STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

WATERMASTER SERVICE IN NORTHERN CALIFORNIA

1966 SEASON

Office Report

JUNE 1967

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

TABLE OF CONTENTS

TABLES

APPENDIX

PLATE

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor
WILLIAM R. GIANELLI, Director, Department of Water Resources
JOHN R. TEERINK, Deputy Director

This report was prepared by the
Northern District
under the direction of

Gordon W. Dukleth . . . . . District Engineer
Wayne S. Gentry . . . . . Chief, Operations Section

by

Edwin J. Barnes . . . . . Chief, Watermaster Unit and Supervising Watermaster
Ross P. Rogers . . . . . Watermaster

assisted by

~~Kenneth H. Lloyd~~ . . . . . Watermaster
Kenneth E. Morgan . . . . . Watermaster
George H. Pape . . . . . Watermaster
~~Harold B. German~~ Virgil D. Boechler . . . . . Deputy Watermaster
Charles H. Holmes . . . . . Deputy Watermaster
~~John A. Nolan~~ Lester L. Lightall . . . . . Deputy Watermaster

Report data and text on the Indian Creek and Middle Fork Feather River Watermaster Service Areas were furnished by the ~~Sacramento~~ Central District ~~under the direction of~~

Carl A. Werner . . . . . District Engineer
Laurence A. Mullnix . . . . . Chief, Operations Section

by

H. J. Nessler . . . . . Supervising Watermaster

~~assisted by~~

Harvey A. Jorgenson . . . . . Watermaster
Conrad Lahr . . . . . Deputy Watermaster

305
38
423

PART I - GENERAL INFORMATION

Distribution of water in watermaster service areas is a continuing statutory function of the Department of Water Resources as provided in Part 4, Division 2, of the California Water Code. The primary purpose of watermaster service is to prevent expensive and unnecessary litigation by equitably distributing water where the rights have been defined, either by court decree or by voluntary agreement.

The first watermaster service areas were created in September 1929, while the most recent addition was made in June 1964. Prior to 1929, watermaster service was provided in accordance with the Water Commission Act of 1913. Table 1 lists the date each watermaster service area was created and the corresponding decrees and agreements under which each is operated.

Description of Watermaster Service Areas

There are 17 watermaster service areas in northern California. Fifteen are located within the Northern District and two are located in the Sacramento District. Plate 1 shows the name and location of each service area.

The service areas are located primarily in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although a considerable amount of land is used exclusively for pasturing livestock. Most irrigation is accomplished by gravity systems, with water users diverting directly from the streams at one or more diversion points.

Schematic drawings of the major stream systems within each service area are presented in Figures 1 through 17. These drawings show the relative location of major roads, stream gaging stations, diversion points, and water right allotments to each diversion.

Watermaster Responsibilities

To assure the proper distribution of water within his service area, each watermaster must determine the amount of water available and distribute it in accordance with decreed water rights or voluntary agreements. To accomplish his purposes, the watermaster is provided authority by both the California Water Code and by the provisions of pertinent court

TABLE I

SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION AND DATES WATERMASTER SERVICE AREAS CREATED

Watermaster service area	Name of stream system	County	Decree number	Date watermaster service area created	Remarks
Ash Creek	Ash Creek	Modoc * and Lassen	3670	4-03-59	Included as part of Big Valley service area 1949 through 1958.
Big Valley	Pit River	Modoc * and Lassen	6395	11-13-34	Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1935 through 1958, and under decree since 1959.
Burney Creek	Burney Creek	Shasta	5111	9-11-29	Service provided in accordance with decree since 1926
Butte Creek	Butte Creek	Butte	18917	1-07-43	
Cow Creek	North Cow Creek	Shasta	5804	10-17-32	
	Oak Run Creek	Shasta	5701	10-17-32	
	Clover Creek	Shasta	6904	1-21-38	Included in Cow Creek service area 1-21-38.
Digger Creek	Digger Creek	Shasta and Tehama *	2213 3214 3327 4570	6-11-64	
Hat Creek	Hat Creek	Shasta	5724 7858	9-11-29	Service provided in accordance with decree since 1924
Indian Creek	Indian Creek	Plumas	4185	2-19-51	
Middle Fork Feather River	Middle Fork Feather River	Plumas * and Sierra	3095	3-29-40	
North Fork Cottonwood Creek	North Fork Cottonwood Creek	Shasta	5479	9-11-29	Service provided intermittently in accordance with the decree since 1924.
North Fork Pit River	North Fork Pit River and all tributaries except Franklin Creek	Modoc	4074	12-18-39	These stream systems consolidated into North Fork Pit River service area 12-12-40.
	New Pine Creek	Modoc	2821	6-22-32	
	Cottonwood Creek	Modoc	2344	12-13-40	
	Davis Creek	Modoc	2783	7-13-32	
	Franklin Creek	Modoc	3118	12-14-33	
Seiad Creek	Seiad Creek	Siskiyou	13774	11-06-50	Service provided in accordance with decree by order of the court in 1950.
Shackleford Creek	Shackleford Creek	Siskiyou	13775	11-06-50	Service provided in accordance with decree by order of the court in 1950.
Shasta River	Shasta River	Siskiyou	7035	3-01-33	
South Fork Pit River	South Fork Pit River	Modoc * and Lassen	3273	12-31-34	
	Pine Creek	Modoc	Agreement	1-12-35	
Surprise Valley	Cedar Creek	Modoc	1206 2343	9-11-29	Service started in accordance with the decree in 1926.
	Soldier Creek	Modoc	2405	9-11-29	Service was provided on Soldier and Owl Creeks in accordance with the decrees by order of the court in 1929.
	Owl Creek	Modoc	2401	9-11-29	
	Emerson Creek	Modoc	2840	4-02-30	
	Mill Creek	Modoc	3024	12-30-31	
	Deep Creek	Modoc	3101	12-29-34	All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on March 16, 1960.
	Pine Creek	Modoc	3391	1-13-37	
	Rader Creek	Modoc	3626	6-12-37	
	Eagle Creek	Modoc	2304 3284	1-10-39	
	Bidwell Creek	Modoc	6420	3-16-60	
Susan River	Susan River	Lassen	4573	11-10-41	
	Baxter Creek	Lassen	8174	2-16-56	
	Parker Creek	Lassen	8175	2-16-56	

