

SUSTINA VALLEY BALD EAGLE SURVEY

1988

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INTRODUCTION

River and stream corridors in the Susitna Valley may be subject to timber leasing, as proposed in the Susitna Area Plan (Alaska Department Natural Resources 1985) and the Alaska Department of Natural Resources' more recent Susitna/Tyonek Forest Management Report (Alaska Department Natural Resources 1987). Because most of the riparian corridors are known to be used by nesting bald eagles (Haliaeetus leucocephalus) and because of US Fish and Wildlife responsibilities under the Bald Eagle Protection Act, the Anchorage Ecological Services field office, in cooperation with the Anchorage Migratory Bird Management, conducted eagle surveys in the proposed lease areas in May 1988.

The area has not been systematically surveyed since the Migratory Bird Management office flew most of it in 1980 for the Susitna Dam project (King 1980). Additional data on nest locations were collected in 1980 by Dan Timm (Timm 1980); in 1980-83 by Ron Modafferi during winter moose surveys (Alaska Department Fish and Game 1985b); in 1981 by Terrestrial Environmental Specialists (Terrestrial Environmental Services 1982); and in 1982 by the University of Alaska, Fairbanks (Kessel et al. 1982). These nest locations, with a few exceptions (e.g., recent Alaska Department Fish and Game discoveries) are on file on 1:250,000 topographic maps at the Juneau Migratory Bird Management office.

METHODS

Bill Butler of the Anchorage Migratory Bird Management office was the pilot on all surveys. The plane (Cessna 206) was flown at an altitude of 300 feet, at approximately 100 miles per hour. A primary observer (Michael Amaral or Bill Eldridge) sat in front on the right side of the plane and took notes on 1:63,360 topographic maps. On 3 of the 4 survey days, an additional spotter sat in the back of the plane on the right side and made notes on a 1:250,000 map or called out to the front observer. Rivers were usually flown along one bank in one direction and along the other bank on the return trip. Islands in large floodplains were circled.

Table 1 identifies which rivers were surveyed this year and in what stretches. Not all the streams were examined in their entirety; some were surveyed only in the sections within proposed timber sale boundaries. Kroto Creek and Alexander Creek, 2 streams within the proposed timber sale area, were not surveyed due to lack of time. They received low priority because of their protected status under the 1988 Recreational Rivers legislation. Susitna Flats, Beluga Flats and the Theodore River were examined incidentally on the way to other areas and were not systematically surveyed. Approximately 500 river miles were flown during 4 days (total 18 hours).

Table 1. Rivers flown during bald eagle survey, May 1988.

River	Start	End	River Miles Flown	Observers*	Date
Susitna	mouth	Talkeetna	89	BB MA JP	5/10
Susitna Flats	---	----	--	BB MA JP	5/10
Little Susitna	mouth	Parks Highway	45	BB MA RM	5/11
Willow Creek	mouth	headwaters	27	BB MA RM	5/11
Kashwitna	mouth	headwaters	51	BB MA RM	5/11
Skwentna	mouth	Talachulitna River	16	BB BE	5/13
Yentna	mouth	Skwentna River	47	BB BE	5/13
Lake Creek	mouth	Chelatna Lake	47	BB BE	5/13
Sunflower Creek	mouth	tractor trail crossing	7	BB BE	5/13
Kahiltna	mouth	Kahiltna Glacier	65	BB BE	5/13
Peters Creek	mouth	Petersville	30	BB BE	5/13
Beluga	mouth	Triumvirate Glacier	52	BB MA TJ	5/20
Beluga Flats	---	----	--	BB MA TJ	5/20
Theodore	---	----	--	BB MA TJ	5/20
Chuitna	mouth	Wolverine Fork	23	BB MA TJ	5/20

*Observers: MA = Michael Amaral
BB = Bill Butler, pilot
BE = Bill Eldridge
TJ = Tom Jennings
RM = Rosa Meehan
JP = Jill Parker

Nest locations were transferred to 1:63,360 maps, on file at the Anchorage Ecological Services field office, and to 1:250,000 maps, on file at Anchorage Ecological Services and at the Juneau Migratory Bird Management office. Nests are numbered by sequential river mile, calculated with a K&R map measurer, using the headwaters as Mile 0.

RESULTS

Nest trees were primarily black cottonwood (Populus balsamifera, Hulten 1968). Two nests on Susitna Flats were in white spruce (Picea glauca). All nest trees were over 50 feet tall, with dbh's of approximately 3 feet, and with nests situated in or near the crown. Nest trees were not isolated trees but were usually situated in stands of cottonwoods. Nest trees were generally the largest trees in the stands, and were usually within 20 yards of the river bank.

Table 2 depicts the number of nests found on each river. No nests were found on either the Kashwitna River nor on Willow Creek, both of which were flown in their entirety. The Kashwitna did not contain trees of sufficient size and Willow Creek has been extensively settled.

Active nests were those that contained either an incubating adult or had a pair perched nearby. Inactive nests appeared unoccupied, with no sign of adults. A total of 69 nests were found on this survey, 71% (n=49) of which were active.

Historic nests refer to those documented by King (1980) and others and on file at the Juneau office of Migratory Bird Management. New nests were those not previously seen. The total number of possible nests takes into account historic nests that, although not seen during this survey, may simply have been missed and may still be present. Even if the nests are gone, their locations represent viable nesting territories. Table 3 lists nest locations by river mile, current nest status and known history. King's 1980 survey was the only source of previous nesting activity.

DISCUSSION

Approximately 125 nesting territories exist in the river corridors proposed for the Susitna/Tyonek timber sale; 69 of these, or over half, have been used recently or are visible today (Table 2). In 1980, King found 76 nests in roughly the same area. Nest densities by river (Table 2) ranged from 0 to 0.29 nests/mile, with an average of 0.14 nests/mile over the 500 miles flown. Densities were particularly high on the Susitna (0.29), Beluga (0.23), Yentna (0.21) and Chuitna (0.17) rivers). Other nesting densities in Alaska have been (in nests/mile): 0.07 along the upper reaches of the Susitna River, 0.08 on the southern Kenai coast, 0.14 in the Tanana Valley, 0.14 on the Gulkana River, 0.23 on the Copper River, and 0.8 in southeastern Alaska (Amaral 1988; Kessel et al. 1982, Bailey 1976, Roseneau et al. 1981, Ludlow 1973, and Hodges and Robards 1982 in Alaska Department Fish and Game 1985a).

Table 2. Results by river of bald eagle survey flown in May 1988.

