

INDICES TO SATELLITE IMAGERY AND SMALL SCALE AERIAL PHOTOGRAPHY OF BRITISH COLUMBIA

1971 - 1972



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INDICES TO SATELLITE IMAGERY
AND SMALL-SCALE AERIAL PHOTOGRAPHY
OF BRITISH COLUMBIA,
1971-1972

by
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VICTORIA, BRITISH COLUMBIA
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INTRODUCTION

Good quality small-scale photographs (taken during the summers of 1971 and 1972), covering much of southern B. C., are available for forest managers and other interested persons. Also on hand are satellite pictures, as of late July 1972, covering the entire province. This report is designed to acquaint potential users with what is available, and gives key maps from which pictures can be ordered.

The imagery described resulted from a program involving the joint efforts of agencies testing the capabilities of the Earth Resources Technology Satellite (E.R.T.S.-1) launched by the United States National Aeronautical Space Agency (N.A.S.A.) in 1972. Acquisition of imagery was facilitated in Canada by the Canada Centre for Remote Sensing (C.C.R.S.)^{1/} in Ottawa. The principal requesting agency in this province was the Canadian Forestry Service (Forest Management Institute, Ottawa, and Pacific Forest Research Centre, Victoria), but the B. C. Land Inventory and other government agencies were also involved in the program. The imagery was acquired to obtain data on a variety of land and water features. The program will presumably continue through the life of E.R.T.S.-1 and subsequent similar satellites.

E.R.T.S. data for British Columbia were received at the Prince Albert Satellite Station (P.A.S.S.) at Prince Albert, Saskatchewan, and compiled by C.C.R.S. in Ottawa. Photographic reproductions of these data are produced by the National Air Photo Library Reproduction Centre (N.A.P.L./R.C.) in Ottawa. Small-scale, high-level photographs, to compare with E.R.T.S.

^{1/} Canada Centre for Remote Sensing, 2464 Sheffield Road, Ottawa, Ontario. Detailed information on this program, including data on the sensors used, can be obtained from this address.

advised to purchase small numbers of pictures as samples before placing larger orders.

SMALL-SCALE PHOTOGRAPHY

Small-scale photographs of much of southern British Columbia (Figure 3) were taken from 30,000 to 41,000 ft (9,144 to 12,192 m)^{3/}. Figure 4 shows areas photographed in 1971; maps 1 to 3^{4/} show the flight lines and photograph numbers. Figure 5 and maps 4 to 26 show the same information for 1972. Photography dates, film types, altitude, filters, roll numbers and frame numbers are on the maps.

All 9 x 9-inch photographs were taken with a 3½-inch (88 mm) lens, except those shown in maps 10, 16 and 19, when a 6-inch (150 mm) lens was used. All 70 mm photography was taken with a 3-inch (76 mm) lens. Photograph scale can be calculated by:
$$\frac{\text{flying height above ground (ft)}}{\text{lens focal length (ft)}}$$
 commonly used scales were between 1:100,000 and 1:160,000. Contact-sized 9 x 9-inch photographs, taken from around 35,000 ft (11 km) with a 3½-inch lens, for example, are at a scale of 1:120,000 and cover an area about 18 miles (29 km) square. 70 mm photographs cover an area about 5 miles (8 km) square, or about the middle one-third of the 9 x 9-inch picture, along the flight line.

^{3/} Exceptions were two areas photographed from 8,000 and 15,000 ft (2,436 and 4,572 m).

^{4/} The original index maps were prepared by N.A.P.L. by comparing the film with map features; the maps reproduced in this report were copies from these maps and most have not been checked with the photographs.

Base maps used in this report are from the Department of Energy, Mines and Resources Mapping Office, Ottawa, and the Department of Lands, Forests and Water Resources, B. C. Lands Service, Victoria, B. C., but air photo indices are not available from these offices.

Table 1. 70 mm black and white films and filter combinations used for small-scale photography in British Columbia, 1971-1972

Film type	Filter	Spectral range (microns)
Double-X Aerographic 2405 B & W	W12 & 58	0.5-0.6 (green)
Tri-X Panchromatic 5063 B & W	W12 & 44	0.5-0.6 (green)
Tri-X Panchromatic 5063 B & W	25A	0.6-0.7 (red)
Plus-X Aerographic 2402 B & W	25A	0.6-0.7 (red)
Infrared Aerographic 2424 B & W	89B	0.7-0.9 (near infrared)

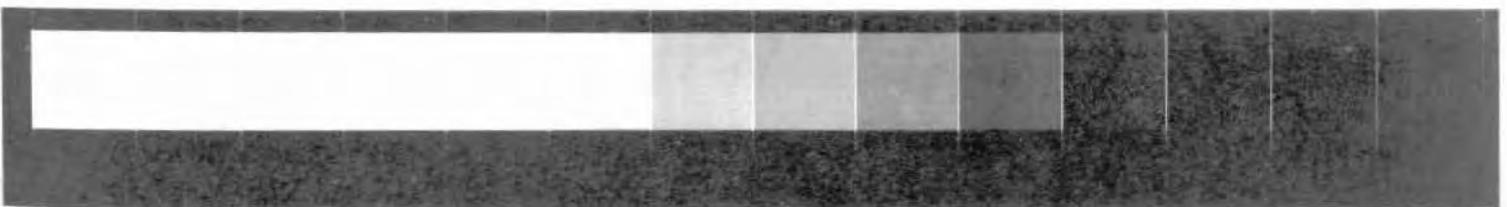
ORDERING IMAGERY

Imagery can be ordered from N.A.P.L.^{5/} by telephone, Telex or letter. N.A.P.L. can supply up-to-date price lists for all imagery, and order forms for efficient ordering of E.R.T.S. imagery. Indicate locality or photograph number and specify format information, i.e. whether transparency or paper print, color or black and white, and contact size (70 mm or 9 x 9-inch) or enlargement (approximately 10 x 10, 15 x 15, 20 x 20, 30 x 30, or 40 x 40-inch - - 26, 38, 50, 76 or 102-cm square, respectively) is required.

C.C.R.S. currently has a temporary office in Victoria^{6/} where copies of E.R.T.S. images and high level program photographs for British Columbia are on file. The potential user can view these, select frames of interest, and order

^{5/} National Air Photo Library Reproduction Centre, 615 Booth St., Ottawa, Ontario K1A 0E4, Telephone (613) 994-5457, Telex 053-4328.

^{6/} B. C. Remote Sensing, #212 - 31 Bastion Square, Victoria, B. C. Telephone 386-2476 or 386-2477.



72/JUL/27 C N48-30/W118-52 N N48-31/W118-52 MSS- -D SUN EL54 A2136 004-0057-P-1-A-P-0 CCRS E-1004-18192-

Figure 1. E.R.T.S. image (M.S.S. band 6) of part of British Columbia showing Okanagan and Arrow Lakes (1:1,000,000 approximately). Outline indicates approximate area covered by small scale photograph shown in Figure 3. From N.A.P.L., Ottawa; if requesting this picture quote E-1004-18192 band 6.

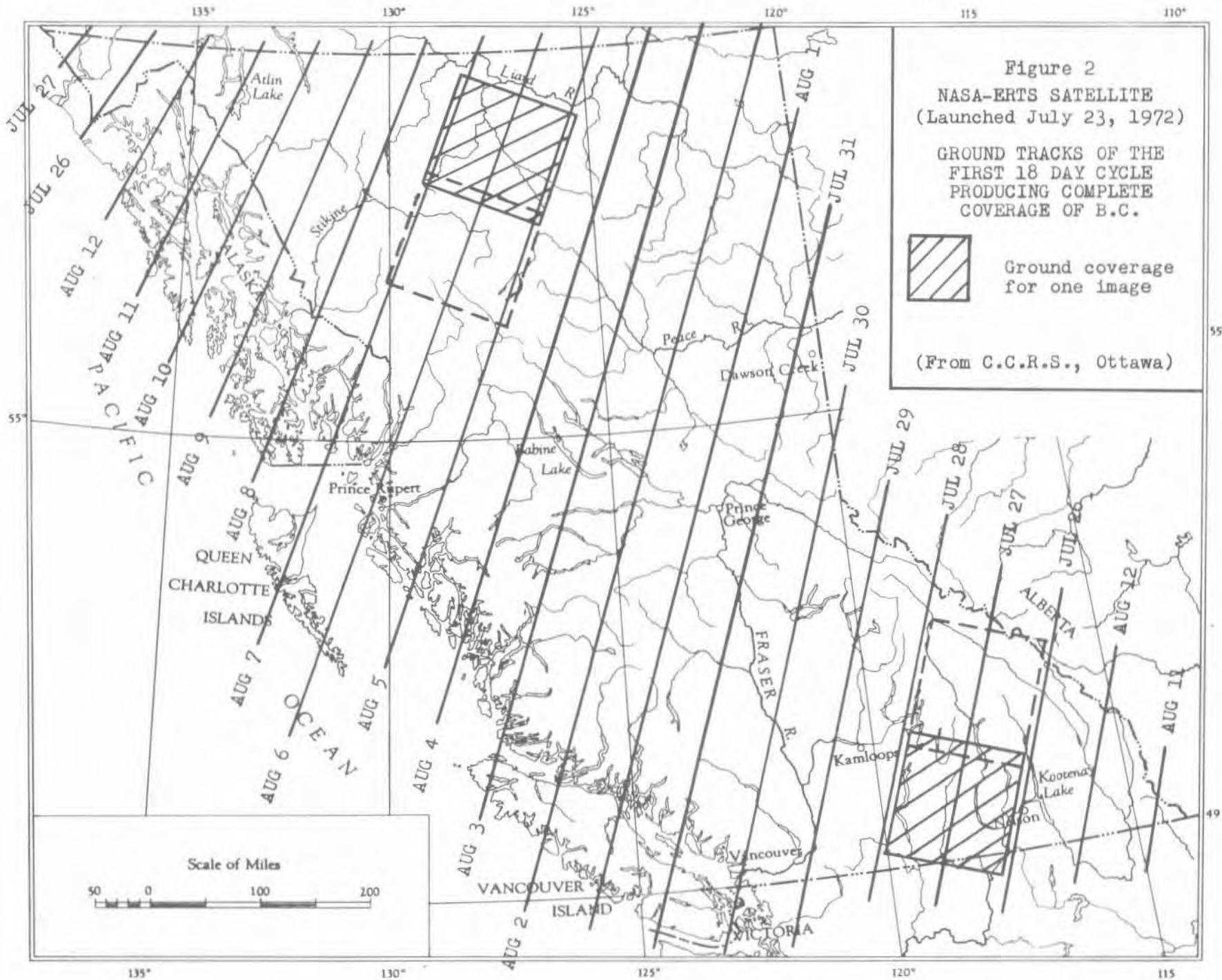


Figure 2
 NASA-ERTS SATELLITE
 (Launched July 23, 1972)

GROUND TRACKS OF THE
 FIRST 18 DAY CYCLE
 PRODUCING COMPLETE
 COVERAGE OF B.C.



Ground coverage
 for one image

(From C.C.R.S., Ottawa)

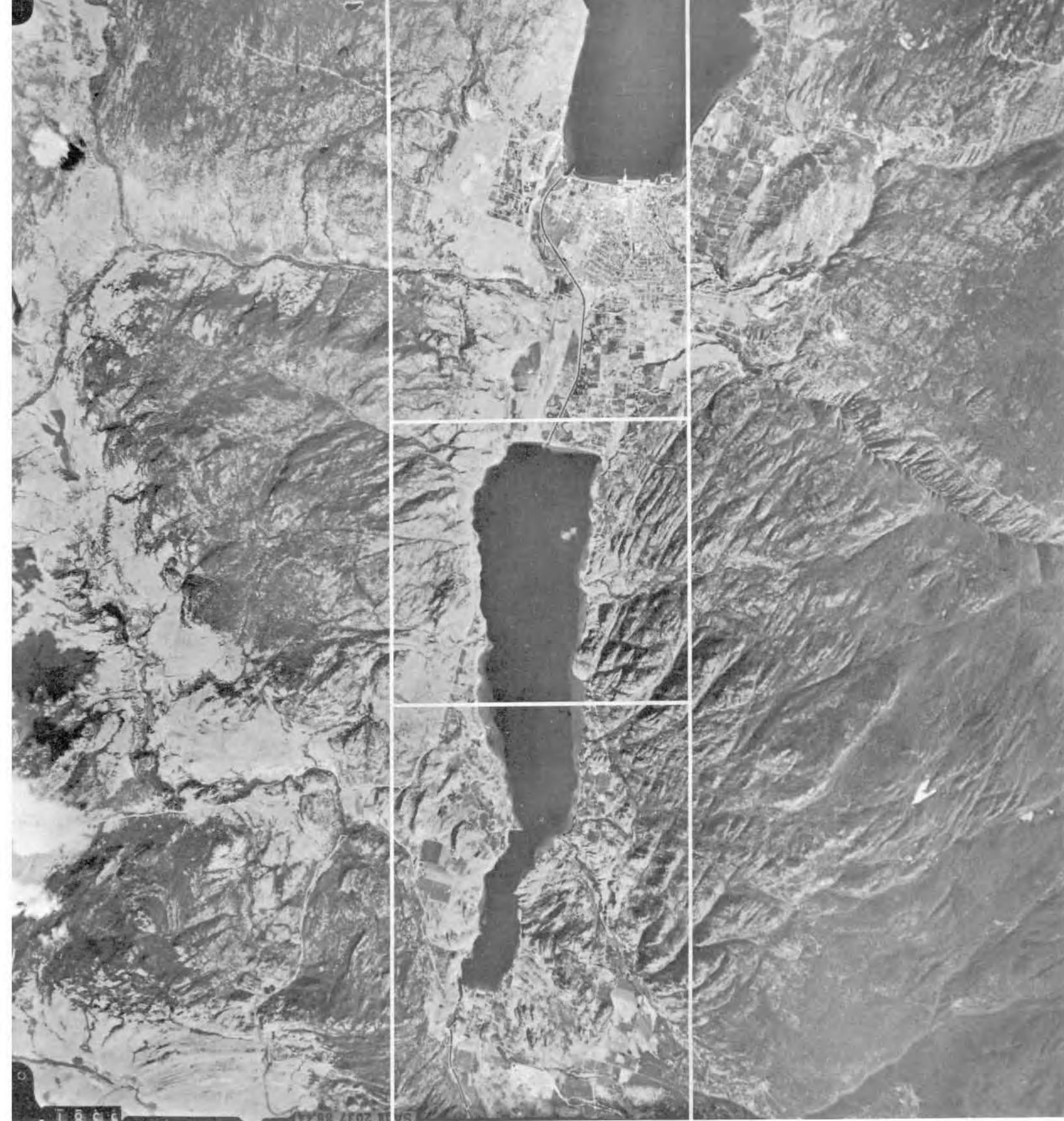
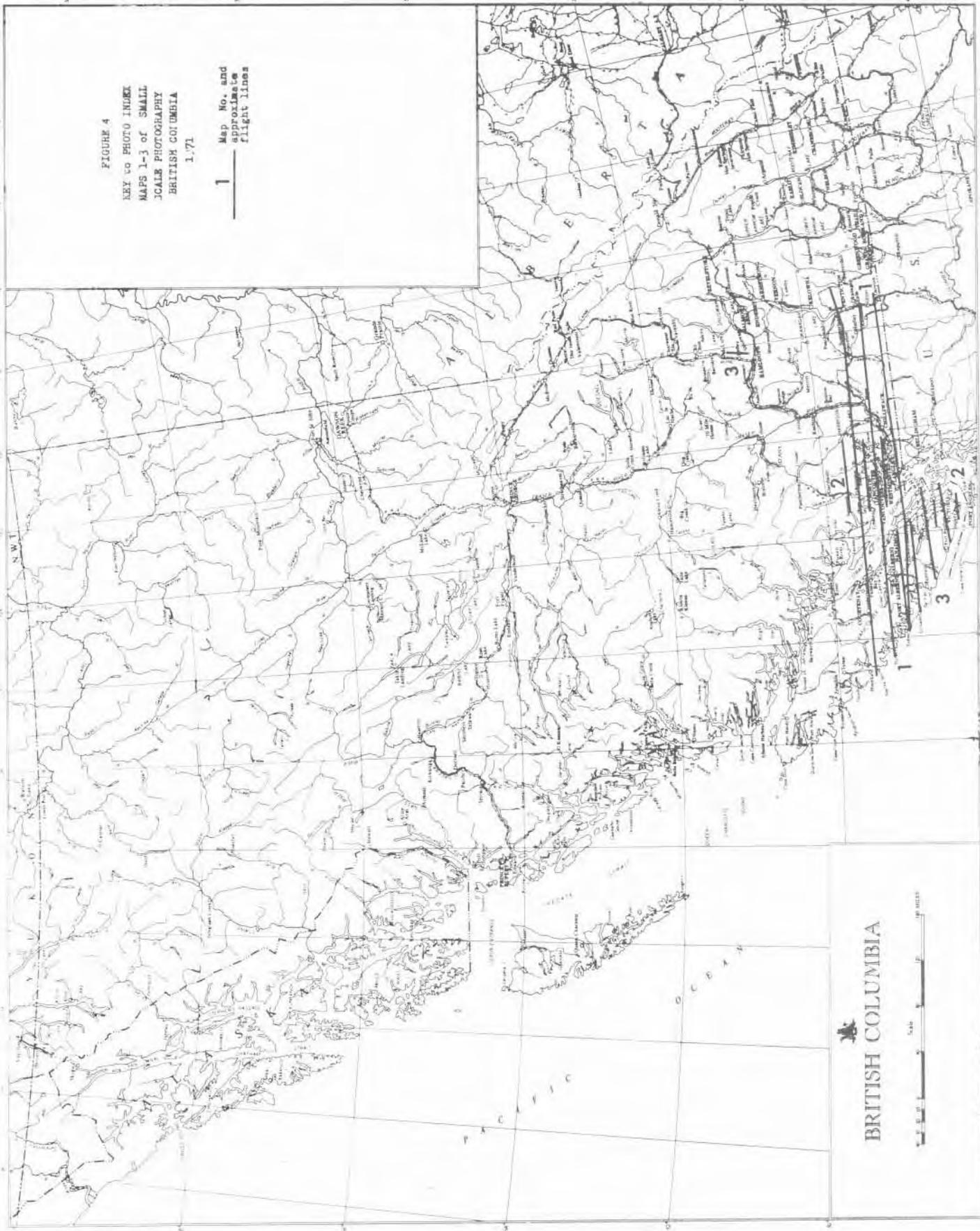