* *Decree entered by the superior court of this county.*

decrees or voluntary agreements to supervise the design, construction, and operation and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises approximately 100 to 200 diversions in one or more service areas. The frequency of visiting diversion points substantially increases in years of short water supply. In some service areas the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the manpower needed. The Department's Bulletin No. 120 series, "Water Conditions in California" is used to assist in estimating these requirements.

Water Supply

Water supply in the watermaster service areas is derived principally from unregulated runoff of small streams. ~~This~~ Peak runoff, mostly snowmelt, occurs in the spring with a relatively small streamflow occuring in summer and early fall months. Supplemental supplies from stored water or ground water are used in some areas to supplement ~~surface~~ natural streamflows ~~but in most instances these are not within the watermaster's jurisdiction~~.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of precipitation received during the irrigation season. The latter is particularly important in the Upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs in April, May and June. These spring storms, normally accompanied by cooler temperatures, materially affect both the supply and the demand for water.

Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in ~~cases where there is a~~ years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Data collected at representative snow courses showing the snowpack as of April 1 and May 1, 1967, are presented in Table 2. This information was obtained from the Department's Bulletin No. 120-67.

Table 3 presents information on precipitation at selected stations in the service areas. The seasonal precipitation gives an indication of the

TABLE 2

SNOWPACK AS OF APRIL 1 AND MAY 1, 1966 AT REPRESENTATIVE SNOW COURSES

Watermaster Service area	Snow course *	Elevation (in feet)	WATER CONTENT OF SNOW (IN INCHES)				
			April 1 Average (1931-1960)	April 1 1966	In percent of April 1 Average	May 1 1966	In percent of April 1 Average **
Seiad Creek	Mount Shasta	7,900	49.4	63.0	128	54.5	110
Shackleford Creek	Parks Creek	6,700	34.1	44.4	130		
Shasta River	Middle Boulder No. 1	6,600	32.9	32.4	98	15.8	48
	Little Shasts	6,200	21.4	14.3	67		
Ash Creek	Blue Lake Ranch	7,300	10.3	2.8	27		
Big Valley	Eagle Peak	7,200	16.2	8.9	55		
North Fork Pit River	Cedar Pass	7,100	17.0	12.2	72	0.0	0
South Fork Pit River	Adin Mountain	6,350	14.0	10.4	74	0.0	0
Surprise Valley							
Burney Creek	Thousand Lakes	6,500	36.8	36.3	99	16.1	44
Cow Creek	New Manzanita Lake	5,900	6.2	6.5	90	0.0	0
Digger Creek	Burney Springs	4,700	2.5	3.1	124		
Hat Creek							
Butte Creek	Humbug Summit	4,850	12.4	10.6	85	0.0	0
Susan River	Silver Lake Meadows	6,450	27.7	27.6	100	10.6	38
	Fredonyer Pass No. 1	5,750	9.3	3.5	38		
Indian Creek	Independence Lake	8,450	41.1	32.4	79		
Middle Fork	Mount Deyer No. 1	7,100	24.6	25.1	102	11.2	46
Feather River	Rowland Creek	6,700	17.3	11.3	65	0.0	0
	Yuba Pass	6,700	31.8	29.5	93	4.7	15

* Snow courses are listed according to elevation with each major grouping of watermaster service areas. They do not necessarily correspond to any specific river or creek.