River	Number Nests Found 1988	Number Active	Number Inactive	Density (nests/ mile)	Number Historic Nests Not Found	Number New Nests	Total Nests Found 80-88
Susitna	26	20	6	0.29	32	8	58
Susitna Flats	4	4	0	--	1	2	5
Little Susitna	1	1	0	0.02	0	1	1
Willow Creek	0	0	0	0	1	0	1
Kashwitna	0	0	0	0	0	0	0
Skwentna	1	1	0	0.06	4	0	5
Yentna	10	6	4	0.21	6	7	16
Lake Creek	2	2	0	0.04	1	2	3
Sunflower Creek	1	1	0	0.14	0	0	1
Kahiltna	3	1	2	0.05	0	2	3
Peters Creek	3	2	1	0.10	3	3	6
Beluga	12	9	3	0.23	5	6	17
Beluga Flats	1	1	0	--	1	1	2
Theodore	1	1	0	--	0	0	1
Chuitna	4	0	4	0.17	2	1	6
TOTAL:	69	49 (71%)	20 (29%)	0.14	56	33	125

Table 3. Results of bald eagle surveys flown in May 1988.

River	Nest Number (by river mile)	Nest Status *	Reported in Earlier Surveys
Susitna	195	Active	King 1980, inactive
	196	Active	Kessel 1982, active
	198	Active	King 1980, active
	209	Active	King 1980, inactive
	214	Inactive	No
	223	Active	King 1980, active
	225	Active	King 1980, inactive
	232	Inactive	No
	234	Active	No
	237	Active	King 1980, inactive
	240	Active	King 1980, inactive
	241	Inactive	No
	242	Active	ADFG 1980-83
	248	Active	ADFG 1980-83
	249	Active	King 1980, inactive
	254	Inactive	No
	257	Active	King 1980, inactive
	261	Inactive	No
	262	Active	ADFG 1980-83
	262.1	Active	No
	267	Active	TES 1981, active
	268	Active	TES 1981, active
	271	Active	King 1980, inactive
	277	Active	ADFG 1980-83
	279	Active	ADFG 1980-83
	283	Inactive	No
Susitna Flats	1	Active	King 1980, active
	2	Active, spruce	No
	3	Active	Timm 1980
	4	Active, spruce	No
Little Susitna	80	Active	No
Skwentna	93	Active	King 1980
Yentna	73	Active	No
	75	Active	No
	76	Inactive	King 1980, inactive
	80	Inactive	King 1980, active
	83	Active	No
	88	Inactive	No
	93	Active	King 1980, inactive
	94	Inactive	King 1980, inactive
	103	Active	No
	106	Active	No

*Unless otherwise noted, nest trees were black cottonwood.

Table 3 (cont.).

River	Nest Number (by river mile)	Nest Status *	Reported in Earlier Surveys
Lake Creek	40	Active	No
	56	Active	No
Sunflower Creek	23	Active	King 1980, inactive
Kahiltna	21	Active	No
	29	Inactive	King 1980, inactive
	41	Inactive	No
Peters Creek	31	Active	No
	35	Active	No
	36	Inactive	No
Beluga	7	Active	No
	16	Active	King 1980, active
	19	Active	No
	20	Inactive	King 1980, active
	23	Active	King 1980, inactive
	29	Inactive	King 1980, inactive
	33	Active	No
	41	Active	No
	42	Active	King 1980, inactive
	43	Active	King 1980, inactive
	45	Inactive	No
	46	Active	No
Beluga Flats	1	Active	No
Theodore	28	Active	Timm 1980
Chuitna	26	Inactive	Timm 1980
	27	Inactive	No
	29	Inactive	Timm 1980
	30	Inactive	Timm 1980

Nests were not concentrated in particular areas on the Susitna River, as they appeared to be in 1982 (Kessel *et al.* 1982), but were uniformly distributed from the mouth to Talkeetna. Large streams such as the Susitna and the Yenta rivers appeared to support a greater number of nesting eagles than did smaller streams, although the Beluga River was a notable exception, with more nests (n=12) than expected for its size.

King's surveys, done in mid-April 1980, found only a 22% occupancy rate (out of 76 nests, 17 were occupied). The 1988 survey, done in mid-May, found an occupancy rate of 71% (49 out of 69 nests). For the 23 nests found in 1988 whose status was known in 1980, 4 were active both years; 4 were inactive both years; 2 were active in 1980 and inactive in 1988; and 13 were inactive in 1980 and active in 1988 (Table 3). The timing of the earlier survey possibly contributed to the apparently low occupancy in 1980 - particularly given the high number of nests inactive in 1980 but active in 1988. Possibly many of the nests empty in April 1980 were occupied in May 1980 and in May 1988 as well. In any event, over half (n=36) of the 69 nests discovered in 1988 were present on the surveys of 5-8 years earlier, a significant demonstration of site fidelity by eagles.

Bald eagles are using the largest cottonwood trees available to them in the Susitna River valley. Trees that are not sufficiently large today serve as a reservoir of future nest sites. To conserve a supply of nest trees during logging operations and to prevent current nests from being windthrown will require the establishment of a 0.25-0.5 mile buffer of trees along each river corridor (i.e., 0.25 or 0.5 miles on either side of the stream). The 0.5-mile buffer would pertain more to the mainstem Susitna River, the Yentna, Skwentna, Beluga and Chuitna rivers, where eagles are or have been particularly abundant (Table 2); smaller buffers may suffice for some of the smaller streams.

Three items - 1) the similarity in counts between 1980 and 1988; 2) the evenness of nest distribution; and 3) the uniformly large size of nest trees relative to what else is available - would all indicate that the Susitna Valley bald eagle population is stable. This implies that the eagle population is in balance with the supply of food and nest trees currently available. A reduction in food supply (or degradation of water supply or quality) or the loss of nest trees will reduce the Susitna bald eagle population from current levels.

