

**AERIAL SURVEY OF SPRING CHINOOK
SALMON REDDS IN THE SALMON
AND WEISER RIVER DRAINAGES, IDAHO**

1957

by

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INTRODUCTION

In order to manage properly the anadromous fish populations, knowledge of the numbers of these fish which constitute the annual spawning escapement is of the utmost importance.

Salmon spawning surveys were begun in Idaho as Dingell-Johnson Projects in 1951.

The Idaho Department of Fish and Game in July, 1953, entered into an agreement with the United States Army, Corps of Engineers, to determine the size and timing of runs of adult spring chinook salmon in the Columbia and Snake Rivers and tributaries thereof above their confluence (Pirtle, 1957). This work included aerial and ground redd counts in the principal spawning tributaries. Only major tributaries which were known to have a minimum normal spawning escapement of 200 chinook salmon were surveyed. The Army Corps contract was completed in 1956.

These surveys were continued in 1957 as part of biological investigations conducted under the Columbia River Fisheries Development Program so that current spawning ground escapement information will be available to evaluate improvements accomplished by the Program. Spawning escapement studies were confined to the Salmon and Weiser River Drainages.

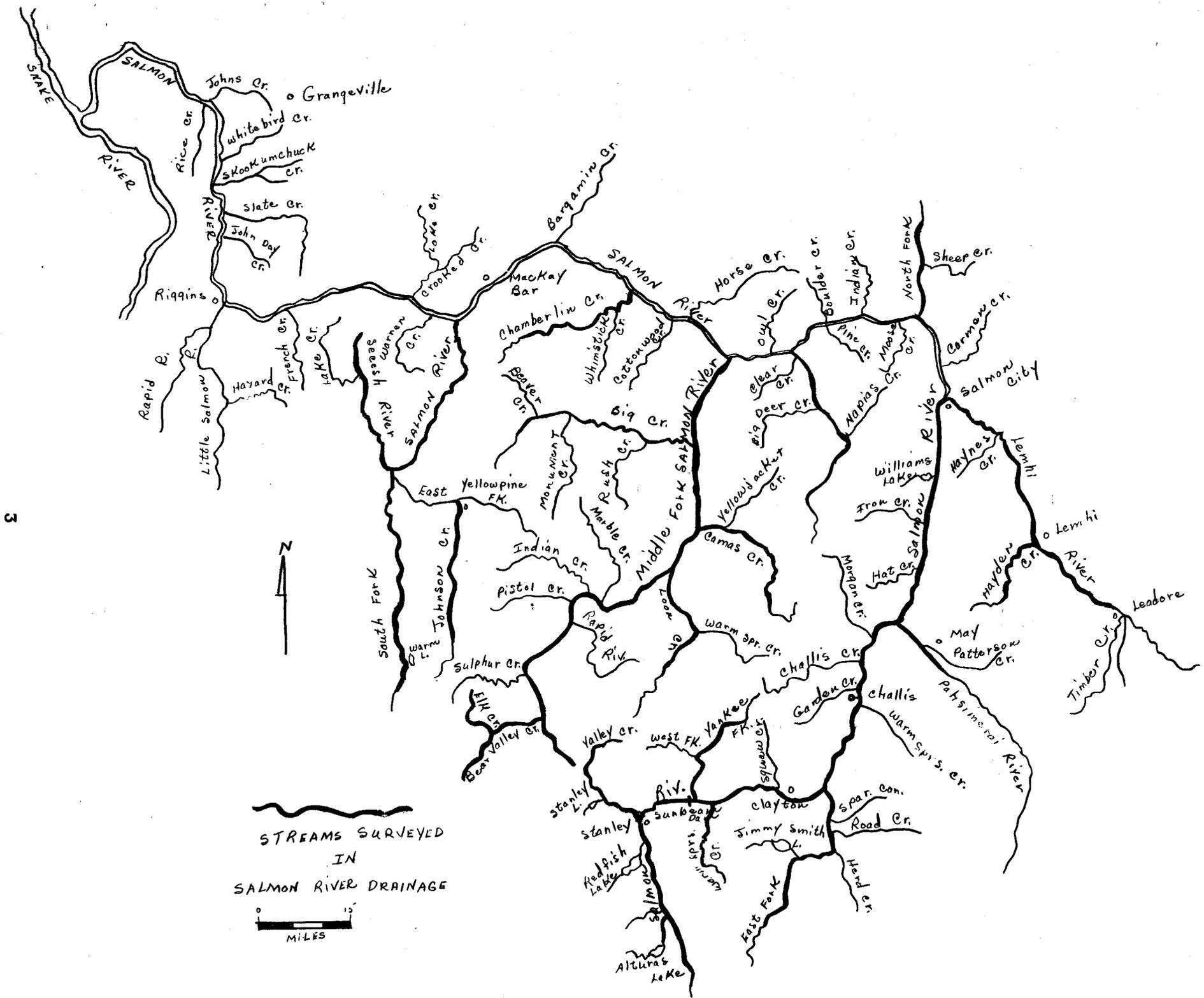
METHODS

The survey began August 31, 1957 using a Piper P. A. 18 airplane. The streams were flown at elevations of 200 to 400 feet above the stream bed. Flying speed varied from 35 to 60 miles per hour depending upon the terrain and the time of day flying was done. Redd counts were made while flying downstream. Redds were tabulated with a mechanical hand tally and were recorded on prepared maps within the boundaries of recognizable landmarks.

Some stream areas were flown twice when the concentration of redds made counting difficult or when the appearance of fish or redds indicated that obser-

vations at a later date would provide more accurate information. The dates of peak spawning were estimated from observations made in previous years. The proportion of spawning completed was estimated for each stream by counting the number of spawning fish and the appearance of the age of the redds in the stream. If no fish were seen and the redds showed evidence of age, spawning was considered to be 100 per cent completed. When time permitted, the aerial observer made redd counts on the ground within limited areas to provide checks on the accuracy of aerial counts.

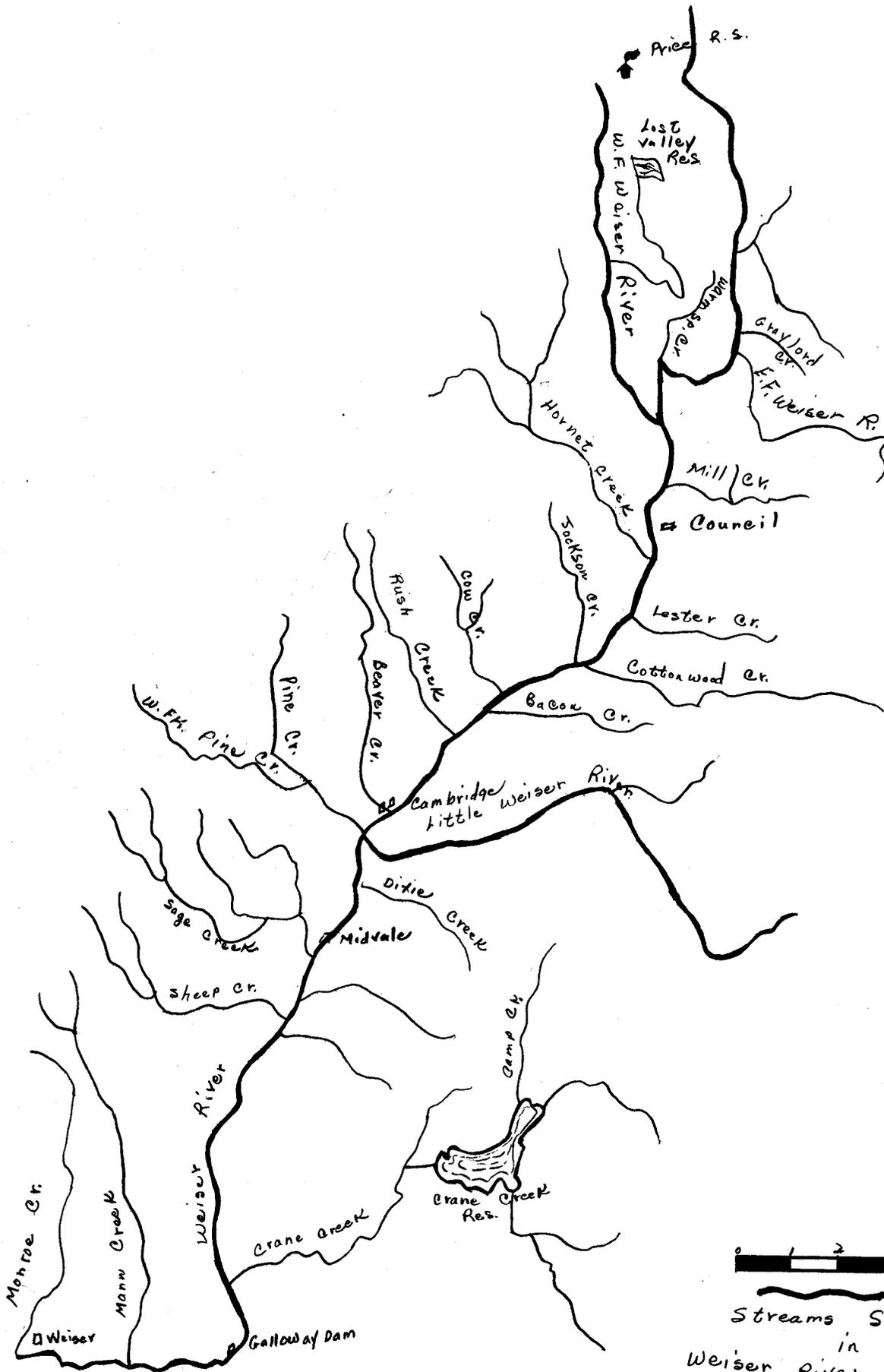
Streams surveyed are shown in map form on pages 3 and 4. Summaries of streams surveyed, miles flown and redds observed are presented in tables 1 and 2.



3

STREAMS SURVEYED
IN
SALMON RIVER DRAINAGE





Streams Surveyed
in
Weiser River Drainage

Table 1. Numbers of chinook salmon redds counted during aerial survey, Salmon River, 1957.

<u>Stream</u>	<u>Date</u>	<u>Stream Miles Flown</u>	<u>Aerial Redd Count</u>	<u>Spawning Completed, Per Cent</u>	<u>Ground Count Adjust.**</u>	<u>Total Redds</u>
Alturas Creek	9/5	6	110	100		110
Bear Valley Creek	9/3	27	661	100	+130	791
Beaver Creek	8/31	10	133	100		133
Big Creek	9/2	36	768	98		784
Camas Creek	9/5	20	123	100		123
Capehorn Creek	8/31	6	55	100		55
Chamberlain Creek	9/2	20	34	100		34
Elk Creek	9/3	18	398	100		398
Johnson Creek	9/7	34	349	100		349
Knapp Creek	8/31	6	33	100		33
Lake Creek & Secesh River	9/7	33	344	100		344
Lemhi River	9/6	52	921*	90		1,023
Loon Creek	9/4	30	425	98		434
Marsh Creek	8/31	15	127	100	+110	237
Pahsimeroi River	9/12	18	491	70		701
Panther Creek	9/6	20	135	100		135
Salmon River:						
Above Stanley	9/12	30	1,118	100		1,118
Stanley to Sunbeam	9/8	12	380	85		447
Sunbeam to East Fork	9/12	26	691	95		727
East Fork to Challis	9/12	21	500	95		526
Challis to Ellis	9/12	18	873	75		1,164
Ellis to Salmon	9/12	42	72	75		96
Salmon River, East Fork	9/6	33	717	95		755
Salmon River, Middle Fork	9/5	100	90	100		90
Salmon River, North Fork	9/6	25	195	100	+127	322
Salmon River, South Fork	9/13	30	2,756	98		2,812
Sulphur Creek	9/3	12	381	100		381
Valley Creek	9/8	17	556	98		567
Warm Springs Creek	9/8	8	28	100		28
Yankee Fork	9/4	23	185	100		185

Mileages were determined from measurements of scale maps and from previous surveys.

* Includes 24 in Hayden Creek.

** Counts adjusted due to unfavorable conditions at the time of the aerial survey.

Table 2. Spring chinook salmon redd counts, Weiser River, 1957.

<u>Area Surveyed</u>	<u>Miles Surveyed</u>	<u>Redds</u>	
		<u>Air</u>	<u>Ground</u>
MAIN WEISER RIVER:			
Galloway Dam-Midvale	24	29	
Midvale-Cambridge	7	28	
Cambridge-Council	23	37	
Council-Tamarack	18	152	
Tamarack-Price Valley	<u>5</u>	<u>0</u>	
Totals	77	246	
LITTLE WEISER RIVER:			
Mouth-Grays Cr.	11	0	
Grays Cr.-Anderson Cr.	19	34	
Anderson Cr.-Wolf Cr.	3	14	
Anderson Cr.	<u>1</u>	<u>2</u>	
Totals	34	50	
WEST FORK WEISER:			
Mouth-W. Fk. Bridge	2	8	32
W. Fk. Bridge-Sawmill	3		53
Sawmill-Lost Cr.	<u>6</u>		<u>Not surveyed</u>
Totals	11		85
Drainage Totals	<u>122</u>		<u>381</u>

All air counts were made September 24.

Ground counts on West Fork were made September 10.

Note that the West Fork count is limited to about 1/2 the available spawning area.

FINDINGS, SALMON RIVER DRAINAGE

Survey of August 31

On this date the Marsh Creek Drainage was surveyed. Areas surveyed in this drainage included Knapp, Marsh, Beaver and Capehorn Creeks. The total number of redds observed was 371 and spawning was estimated to be 100 percent completed.

Knapp Creek

Knapp Creek was surveyed from its confluence with Marsh Creek upstream approximately eight miles. A total of 33 redds was observed, the greatest number in the first four miles.

Marsh Creek

Marsh Creek was surveyed from its source downstream to the mouth of Beaver Creek. A total of 150 redds were seen. Due to a heavy growth of algae on the creek bottom which partially obscured the redds, the aerial survey was not considered adequate in this stream. A ground survey was made to determine the accuracy of the aerial count. The ground survey on September 2 disclosed the presence of 231 redds in an area which had revealed only 121 to the aerial inspection. The results of the ground survey are used in Table 1 in order to make use of the most accurate figures.

Beaver Creek

Beaver Creek was surveyed from the mouth of Winnemucca Creek, to its confluence with Marsh Creek. A total of 133 redds was counted.

Capehorn Creek

Capehorn Creek, another tributary of Marsh Creek, was surveyed and a total of 55 redds was counted.

Survey of September 2

Big Creek

Big Creek was surveyed from Jacob's Ladder Creek to its confluence with the Middle Fork of the Salmon River. Spawning was completed from Jacob's Ladder

Creek to Smith Creek. A few live fish were seen below Smith Creek indicating that 98 percent of the fish had completed spawning. A total of 768 redds were counted the bulk of which were located between Monumental and Rush Creeks.

Chamberlain Creek

The mouth of Chamberlain Creek is located about 45 miles downstream from Big Creek and flows into the Main Salmon River. Thirty-four redds were observed most of which were located near the Chamberlain Basin Airfield. Spawning activity was completed.

Survey of September 3

Sulphur Creek

A total of 381 redds were observed in Sulphur Creek, a tributary of the Middle Fork. All fish had finished spawning. Two beaver dams were noted between Silver Moon and Moonshine Creeks. Both dams might become migrational blocks; however, dead salmon were seen above the dams. The diversion ditch located above the Morgan Ranch near the mouth of Sulphur Creek was flowing at maximum capacity creating a migrational hazard for ocean bound chinook fingerlings.

Two aerial passes were made over Dagger Falls. There were no live chinook observed in pools below the falls.

Elk Creek

Elk Creek, a tributary of Bear Valley Creek, was also checked on this date. A total of 398 redds were counted and spawning activity was completed.

Bear Valley Creek

Bear Valley Creek was flown from the dredges in Big Meadows downstream to the pack bridge near the mouth of Fir Creek. Sediment from the dredge workings have reduced considerably the Big Meadows spawning ground; however, twenty redds were observed in this area. Turbid water hampered redd counting downstream to Sack Creek. Spawning was completed and 661 redds were counted in the 27 miles

flown. A ground count on September 11 revealed 35 redds from the dredges downstream to Cub Creek where only 20 had been observed from the air on September 3. As turbidity effected adversely the number of redds counted downstream from the dredges, the aerial count from the dredges to Elk Creek is increased by 130 redds to account for those not seen from the air. That area from the Bear Valley - Stanley bridge downstream to the pack bridge near Fir Creek was also surveyed from the ground on September 11. A count of 168 redds compared favorably with 173 observed from the air on September 3. The total redd count in Bear Valley Creek is estimated at 791.