** May 1 data collected for selected courses.

TABLE 3

PRECIPITATION AT SELECTED STATIONS – 1965-66 SEASON

Station Name	County	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Percent of mean
Fort Jones Ranger Station	Siskiyou	0.04	2.25	2.99	6.52	0.51	1.81	0.74	0.76	0.33	0.13	0.03	1.59	17.70	81
		1.59	2.77	4.02	4.06	3.14	2.21	0.98	1.11	0.81	0.35	0.34	0.40	21.78	
Happy Camp Ranger Station	Siskiyou	1.19	8.35	10.99	16.09	2.40	10.15	1.97	0.47	0.18	T	0.07	1.24	53.10	97
		4.07	7.25	10.41	11.31	8.24	6.45	2.72	2.16	1.06	0.38	0.17	0.74	54.96	
Yreka	Siskiyou	0.02	2.17	1.92	3.50	0.56	1.06	0.42	0.69	0.27	0.17	0.21	1.08	12.07	68
		1.45	2.00	3.30	3.19	2.29	1.61	0.92	1.03	0.86	0.27	0.39	0.45	17.76	
Chico Experiment Station	Butte	T	6.29	2.66	4.84	3.53	0.91	0.81	0.18	T	T	0.02	0.03	19.27	74
		1.46	2.41	5.12	5.03	4.43	3.29	2.31	1.16	0.44	0.01	0.07	0.33	26.06	
Redding Fire Station No. 2	Shasta	0.03	10.11	2.26	6.64	5.97	2.48	3.70	0.01	0.04	T	0.11	0.24	31.59	81
		2.27	3.76	7.26	7.69	6.19	4.90	2.95	1.74	1.31	0.11	0.13	0.61	38.92	
Hat Creek Pump House No. 1	Shasta	0.00	2.68	2.62	1.81	1.65	1.30	1.53	0.16	0.41	0.00	0.04	0.19	12.39	69
		1.30	1.83	2.93	2.85	2.84	2.02	1.35	1.26	0.77	0.28	0.16	0.47	18.06	
Bieber	Lassen	0.04	2.40	2.69	1.53	0.49	1.48	1.34	0.34	*	*	*	*	*	*
		1.06	1.80	2.29	1.91	2.08	1.69	1.12	1.26	0.86	0.21	0.16	0.43	14.87	
Lakeview, Oregon	Lake	0.04	2.79	0.89	1.80	0.82	0.99	0.73	1.14	1.09	0.11	0.20	0.45	11.05	77
		1.21	1.37	1.88	1.84	1.71	1.52	1.15	1.51	1.28	0.22	0.17	0.58	14.44	
Alturas Ranger Station	Modoc	0.17	1.91	**	2.62	0.61	0.57	0.67	0.79	0.47	0.63	T	0.59	29.03	70
		1.07	1.35	1.63	1.62	1.45	1.37	1.03	1.31	1.03	0.31	0.22	0.43	12.82	
Jess Valley	Modoc	0.43	2.26	1.14	1.05	0.89	1.37	0.85	1.40	0.44	0.50	0.05	0.74	11.12	65
		1.31	1.66	1.92	1.89	1.95	1.88	1.64	2.02	1.62	0.41	0.26	0.66	17.22	
Cederville	Modoc	0.01	1.93	0.88	0.55	0.57	0.83	0.73	0.52	0.24	0.43	0.39	0.24	7.32	57
		1.17	1.41	1.69	1.84	1.50	1.45	0.99	1.04	0.94	0.33	0.15	0.37	12.88	
Susanville Airport	Lassen	0.00	3.11	2.10	0.25	0.47	0.57	0.25	0.59	0.00	0.39	0.15	0.21	8.09	56
		0.92	1.51	2.56	2.53	2.51	1.51	0.82	0.83	0.67	0.18	0.09	0.35	14.48	
Greenville Ranger Station	Plumas	0.08	9.61	**	9.72	1.87	2.31	1.78	0.43	0.08	0.09	0.00	0.08	26.05	61
		2.61	4.81	5.93	8.89	7.44	6.47	2.84	1.71	0.75	0.35	0.21	0.95	42.95	
Sierraville Ranger Station	Sierra	0.30	4.82	3.08	0.78	0.89	1.05	0.69	0.99	0.08	0.03	0.10	0.11	12.92	51
		1.83	2.76	4.49	4.94	4.23	2.84	1.63	1.25	0.54	0.29	0.15	0.44	25.39	
Vinton	Plumas	0.17	2.70	1.48	0.09	0.53	0.52	0.73	0.86	0.07	T	0.00	0.51	7.66	
		0.89	1.44	2.12	1.94	1.87	1.43	0.84	1.01	0.50	0.36	0.18	0.25	12.91	

* *Date unavailable*

** *Amount included in following month's measurement – distribution unknown.*

Note: Figures above line are for current season; below line are long-term averages.

related water supply available for distribution, and provides a basis for comparing the current years supply with the long time average supply.

Streamflow

The watermaster determines the amount of water available for distribution within his area, primarily by the use of stream gaging stations and measuring devices in the diversion ditches. There are four sources from which he obtains this information:

1. U. S. Geological Survey stream gaging stations.
2. Department of Water Resources stream gaging stations.
3. Stream gaging stations installed and maintained by the watermaster and used primarily for aid in distributing the water.
4. Measuring devices installed in individual diversion ditches by the water right owner under supervision of the watermaster.

Table 4 presents runoff data at selected stream gaging stations in or near the service areas. Appendix A presents runoff data at the stream gaging stations utilized by the watermasters. These data, together with distribution schedules, are used to determine the adequacy or shortage of the water supply.

All Watermaster Service Areas experienced ~~below~~ above average water supplies during the 1966 irrigation season. The degree varied from ~~extreme drought in many~~ slightly above average in some areas to ~~near normal in a few areas.~~ the best year of record in others.

Streams in the Lahonton drainage basin approached the lowest runoff on record. Many farms and ranches were not irrigated, as streamflow was insufficient to supply many lower priorities.