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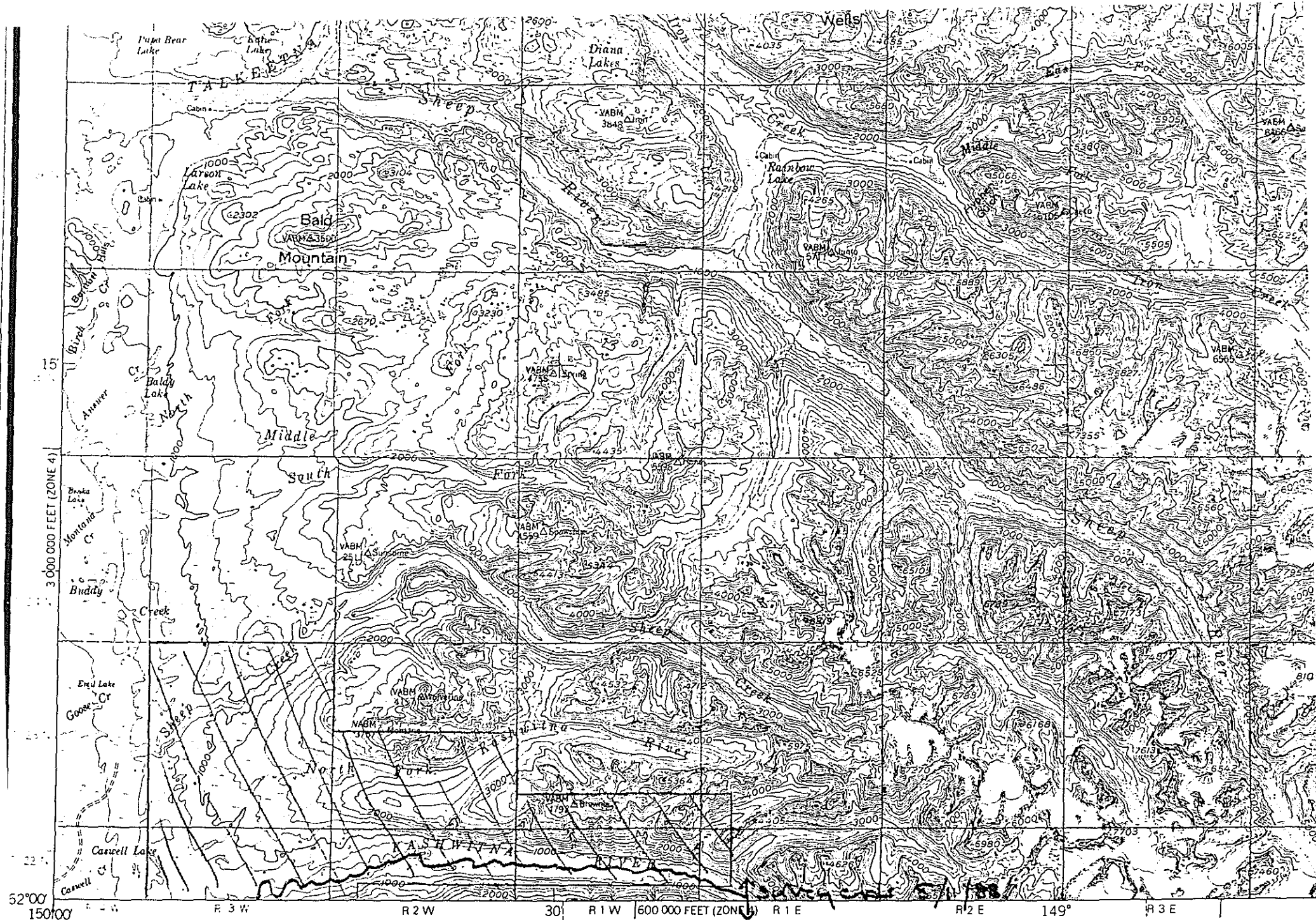
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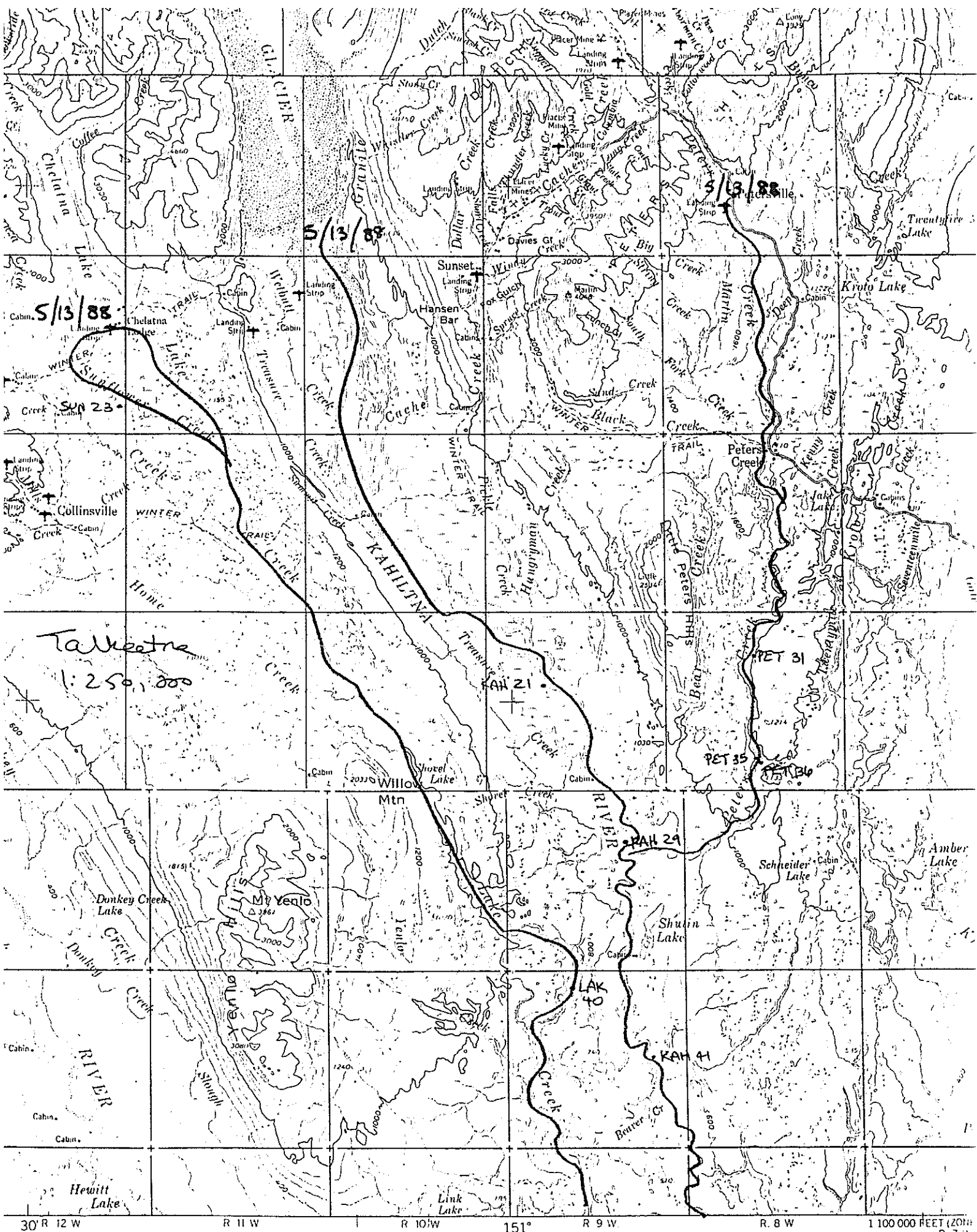