Survey of September 4

Loon Creek

Loon Creek was ground-surveyed September 1 at various points (not a complete count). Seven redds were observed. The aerial count in Loon Creek from Boyles Ranch downstream approximately 4 miles revealed 20 redds. Redds were more dispersed throughout the full length of the creek than in past years. The excellent spawning gravel located above and below the Falconberry Ranch was not utilized as heavily as in previous years. Flying conditions were excellent and redds were easily detected. A total of 425 redds were counted and spawning was estimated to be 98 percent completed.

Yankee Fork

Yankee Fork was spot checked from the ground on September 1 from its mouth to the West Fork and 37 redds were counted. On September 4 the aerial count revealed 73 redds in this area. Most of the spawning was located in the dredge workings below the mouth of the West Fork. Over the entire length of Yankee Fork 185 redds were seen and spawning activity was completed.

Survey of September 5

The extreme headwaters of the Salmon River include Smiley, Alturas, Beaver, Pole and Frenchman Creeks. Alturas Creek excepted, the spawning grounds of these

streams are greatly reduced in value due to the migrational hazard of a concrete diversion dam located in the Salmon River about one mile above the mouth of Alturas Creek. It is reported that a number of Salmon were taken by anglers above this point of diversion in 1957, indicating that some Chinooks do pass the diversion dam.

Smiley Creek

Smiley Creek was flown to check reports that salmon were spawning in this drainage. It had been reported also that anglers had taken chinook salmon from a diversion canal located on Smiley Creek about one mile above its mouth. The lower four miles of the creek which meander through the meadows and contain excellent spawning gravel, were surveyed. No redds were observed.

Salmon River, Main Stem

The main Salmon River from the mouth of Alturas Creek upstream to ½-mile above the mouth of Frenchman Creek, a distance of about 10 miles, was observed on September 5. Of the 80 redds observed in this area, only 3 were seen above the irrigation diversion dam located about one mile above the mouth of Alturas Creek.

Alturas Creek

Alturas Creek was flown from Alturas Lake to its confluence with Salmon River. One hundred-ten redds were observed. Three of the 7 miles of spawning ground available in this creek are affected adversely by an irrigation diversion dam located near the outlet of Alturas Lake. Four of the 110 redds were seen above the diversion dam. A ground check on September 4 indicated a total of 103 redds in Alturas Creek.

Camas Creek

Camas Creek was flown from its South Fork downstream to the Middle Fork of the Salmon River. A count of 123 redds was recorded and spawning was completed. The area between Meyers Cove and Woodtick Creek contained most of the redds.

The Middle Fork of the Salmon River was surveyed from Lolo Creek Campground down to its confluence with Big Creek. Within this distance a total of 90 redds was tallied and spawning appeared to be completed.

September 6 Survey

Panther Creek

Panther Creek was checked and 135 redds were counted from its mouth upstream to the Meyers Cove road. Spawning was completed. The most heavily utilized area occurred below Napias Creek where in 1956 the water was so discolored that the bottom material could not be detected.

Lemhi River

The Lemhi River was flown from Salmon to Leadore. The greatest number of redds was counted from the Lemhi Store upstream to Leadore. A total of 921 redds was observed including 24 located on Hayden Creek, a small tributary of the Lemhi. Spawning was estimated 90 percent completed.

Salmon River, North Fork

The North Fork of the Salmon River, not surveyed in past years, was included in the 1957 survey. The stream was observed on the ground from Twin Creeks downstream to the Ranger Station below its confluence with Sheep Creek. In this area 222 redds were counted from the ground. The aerial count revealed only 95. An aerial count of 195 redds was recorded from the mouth of the North Fork upstream to the mouth of Twin Creek. All fish had finished spawning. A heavy growth of algae made the redds difficult to detect.

Salmon River, East Fork

The East Fork of Salmon River was checked for redds from the Bowery Guard Station downstream to the Main Salmon River. A total of 717 redds was counted, the bulk of which occurred between Big Boulder and Herd Creeks. Spawning was estimated to be 95 percent completed.

September 7 Survey

Johnson Creek

Johnson Creek was flown from Boulder Creek, which is located above the Landmark airfield, downstream to its confluence with the East Fork of the South Fork near the town of Yellow Pine. A count of 349 redds was recorded and the spawning was considered completed.

Salmon River, South Fork

The South Fork of Salmon River was checked from Blue Point Creek downstream to the Warren-Big Creek road. The Stolle Meadows aerial count totaled 362 redds and spawning was completed. The area between the Poverty Flat pack bridge and the lower end of Brown's airfield contained 1302 redds. The number of redds observed in the South Fork totaled 2224 and spawning was estimated to be 85 percent completed. This stream was surveyed again on September 13. As the spawning activity was nearly completed on this date, the resulting redd count (2756) is used.

A log jam located approximately seven miles above the Poverty Flat pack-bridge may later be of some consequence to migrating salmon. A ground check was made in Stolle Meadows from the guard station corral fence downstream a quarter of a mile to a white creek bank, a good aerial landmark. The ground redd count was 50 and the aerial count over the same area was 30. Counts made on September 13 indicated an increase, due to better visibility, in about this same ratio.

Secesh River and Lake Creek

A portion of the Secesh River and one of its tributaries, Lake Creek, were also surveyed on this date. In the 25 miles checked, 344 redds were observed and spawning activity was finished.

September 8 Survey

Valley Creek

Valley Creek was flown from lower Valley Creek Lake downstream to the confluence with the Salmon River. A count of 556 redds was recorded and spawning was estimated 98 percent completed.

Salmon River, Stanley to East Fork

The Salmon River from Stanley downstream to the mouth of the East Fork was flown on this date and a total of 1055 redds was counted. Spawning was concentrated in two areas. The count between Valley and Yankee Fork Creeks was 380 redds; between Robinson Bar and Clayton 343. Spawning activity was noted in all areas containing suitable gravel and was estimated to be 85 percent completed.

Warm Springs Creek

Warm Springs Creek was added to this year's survey. The headwaters of this creek flow through a large meadow estimated to be 3 miles long. This excellent spawning area is blocked by a series of falls located at the lower end of the meadow. Two redds were observed above the falls. Subsequent investigation indicated that the falls form a complete barrier to upstream migration and the existence of the two redds is doubtful. Heavy vegetative growth bordering the stream prevented observation of the stream bed except for short distances. The bulk of the 28 redds observed was found near the Robinson Bar Ranch.

September 12 Survey

Salmon River, Alturas Creek to Salmon City

The Salmon River from Alturas Creek to the town of Salmon, a distance of approximately 150 miles, was surveyed on September 12. The total number of redds observed, including the 80 seen above the mouth of Alturas Creek on September 5 and 16 in the heads of diversion canals was 3634. From the headwaters to Stanley 1,118 redds were observed and spawning activity was considered completed. From Stanley to Sunbeam Dam 380 (September 8 survey) were seen, spawning was completed; Sunbeam Dam to the mouth of the East Fork of Salmon River 691, 95 percent completed; East Fork to Challis 500, 98 percent completed; Challis to Ellis 873, 75 percent completed and Ellis to Salmon 72, 75 percent completed.

Pahsimeroi River

The Pahsimeroi River was also flown on this date. The spawning time in this river and in the Salmon River near Challis is about the same. A total of 491 redds was observed and spawning was estimated to be 70 percent completed. Spawn-

ing was just commencing below Dawton Lane. Most of the salmon observed were in pool areas.

September 13 Survey

Salmon River, South Fork

The South Fork of the Salmon River was surveyed from Blue Point Creek downstream to the Secesh. The redds observed in Stolle Meadows totaled 587. The increase in redd count from the observation on September 7 (362) resulted from better visibility due to the angle of sunlight penetration in the water of the stream.

The area between the Poverty Flat pack bridge and the lower end of Brown's airfield was heavily utilized, containing 1,479 redds. Spawning in the drainage was estimated to be 98 percent completed. The total number of redds for the South Fork was 2,756 counting the 24 redds observed below the confluence of the Secesh September 7.

FINDINGS, WEISER RIVER DRAINAGE

On September 24, 1957, an aerial survey to determine the number of spring chinook salmon redds in the Weiser River Drainage was conducted. Observations were made on the main stem of the Weiser River from Galloway Dam to Price Valley, the West Fork from its confluence with the Weiser River to Lost Creek and the Little Weiser River from its confluence with the Weiser River to Anderson Creek.

Conditions were generally poor for observation from the air. The color of the stream gravel and heavy shoreline vegetation were factors limiting good observation. As the survey was conducted 24 days after the estimated peak of spawning and turbid water was encountered in parts of the drainage, all resulting aerial counts should be considered minimum.

Turbidity created by logging and bulldozer work in the headwaters of the West Fork of the Weiser River made reliable counts from the air impossible. A redd count covering about one-half the suitable spawning area in the West Fork was

made from the ground on September 10. These counts are used in this report as the most accurate information available for this area.

Spawning activity in the entire drainage was completed at the time of the aerial survey.

Weiser River, Main Stem

A total of 246 redds was counted in the main stem of the Weiser River from Galloway Dam to Price Valley.

Weiser River, Little

Fifty redds were seen in the Little Weiser River from its mouth to Anderson Creek.

Weiser River, West Fork

Eighty-five redds were observed from the ground in the lower five miles of the West Fork of the Weiser River on September 10.

RECOMMENDATIONS

Though the time of peak spawning activity of spring chinook salmon is relatively stable through the years, some variation does occur between specific years. Some streams in the survey area are bordered by heavy timber making accurate redd counts from the air impossible.

Streams in which the observation dates should be altered from the 1957 schedule to provide more accurate information in future surveys are as follows:

<u>Stream</u>	<u>Survey Date</u>
Marsh Creek	August 15-20
Bear Valley Creek	August 18-20
Elk Creek	August 20-25
Stolle Meadows area of South Fork Salmon River	August 25-29
Sulphur Creek	August 25-29

North Fork of Salmon River

August 20-25

Salmon River below Challis

September 20-25

Pahsimeroi River

September 20-25

Weiser River

September 1-5

Streams which are bordered by timber and should be surveyed, at least in part, from the ground include the North Fork of the Salmon River, Warm Springs Creek and the West Fork of the Weiser River.

More extensive use of ground check areas to fix the accuracy of aerial counts should be employed.

The use of a helicopter in future spawning ground surveys should be explored.

LEGEND

Ground Survey Sections

Aerial Survey Sections

Ground Redd Counts

Aerial Redd Counts

Aerial-Ground Check Area Count

Migratory Block

Road

Trail

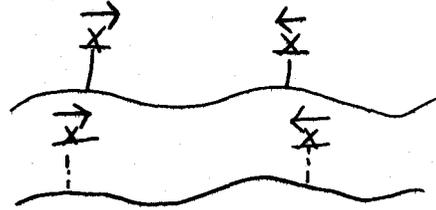
Forest Service Stations

Landing Strip

Fence

Pack Bridge

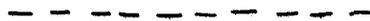
Highway Bridge



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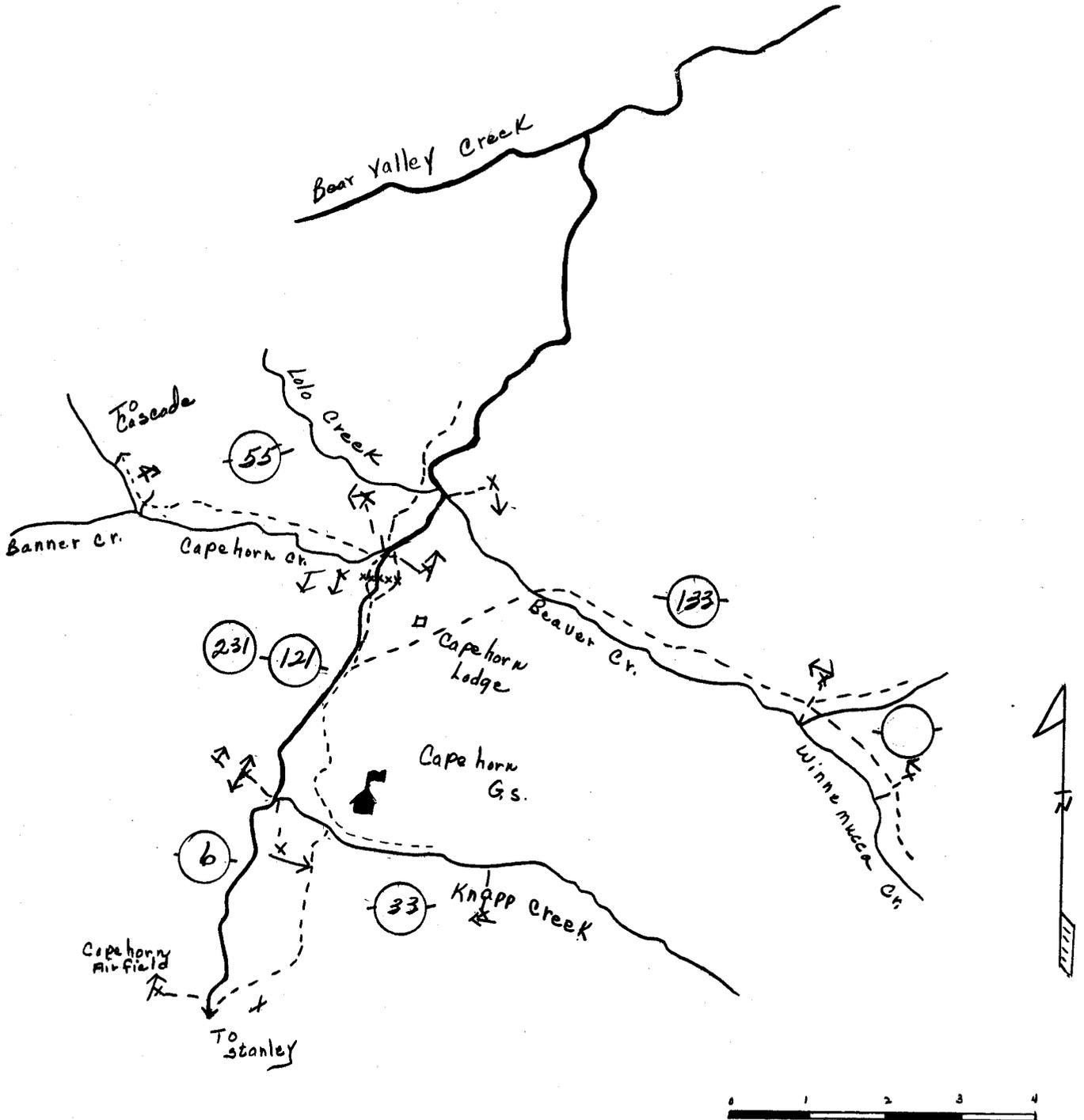
DRAINAGE Middle Fork Salmon River

SURVEY DATE 8/31

STREAM Marsh Creek

MAP SCALE 2/3" = 1 mi.