The Pit River drainage area also experienced an extremely low water supply season. West Valley Reservoir which was completely emptied before the end of the 1966 season, was filled to capacity on July ___ and had ___ af remaining at the end of the 1965 season. The North Fork Pit River, South Fork Pit River, and Big Valley Service Areas received total runoff approaching all-time ~~lows~~. Ash Creek, Burney Creek and Hat Creek Service Areas were in somewhat better condition, but they also had a below average water supply.

The Upper Sacramento Valley areas received almost no precipitation during the critical spring and early summer months. Consequently, water supplies in much of this area approached record low conditions.

The service areas in the Klamath River drainage basin, while also experiencing a below average year, had the best water supplies of all service areas.

TABLE 4

RUNOFF AT SELECTED STATIONS

1965-66 SEASON

(In acre-feet)

Station	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Average *	Percent Average
Shasta River near Yreka	9,950	14,090	16,100	23,080	12,020	13,520	6,770	4,050	3,760	921	853	3,700	108,810	127,400	85
Hat Creek near Hat Creek	4,680	4,770	4,560	4,550	4,010	4,520	4,810	6,100	4,580	4,120	4,000	3,770	54,470	94,840	57
Pit River near Canby	4,920	7,580	4,580	6,770	6,910	17,840	9,280	3,190	4,060	1,720	1,470	1,240	69,560	164,300	42
North Fork Pit River near Alturas	217	896	534	990	1,140	4,510	2,730	140	90	38	31	13	11,330	32,650	35
South Fork Pit River near Likely	2,020	2,170	1,520	1,530	1,280	3,680	5,820	6,330	5,090	6,160	2,650	704	38,950	51,910	75
Susan River at Susanville	579	1,260	1,040	1,580	1,310	5,520	8,090	6,820	8,180	224	84	157	34,840	69,070	50
Indian Creek near Crescent Mills	4,710	12,620	8,970	17,890	12,060	47,200	55,500	18,920	3,720	994	763	938	184,340	385,900	48
Middle Fork Feather River near Clio	3,480	7,450	5,400	7,080	8,230	42,230	21,400	8,770	2,300	1,050	733	823	108,950	196,900	55
Butte Creek near Chico	7,770	16,710	13,760	29,370	23,190	29,910	39,960	22,050	11,440	8,260	7,190	6,460	216,070	282,300	77

** Average annual flow of record through 1963.*

PART II - 1966 WATERMASTER SERVICE

This part of the report gives a general geographical description of each watermaster service area and the major sources of water supply therein. The usual methods of distribution and the actual distribution of the 1966 season's water supply are discussed. Special occurences in some areas are also mentioned.

Ash Creek Watermaster Service Area

The Ash Creek Service Area is located in Modoc and Lassen Counties near the town of Adin. There are 32 water right owners in this area with total allotments of 123.65 cubic feet per second.

The major sources of water supply for the service area are Ash Creek and two tributaries, Willow Creek and Rush Creek. Ash Creek rises in the eastern part of the service area and flows westerly through the town of Adin into Ash Creek Swamp and then into the Pit River. Rush Creek heads in the northeastern part of the service area and joins Ash Creek above the town of Adin. Willow Creek originates in the southeastern part of the service area and joins Ash Creek near the head of Ash Creek Swamp. Each of these streams is independently regulated.

The primary place of water use from this stream system is in Big Valley, west of the town of Adin, with some use along the upstream tributaries. The portion of Big Valley served is approximately 10 miles long by 6 miles wide, extending from the town of Adin to the confluence of Ash Creek and the Pit River. The valley floor is at an elevation of approximately 4,200 feet.

A schematic drawing of each major stream system within the Ash Creek Service Area is presented as Figure 1.

Water Supply

The water supply for Ash and Rush Creeks is derived primarily from snowmelt, since most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek receives a substantial portion of its water from springs. These three creeks normally have sufficient water to satisfy demands until about June 1, after which the supply decreases rapidly. By the latter part of June, Ash Creek normally has receded to about 20 cubic feet per second, Rush Creek to about two cubic feet per second, and Willow Creek to about five cubic feet per second. The flow

of these creeks then remains nearly constant for the remainder of the season.

The daily mean discharge of Ash Creek at Adin is presented in Appendix A, Table A-1. This stream gaging station is located below a substantial number of the points of diversion; consequently, the table does not include all of the available supply of this creek.

No stream gaging stations were installed on Rush or Willow Creeks during the 1966 season.

Method of Distribution

Irrigation diversions from Ash Creek and its tributaries are accomplished by small dams placed in the stream channels. Most of the users have several diversion ditches at these dams. These ditches convey the water to the fields where it is spread by means of small laterals. Some of the users employ a system of checks and borders; however, most of the land is irrigated by wild flooding. Return flow is captured by downstream ranches for reuse. In a few areas, pumps are used to divert the water into ditches or through sprinkler systems.

The Ash Creek decree* establishes the number of priority classes on the various stream systems within the Ash Creek Service Area as follows: Ash Creek - five; Willow Creek - four; Rush Creek - one; and Butte Creek - two.

1966 Distribution

Watermaster service began May 1 and continued until September 30 in the Ash Creek Service Area. Kenneth H. Lloyd, Water Resources Engineering Associate, was watermaster during this period.

Ash Creek. The available water supply in Ash Creek was sufficient to meet all demands (five priorities) until early June. For most of the remainder of the irrigation season, water was available for first priority allotments only.