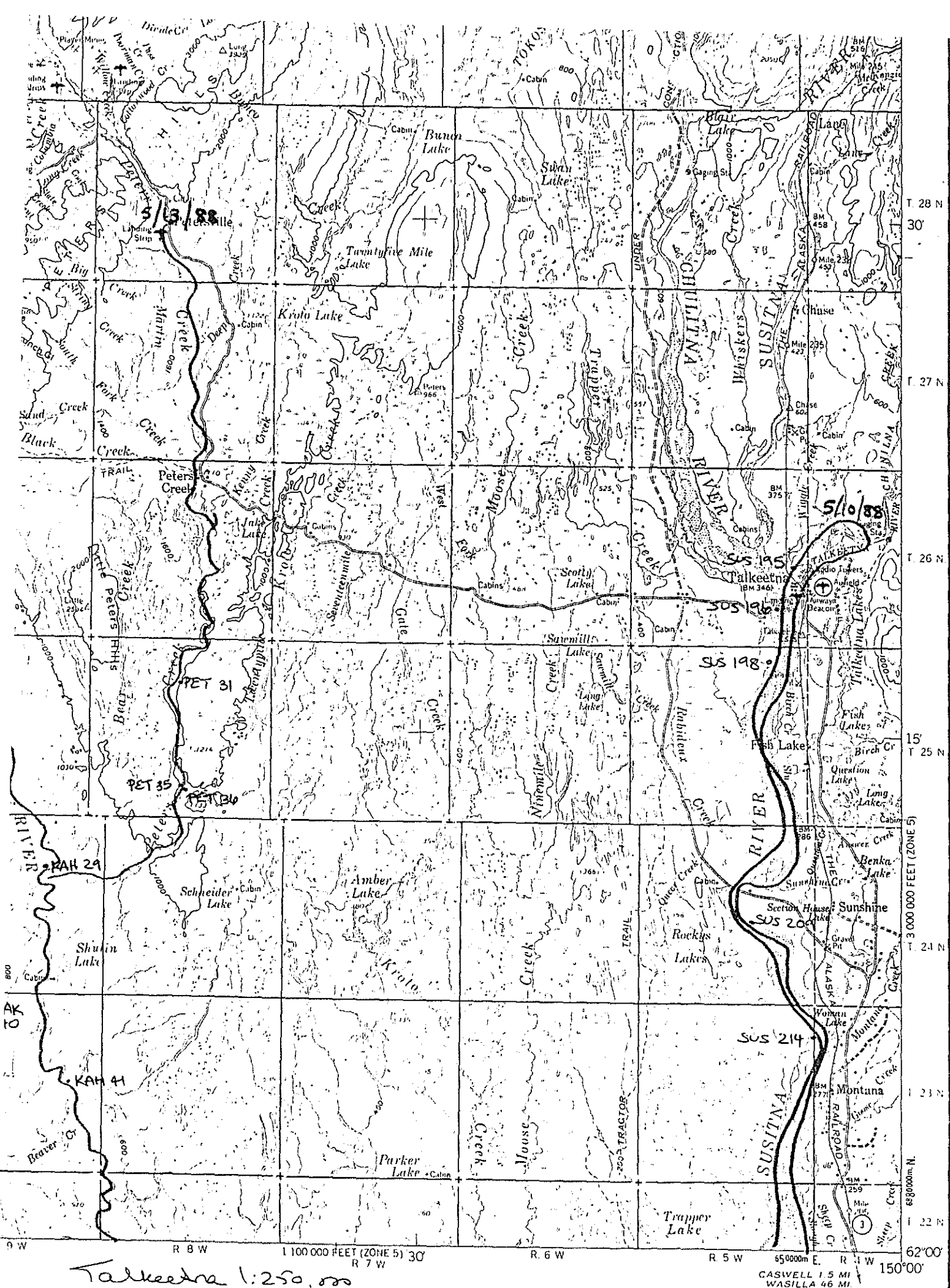
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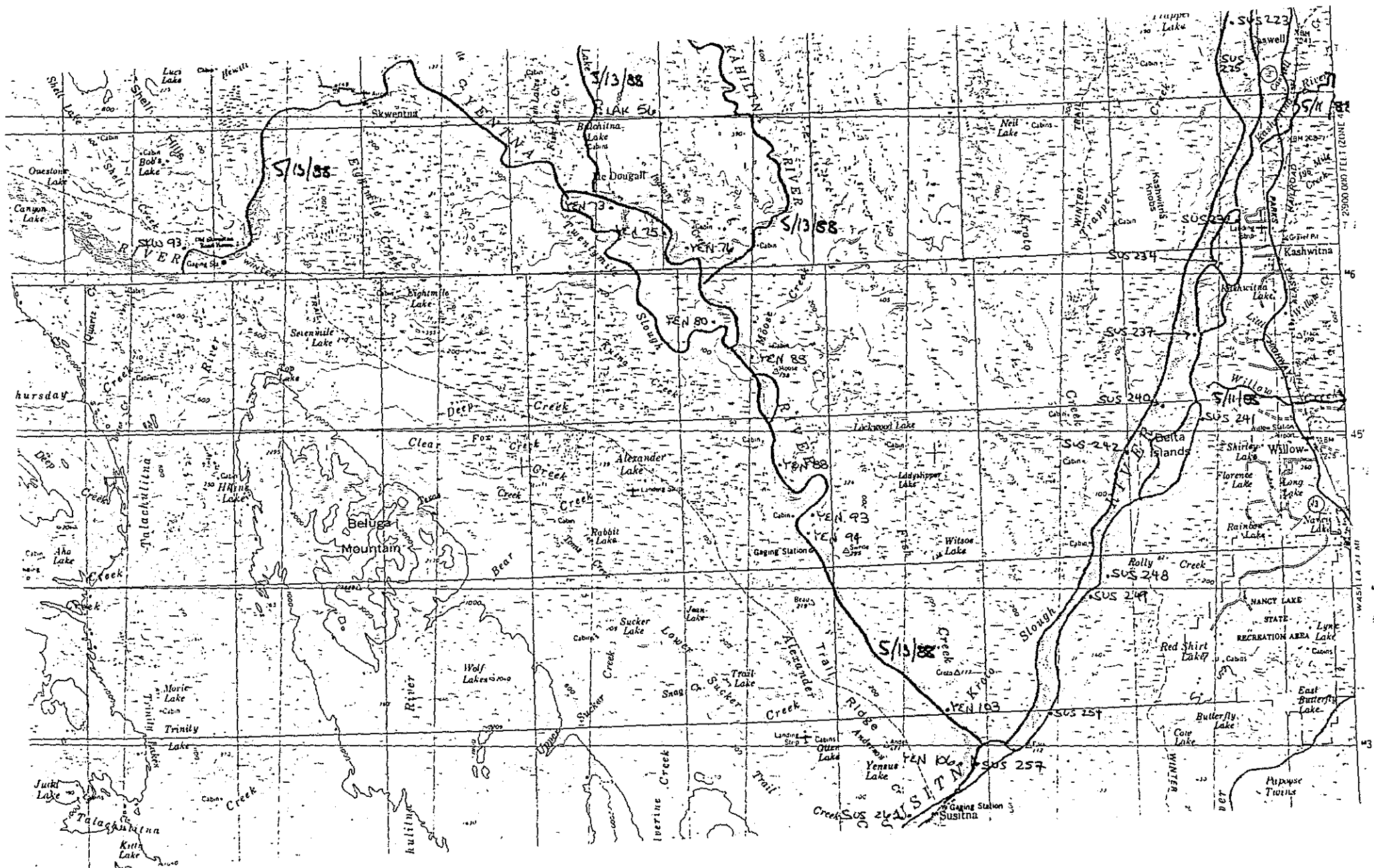