OBSERVATION CONDITIONS Good



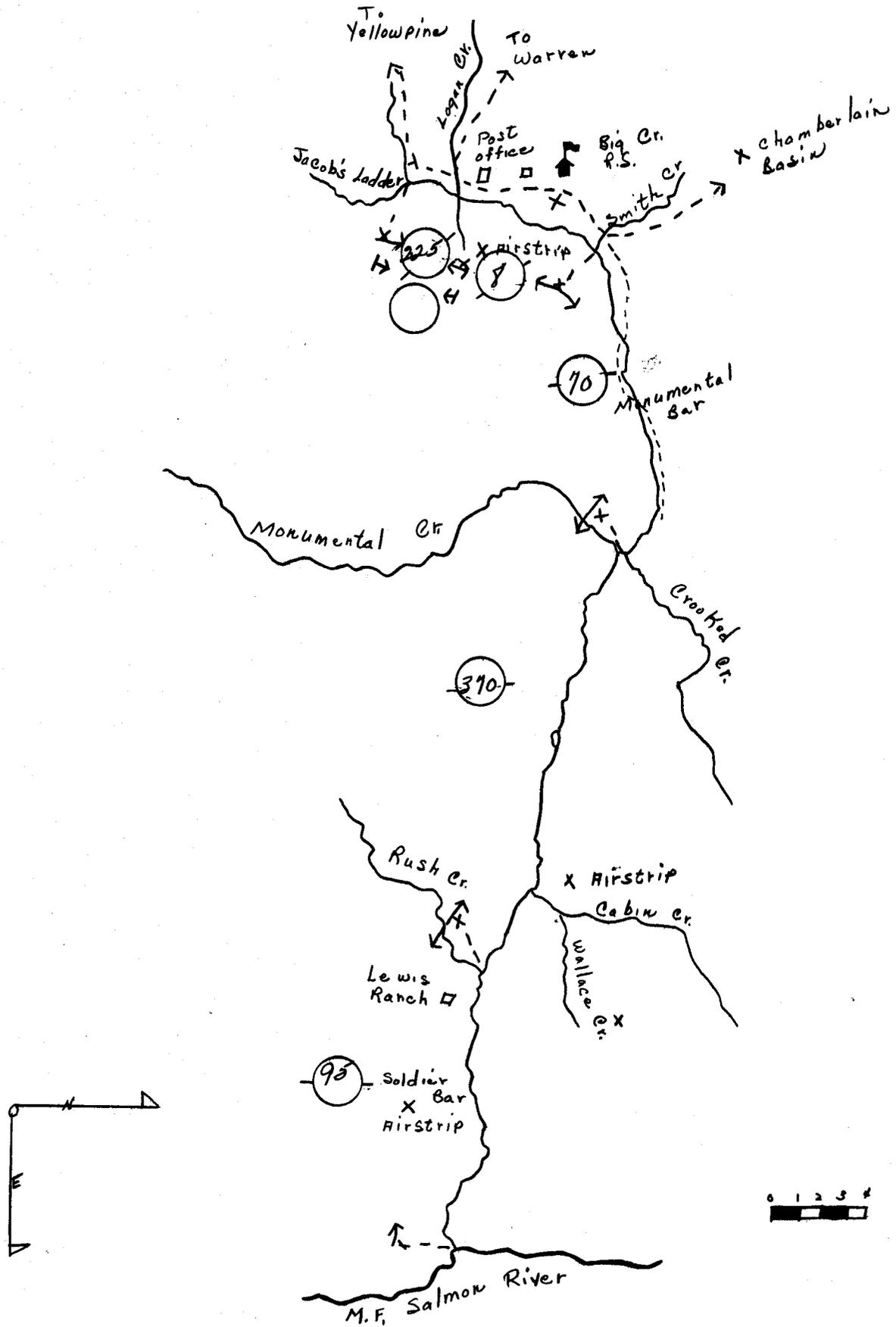
DRAINAGE Middle Fork Salmon River

SURVEY DATE 9/2

STREAM Big Creek

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Excellent



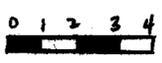
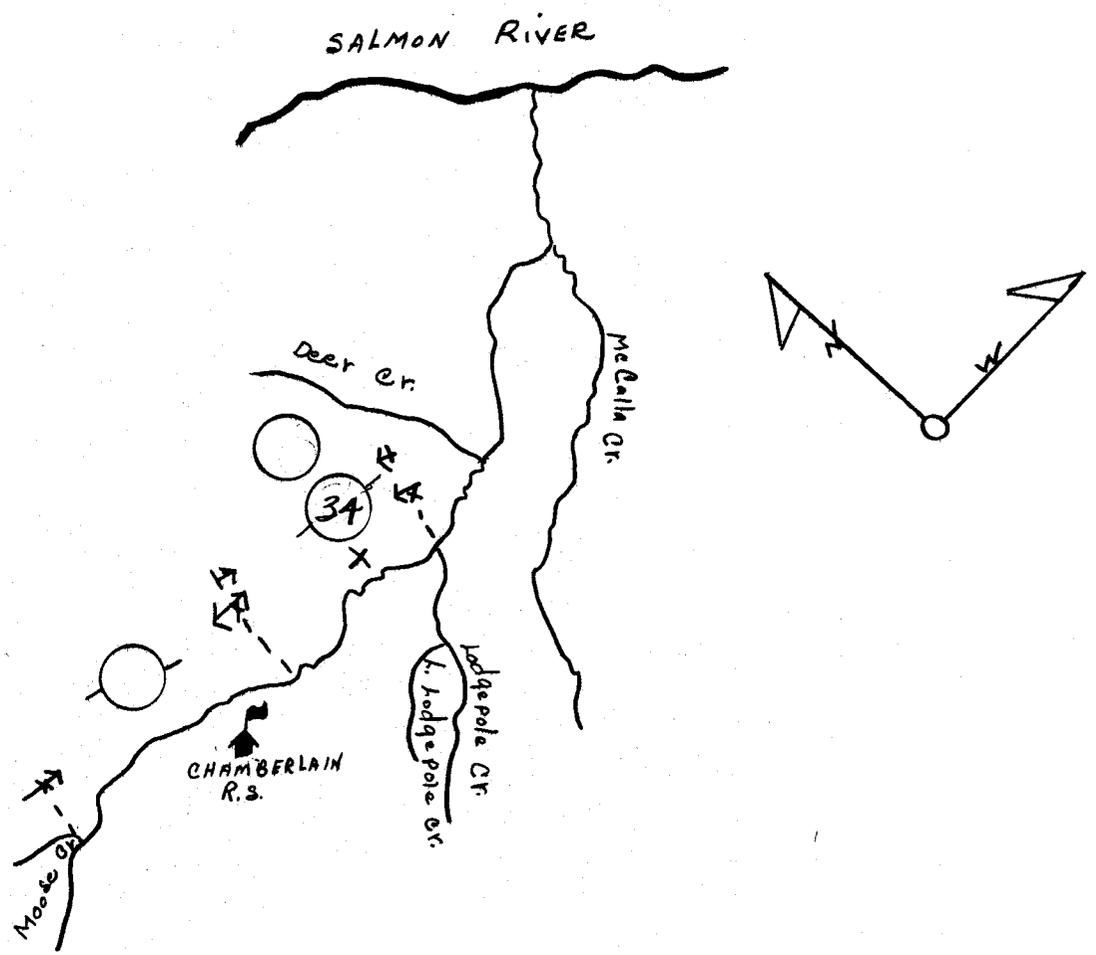
DRAINAGE Salmon River

SURVEY DATE 9/5

STREAM Chamberlain Creek

MAP SCALE 1/6" = 1 mi.

OBSERVATION CONDITIONS Excellent



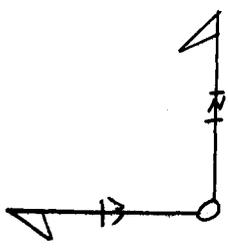
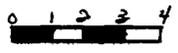
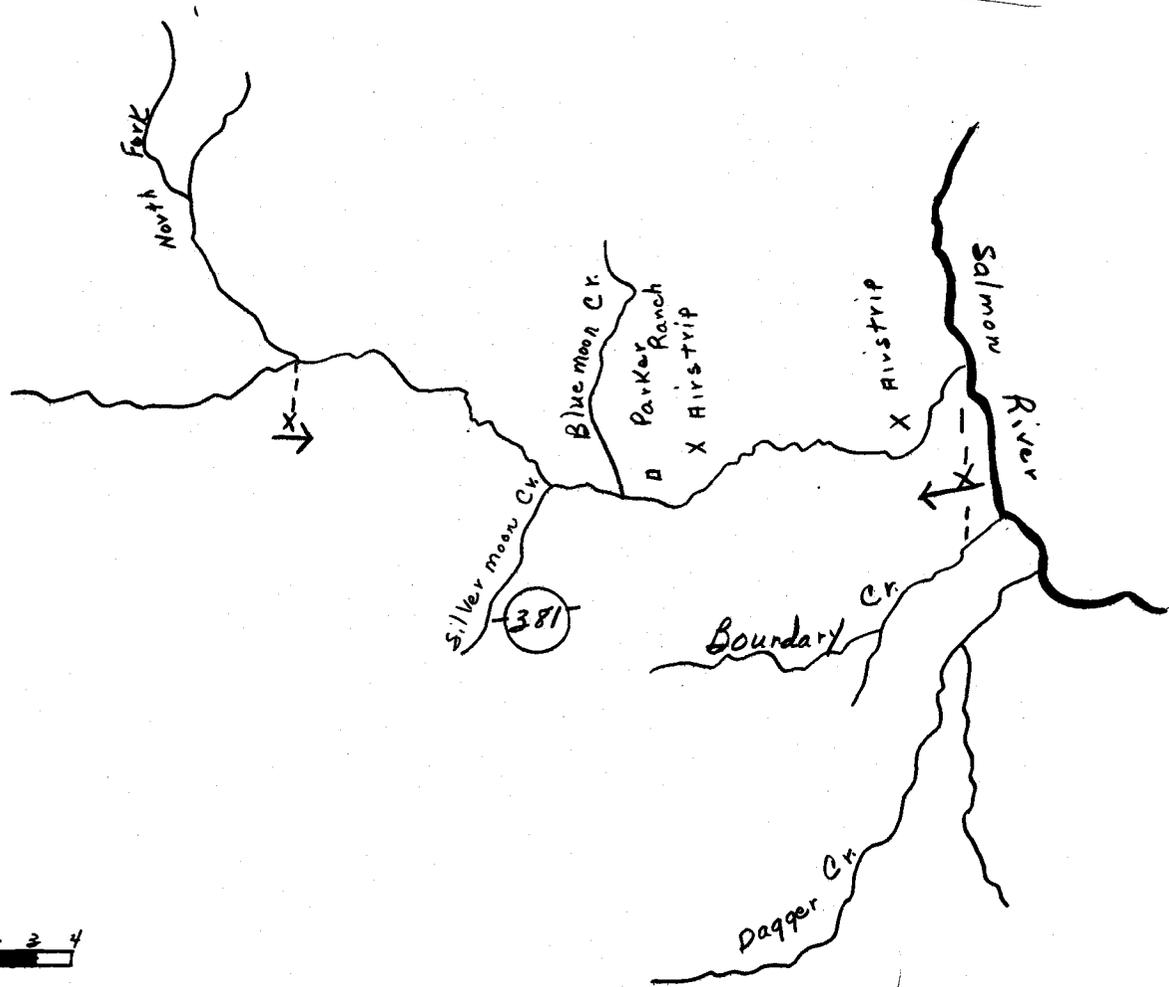
DRAINAGE Middle Fork Salmon River

SURVEY DATE 9/3/57

STREAM Sulphur Creek

MAP SCALE 1/6" = 1 mile

OBSERVATION CONDITIONS Good



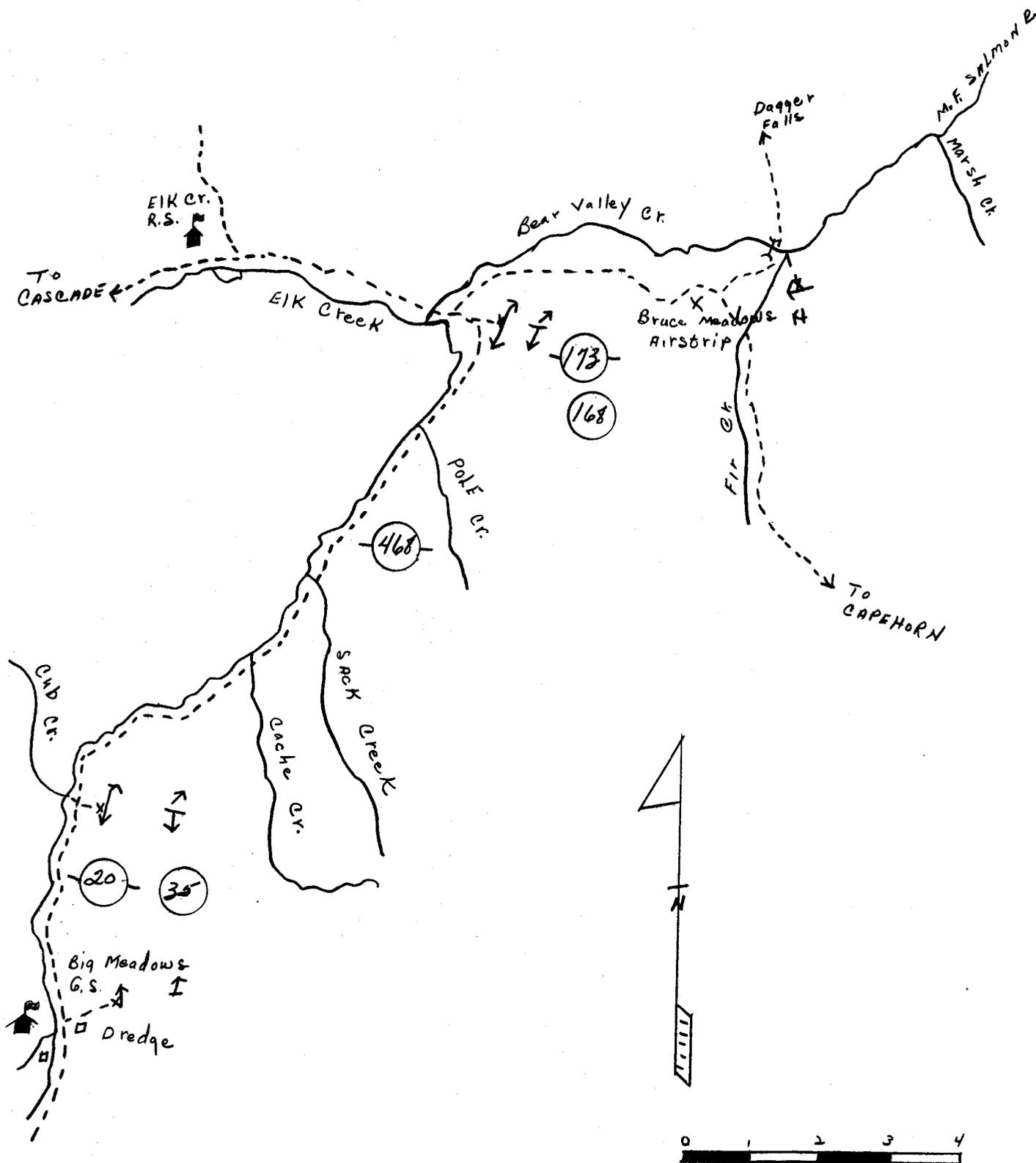
DRAINAGE Middle Fork Salmon River

SURVEY DATE 9/3

STREAM Bear Valley Creek

MAP SCALE 1/2" = 1 mile

OBSERVATION CONDITIONS Good



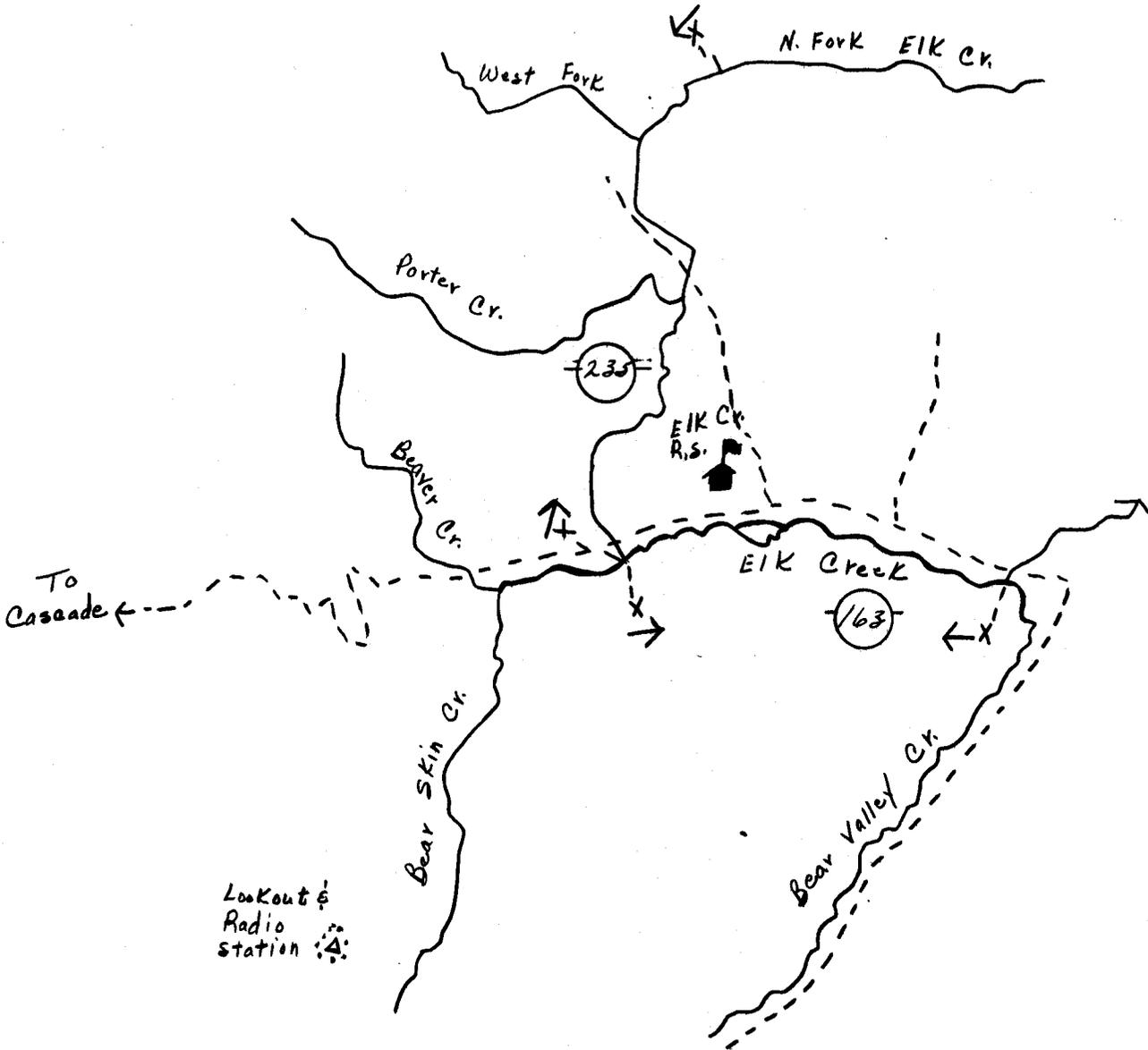
DRAINAGE Middle Fork Salmon River

SURVEY DATE 9/3/57

STREAM Elk Creek

MAP SCALE 1/2" = 1 mile

OBSERVATION CONDITIONS Good



Lookout &
Radio
station :A:



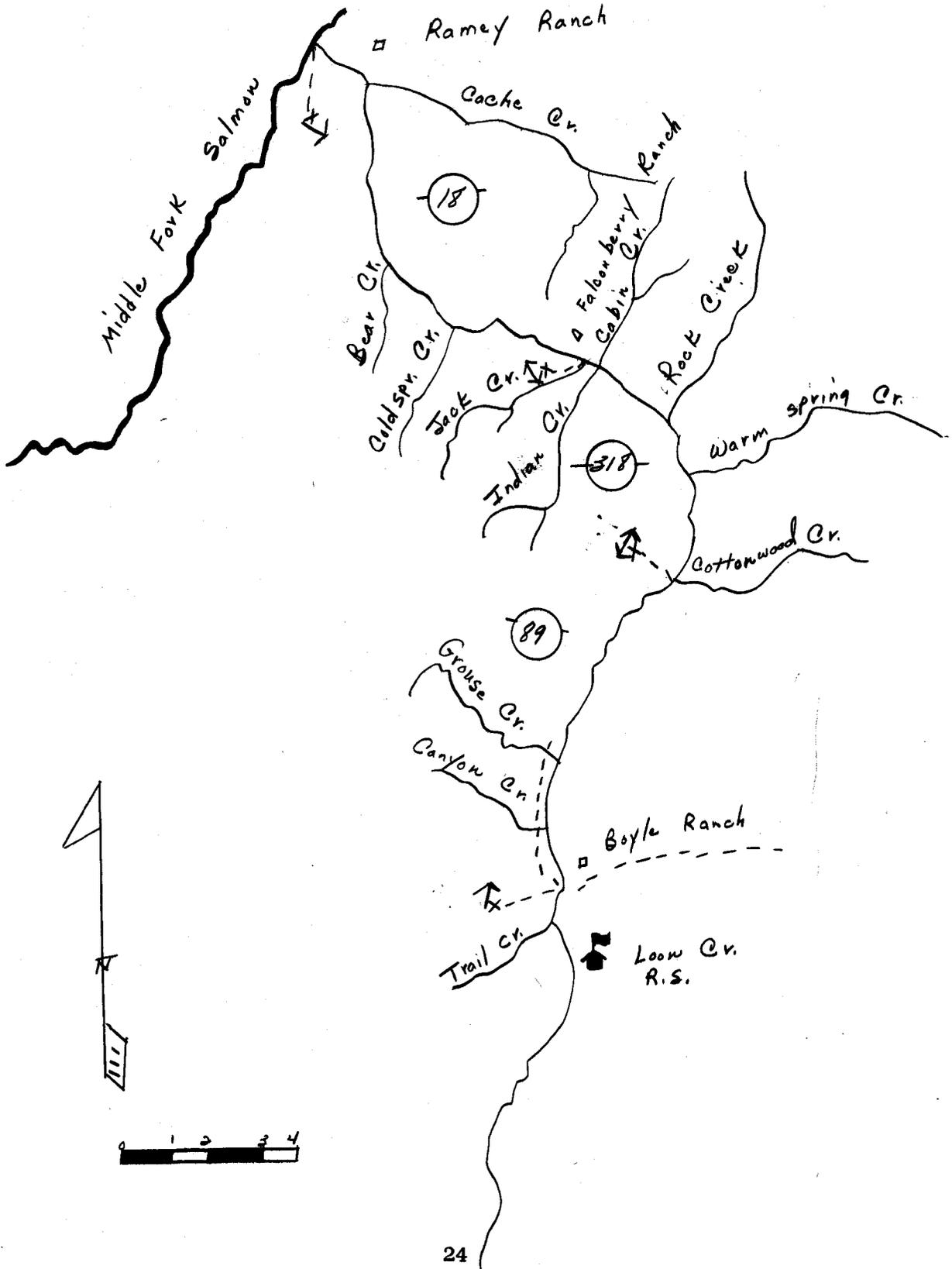
DRAINAGE Middle Fork Salmon River

SURVEY DATE 9/4/57

STREAM Loon Creek

MAP SCALE 1/3" = 1 mile

OBSERVATION CONDITIONS Excellent



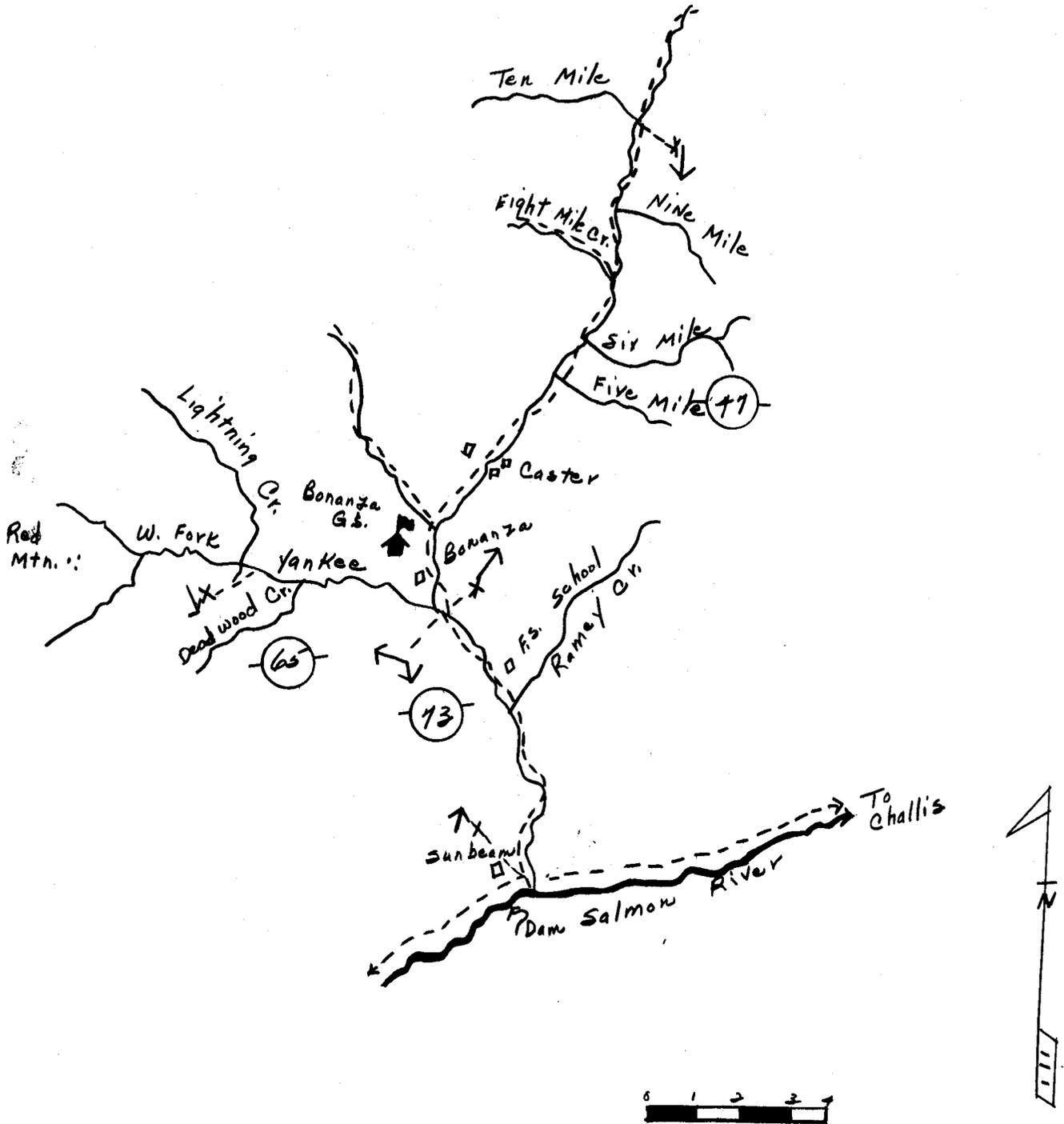
DRAINAGE Salmon River

SURVEY DATE 9/4/57

STREAM Yankee Fork

MAP SCALE 1/3" = 1 mile

OBSERVATION CONDITIONS Excellent



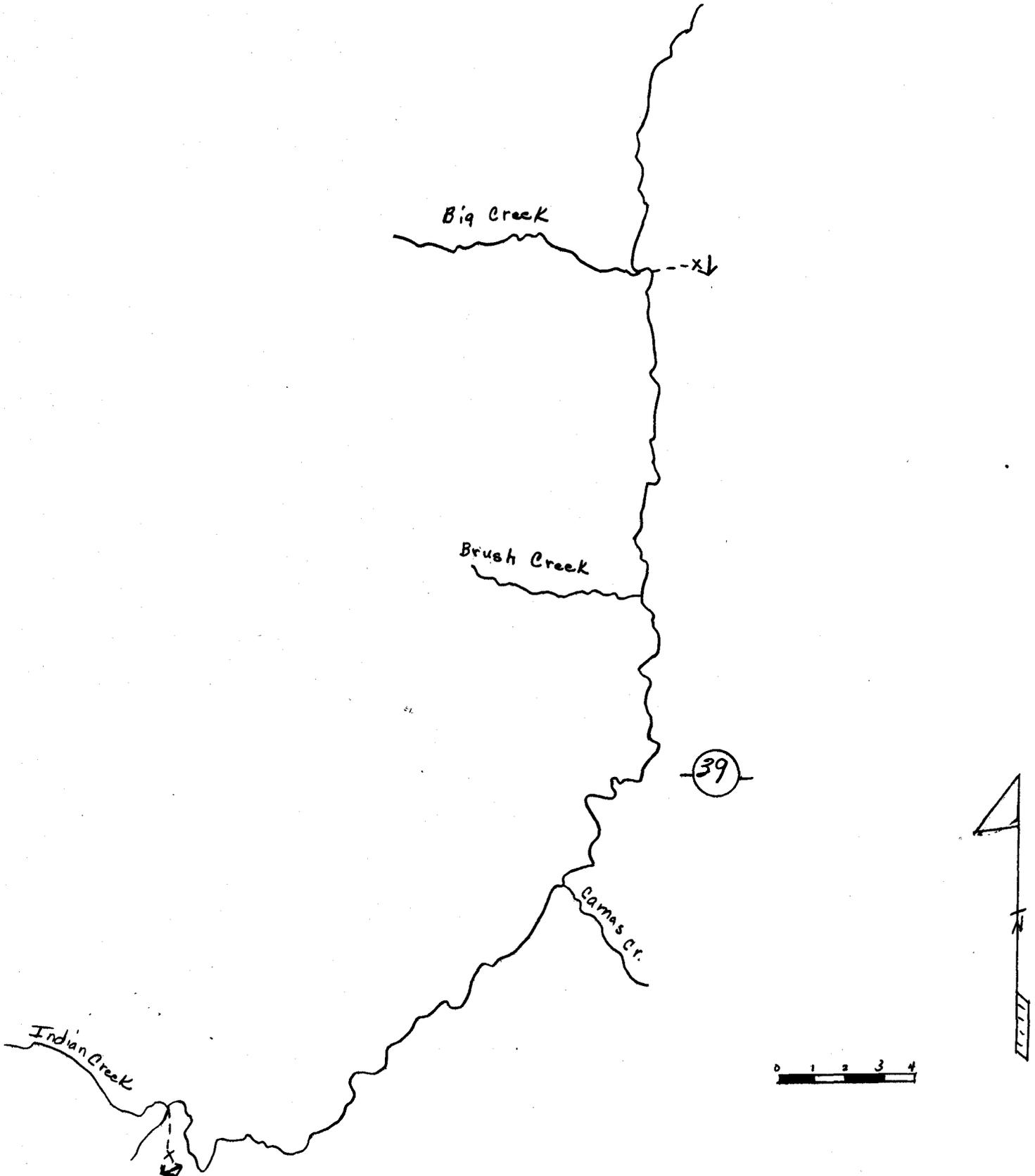
DRAINAGE Salmon River

SURVEY DATE 9/5

STREAM Middle Fork Salmon River

MAP SCALE 1/4" = 1 mi.

OBSERVATION CONDITIONS Excellent



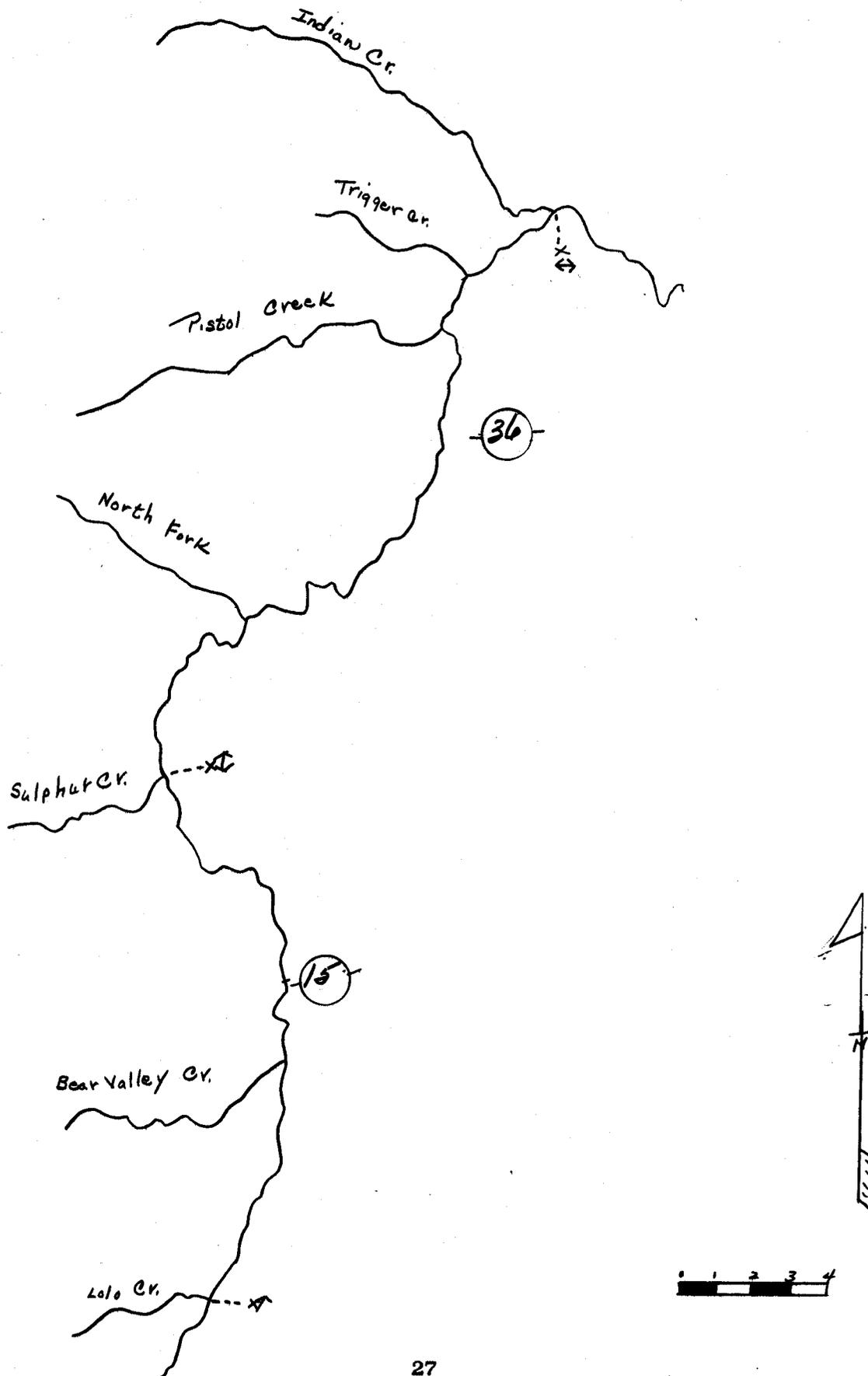
DRAINAGE Salmon River

SURVEY DATE 9/5

STREAM Middle Fork Salmon River

MAP SCALE 1/4" = 1 mi.