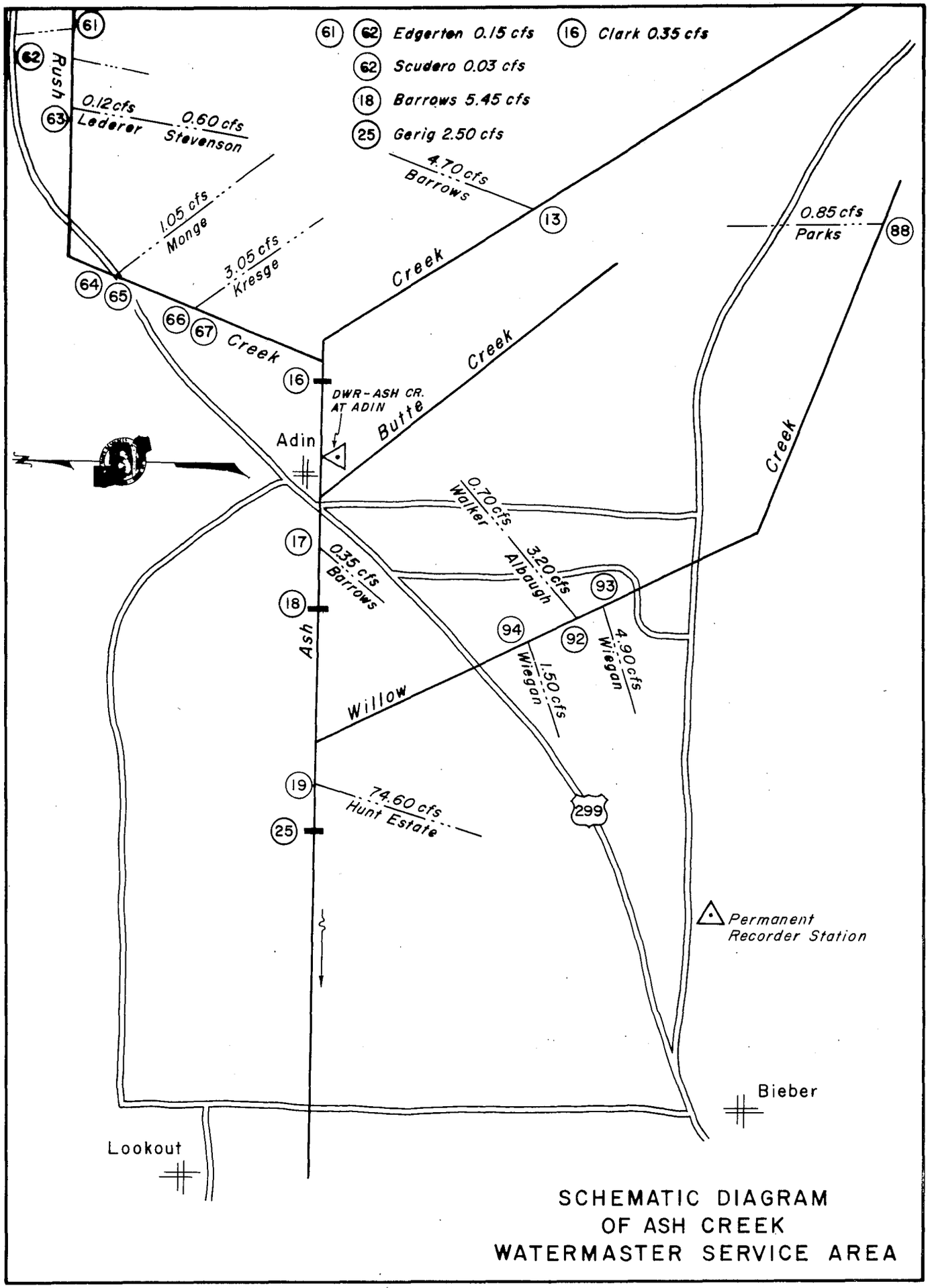
Willow Creek. The available water supply in Willow Creek was sufficient to satisfy all priority allotments (four priorities) until early in May. On May 22nd the flow was insufficient to supply fourth priority allotments; water for third priority allotments was also quickly exhausted. Second priority regulations began during the first week in June as the streamflow continued to decline rapidly. A seasonal low of 4.8 cubic feet

* See Table 1

per second, which is about 55 percent of first priority allotments, was available at the end of the season.

Rush Creek. The available water supply in Rush Creek was sufficient to satisfy all priority allotments (one priority) until approximately July 15. For the remainder of the season the streamflow gradually decreased to about 80 percent of total allotments.

FIGURE 1



SCHEMATIC DIAGRAM
OF ASH CREEK
WATERMASTER SERVICE AREA

Big Valley Watermaster Service Area

Big Valley Service Area is located in Modoc and Lassen Counties in the vicinity of the towns of Lookout and Bieber. There are 53 water right owners in the area with total allotments of 231.03 cubic feet per second.

Pit River is the major source of water supply for the service area. The river enters the valley north of the town of Lookout and flows southerly through the western part and out its southern end. The major place of use is about 13 miles of valley floor along the Pit River at an approximate elevation of 4,200 feet.