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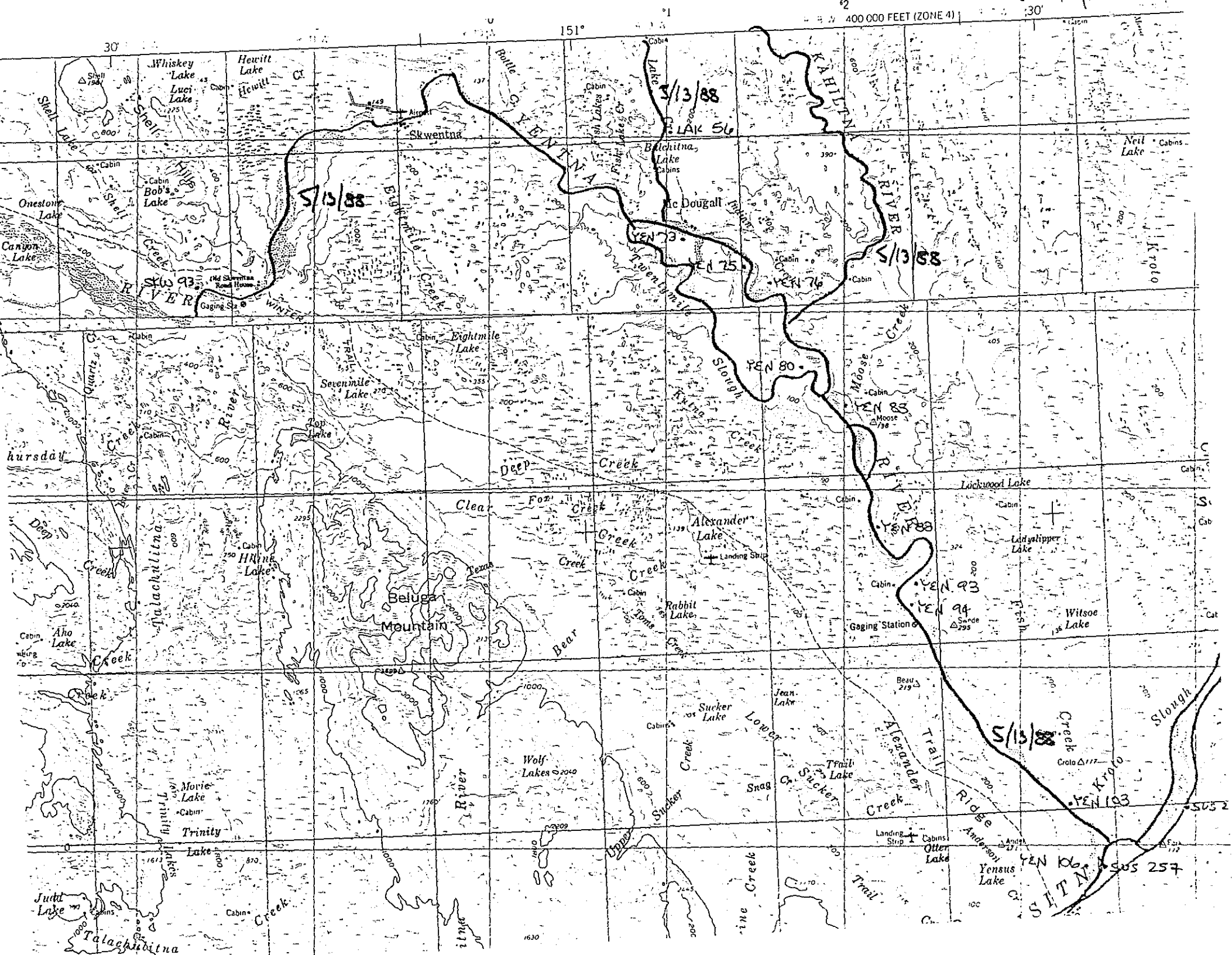
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