Figure 3. Black and white copy of part of 9 by 9-inch small scale (1:102,740) color photograph taken by Airborne Sensing Unit showing city of Penticton (upper centre) and surrounding mountains. This is area shown on satellite image (Figure 1). Center strip is that covered by 70 mm simultaneous photography; centre block is area covered by a single photograph. From N.A.P.L., Ottawa; if requesting this photograph quote RSA 30564 (6).

FIGURE 4

KEY TO PHOTO INDEX
MAPS 1-3 of SMALL
SCALE PHOTOGRAPHY
BRITISH COLUMBIA
1:75,000

1 ——— Map No. and
approximate
flight lines

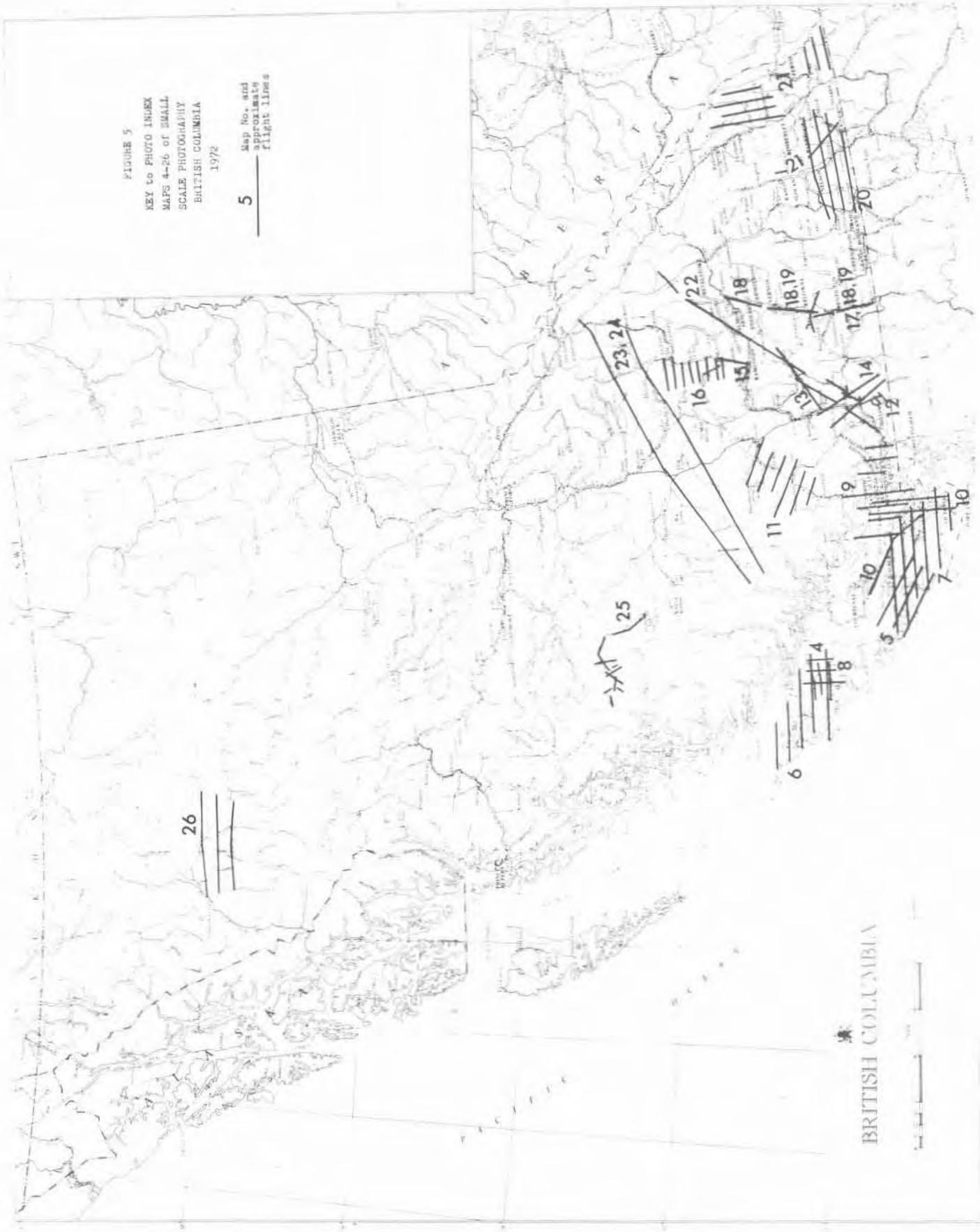



BRITISH COLUMBIA



FIGURE 5
KEY TO PHOTO INDEX
MAPS 4-26 OF SMALL
SCALE PHOTOGRAPHY
BRITISH COLUMBIA
1972

5 ——— Map No. and
approximate
flight lines

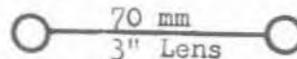
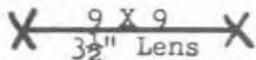


BRITISH COLUMBIA

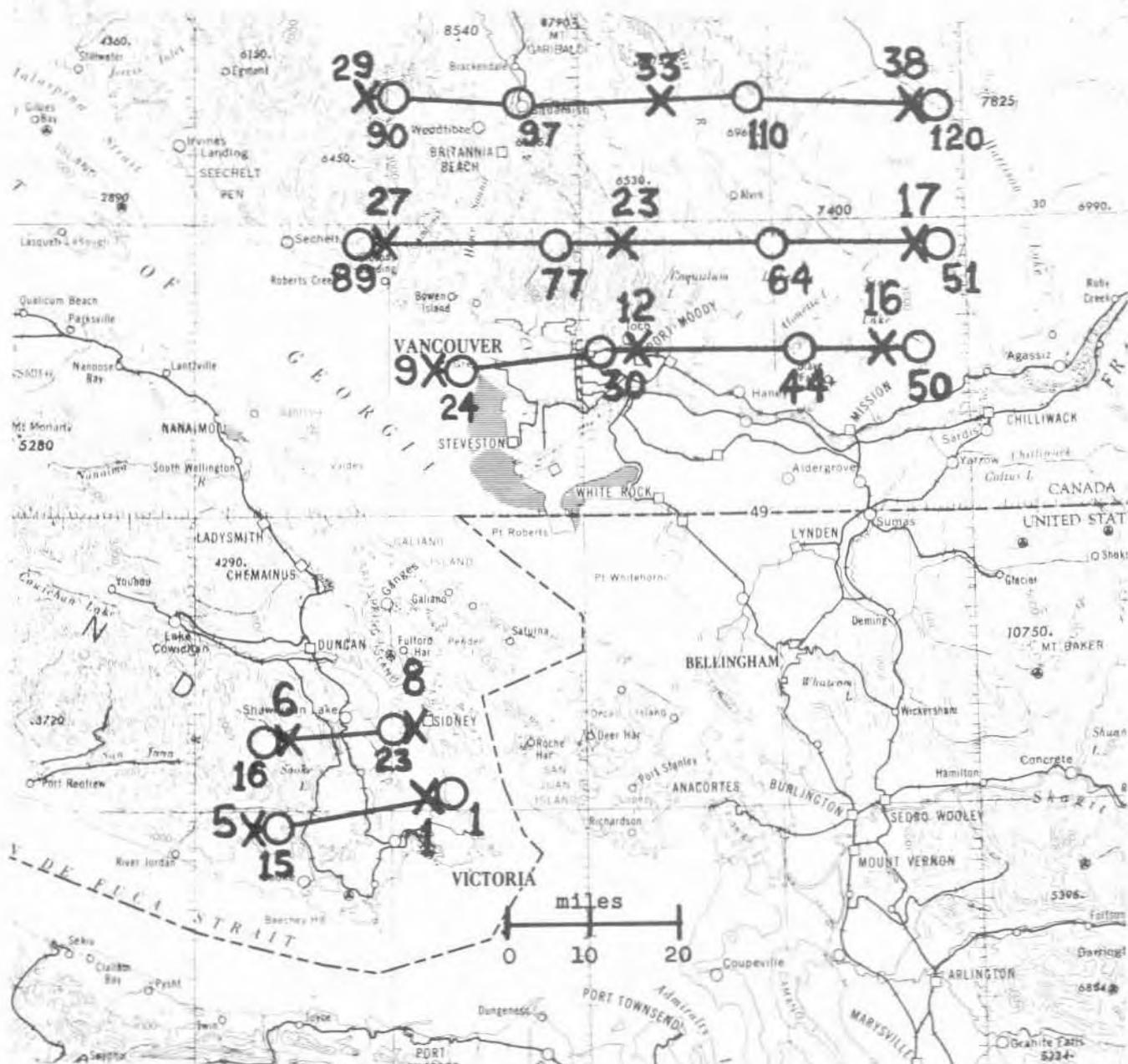


MAP 2. VICTORIA-VANCOUVER

JULY 21, 1971
40,000' ASL



ROLL NO.	FILM	FILTER	FRAMES	ROLL NO.	FILM	FILTER	FRAMES
RSA 30342	IR 2443	W12	1-38	BN 1188IR	2424	89B	1-120
				BN 1189	5063	25A	AS ABOVE
				CP 1190IR	2443	12& 44	AS ABOVE
				CP 1191IR	2443	12	AS ABOVE



MAP 3. SOUTH VANCOUVER ISLAND and KAMLOOPS (Inset)