A schematic drawing of the Big Valley stream system is presented as Figure 2.

Water Supply

The available water supply in the Pit River as it flows through Big Valley is ordinarily adequate to satisfy all demands until about June 1. The irrigation practices in Hot Springs Valley, located about 20 miles upstream from Big Valley, have a significant effect on the available water supply in Big Valley throughout the remainder of the irrigation season. Water users in Hot Springs Valley divert most of the flow in Pit River for two or three week periods. Natural flow available for use in Big Valley during these periods is often less than 20 cubic feet per second. Periodic releases from channel storage reservoirs in the lower end of the valley sometimes increase the flow to as much as 200 to 300 cubic feet per second for relatively short periods. Consequently, equitable water distribution in Big Valley is very difficult to attain.

Roberts Reservoir, located on a minor tributary of the Pit River at the upper end of Big Valley above Lookout, serves as a supplemental source of water to those users in the area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into Pit River and distributed to members of the water company along with their natural flow rights.

Records of two stream gaging stations in the Big Valley Service Area are presented in Table A-2 and A-3.

Method of Distribution

Most water users in the Big Valley Service Area irrigate on a rotation schedule by either wild flooding or by checks and borders. Large

flashboard dams placed in the channel make it possible to utilize the large heads of water characteristic of the supply in the area. In addition, some pumps are used for diversion, both into ditches and directly into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Much of the runoff is recaptured for use by downstream lands, resulting in a relatively high irrigation efficiency for the valley.

The Big Valley decree* provides for the distribution of water from Pit River in four priority classes.

1966 Distribution

Watermaster service began May 1 and continued until September 30 in the Big Valley Service Area. Kenneth H. Lloyd, Water Resources Engineering Associate, was watermaster during this period.

During the first week of May the flow in the Pit River at Canby was only 15 cubic feet per second, an unprecedented low for the beginning of an irrigation season. Lookout Dam was installed on May 3, and an irrigation rotation schedule was started immediately.

From May 3 to June 10 all first and second priority water users received two complete irrigations. From June 10 to September 30, these users received three partial irrigations.

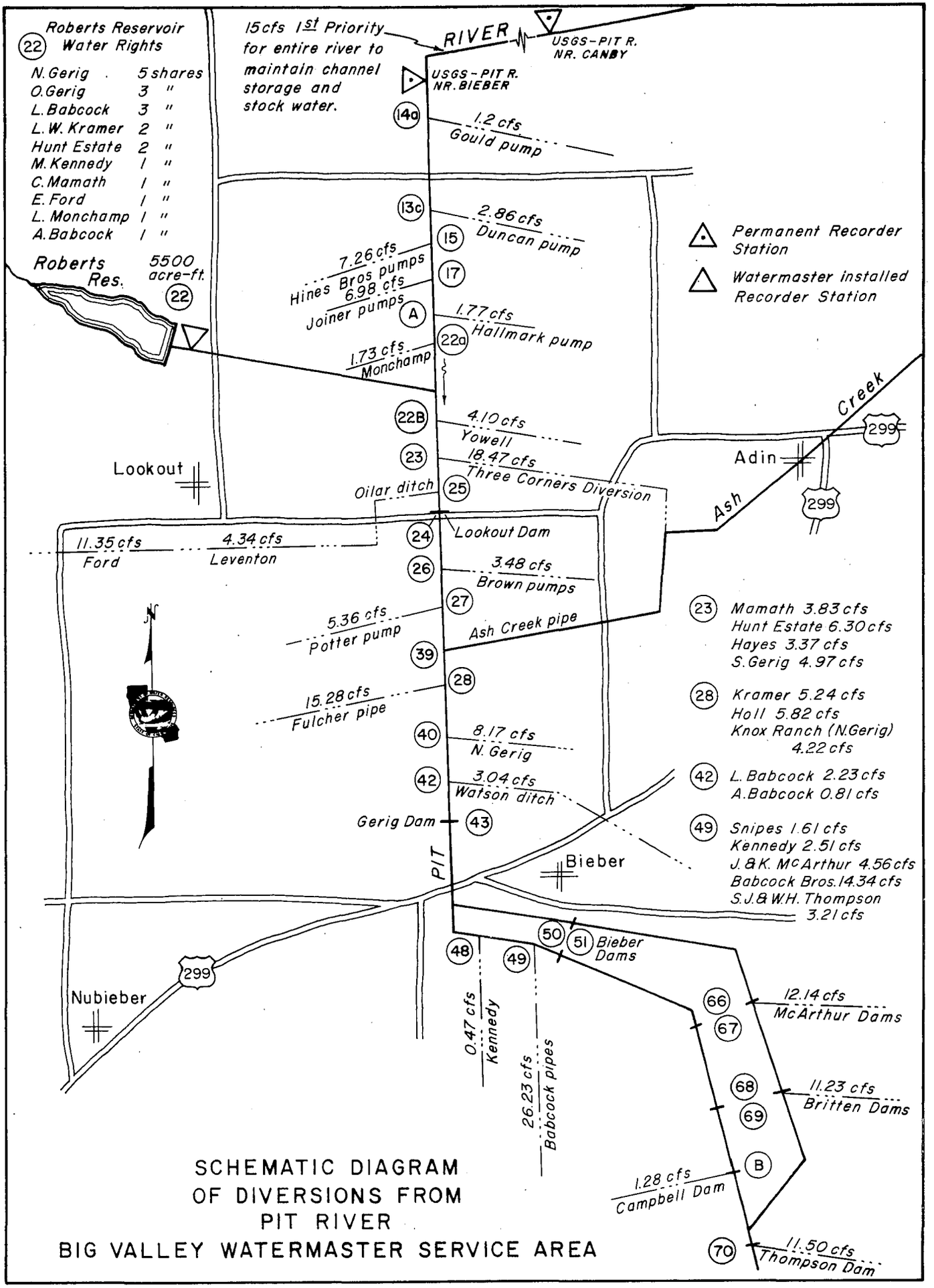
Throughout the entire irrigation season no water was available for third or fourth priority allotments.