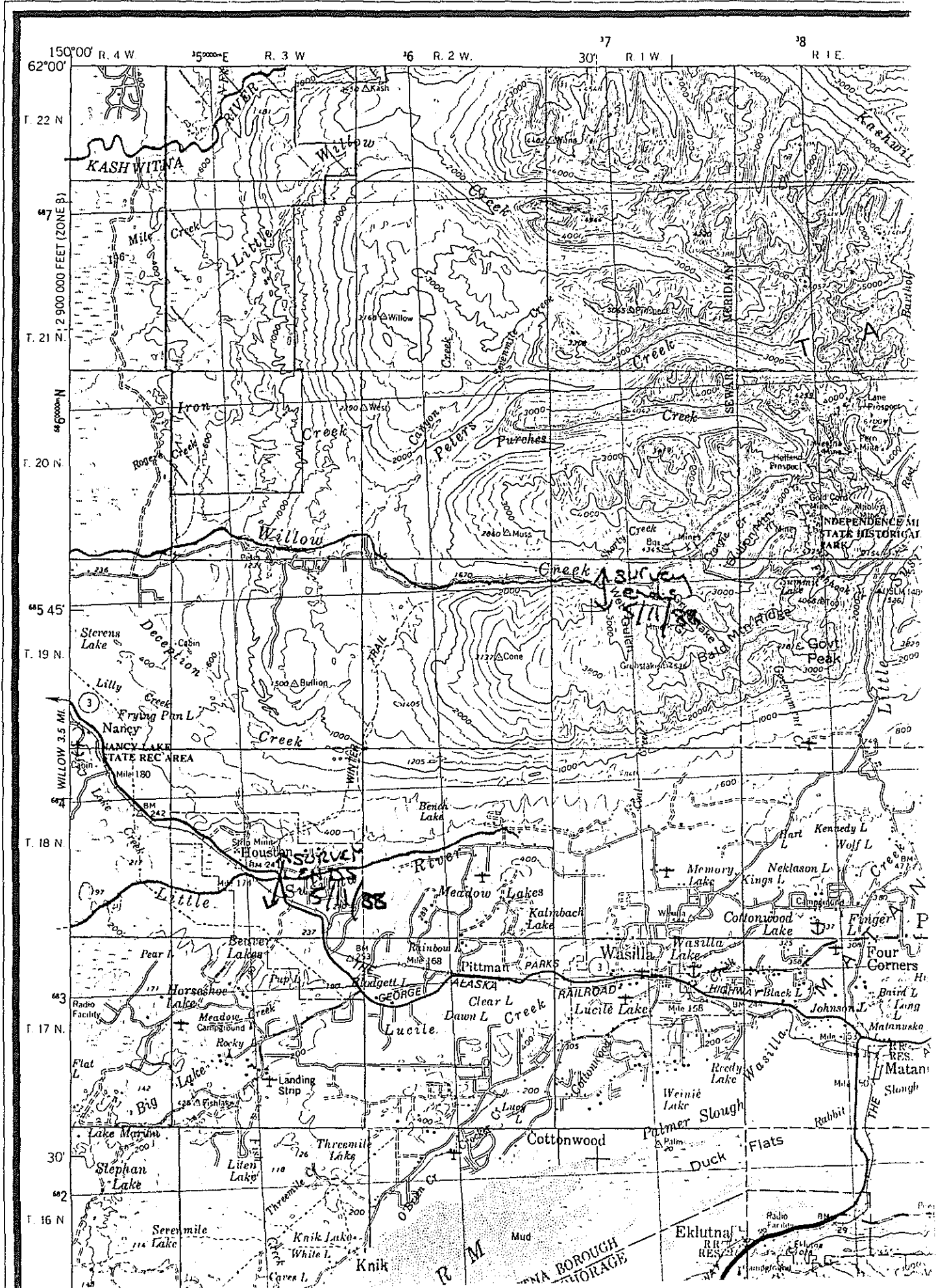
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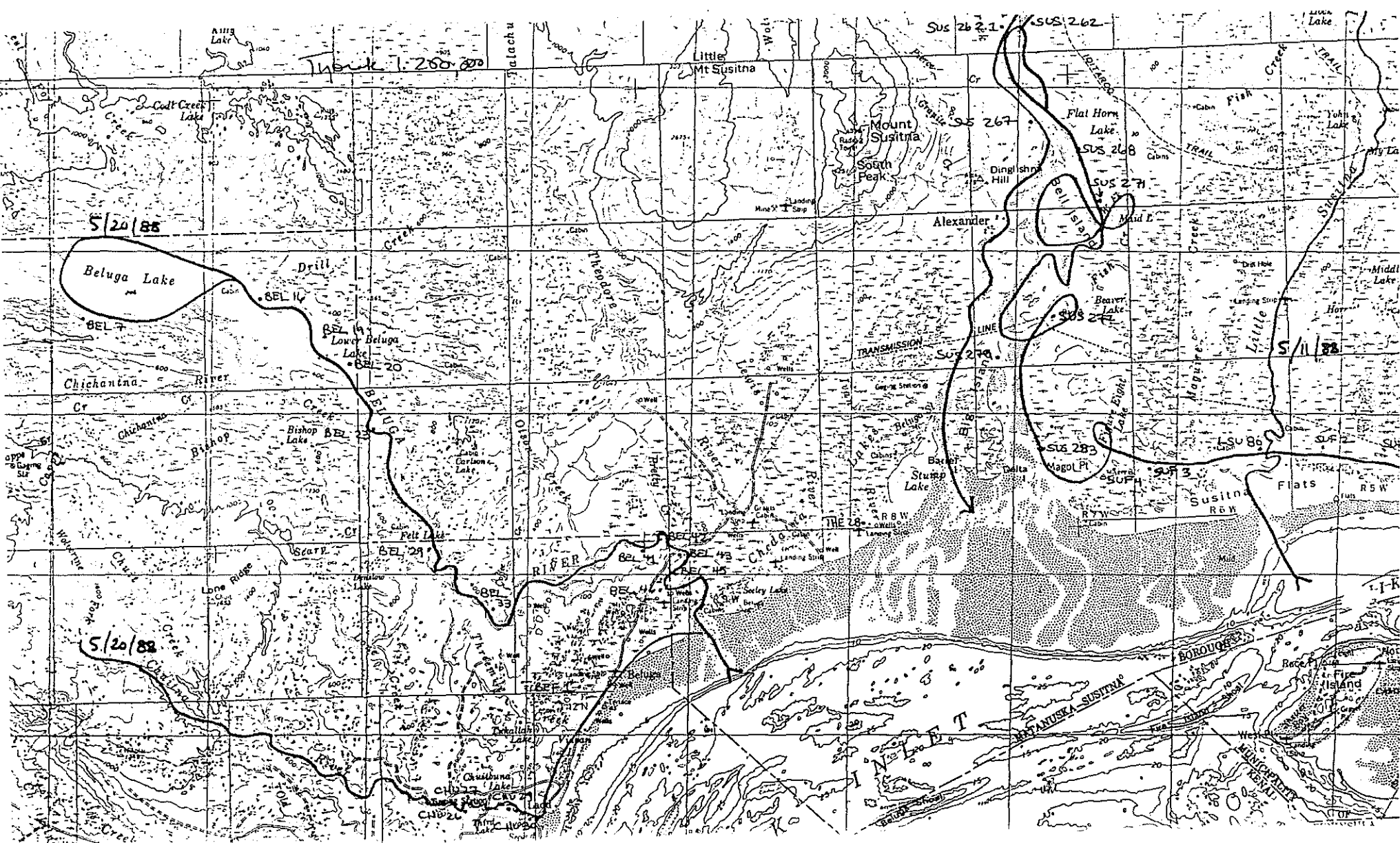