OCT. 9, 1971

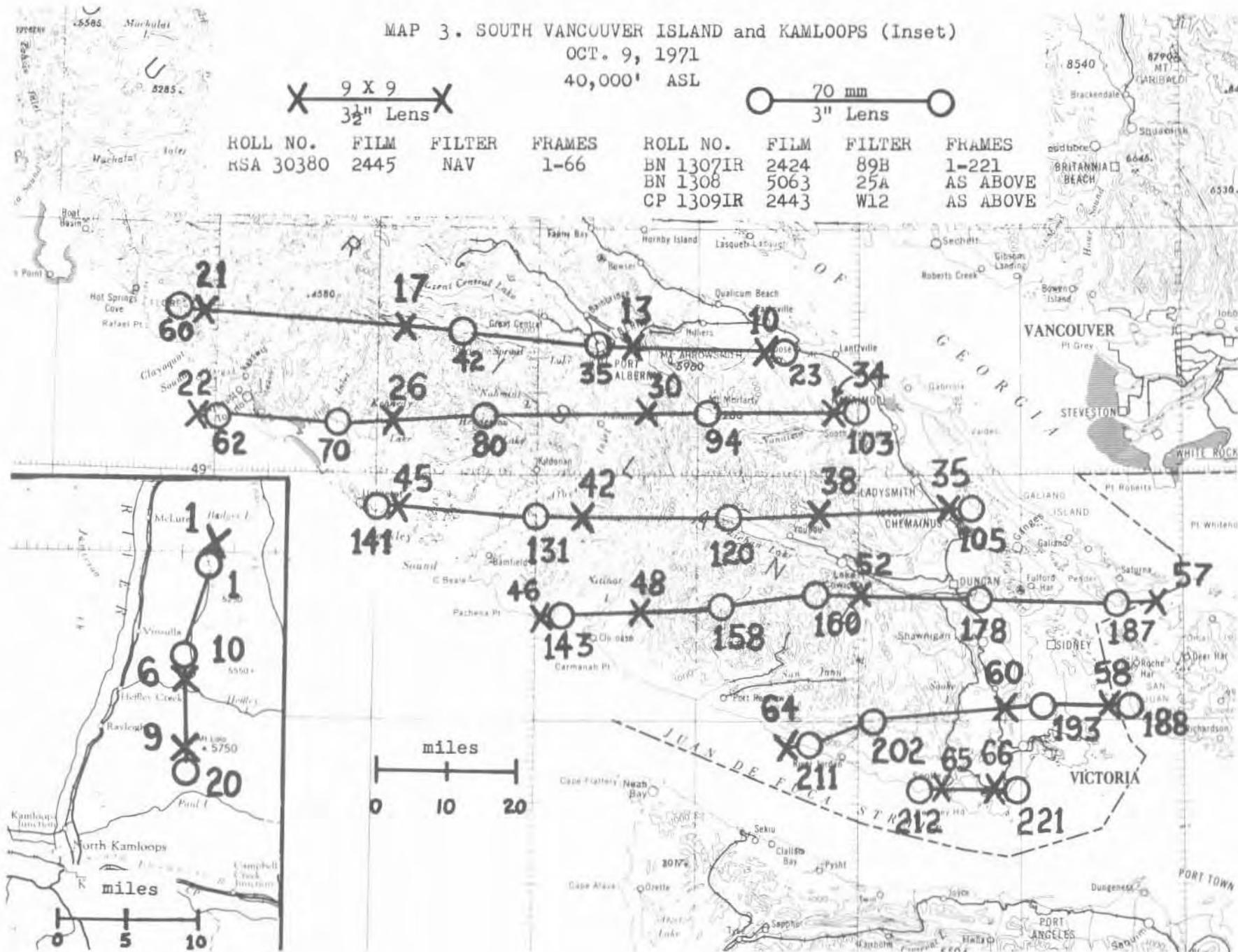
40,000' ASL

X 9 X 9
3 1/2" Lens

○ 70 mm
3" Lens

ROLL NO.	FILM	FILTER	FRAMES
RSA 30380	2445	NAV	1-66

ROLL NO.	FILM	FILTER	FRAMES
BN 1307IR	2424	89B	1-221
BN 1308	5063	25A	AS ABOVE
CP 1309IR	2443	W12	AS ABOVE





MAP 4. NIMPKISH RIVER

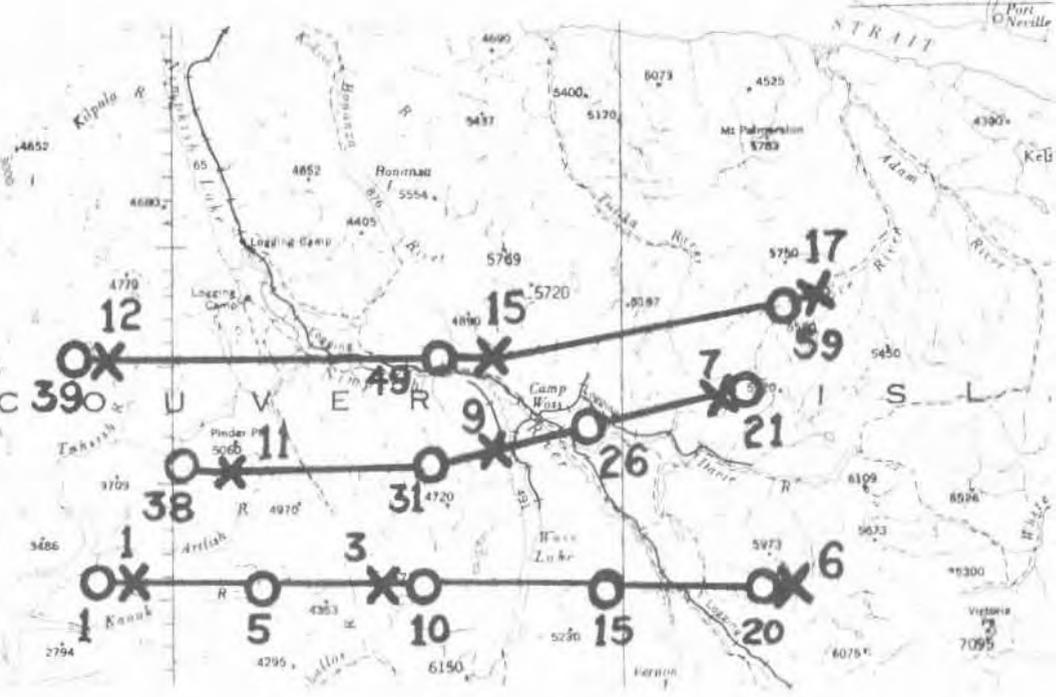
JUNE 19, 1972
 TASK 72/47
 35,000' ASL

○ 70mm ○ 3" Lens

ROLL NO.	FILM	FILTER	FRAMES
BN 1562IR	2424	89 B	1-20, 21-38, 39-59
BN 1563	2402	25 A	AS ABOVE
BN 1564	2405	12 & 58	AS ABOVE
CP 1565IR	2443	12 & 20B	AS ABOVE
BN 1566IRSc	2498		

✕ 9 X 9 ✕ 3 1/2" Lens

RSA 30442	2445	NAV	1-6 7-11 12-17
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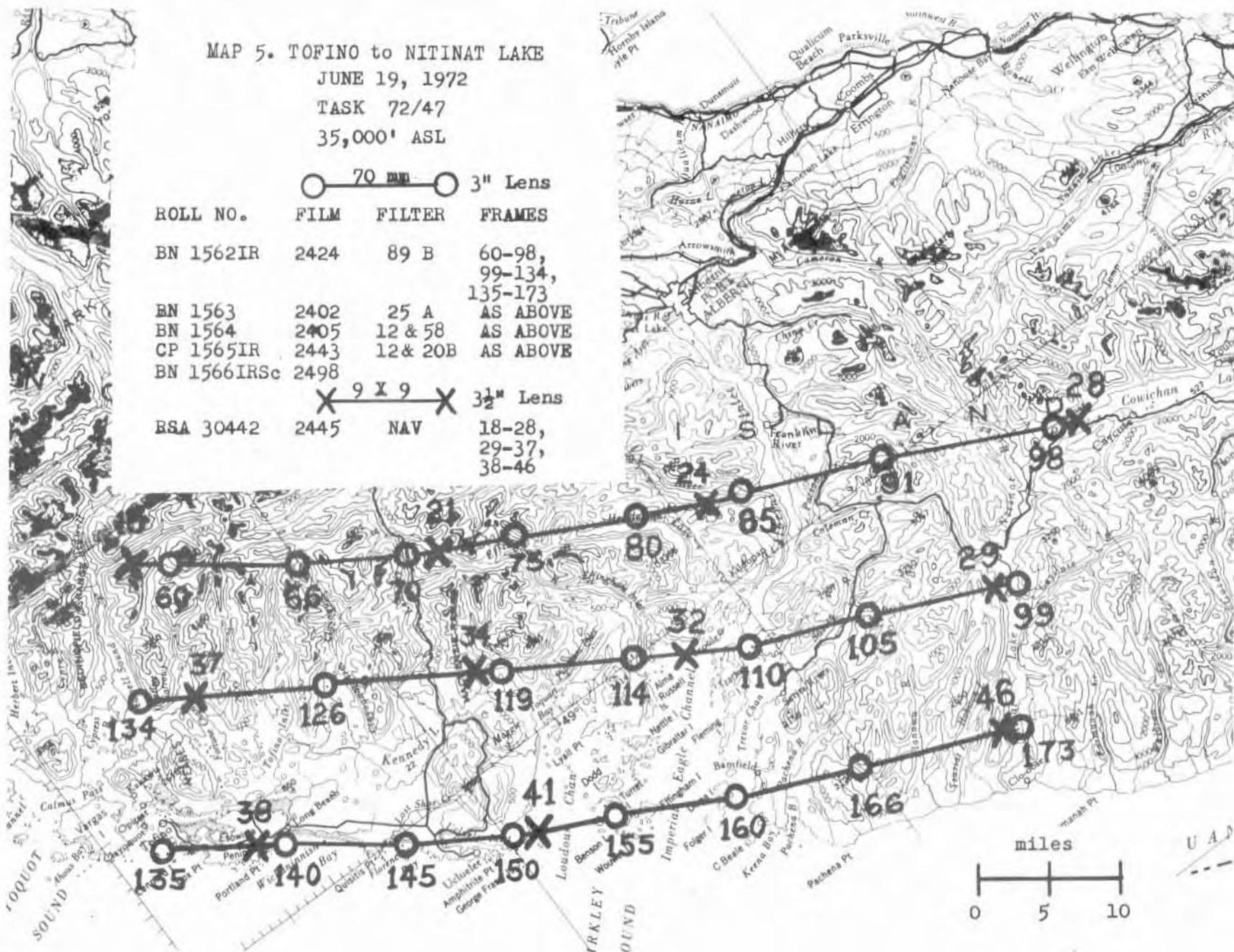
MAP 5. TOFINO to NITINAT LAKE
 JUNE 19, 1972
 TASK 72/47
 35,000' ASL

○ — 70 mm — ○ 3" Lens

ROLL NO.	FILM	FILTER	FRAMES
BN 1562IR	2424	89 B	60-98, 99-134, 135-173
BN 1563	2402	25 A	AS ABOVE
BN 1564	2405	12 & 58	AS ABOVE
CP 1565IR	2443	12 & 20B	AS ABOVE
BN 1566IRSc	2498		

✕ 9 X 9 ✕ 3 1/2" Lens

BSA 30442	2445	NAV	18-28, 29-37, 38-46
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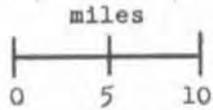


MAP 6. NORTHERN VANCOUVER ISLAND

AUG. 6, 1972

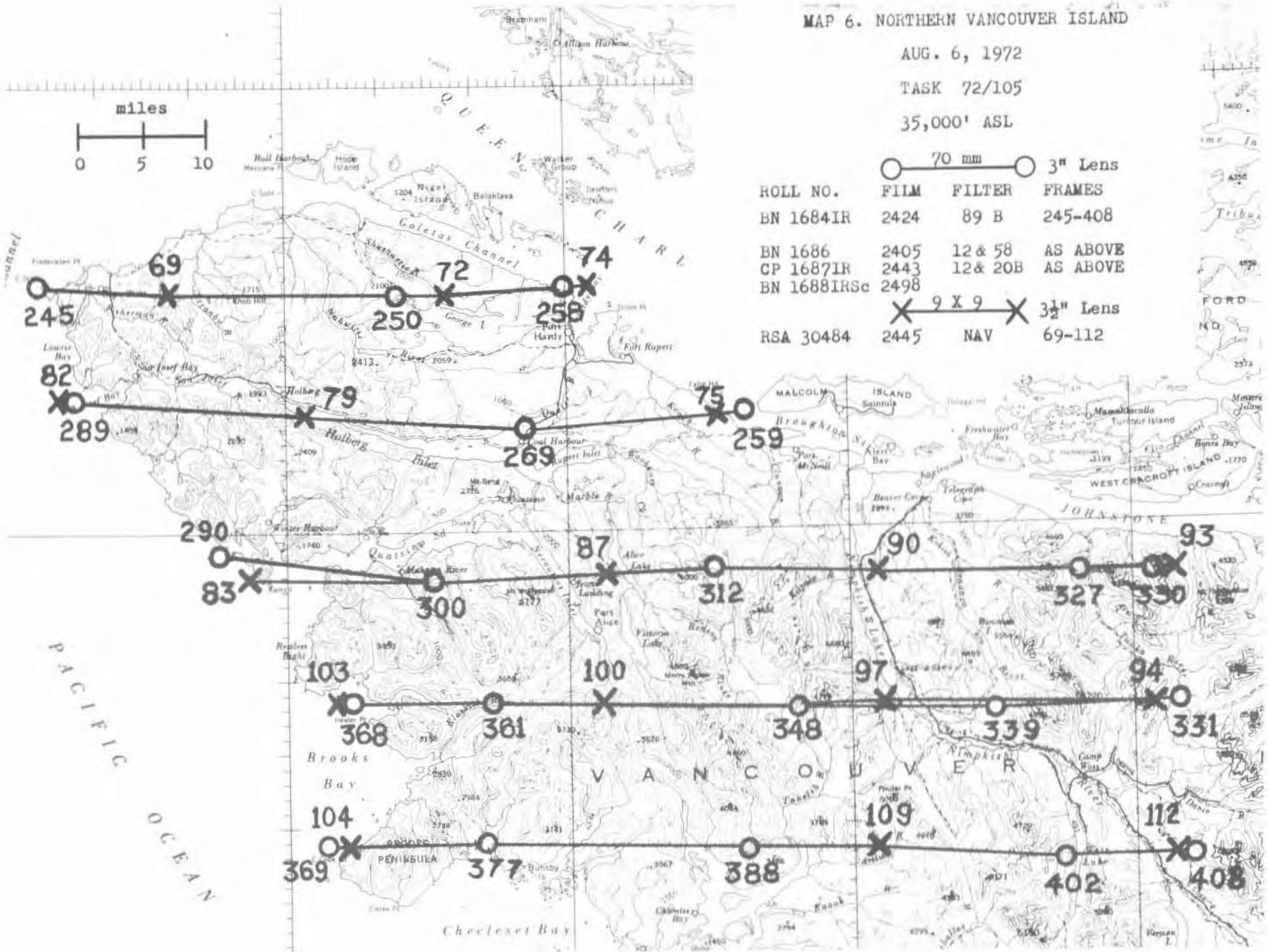
TASK 72/105

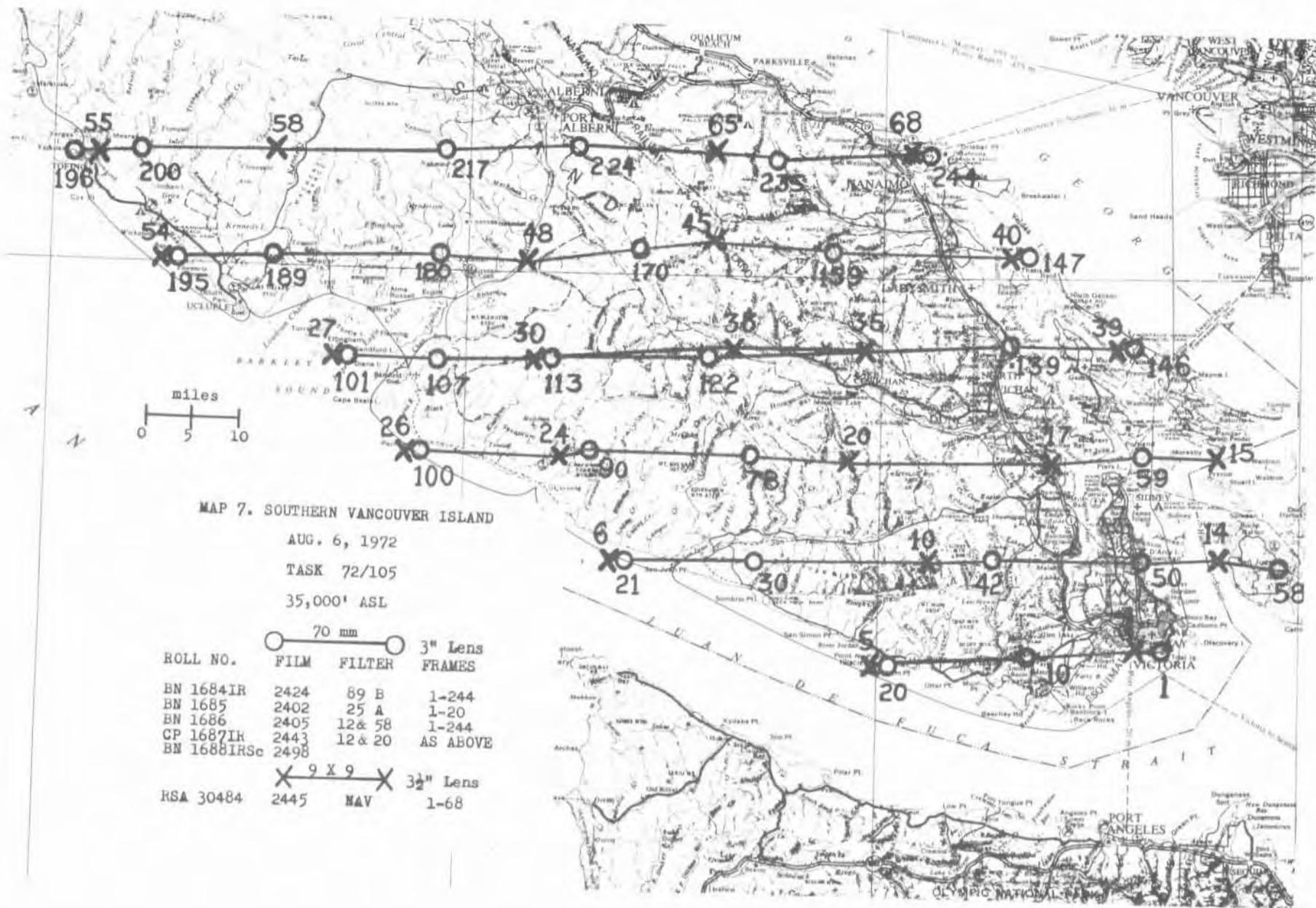
35,000' ASL



ROLL NO.	FILM	FILTER	FRAMES
BN 1684IR	2424	89 B	245-408
BN 1686	2405	12 & 58	AS ABOVE
CP 1687IR	2443	12 & 20B	AS ABOVE
BN 1688IRSc	2498		
RSA 30484	2445	NAV	69-112