Members of the Big Valley Mutual Water Company agreed to an allocation from Roberts Reservoir water of 100 acre-feet per each member share. Water was released from Roberts Reservoir at intervals, during the period July 12 to September 4, for use by shareholders as follows:

Name	Shares	Acre-feet of Roberts Reservoir Water Used
Norris Gerig	5	315
Oral (Sam) Gerig	3	300
L. Babcock & C. Hawkins	4	255
L. W. Kramer	2	200
Hunt Estate	2	200
Merlin Kennedy	1	100
Cyril Mamath	1	100
Ford Ranch	1	100
Lewis Monchamp	1	5
	20	1575

* See Table 1

FIGURE 2



SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
PIT RIVER
BIG VALLEY WATERMASTER SERVICE AREA

Burney Creek Watermaster Service Area

The Burney Creek Service Area is located in Shasta County near the town of Burney. There are 11 water right owners in the area with total allotments of 33.09 cubic feet per second. The source of water supply for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The portion of the valley served by this stream is approximately 11 miles long and two miles wide, and extends both north and south of Burney. The service area is at approximately 3,200 feet elevation.

A schematic drawing of the Burney Creek stream system is presented as Figure 3.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 feet on the northeast slopes of Clover Mountain and the west slopes of Burney Mountain. The creek normally has sufficient water to supply all demands until about the middle of June. The supply then gradually decreases until the end of July. For the remainder of the irrigation season runoff from perennial streams keeps the flow nearly constant at approximately 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table A-4. The stream gaging station on Burney Creek is located below four points of diversion; consequently, the records do not show all of the available water supply of the creek.

Method of Distribution

The Burney Creek decree* sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now the normal practice. The water allotted to the Greer-Cornaz Ditch is distributed in accordance with a supplemental court decree.

Water is diverted from Burney Creek, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to irrigate the land. Scott Lumber Company utilizes a pump and pipeline to divert its allotment for industrical use.

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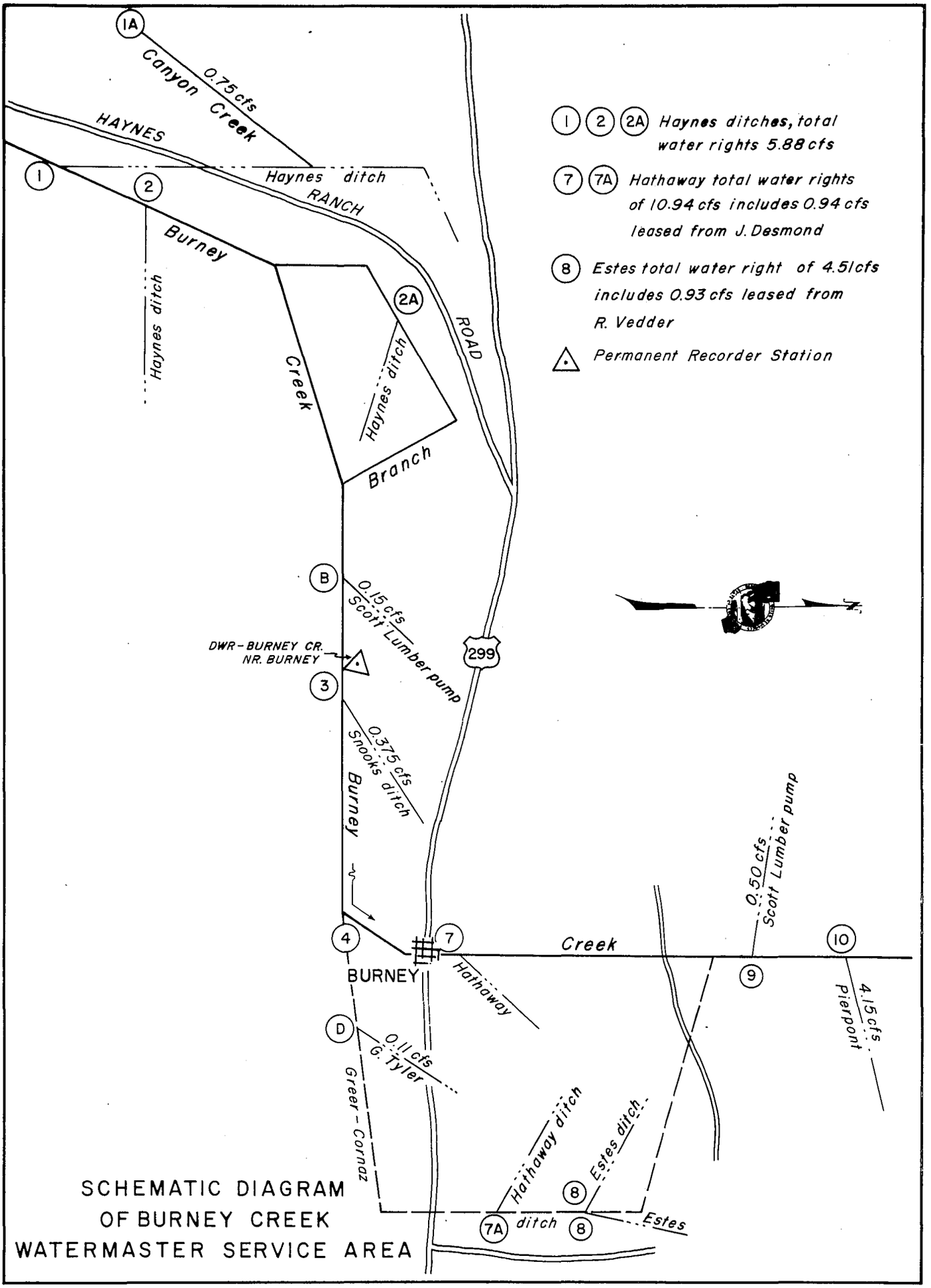
* See Table 1

