 F-36° 28' 04" 6.815
33 F-35 F-281° 53' 07" 13.387	87 F-89 F-110° 43' 21" 25.587
35 F-37 F-249° 16' 12" 34.358	89 F-91 F-136° 59' 26" 11.233
37 F-39 F-249° 16' 12" 36.279	91 F-93 F-97° 03' 47" 27.707
39 F-41 F-169° 33' 01" 8.693	93 F-95 F-103° 31' 52" 19.235

REFERENCES

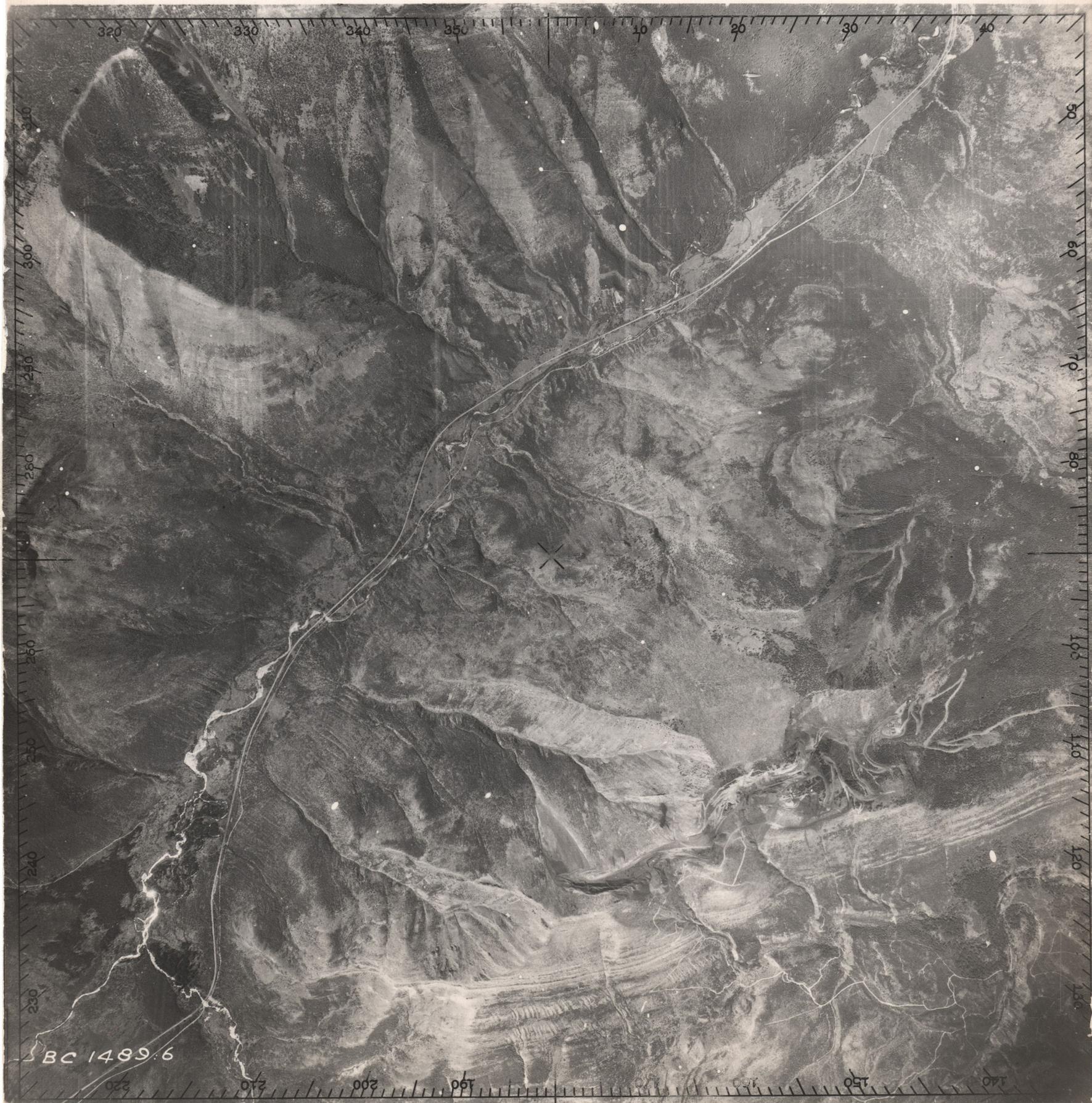
- Concrete Monuments
  - Brass Bolts and Cairns
  - Camera Stations
  - Roads
  - Trails
  - Talus
  - Boundary along natural line of Watershed
  - Boundary marked by the Commission
  - Bearings are referred to the local Meridian of Monument 5.F.
- Elevations are to the tops of Monuments and Brass Bolts.  
Distances are in chains.