○ 70 mm ○ 3" Lens
 X 9 X 9 X 3 1/2" Lens



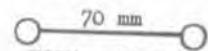


MAP 7. SOUTHERN VANCOUVER ISLAND

AUG. 6, 1972

TASK 72/105

35,000' ASL



ROLL NO.	FILM	FILTER	3" Lens FRAMES
BN 1684IR	2424	89 B	1-244
BN 1685	2402	25 A	1-20
BN 1686	2405	12 & 58	1-244
CP 1687IR	2443	12 & 20	AS ABOVE
BN 1688IRSc	2498		
	X 9 X 9 X		3 1/2" Lens
RSA 30484	2445	NAV	1-68



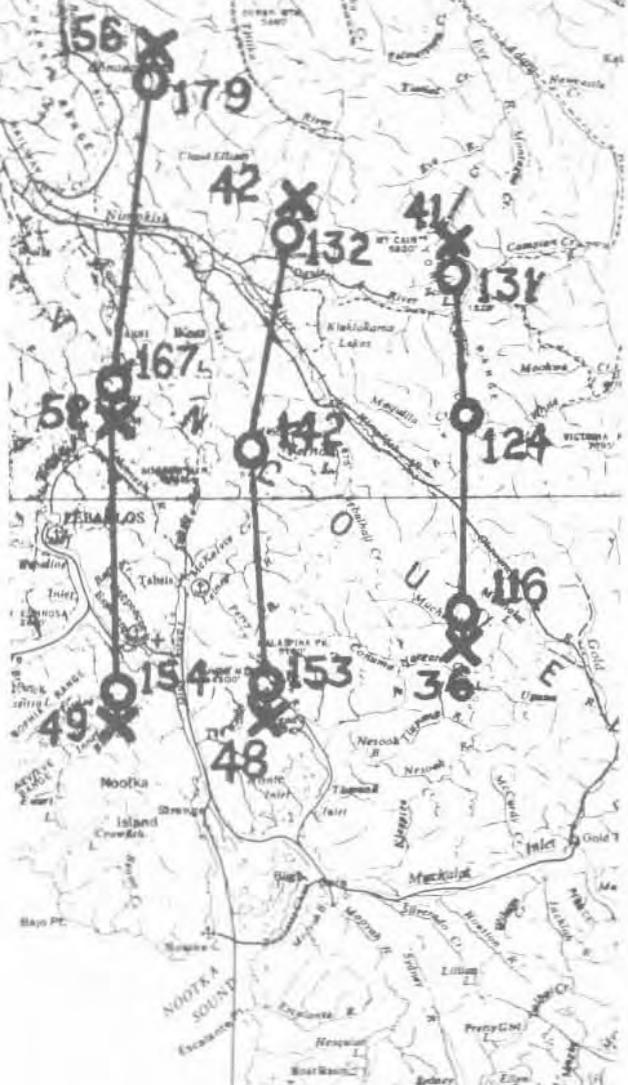
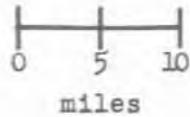
MAP 8. NIMPKISH RIVER-TAHSIS INLET
 AUG. 9, 1972
 TASK 72/55
 30,000' ASL

ROLL NO.	FILM	FILTER	FRAMES
BN 1889IR	2424	89 B	116-131 132-153 154-179
BN 1890	2402	25 A	AS ABOVE
BN 1891	2405	58	AS ABOVE
CP 1892IR	2443	12	AS ABOVE
BN 2007IRSc	2498		

RSA	FILM	FILTER	FRAMES
30564	2445	NAV	36-41 42-48 49-56

70 mm 3" Lens

9 X 9 3 1/2" Lens

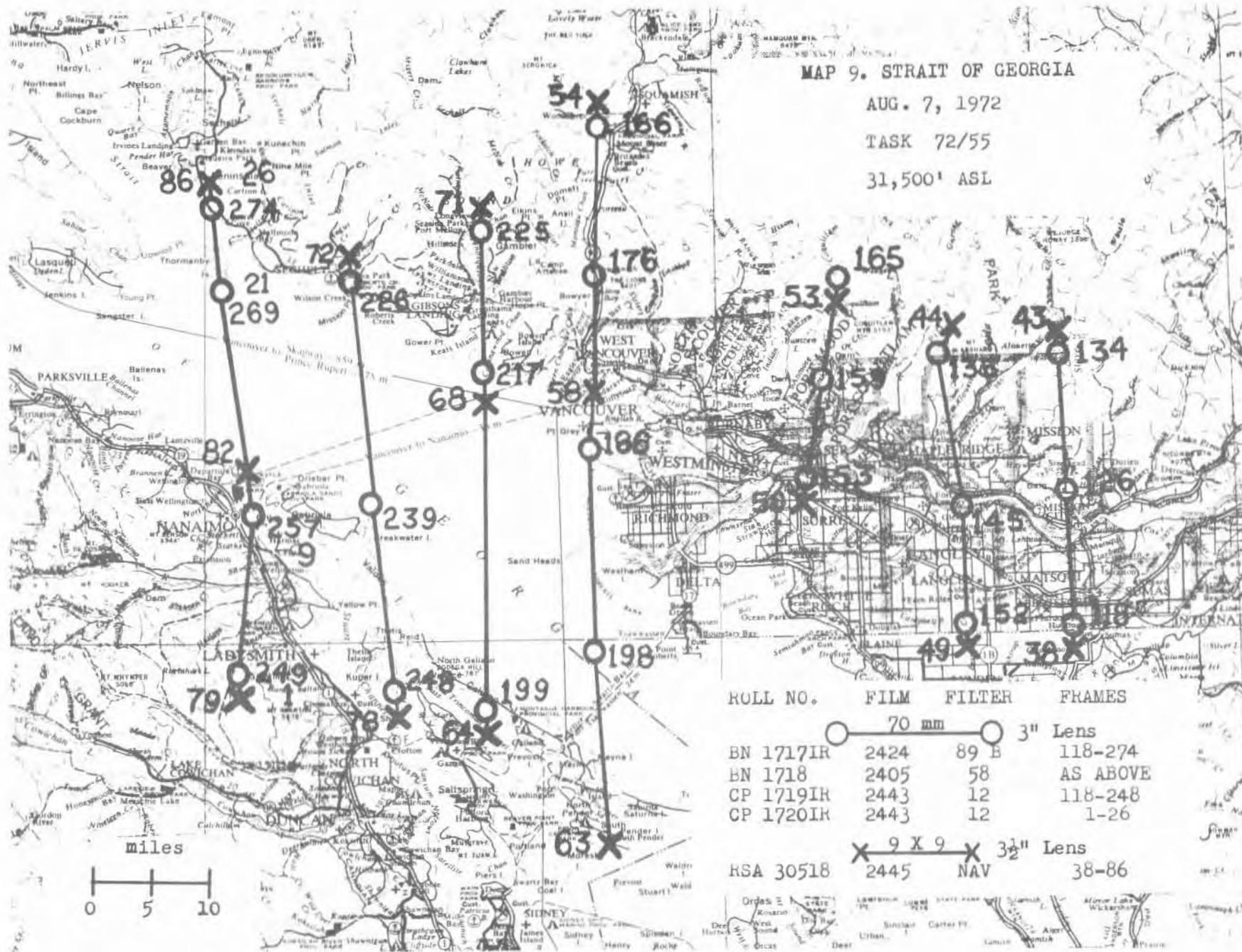


MAP 9. STRAIT OF GEORGIA

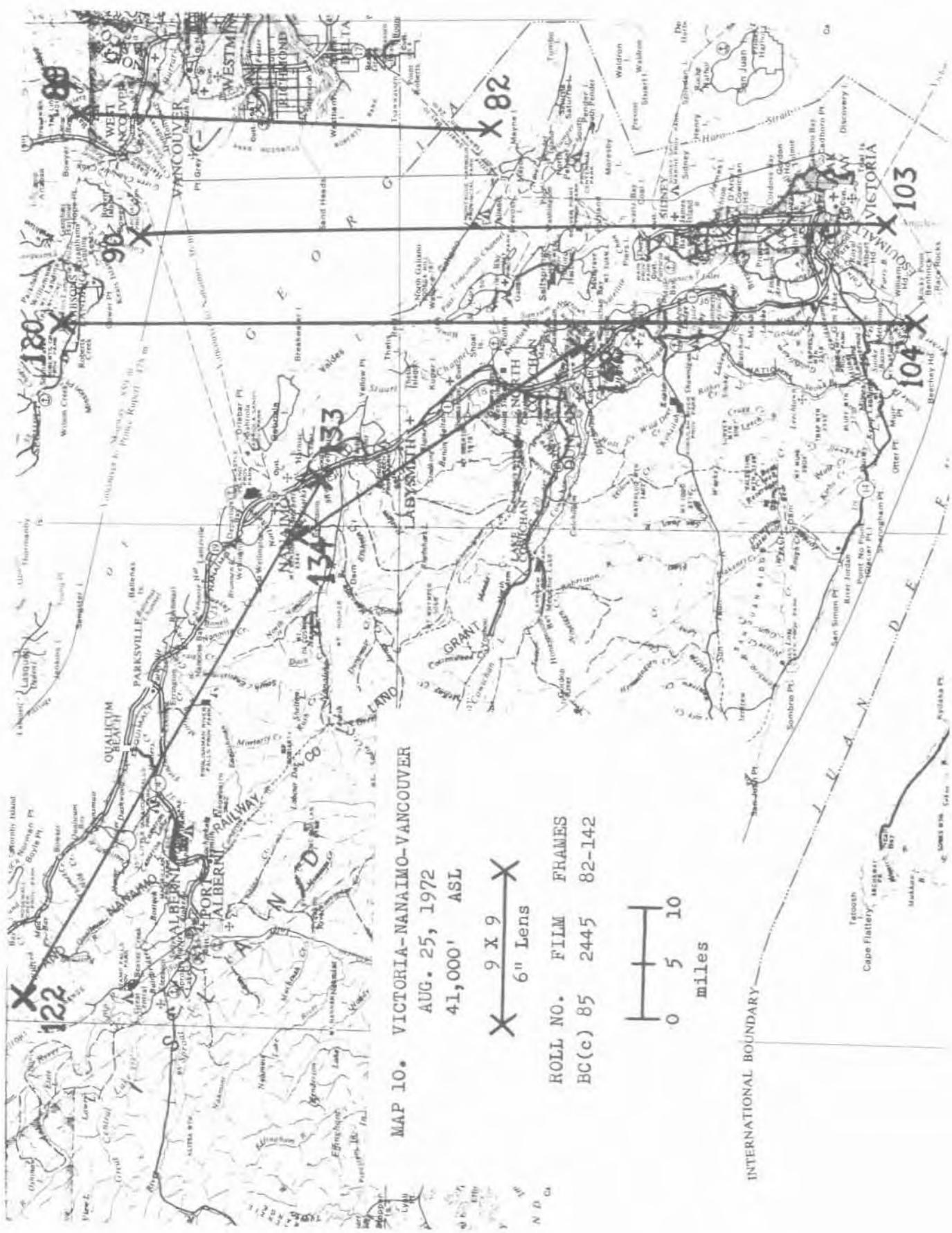
AUG. 7, 1972

TASK 72/55

31,500' ASL



ROLL NO.	FILM	FILTER	FRAMES
	70 mm		3" Lens
BN 1717IR	2424	89 B	118-274
BN 1718	2405	58	AS ABOVE
CP 1719IR	2443	12	118-248
CP 1720IR	2443	12	1-26
	9 X 9		3 1/2" Lens
RSA 30518	2445	NAV	38-86

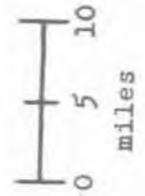


MAP 10. VICTORIA-NANAIMO-VANCOUVER

AUG. 25, 1972
41,000' ASL

X 9 X 9 X
6" Lens

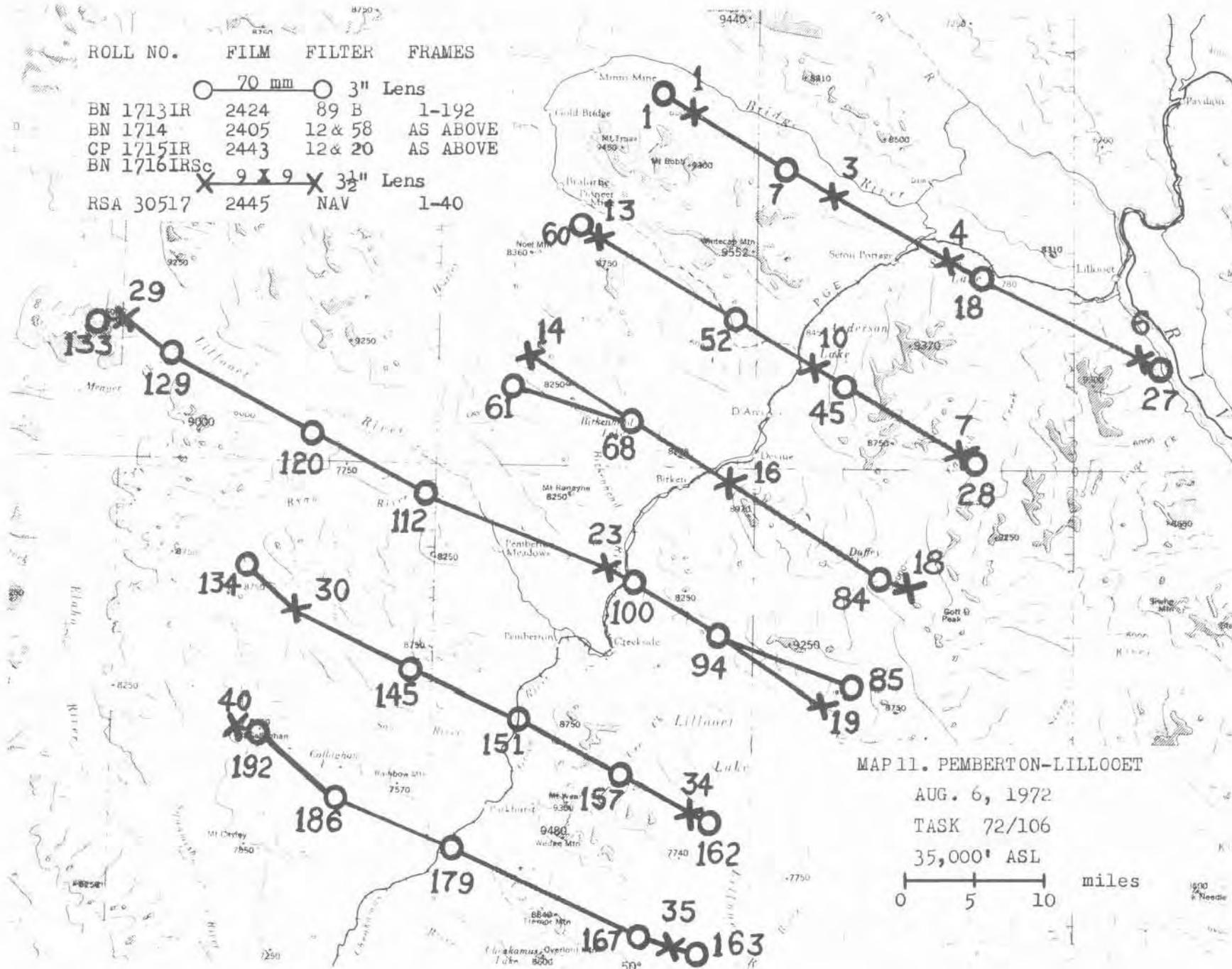
ROLL NO. FILM FRAMES
BC(c) 85 2445 82-142