OBSERVATION CONDITIONS Excellent



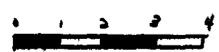
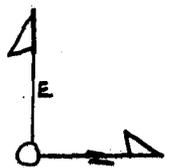
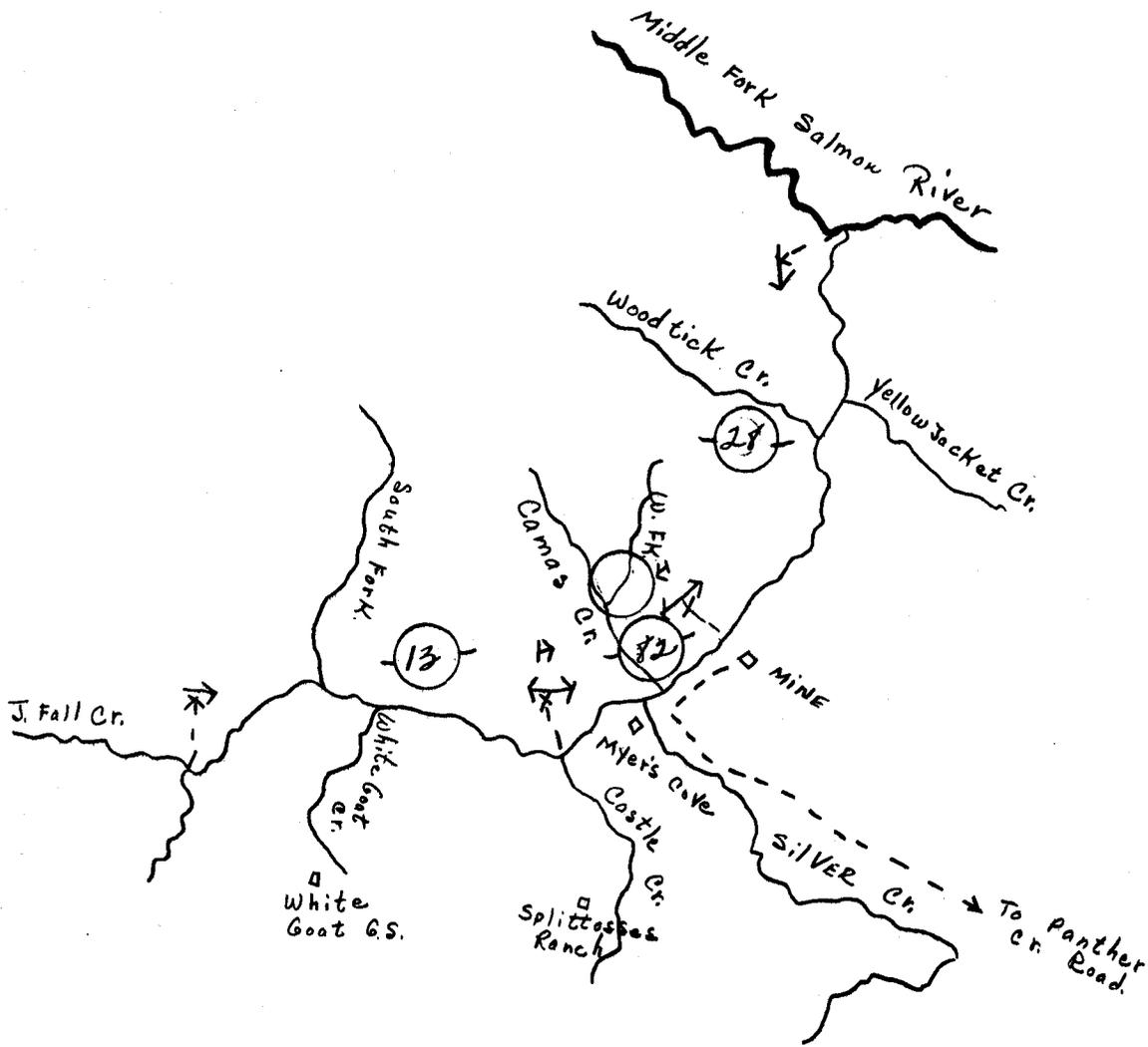
DRAINAGE Middle Fork Salmon River

SURVEY DATE 9/5

STREAM Camas Creek

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Excellent



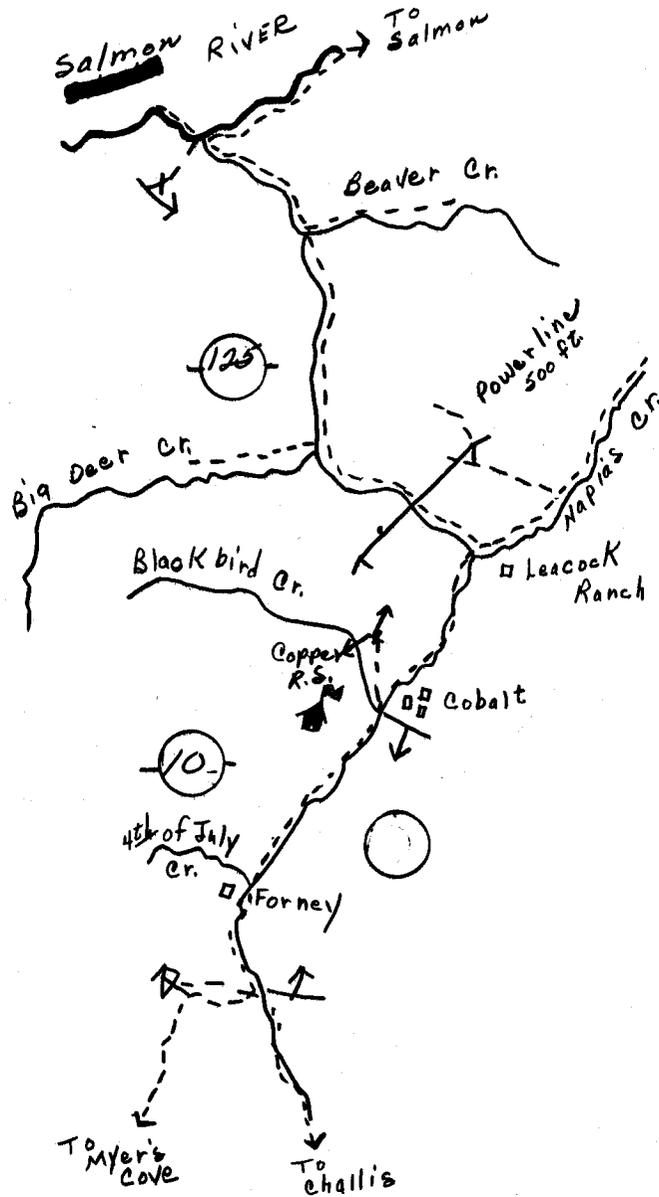
DRAINAGE Salmon River

SURVEY DATE 9/6

STREAM Panther Creek

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Good



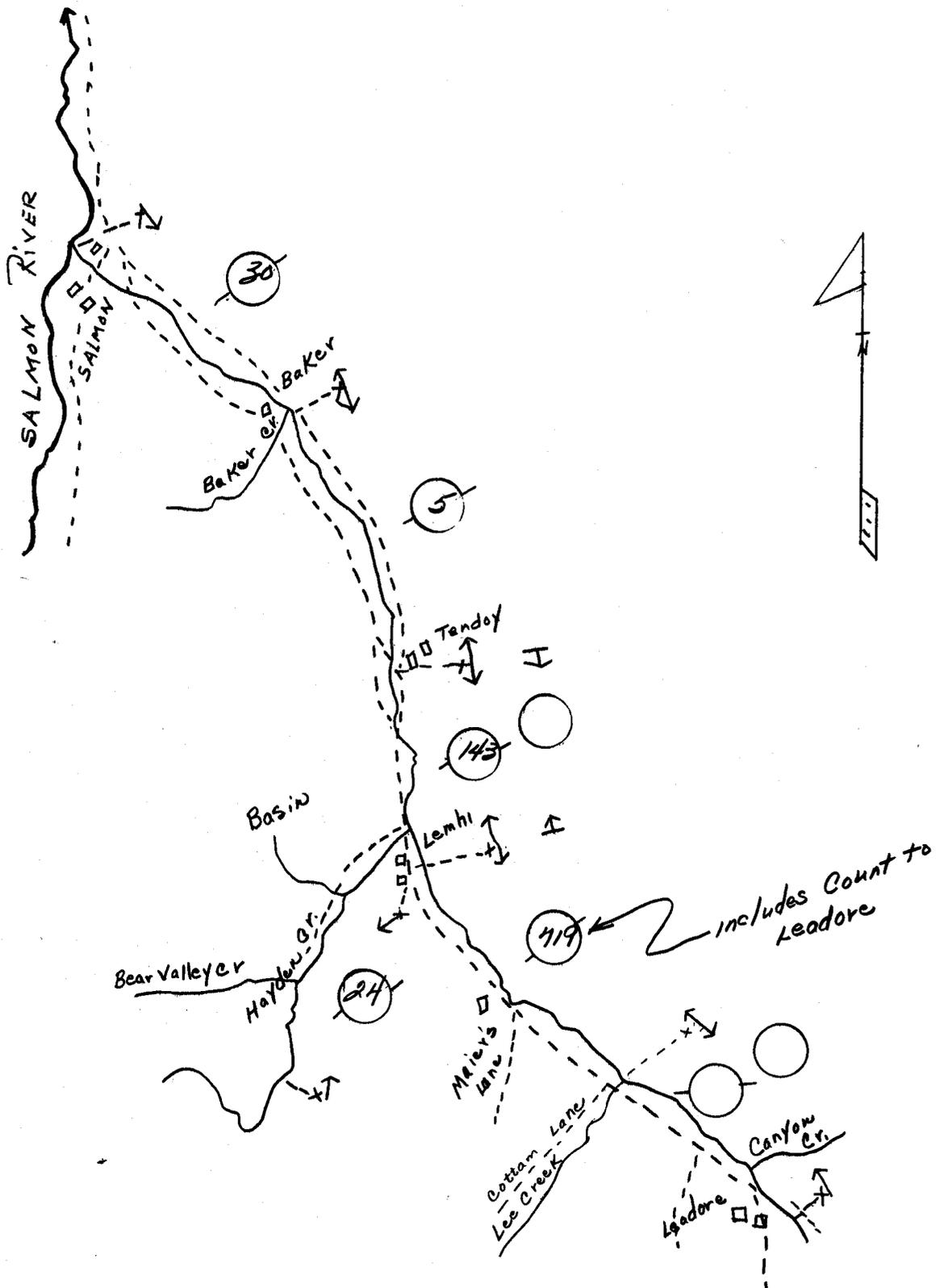
DRAINAGE Salmon River

SURVEY DATE 9/6

STREAM Lemhi River

MAP SCALE 1/6" = 1 mi.

OBSERVATION CONDITIONS Good



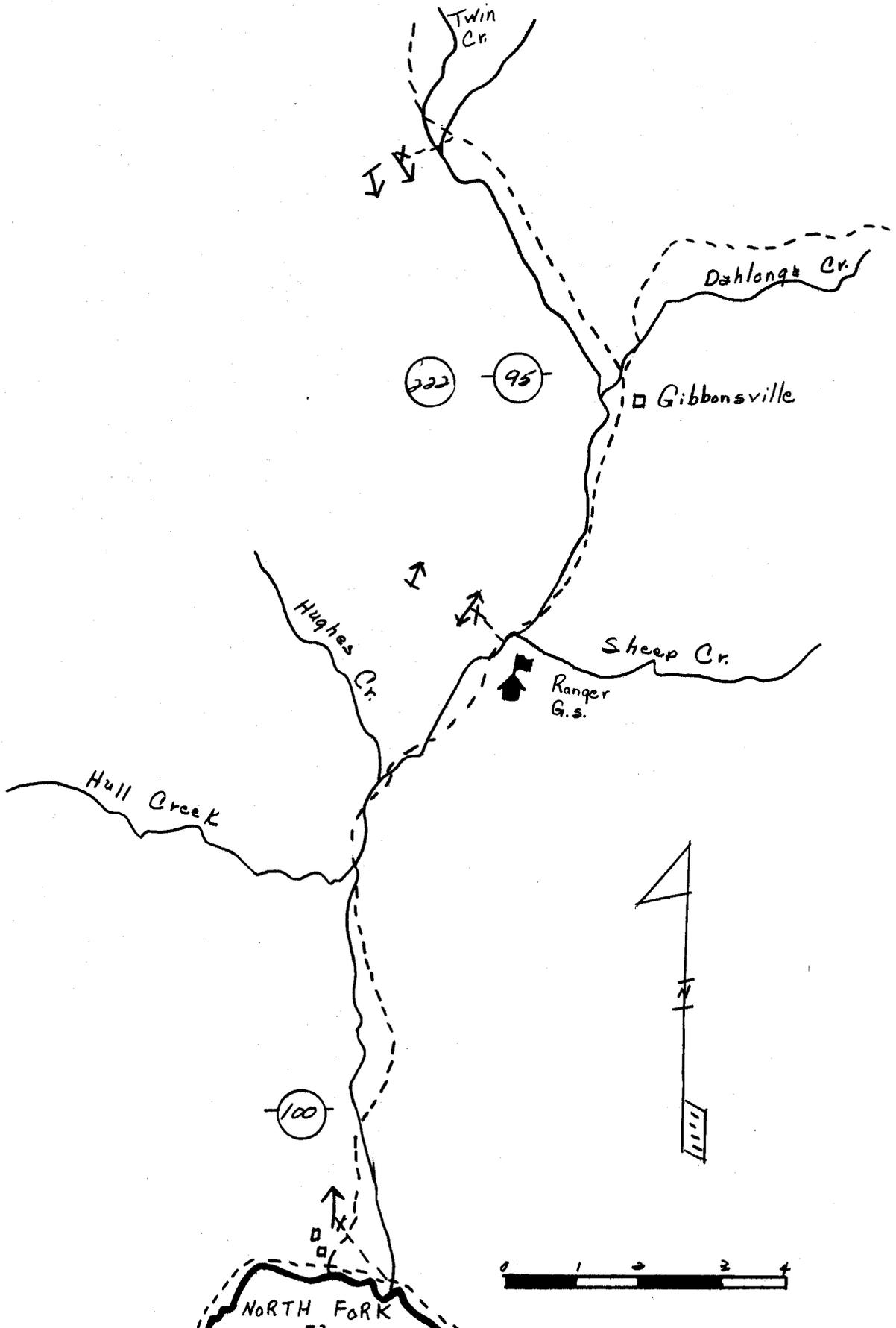
DRAINAGE Salmon River

SURVEY DATE 9/6/57

STREAM North Fork Salmon River

MAP SCALE 1/2" = 1 mile

OBSERVATION CONDITIONS Excellent



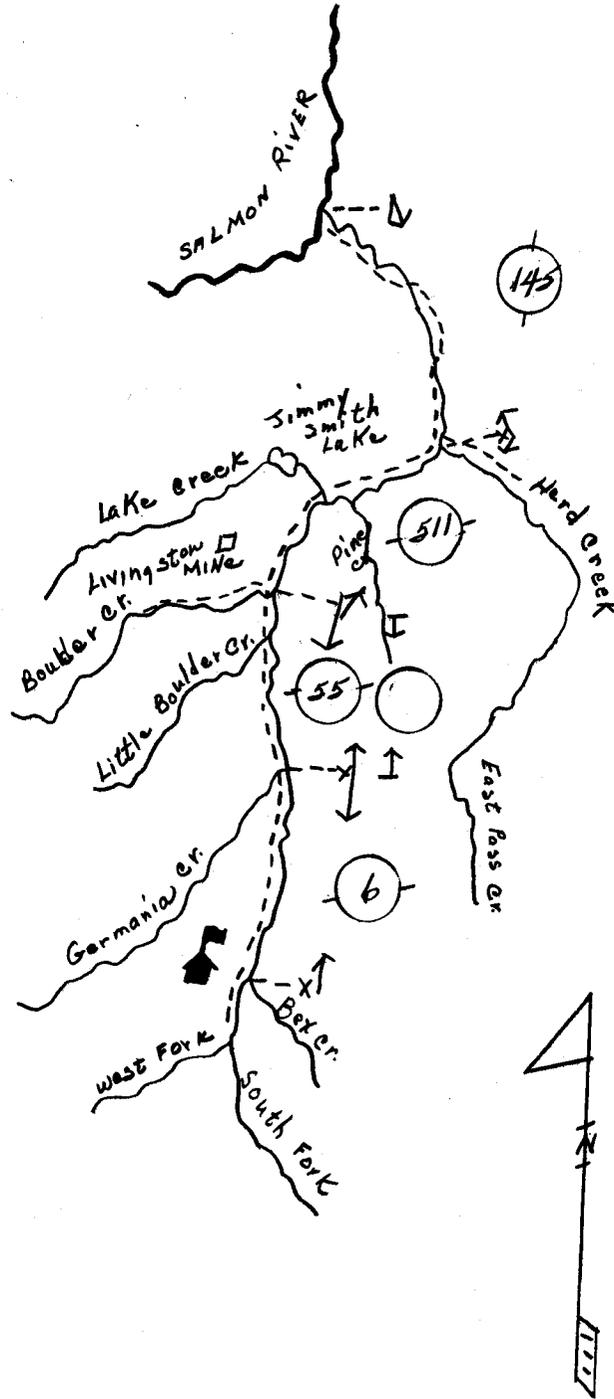
DRAINAGE Salmon River

SURVEY DATE 9/6

STREAM East Fork Salmon River

MAP SCALE 1/6" = 1 mi.