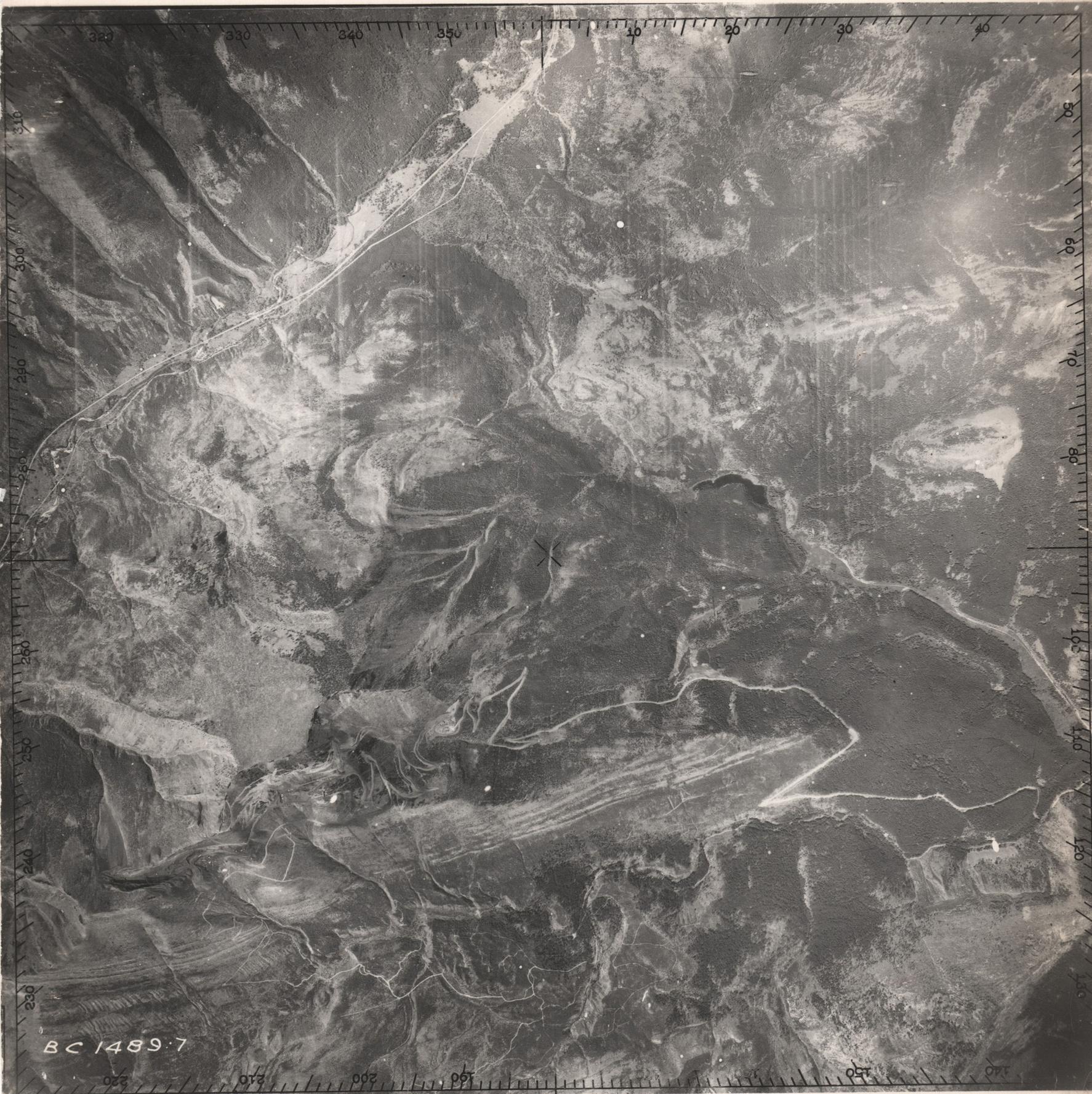
DRAWN AND PRINTED AT THE SURVEYOR GENERAL'S OFFICE, OTTAWA, CANADA.

J. N. WALLACE, D. L. S. Commissioner for the Dominion.  
 R. W. CAUTLEY, D. L. S. Commissioner for Alberta.  
 A. O. WHEELER, B. C. L. S. Commissioner for British Columbia.

FB 23 465



BC 1489.6



BC 1489.7