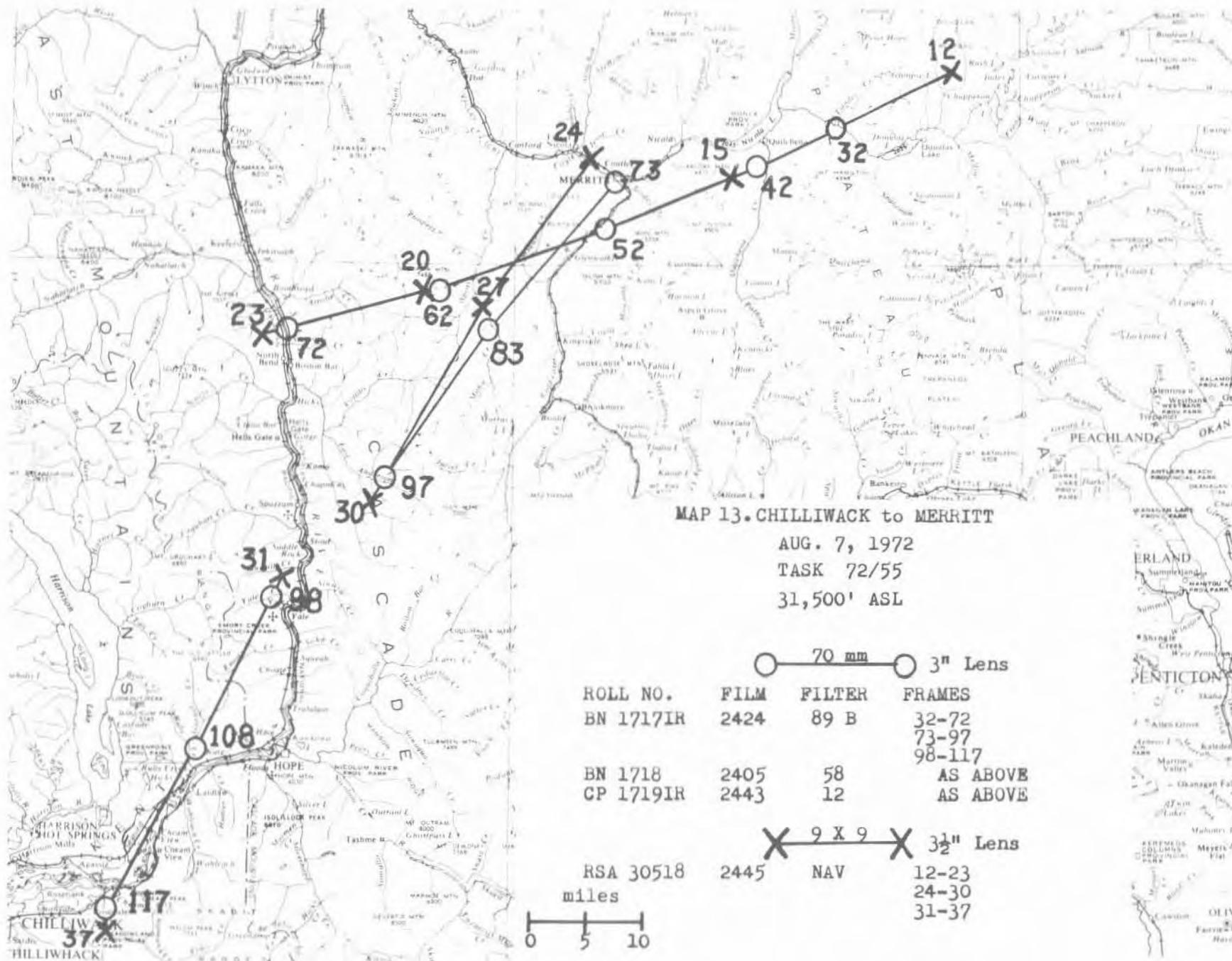


INTERNATIONAL BOUNDARY

ROLL NO. FILM FILTER FRAMES

	○ 70 mm	○ 3" Lens	
BN 1713IR	2424	89 B	1-192
BN 1714	2405	12 & 58	AS ABOVE
CP 1715IR	2443	12 & 20	AS ABOVE
BN 1716IRSc			
	✕ 9	✕ 9	✕ 3 1/2" Lens
RSA 30517	2445	NAV	1-40





MAP 13. CHILLIWACK TO MERRITT

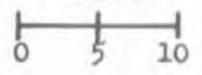
AUG. 7, 1972
 TASK 72/55
 31,500' ASL

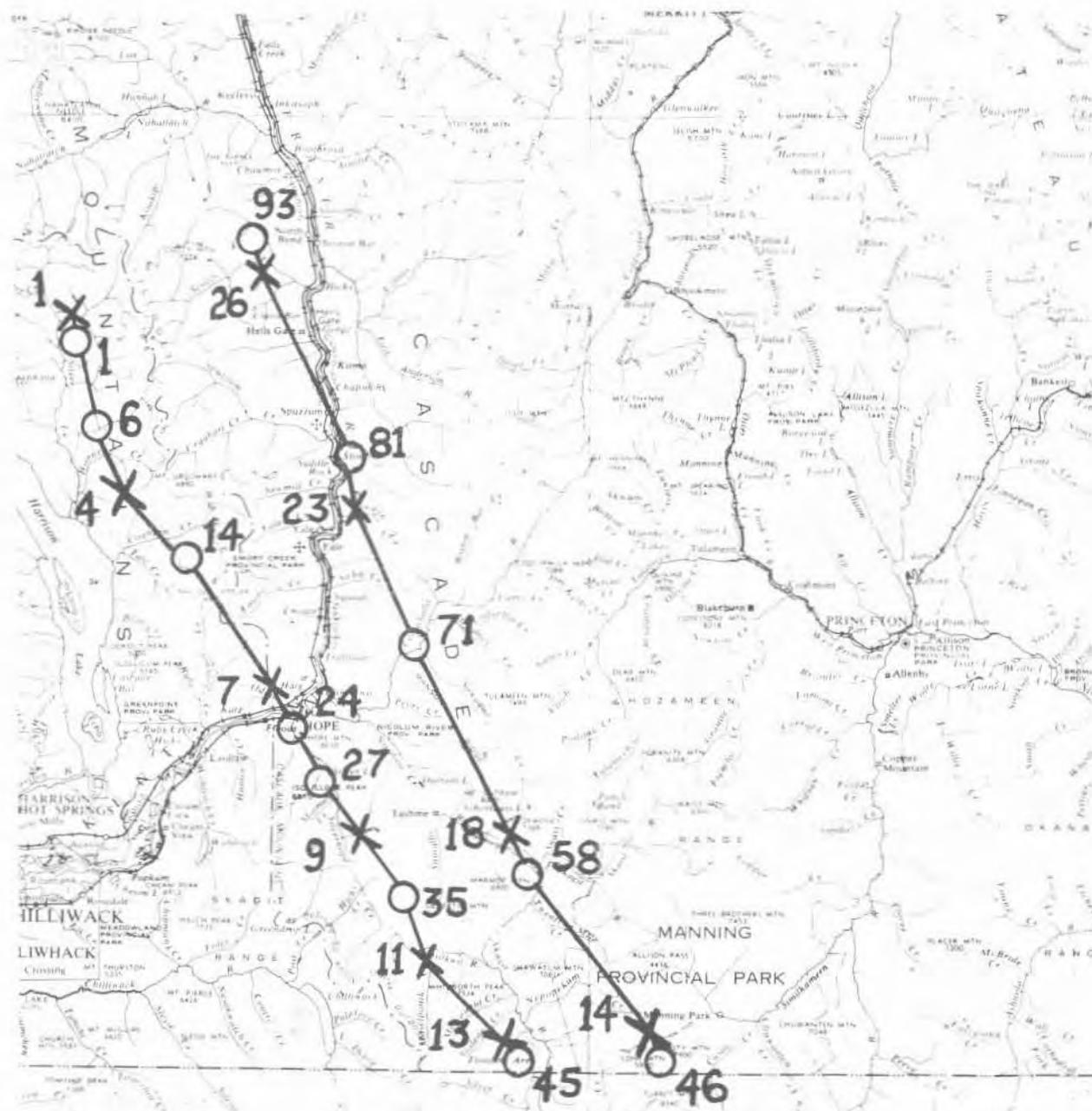
70 mm 3" Lens

ROLL NO.	FILM	FILTER	FRAMES
BN 1717IR	2424	89 B	32-72 73-97 98-117
BN 1718	2405	58	AS ABOVE
CP 1719IR	2443	12	AS ABOVE

9 X 9 3 1/2" Lens

RSA 30518	NAV	FRAMES
2445	NAV	12-23 24-30 31-37





MAP 14. FRASER RIVER to MANNING PARK

OCT. 6, 1972

TASK 72/106

X 9 X 9 X 3 1/2" Lens 31,000' ASL ○ 70 mm ○ 3" Lens

ROLL NO. FILM FILTER FRAMES
RSA 30583 2445 NAV-HF3 1-26

ROLL NO. FILM FILTER FRAMES
BN 1995 2405 12 & 58 1-93
CP 1996IR 2443 12 & 20B AS ABOVE
BN 2068IRSc 2498

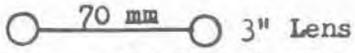
0 5 10 miles

MAP 15. NORTH THOMPSON RIVER

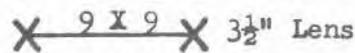
AUG. 7, 1972

TASK 72/55

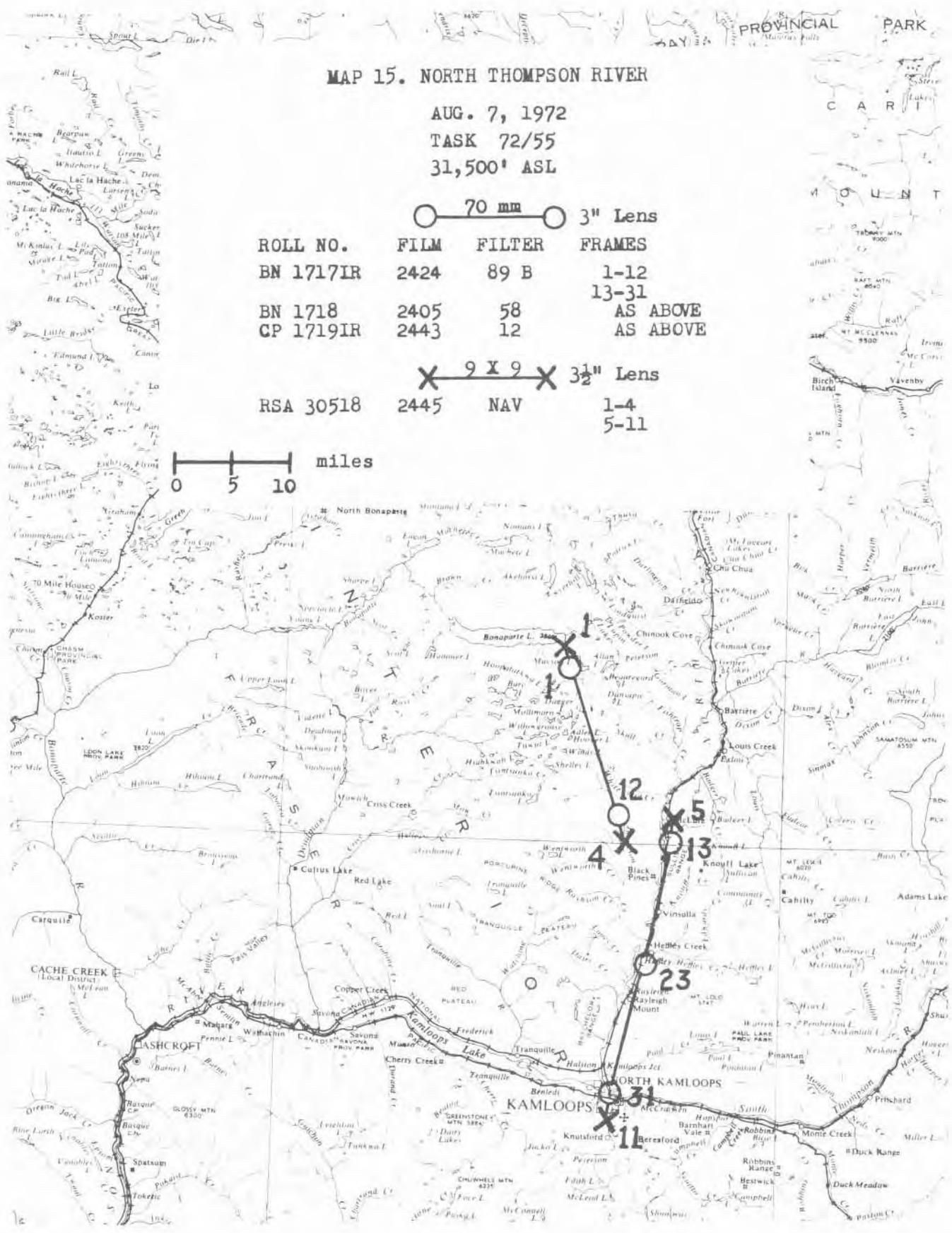
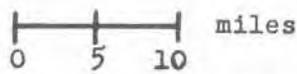
31,500' ASL