OBSERVATION CONDITIONS Excellent



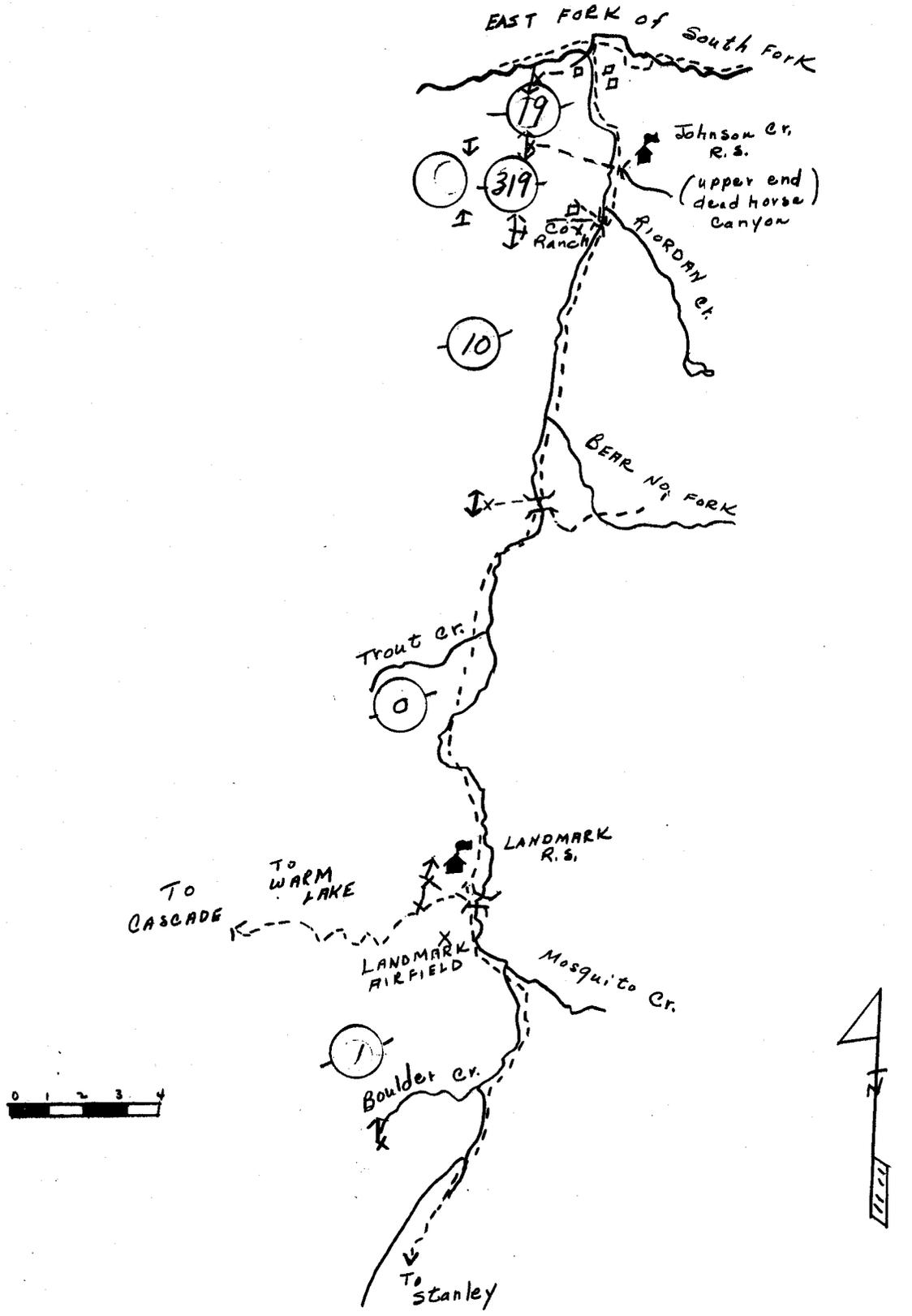
DRAINAGE East Fork of South Fork

SURVEY DATE 9/7

STREAM Johnson Creek

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Excellent



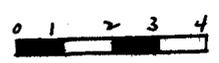
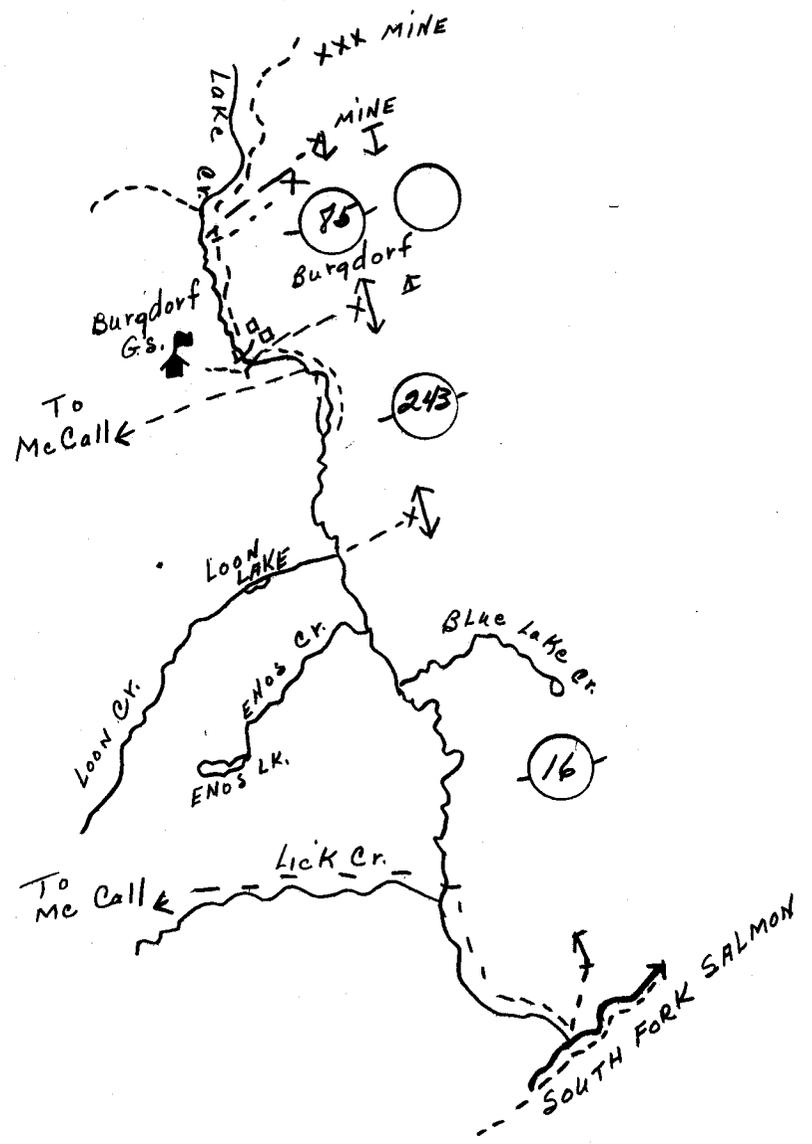
DRAINAGE South Fork Salmon River