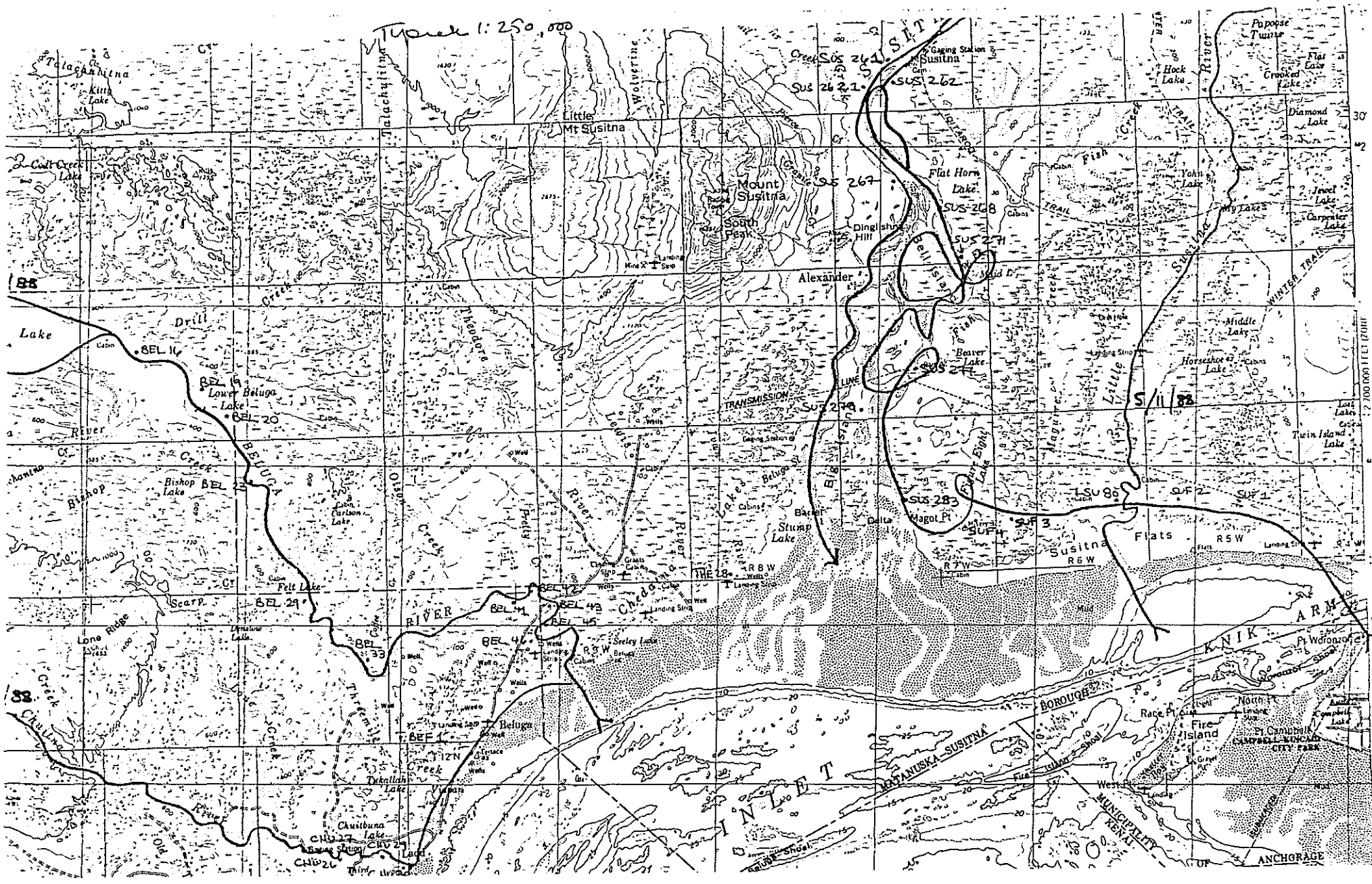
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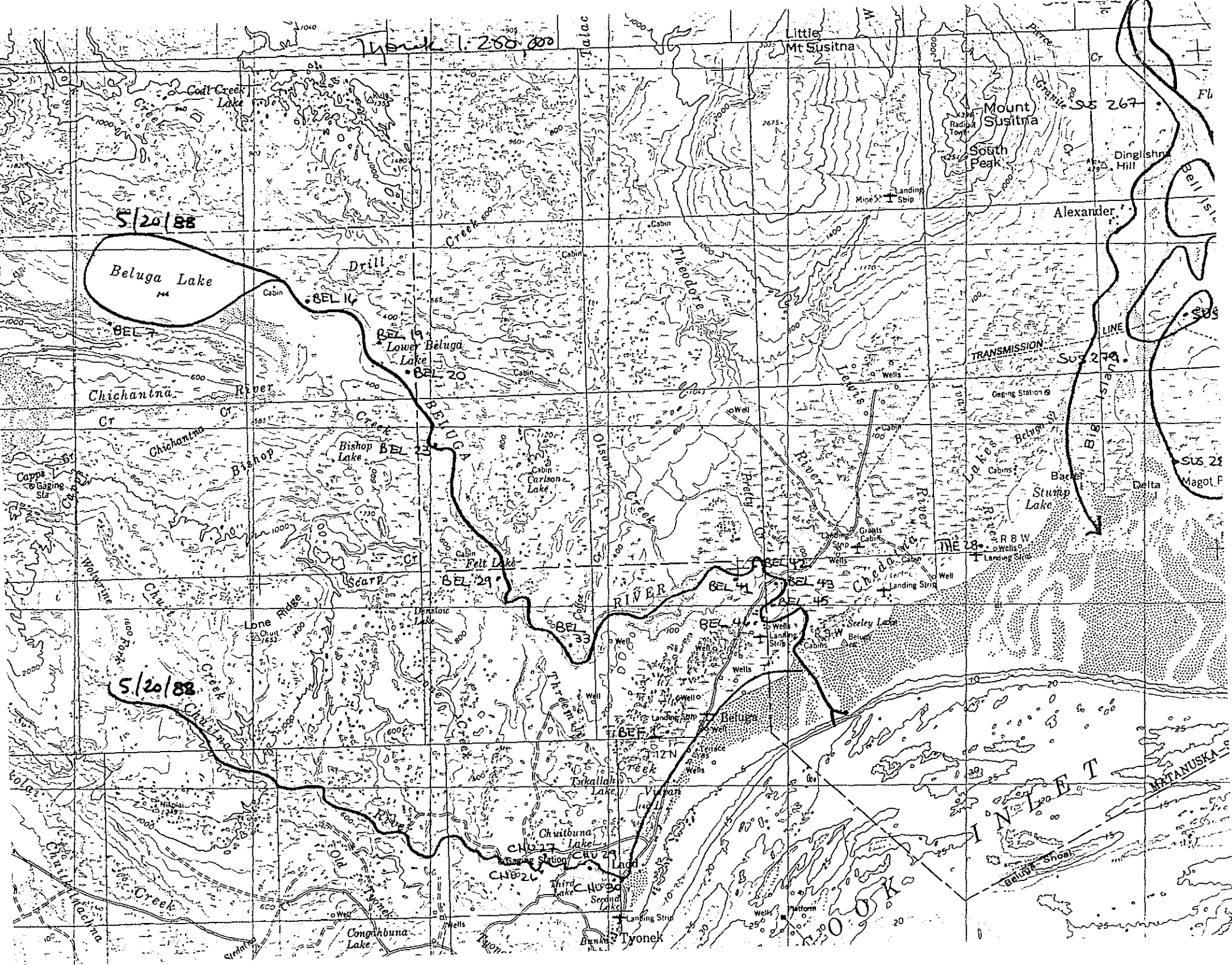
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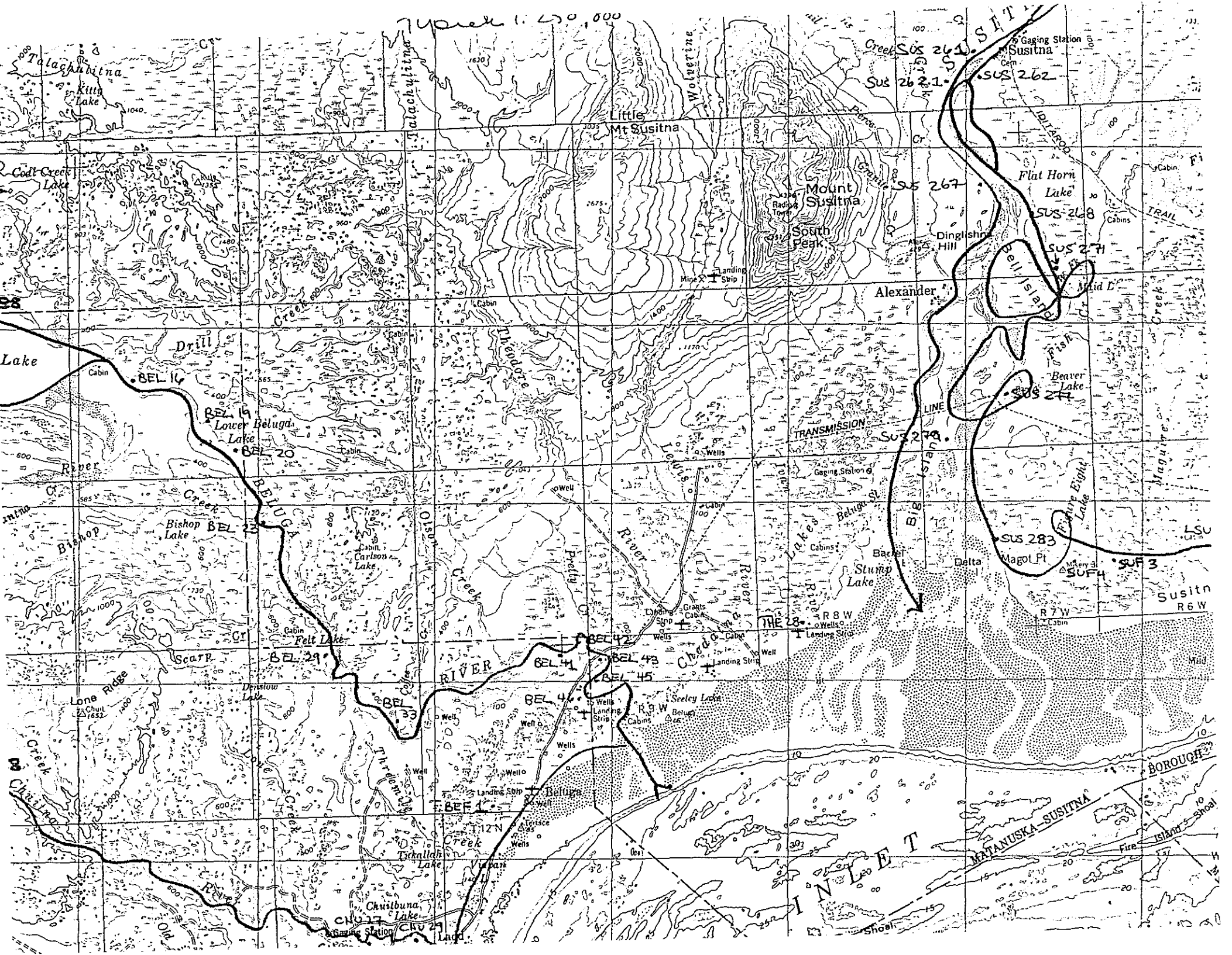