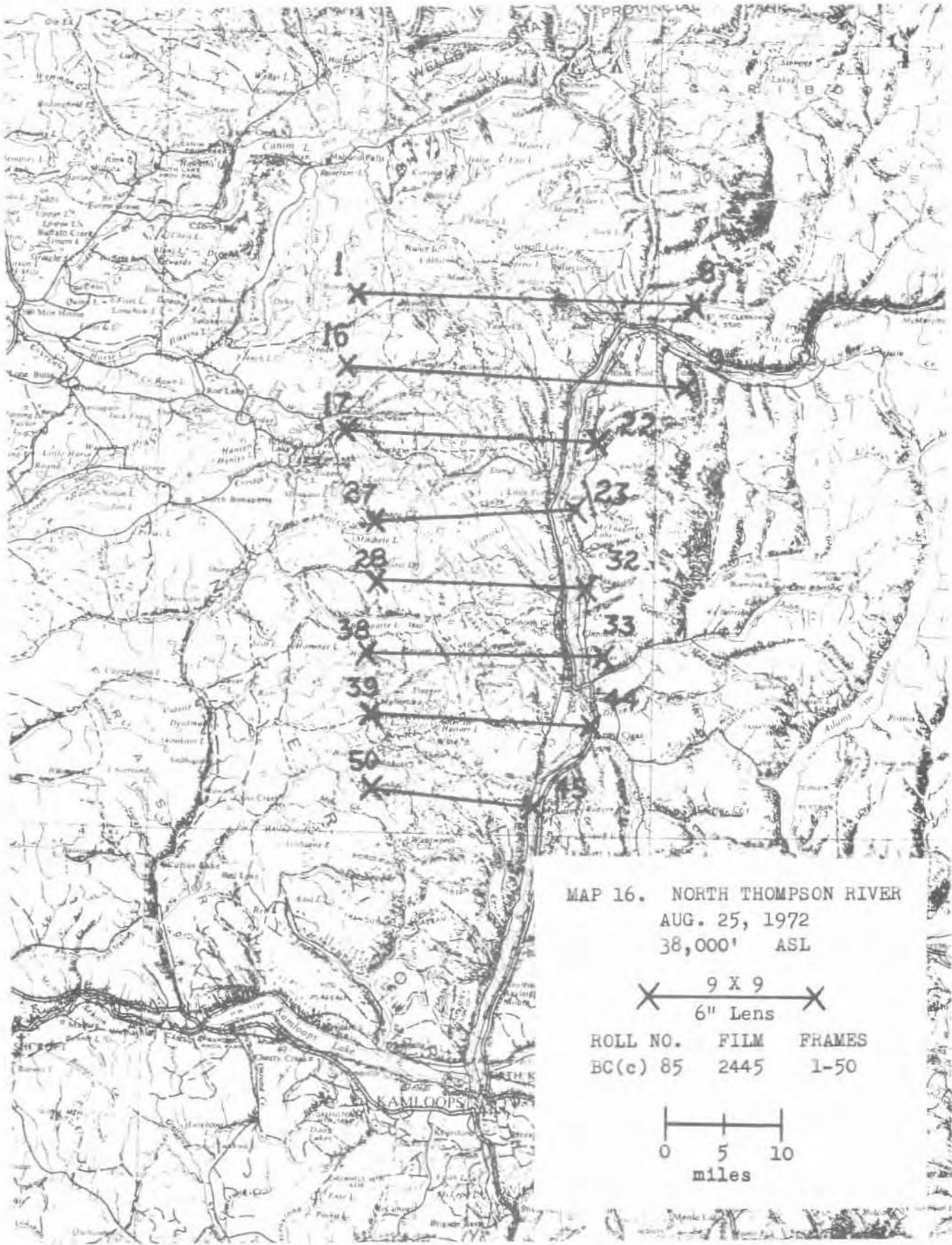


ROLL NO.	FILM	FILTER	FRAMES
BN 1717IR	2424	89 B	1-12 13-31
BN 1718	2405	58	AS ABOVE
CP 1719IR	2443	12	AS ABOVE

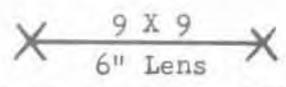


RSA	FILM	FILTER	FRAMES
RSA 30518	2445	NAV	1-4 5-11

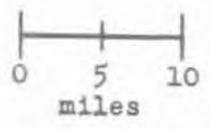


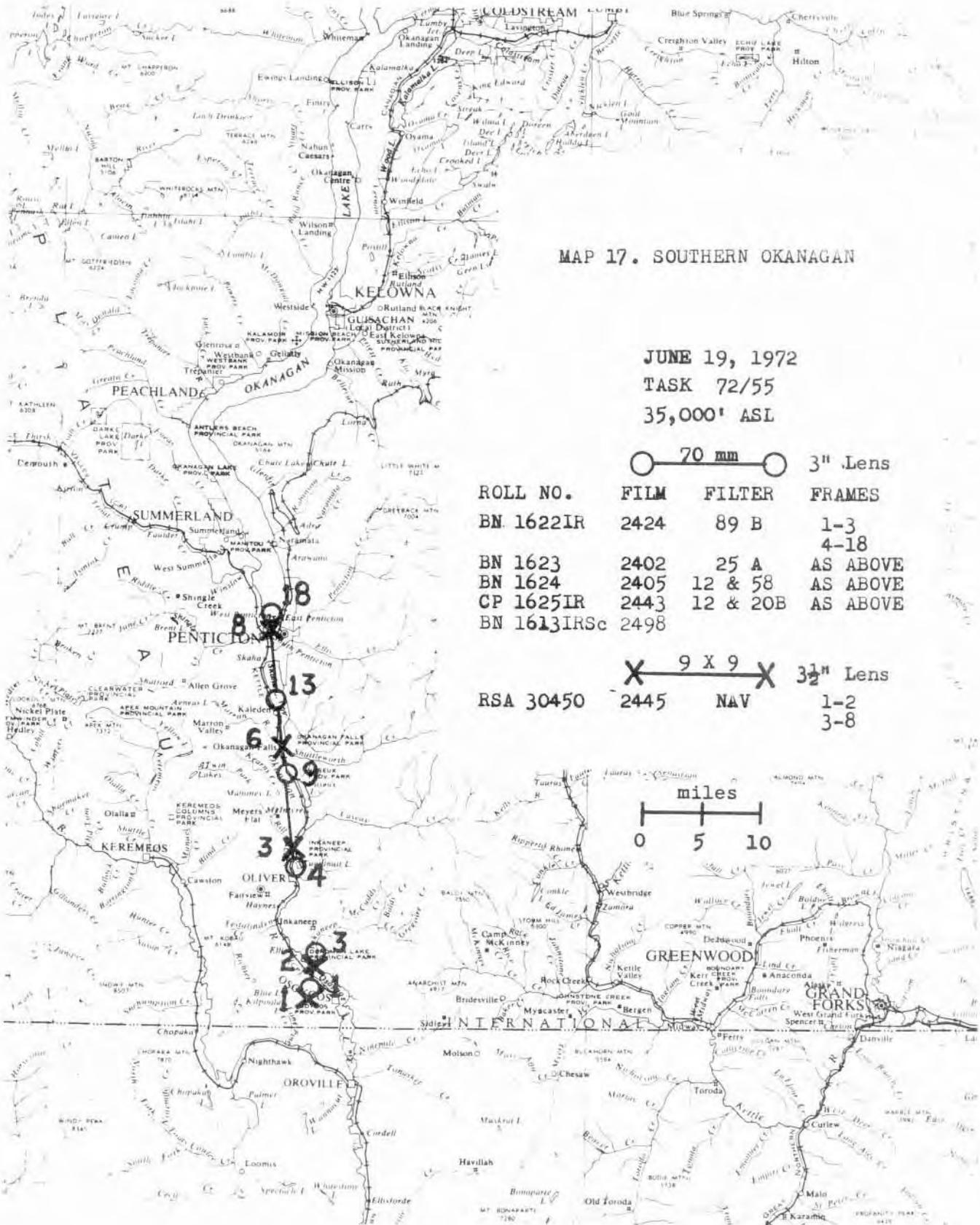


MAP 16. NORTH THOMPSON RIVER
 AUG. 25, 1972
 38,000' ASL



ROLL NO.	FILM	FRAMES
BC(c) 85	2445	1-50





MAP 17. SOUTHERN OKANAGAN

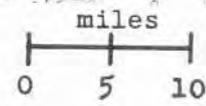
JUNE 19, 1972
 TASK 72/55
 35,000' ASL

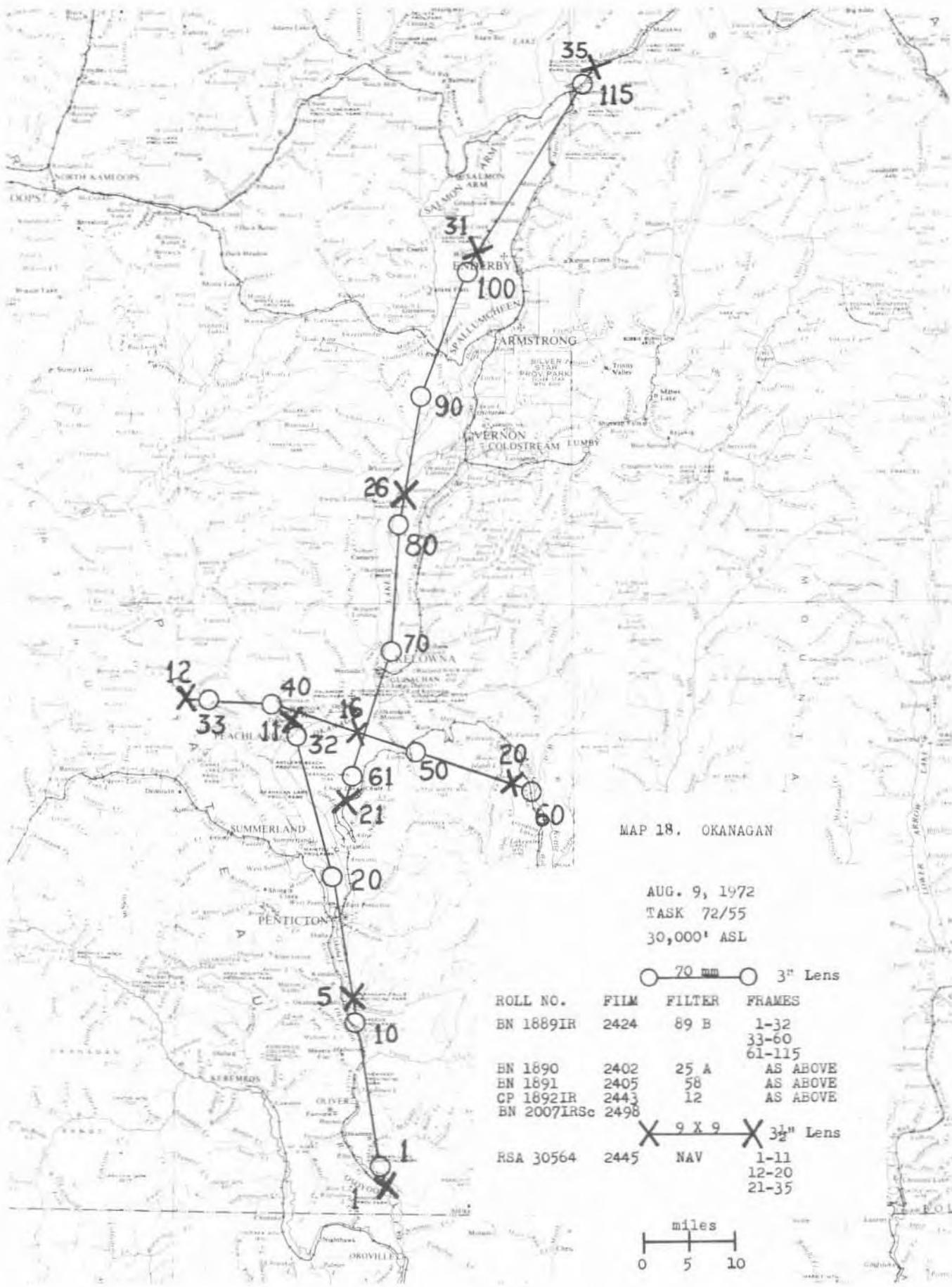
70 mm 3" Lens

ROLL NO.	FILM	FILTER	FRAMES
BN 1622IR	2424	89 B	1-3 4-18
BN 1623	2402	25 A	AS ABOVE
BN 1624	2405	12 & 58	AS ABOVE
CP 1625IR	2443	12 & 20B	AS ABOVE
BN 1613IRSc	2498		

9 X 9 3 1/2" Lens

RSA 30450	FILM	FILTER	FRAMES
	2445	NAV	1-2 3-8





MAP 18. OKANAGAN

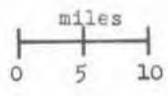
AUG. 9, 1972
 TASK 72/55
 30,000' ASL

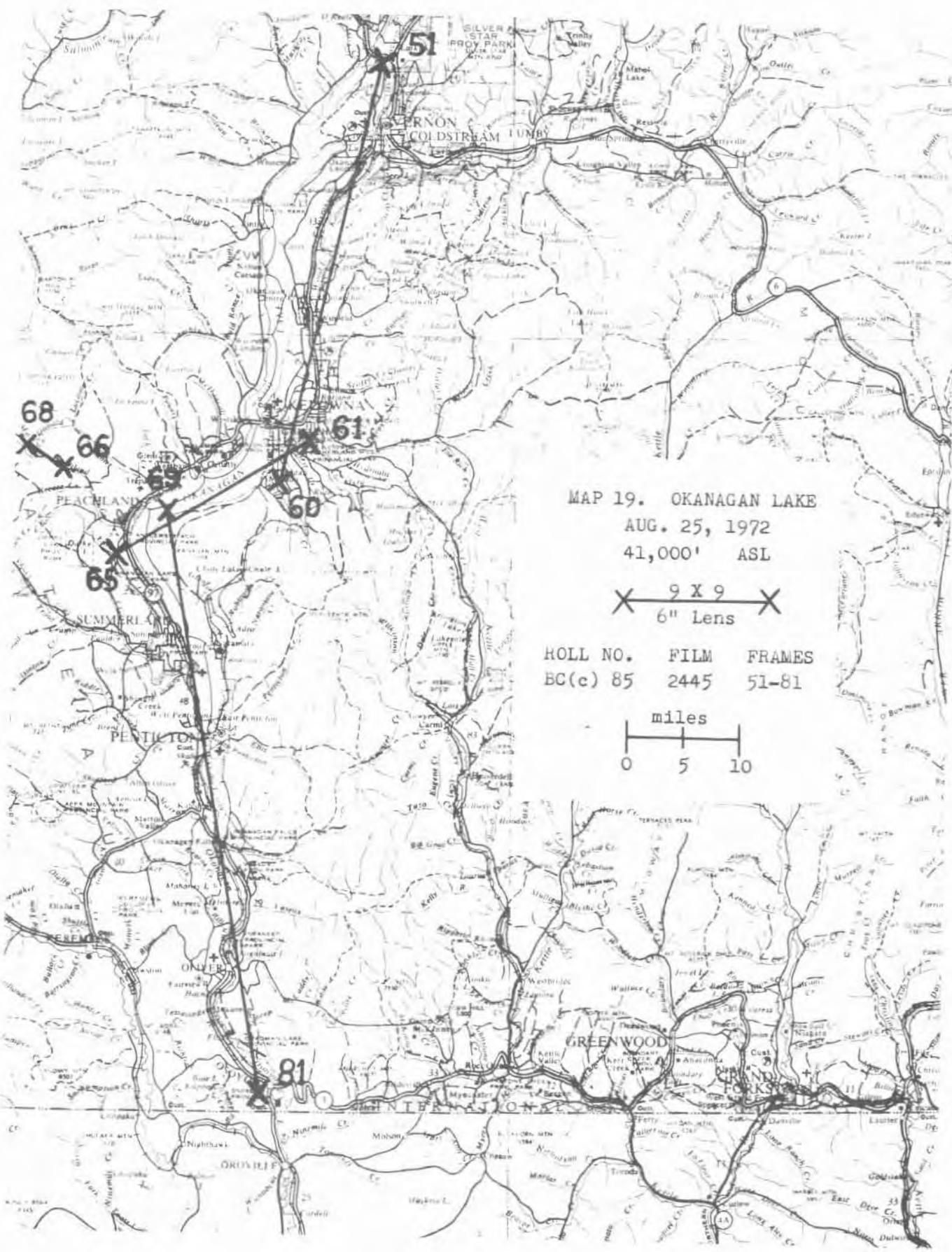
○ 70 mm ○ 3" Lens

ROLL NO.	FILM	FILTER	FRAMES
BN 1889IR	2424	89 B	1-32 33-60 61-115
BN 1890	2402	25 A	AS ABOVE
BN 1891	2405	58	AS ABOVE
CP 1892IR	2443	12	AS ABOVE
BN 2007IRSc	2498		

✕ 9 X 9 ✕ 3 1/2" Lens

RSA 30564	2445	NAV	1-11 12-20 21-35
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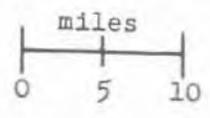
MAP 19. OKANAGAN LAKE