SURVEY DATE 9/7

STREAM Secesh & Lake Creek

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Excellent



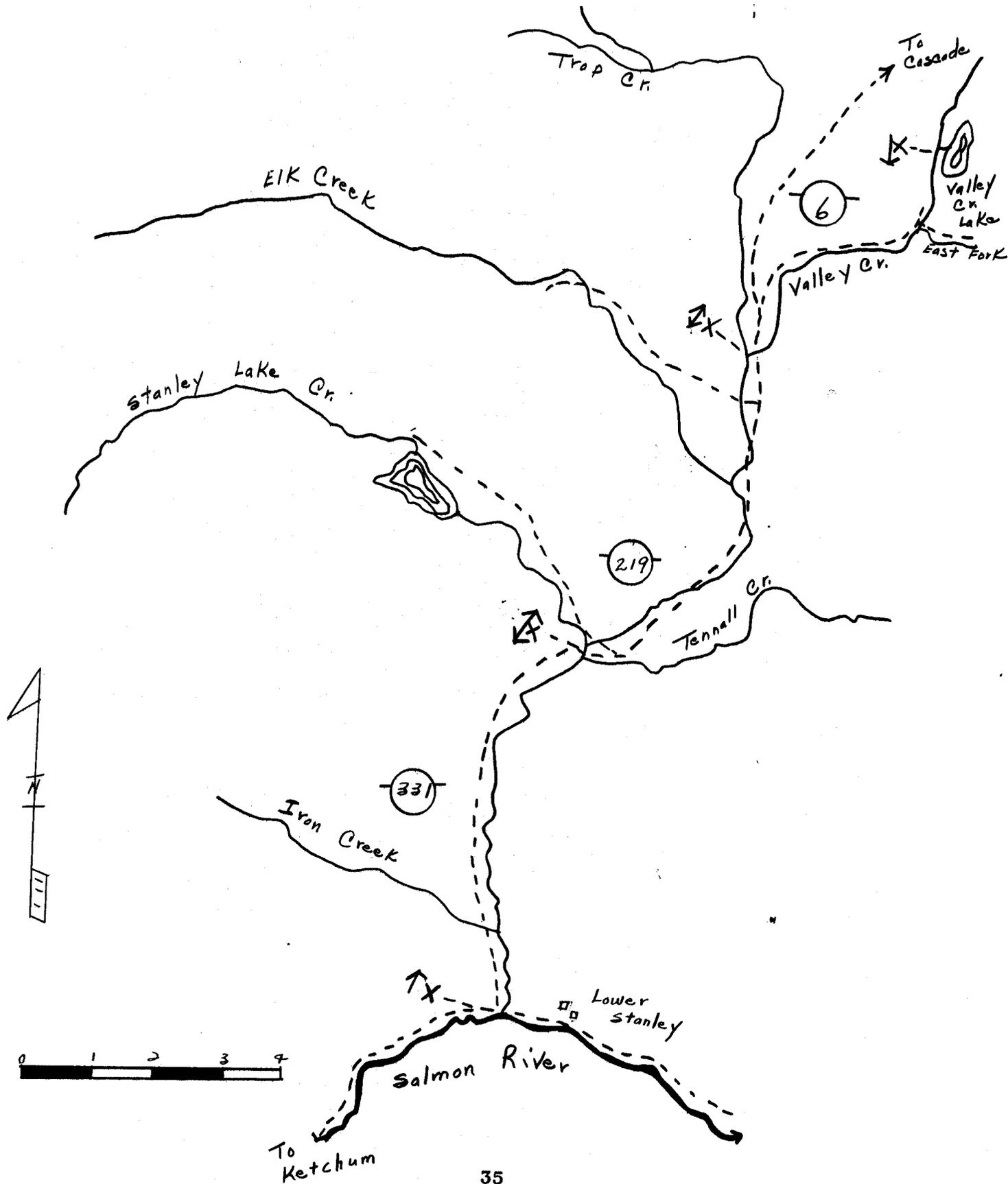
DRAINAGE Salmon River

SURVEY DATE 9/8/57

STREAM Valley Creek

MAP SCALE 2/3" = 1 mile

OBSERVATION CONDITIONS Excellent



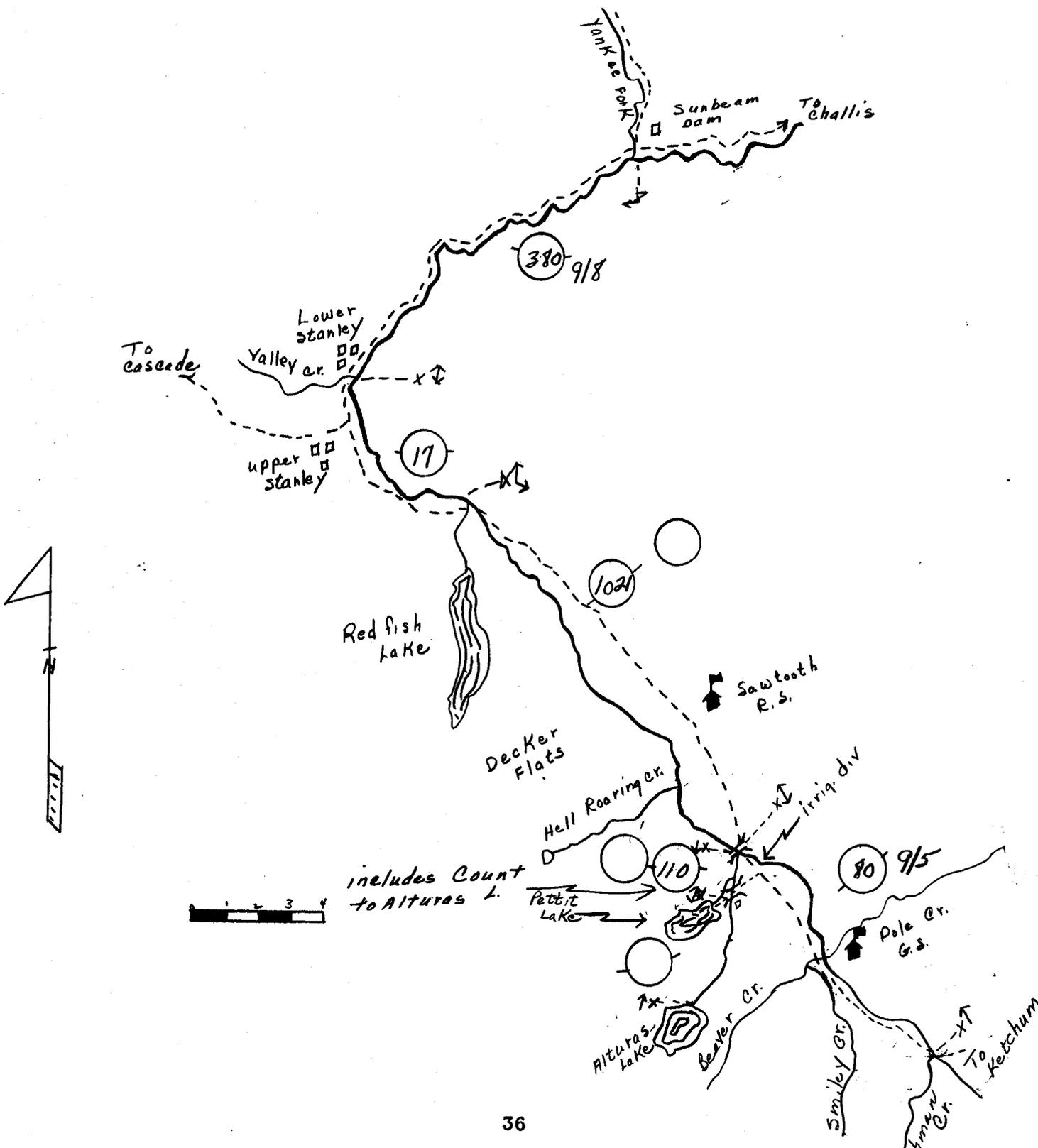
DRAINAGE Salmon River

SURVEY DATE 9/12

STREAM Headwaters Salmon River

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Excellent



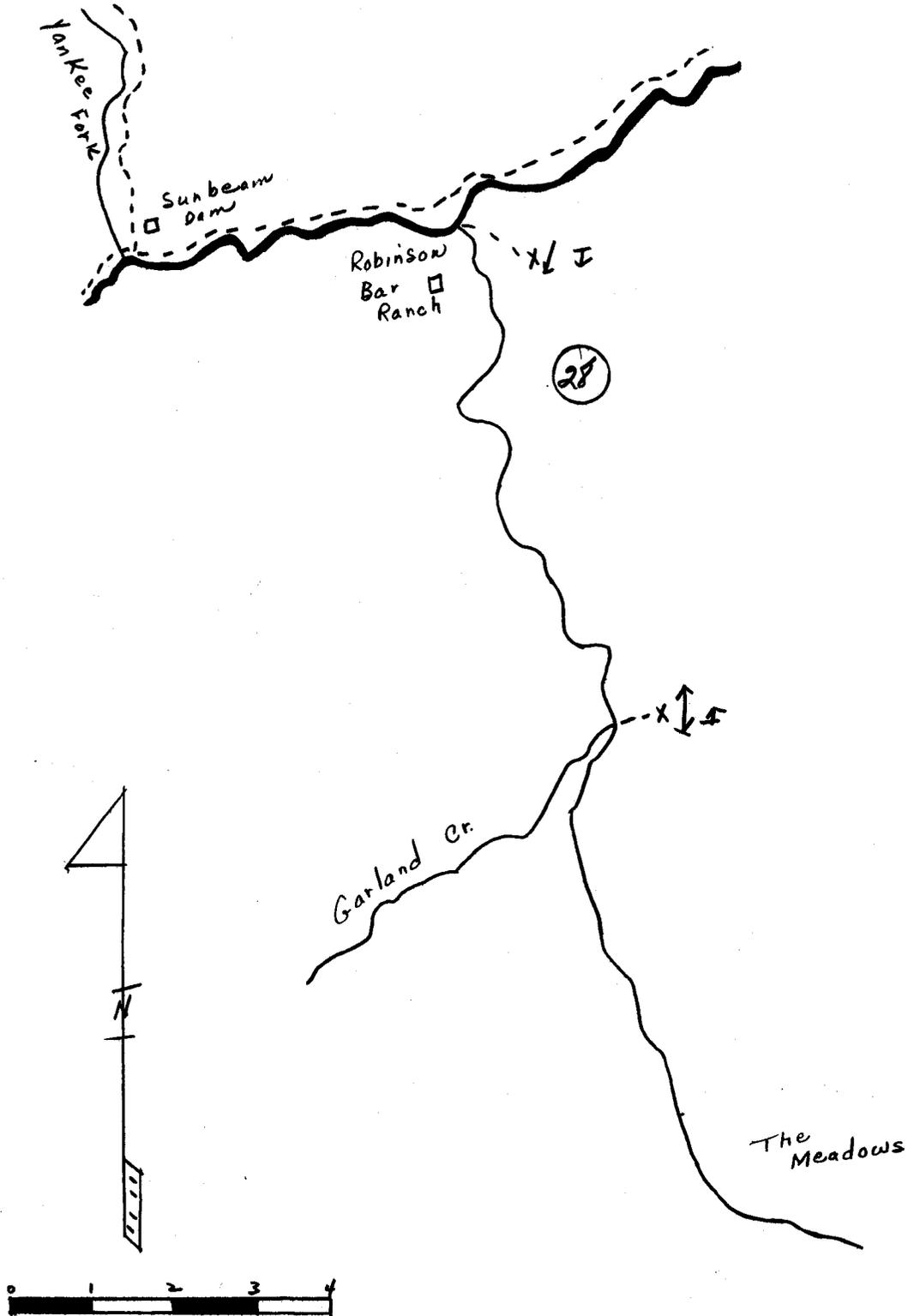
DRAINAGE Salmon River

SURVEY DATE 9/8

STREAM Warm Springs Creek

MAP SCALE 1/2" = 1 mile

OBSERVATION CONDITIONS Excellent



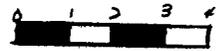
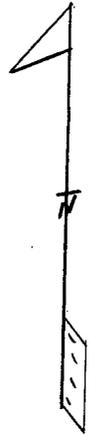
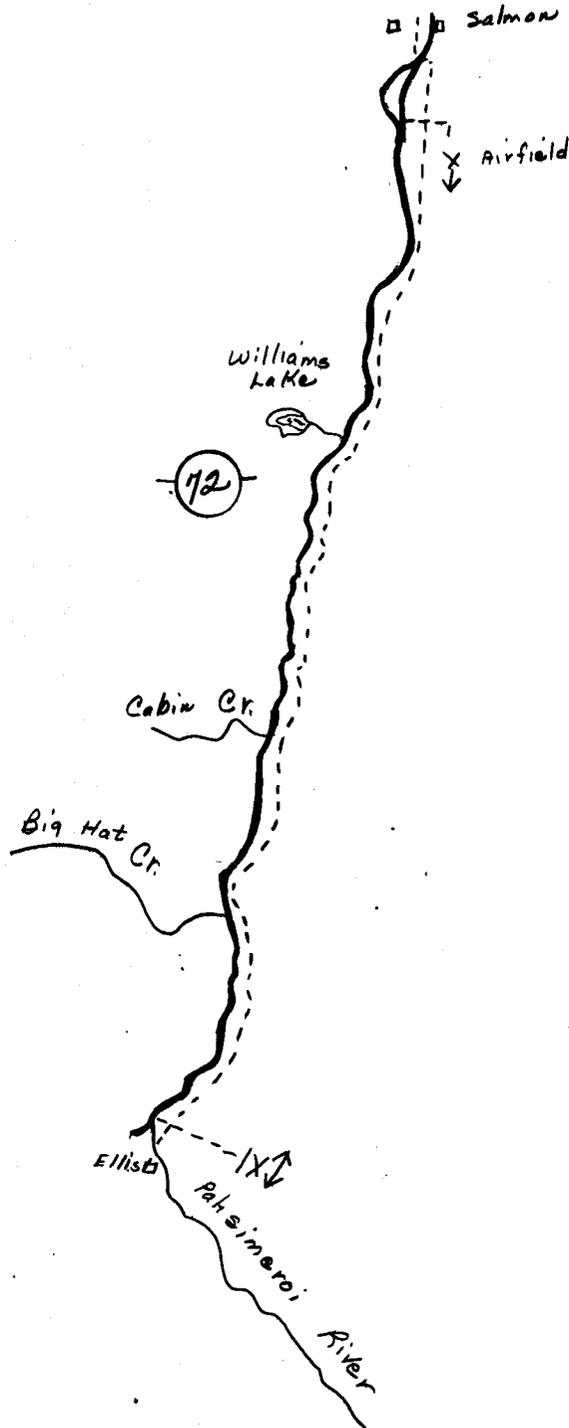
DRAINAGE Salmon River