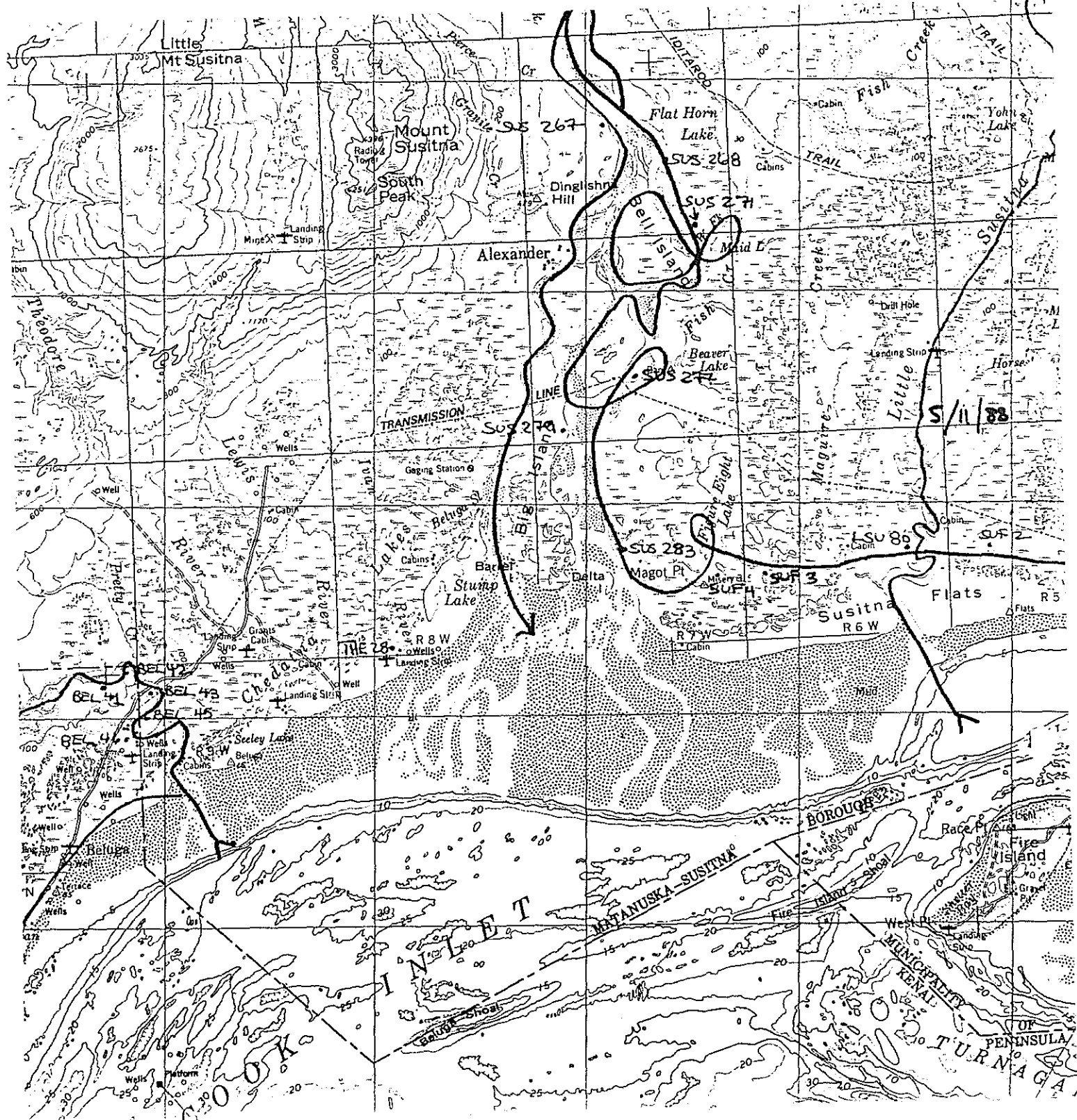


Scale 1:250,000











United States Department of the Interior

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IN REPLY REFER TO:

MEMORANDUM

July 26, 1988

TO: Jill Parker, Ecological Service, Anchorage

FROM: Mike Jacobson, Raptor Management Studies, Juneau

SUBJECT: Susitna Valley Bald Eagle Survey

Thank you for sending your excellent report (with maps) of the Susitna Valley Bald Eagle Survey. I know this survey required quite a lot of effort...the timely report is appreciated.

The information gathered from this survey will be even more valuable as time goes by.

Mike

JUL 28 1988