AUG. 25, 1972

41,000' ASL

9 X 9
6" Lens

ROLL NO.	FILM	FRAMES
BC(c) 85	2445	51-81



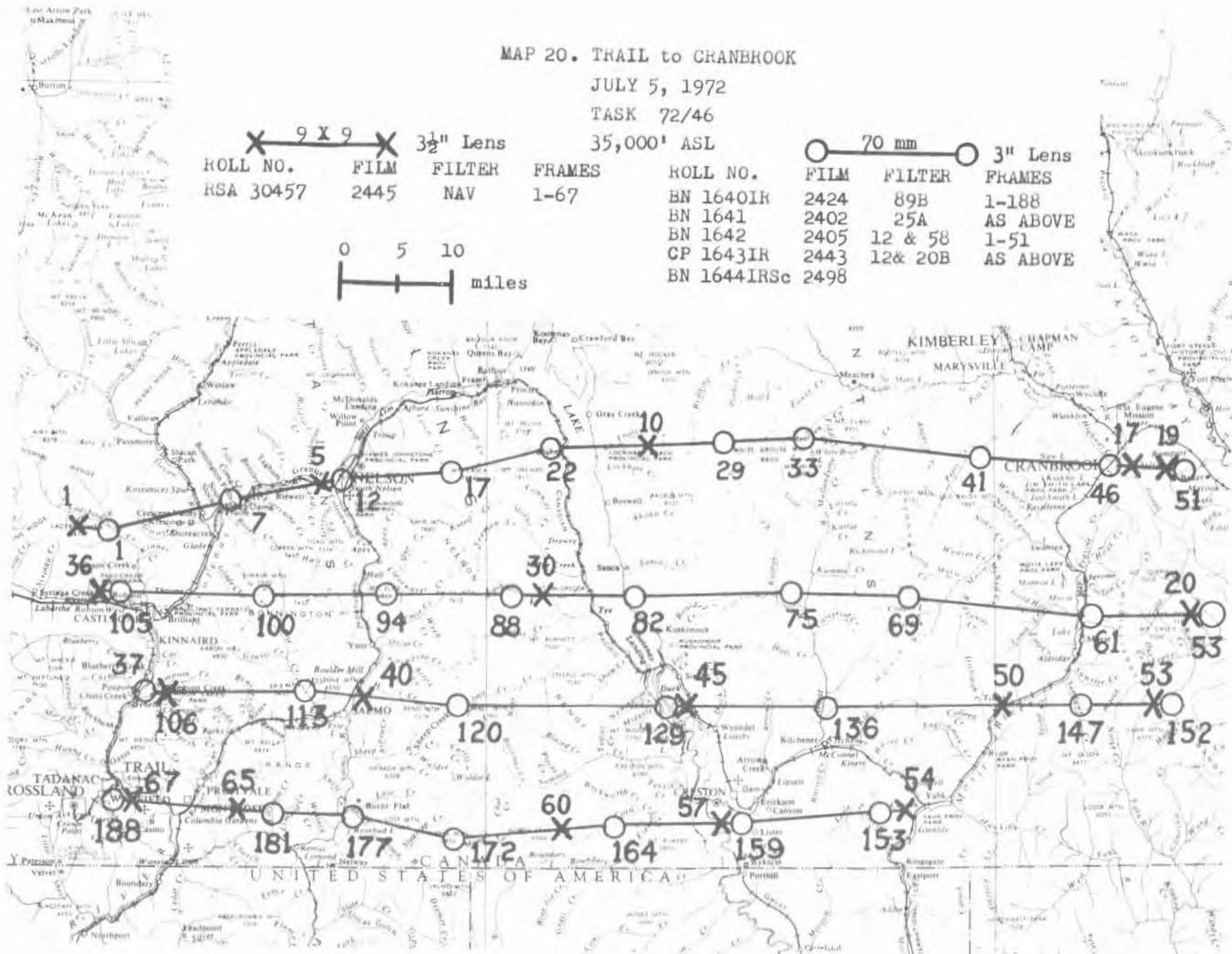
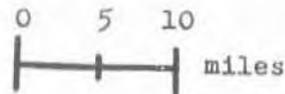
MAP 20. TRAIL to CRANBROOK

JULY 5, 1972

TASK 72/46

\times 9 X 9 \times 3 1/2" Lens
 ROLL NO. FILM FILTER FRAMES
 RSA 30457 2445 NAV 1-67

70 mm 3" Lens
 ROLL NO. FILM FILTER FRAMES
 BN 1640IR 2424 89B 1-188
 BN 1641 2402 25A AS ABOVE
 BN 1642 2405 12 & 58 1-51
 CP 1643IR 2443 12& 20B AS ABOVE
 BN 1644IRSc 2498



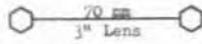
MAP 21. EAST FOOTERAY

OCT. 5 & 6, 1972

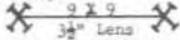
TASK 72/55

35,000' ASL

OCT. 5, 1972
ROLL NO. FILM FILTER FRAMES

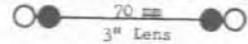


BN 1997IR	2424	89B	1-125
BN 1998	2405	58	AS ABOVE
CP 1999IR	2443	12A20B	AS ABOVE
SB 2066IRSc	2498		

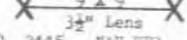


RSA 30589	2445	NAV-RF3	1-32
			31,000' ASL

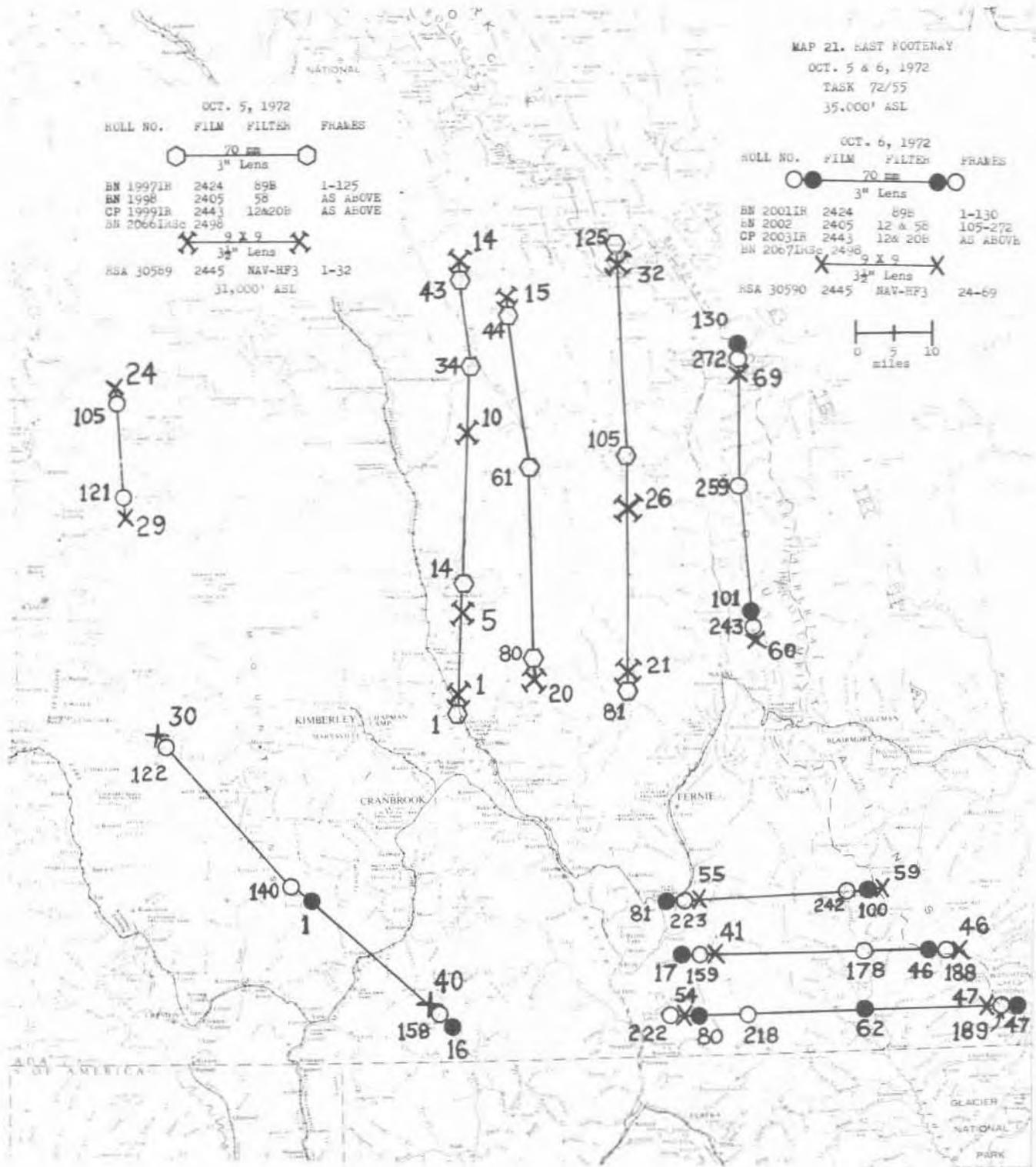
OCT. 6, 1972
ROLL NO. FILM FILTER FRAMES

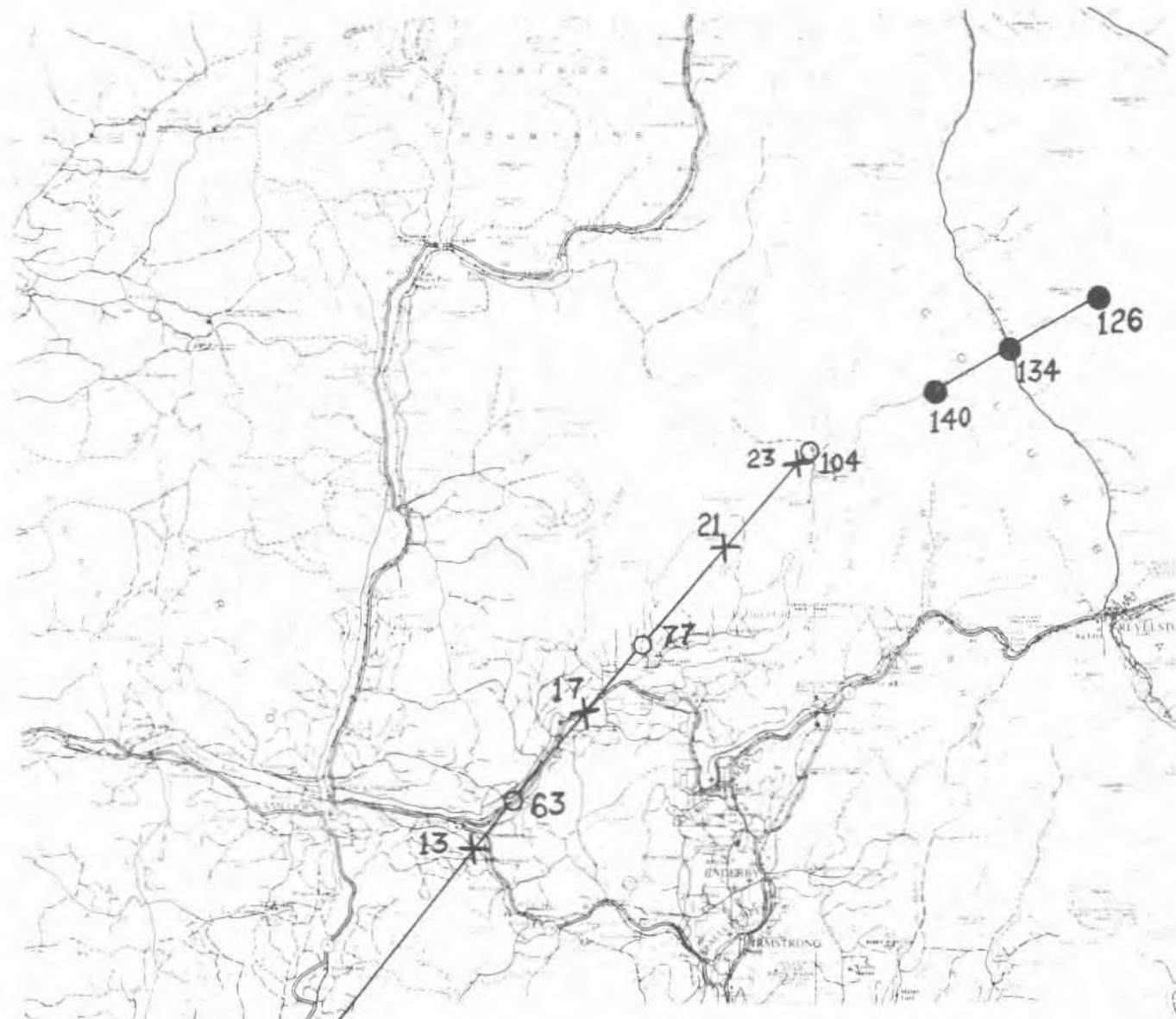


BN 2001IR	2424	89B	1-130
BN 2002	2405	12 & 58	105-272
CP 2003IR	2443	12 & 20B	AS ABOVE
BN 2067IRSc	2498		



RSA 30590	2445	NAV-RF3	24-69
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MAP 22. MERRITT to COLUMBIA RIVER

OCT. 5 & 6, 1972

TASK 72/55

35,000' ASL

31,000' ASL

X 3/4" Lens X

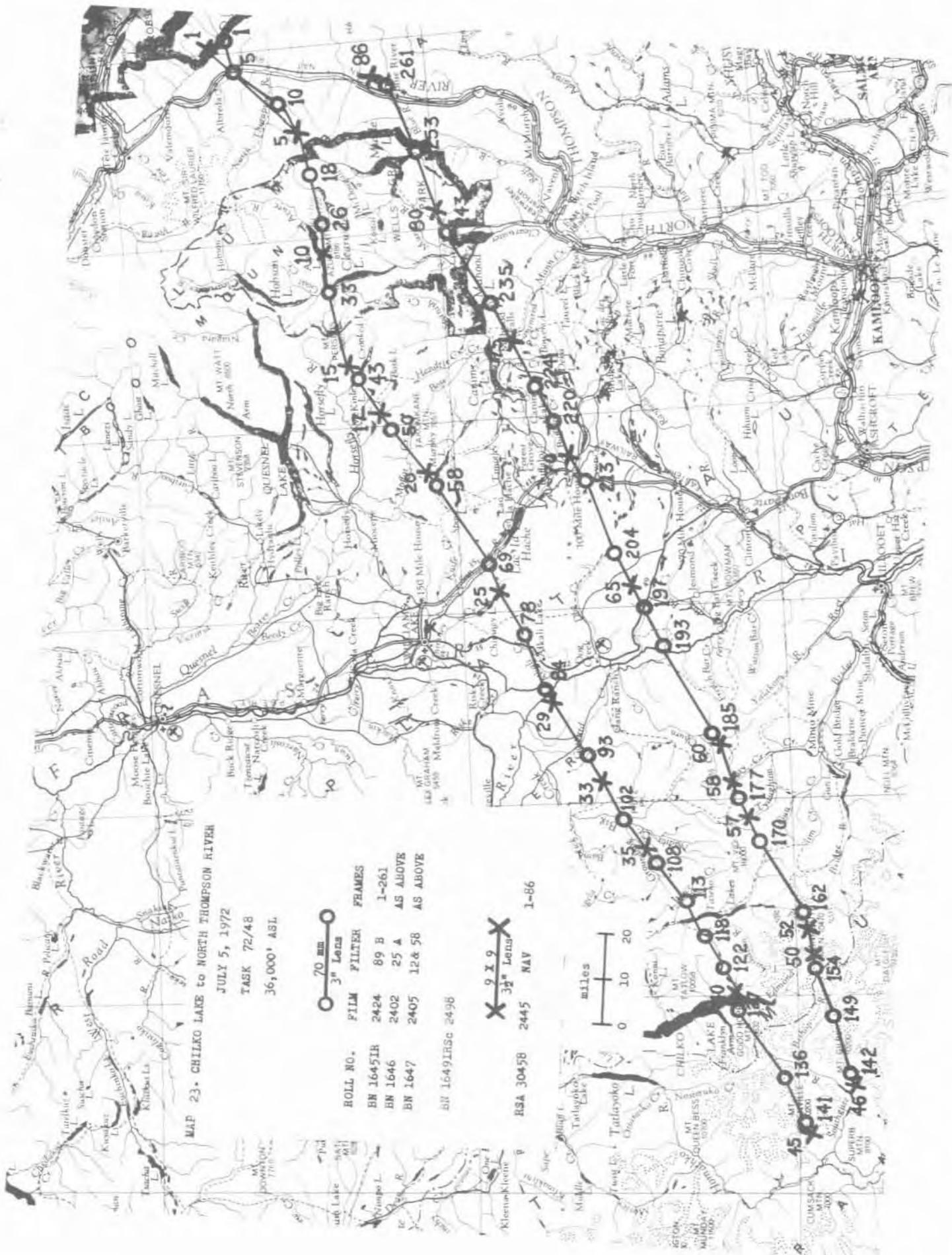
● 70 mm ● 5 OCT.
○ 3" Lens ○ 6 OCT.