SURVEY DATE 9/12

STREAM Salmon River

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Excellent



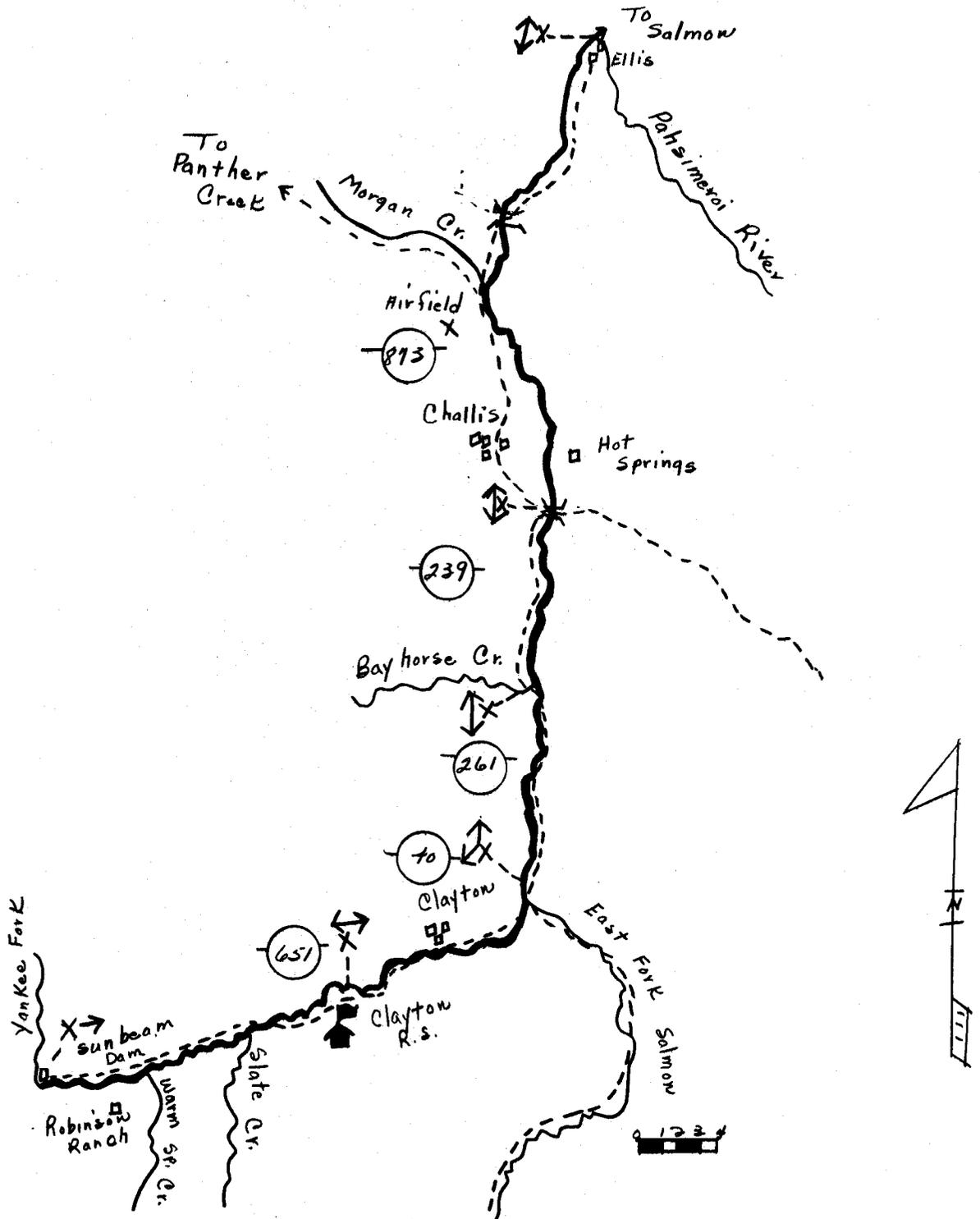
DRAINAGE Salmon River

SURVEY DATE 9/12

STREAM Salmon River

MAP SCALE 1/6" = 1 mile

OBSERVATION CONDITIONS Excellent



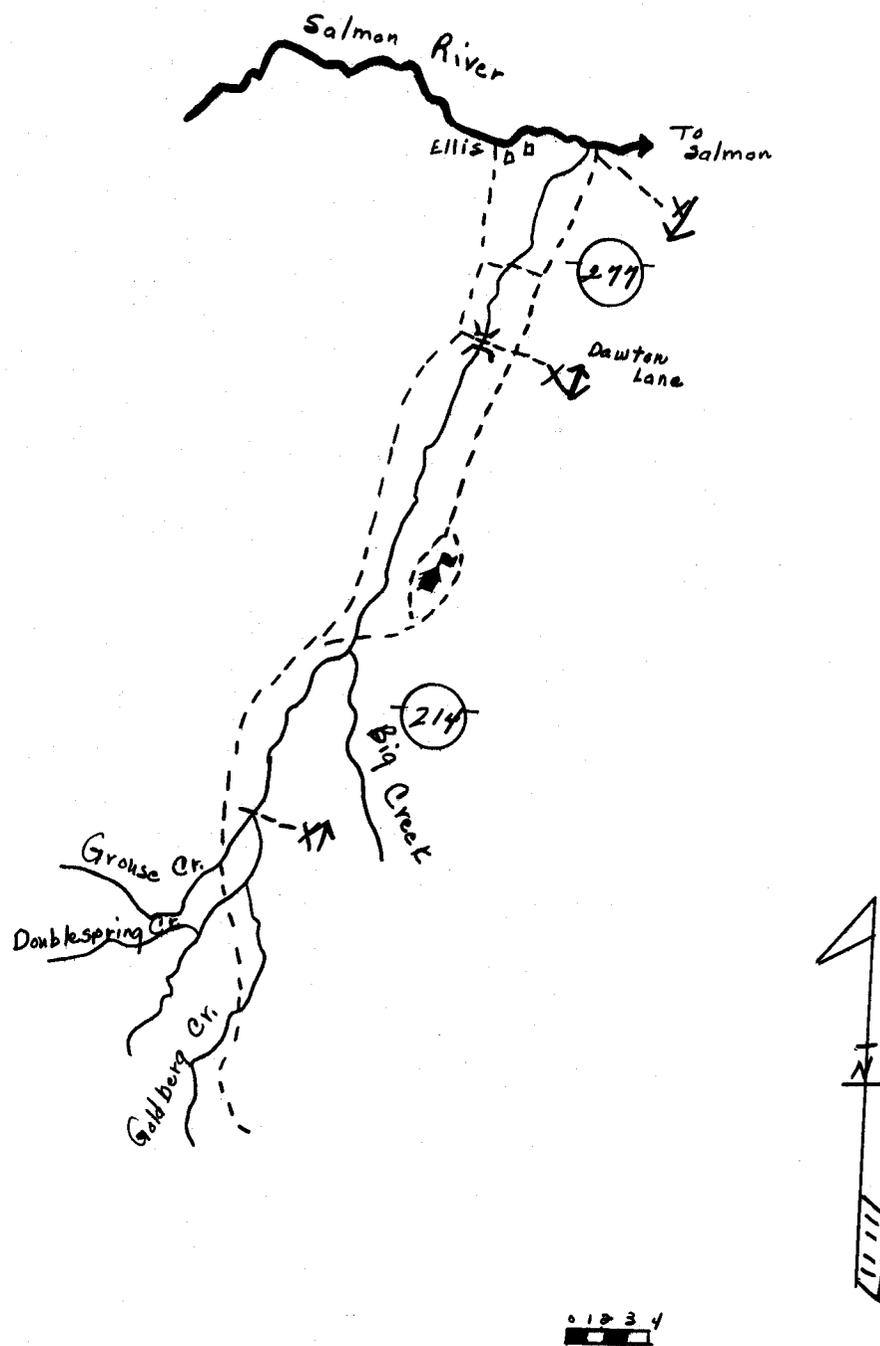
DRAINAGE Salmon River

SURVEY DATE 9/12/57

STREAM Pahsimeroi River

MAP SCALE 1/6" = 1 mile

OBSERVATION CONDITIONS Excellent



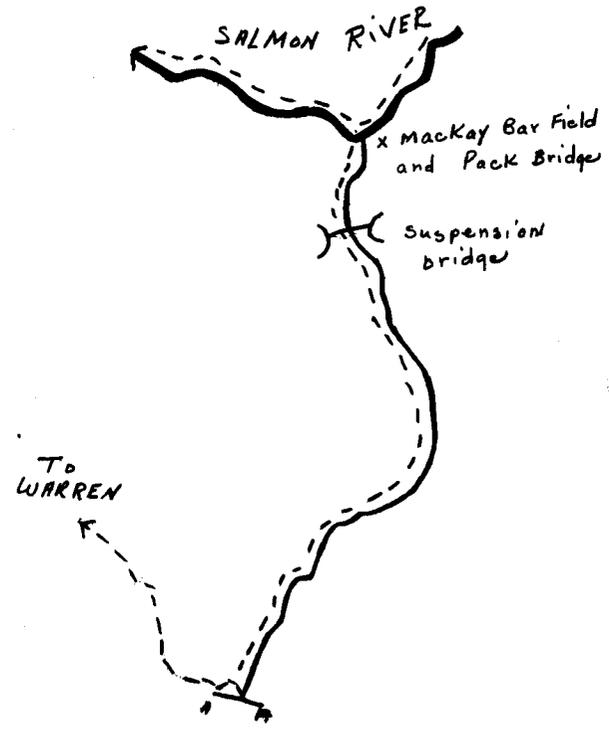
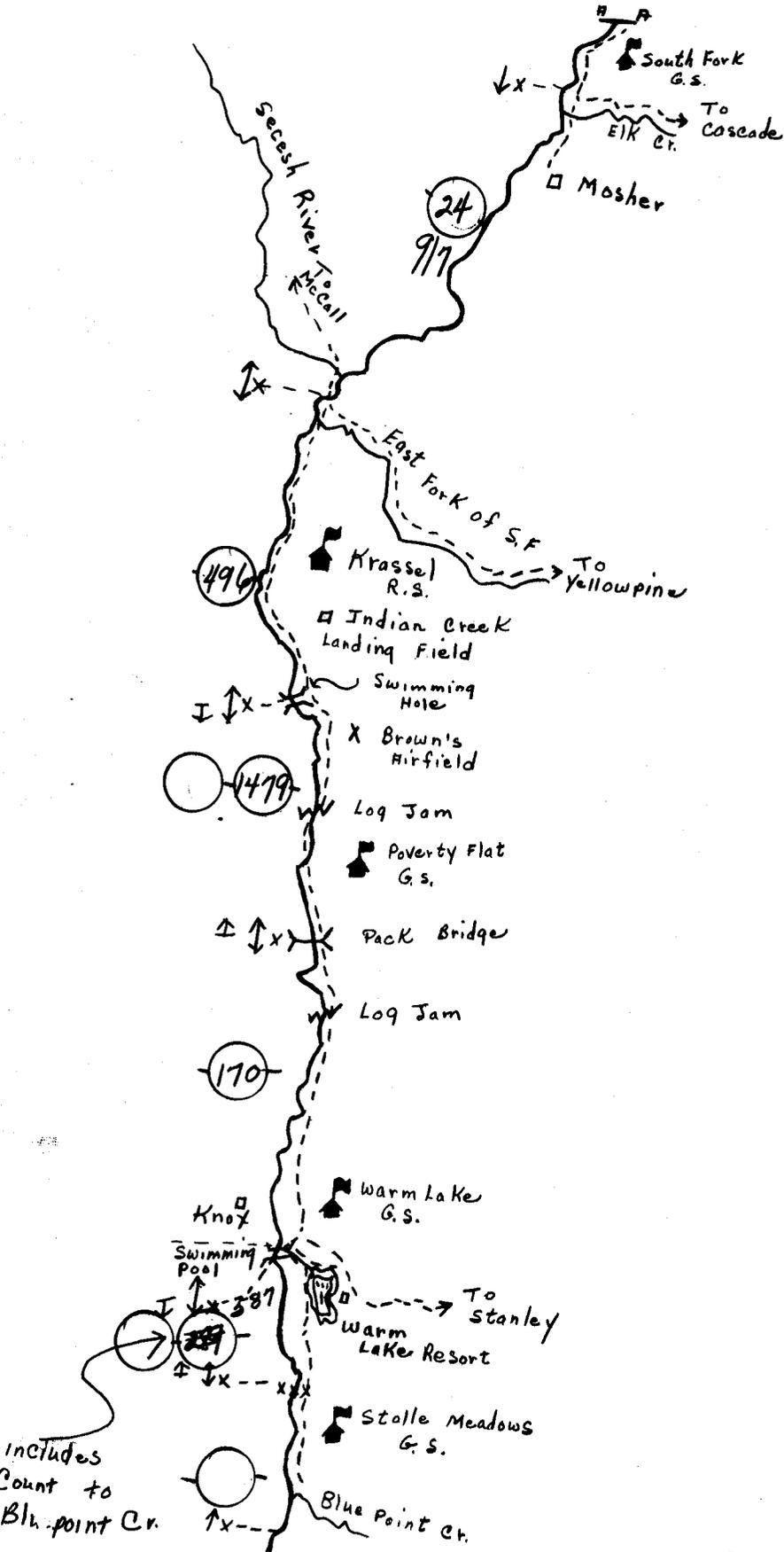
DRAINAGE Salmon River

SURVEY DATE 9/13

STREAM South Fork Salmon River

MAP SCALE 1/4" = 1 mi.

OBSERVATION CONDITIONS Excellent



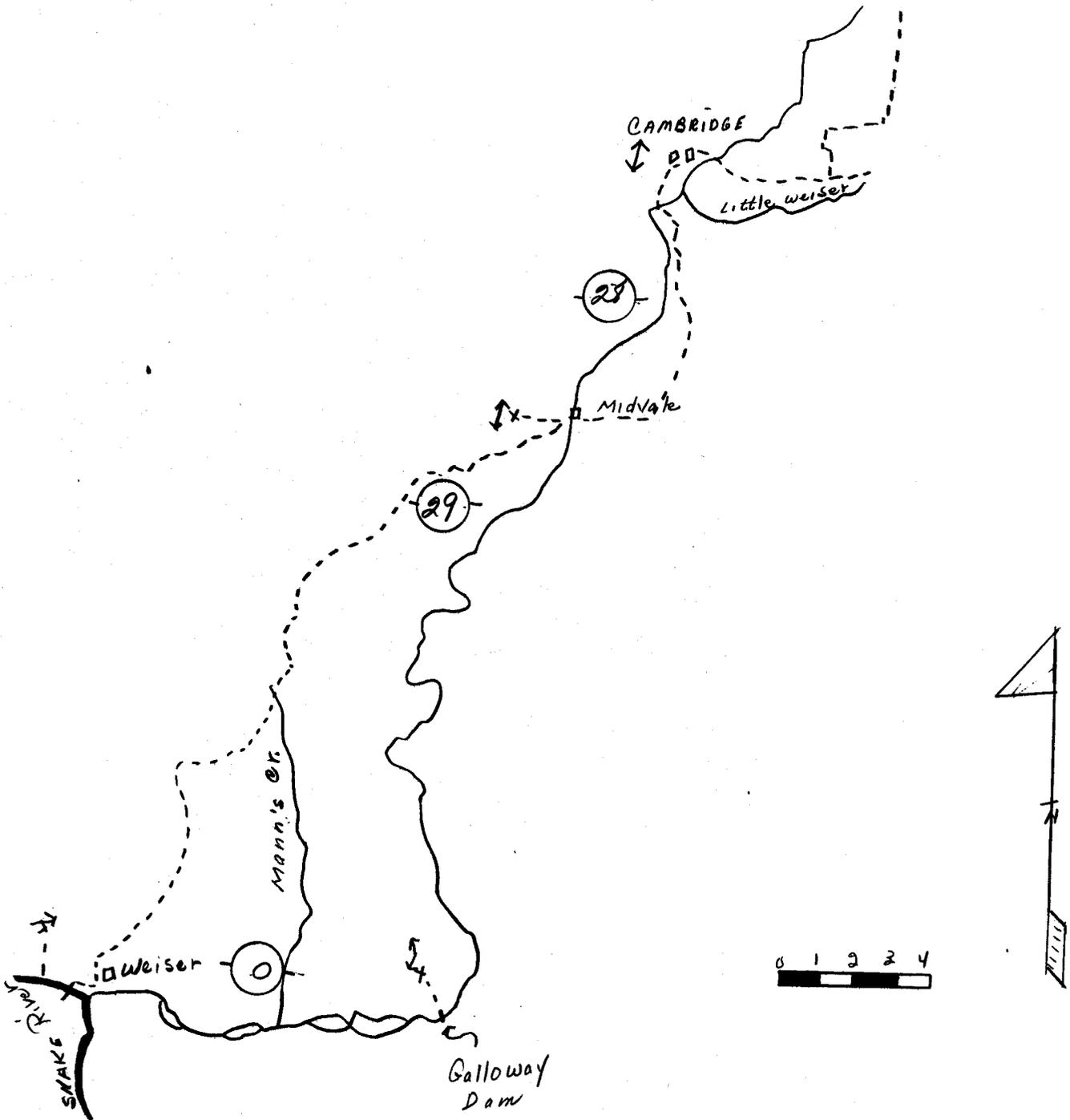
DRAINAGE Weiser River

SURVEY DATE 9/24

STREAM Weiser River - Weiser to Cambridge

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Poor



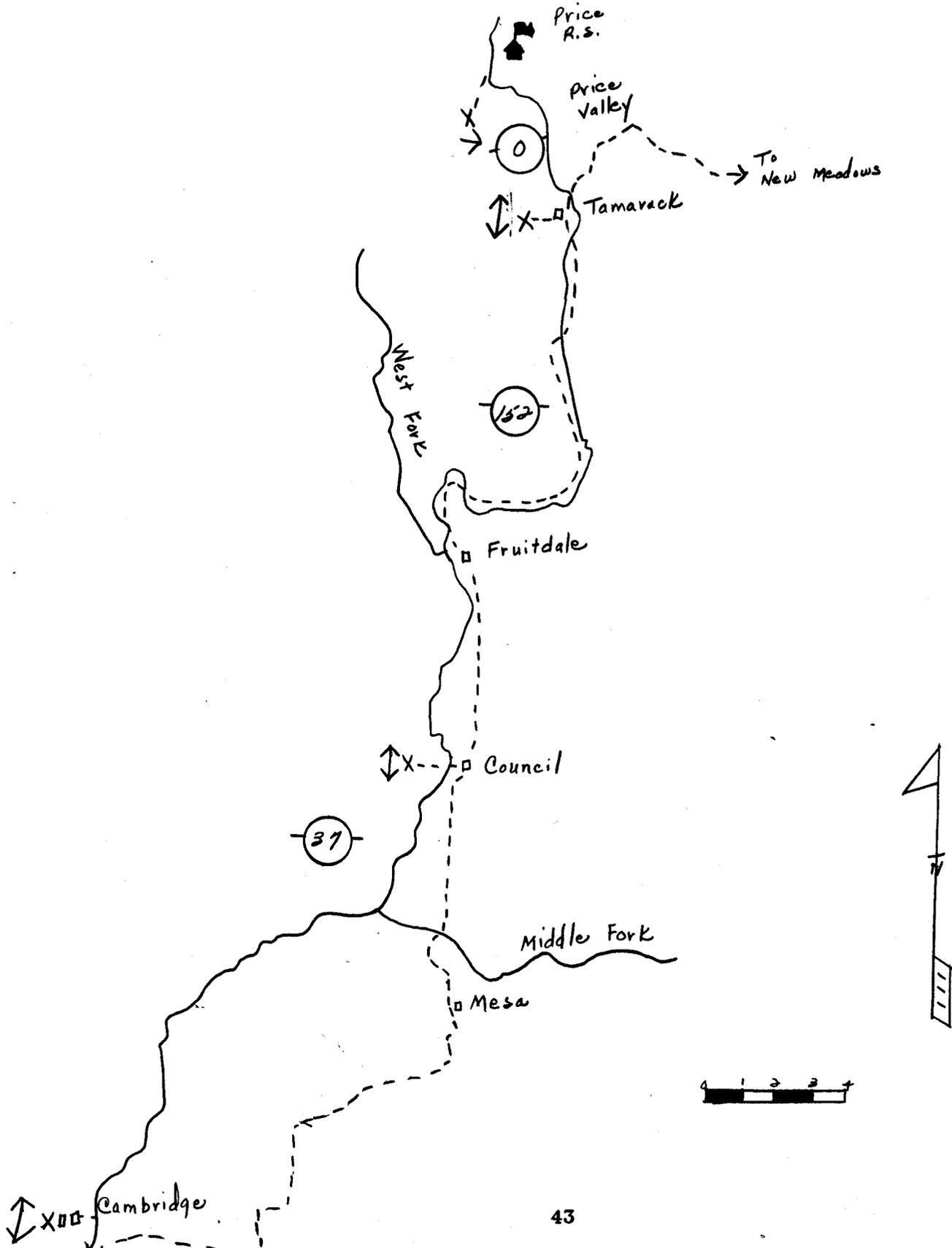
DRAINAGE Weiser River

SURVEY DATE 9/24/57

STREAM Weiser River-Cambridge to Price Valley

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Poor



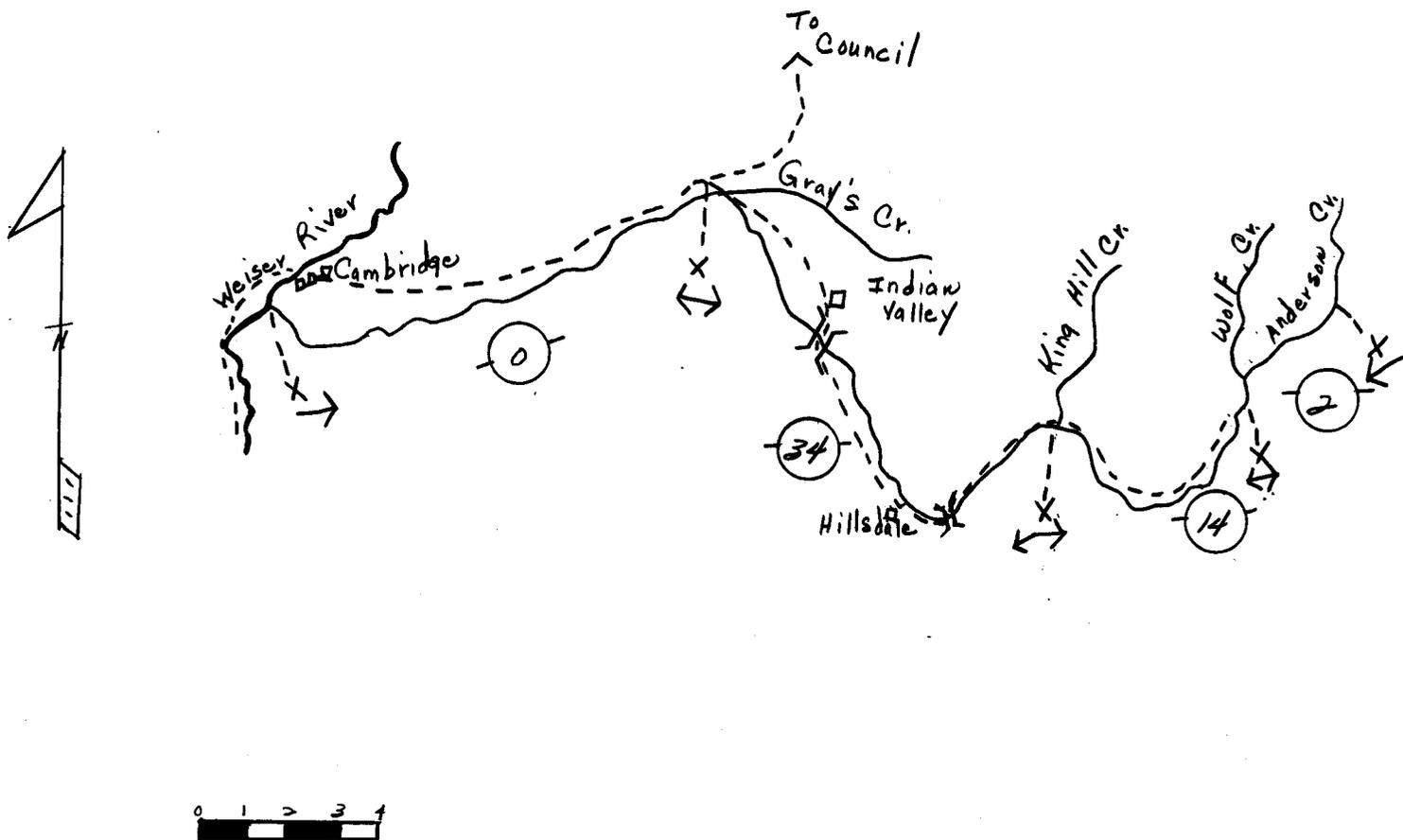
DRAINAGE Weiser River

SURVEY DATE September 24, 1957

STREAM Little Weiser

MAP SCALE 1/4" = 1 mile

OBSERVATION CONDITIONS Poor



DRAINAGE Weiser River

SURVEY DATE 9/24

STREAM West Fork Weiser River

MAP SCALE 1/3" = 1 mile

OBSERVATION CONDITIONS Poor