ROLL NO.	FILM	FILTER	FRAMES
RSA 30590	2445	NAV-HF3	1-23

ROLL NO.	FILM	FILTER	FRAMES
BN 1997IR	2424	89B	126-140
BN 1998	2405	58	AS ABOVE
CP 1999IR	2443	12& 20B	AS ABOVE
BN 2001IR	2424	89B	1-104
BN 2002	2405	58	AS ABOVE
CP 2003IR	2443	12& 20B	AS ABOVE
BN 2061dSc	2498		
BN 20671hSc	2498		

0 5 10
miles

1
1



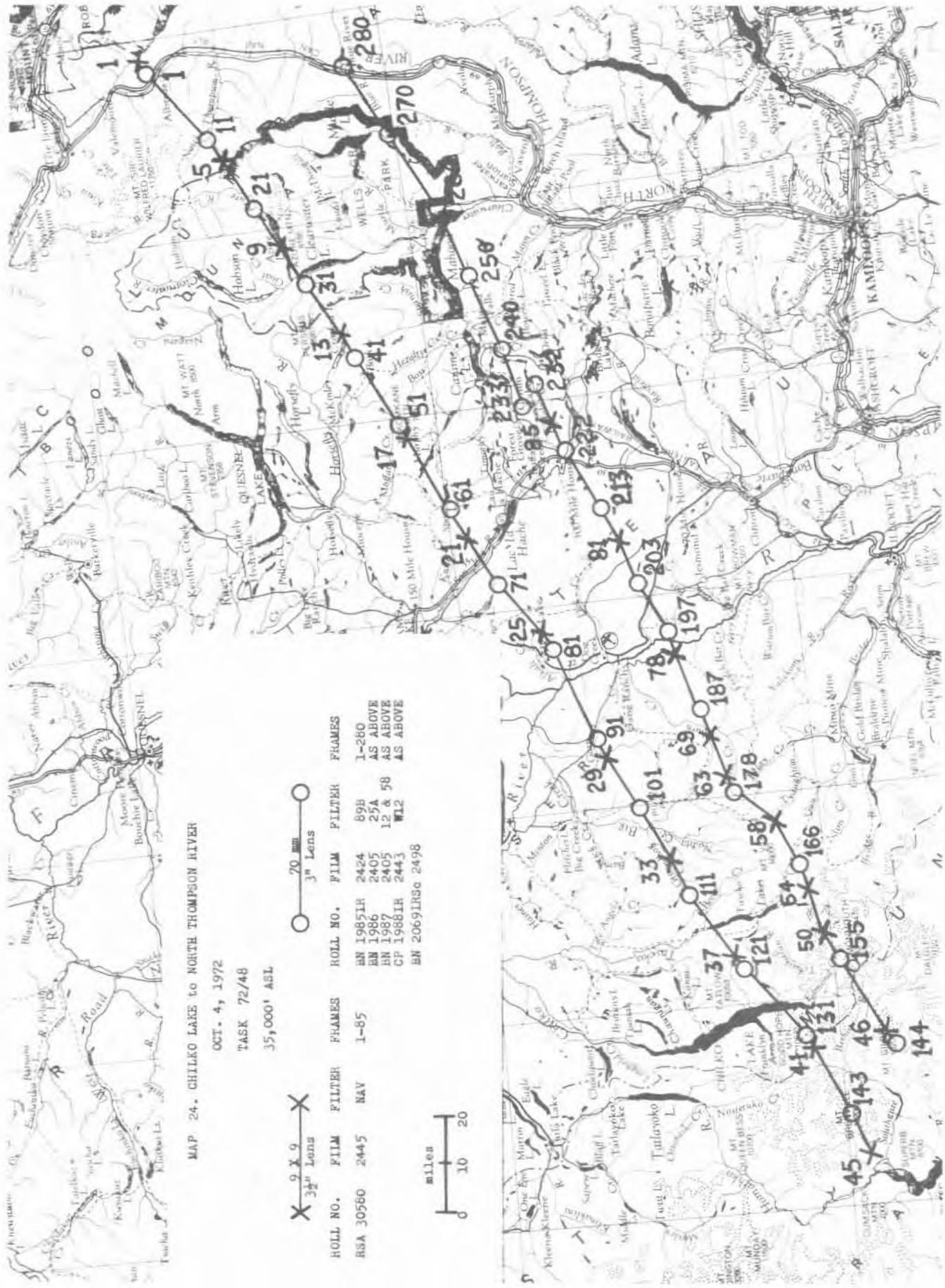
MAP 23. CHILKO LAKE TO NORTH THOMPSON RIVER
 JULY 5, 1972
 TASK 72/48
 36,000' ASL

ROLL NO.	FILM	FILTER	FRAMES
BN 16451R	89 B		1-261
BN 1646	2402	25 A	AS ABOVE
BN 1647	2405	12 & 58	AS ABOVE

BN 1649LRSc 2498

X 9 X 9 X
 3 1/2" Lens X
 RSA 30458 2445 NAV 1-86





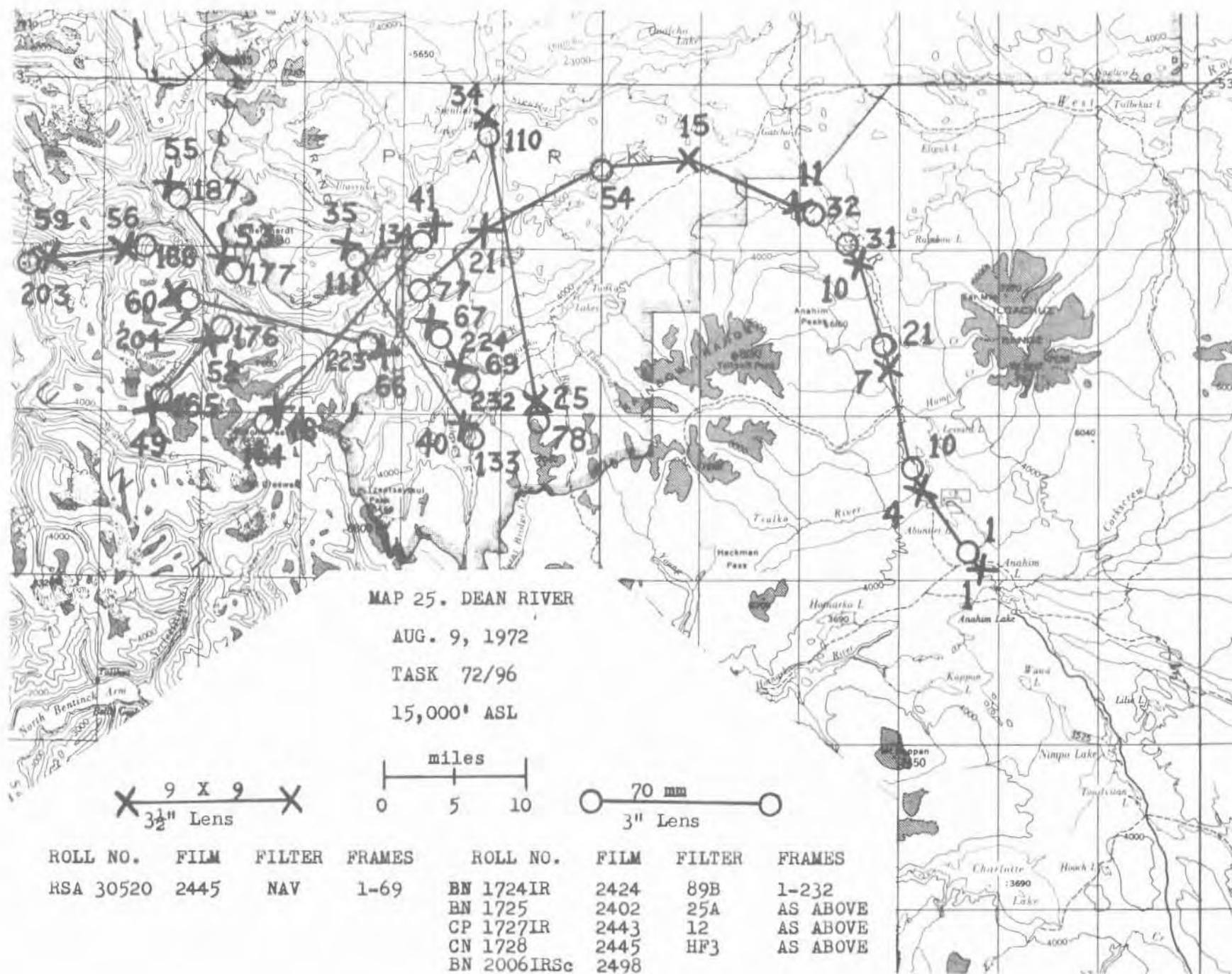
MAP 24. CHILKO LAKE TO NORTH THOMPSON RIVER
 OCT. 4, 1972
 TASK 72/48
 35,000' ASL

X 9 X 9
 3 1/2" Lens

○ 70 mm
 3" Lens

HOLL NO.	FILM	FILTER	FRAMES	HOLL NO.	FILM	FILTER	FRAMES
RSA 30580	2445	NAV	1-85	BN 19851R	2424	89B	1-280
				BN 1986	2405	25A	AS ABOVE
				BN 1987	2405	12 & 58	AS ABOVE
				CP 19881R	2443	WL2	AS ABOVE
				BN 20691RSa	2498		

miles
 0 10 20

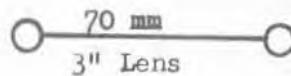
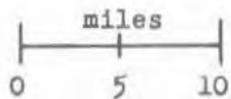
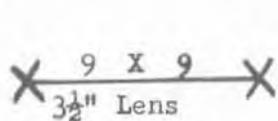


MAP 25. DEAN RIVER

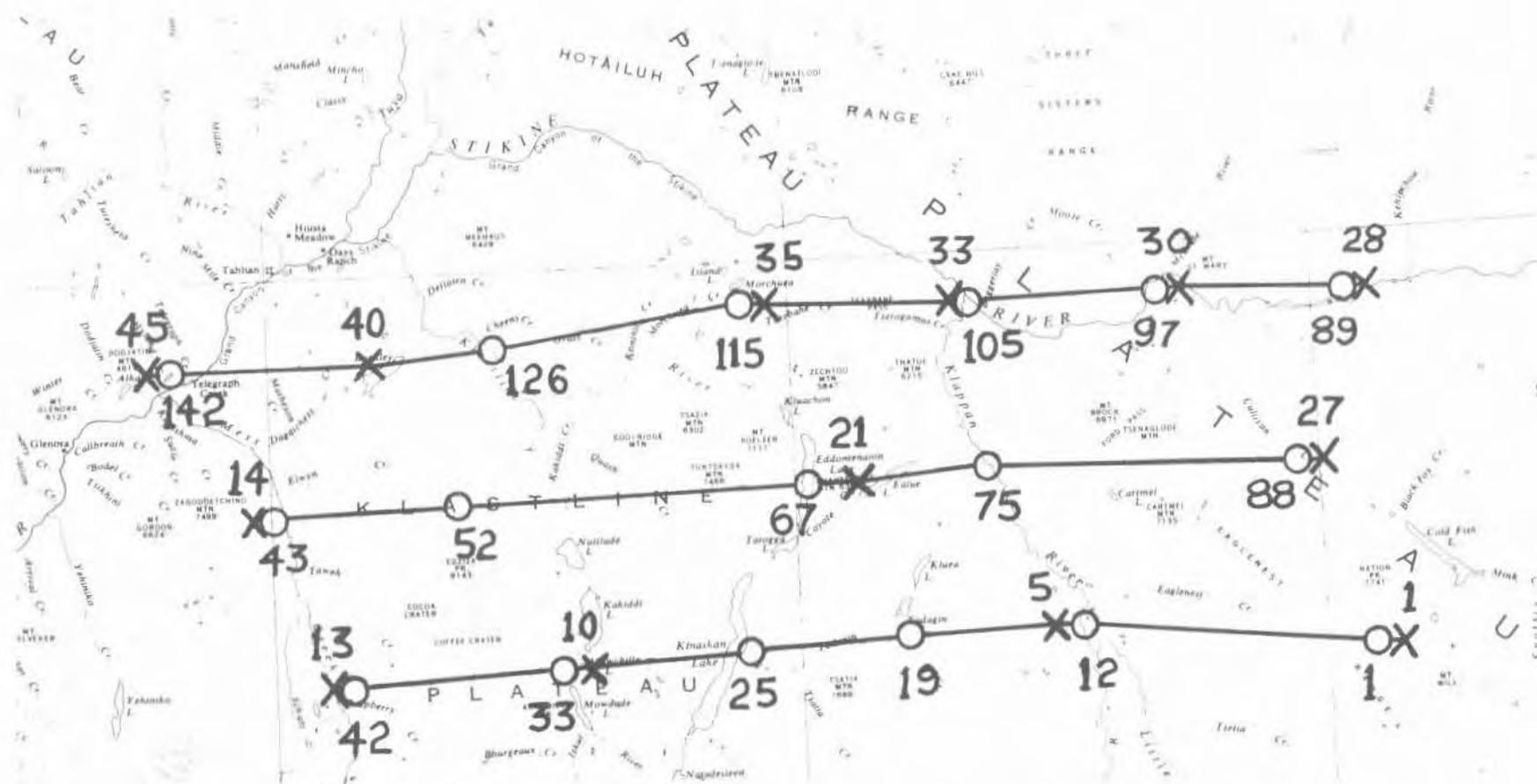
AUG. 9, 1972

TASK 72/96

15,000' ASL



ROLL NO.	FILM	FILTER	FRAMES	ROLL NO.	FILM	FILTER	FRAMES
RSA 30520	2445	NAV	1-69	BN 1724IR	2424	89B	1-232
				BN 1725	2402	25A	AS ABOVE
				CP 1727IR	2443	12	AS ABOVE
				CN 1728	2445	HF3	AS ABOVE
				BN 2006IRSc	2498		



MAP 26. STIKINE RIVER

AUG. 21, 1972

TASK 72/102

35,000' ASL

X 9 X 9 X 3 1/2" Lens
 ROLL NO. FILM FILTER FRAMES
 RSA 30552 2445 NAV 1-45

70 mm 3" Lens
 ROLL NO. FILM FILTER FRAMES
 BN 1863IR 2424 89B 1-142
 CN 1864 2445 AS ABOVE
 CP 1866IR 2443 W12 AS ABOVE