1966 Distribution

Watermaster service began May 1 in the Burney Creek Service Area and continued until September 30. Kenneth H. Lloyd, Water Resources Engineering Associate, was watermaster during this period.

The watermaster distributed all allotments on a continuous flow basis. The available water supply for the 1966 irrigation season was below average due to below normal precipitation during the late winter and spring months.

The Edward Pierpont Ranch, the lowermost decreed land on Burney Creek, was not irrigated during the entire 1966 irrigation season. A request was made by the leasee of the ranch, that only stockwater be diverted for his use. Therefore, a continuous flow of only one cubic foot per second was diverted to the ranch, which permitted higher allotments for all other users. Surplus flow was available to all users until June 13, at which time all irrigation diversions were regulated to first priority allotments. The flow gradually decreased until September 7, when only 45 percent of first priority allotments was available. Throughout the remainder of the irrigation season the flow remained at this level.


1A
Canyon Creek
0.75 cfs
HAYNES
RANCH
Haynes ditch
1
2
Burney
Haynes ditch
Creek
2A
Haynes ditch
ROAD
Branch
1 2 2A Haynes ditches, total water rights 5.88 cfs
7 7A Hathaway total water rights of 10.94 cfs includes 0.94 cfs leased from J. Desmond
8 Estes total water right of 4.51 cfs includes 0.93 cfs leased from R. Vedder
Permanent Recorder Station
B
0.15 cfs
Scott Lumber pump
DWR - BURNEY CR. NR. BURNEY
299
3
0.375 cfs
Snooks ditch
Burney
0.50 cfs
Scott Lumber pump
4
7
Creek
10
BURNEY
Hathaway
9
4.15 cfs
Pierpont
D
0.11 cfs
G. Tyler
Greer - Cornaz
Hathaway ditch
Estes ditch
8
7A
ditch
8
Estes
SCHEMATIC DIAGRAM
OF BURNEY CREEK
WATERMASTER SERVICE AREA

Butte Creek Watermaster Service Area

The Butte Creek Service Area is located in Butte County near the City of Chico. There are 35 water right owners in the area with total allotments of 219.71 cubic feet per second. Butte Creek is the major source of water supply. The area served by this stream extends from about four miles east of Chico to the diversion of the Great Western Canal, about 11 miles south. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet.

A schematic drawing of the Butte Creek stream system is presented as Figure 4.

Water Supply

Butte Creek rises on the west slope of the Sierra Nevada Mountains in the northeasterly portion of Butte County, between Humbug and Humboldt Passes, at elevations of 5,000 to 6,000 feet.

Snowmelt normally produces sustained high flows until about the end of June, after which perennial springs at the headwaters continue to produce flows of more than 40 cubic feet per second. Additional water is imported from the West Branch Feather River by means of the Hendricks (Toad Town) Canal through DeSabla Reservoir and Powerhouse into Butte Creek. This imported water is rediverted at Parrott Dam to the Parrott Ditch.

Records of the daily mean discharge at several stream gaging stations in the Butte Creek Service Area are presented in Table A-5 through A-9.

Methods of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T Incorporated, Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water into several ditches leading to their individual distribution systems. Various methods of irrigation are in general practice. These include contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in popularity within the past few years, especially for use on orchards.

Water diverted from the West Branch Feather River through the Hendricks Canal and DeSabla Powerhouse into Butte Creek has, in the past, caused wide fluctuation in the Butte Creek flow. In accordance with

"Memorandum and Order" entered May 10, 1949, by the Superior Court of Butte County, water users below Parrott Dam (where the imported water is rediverted) must be provided their natural flow allotments at all times without undue fluctuation caused by intermittent presence of imported water. For the past several years PG&E has maintained reasonably steady releases which have greatly simplified this rediversion problem.

The Butte Creek decree* established three priority classes for summer distribution purposes and, in addition, defined two surplus flow allotments.

1966 Distribution

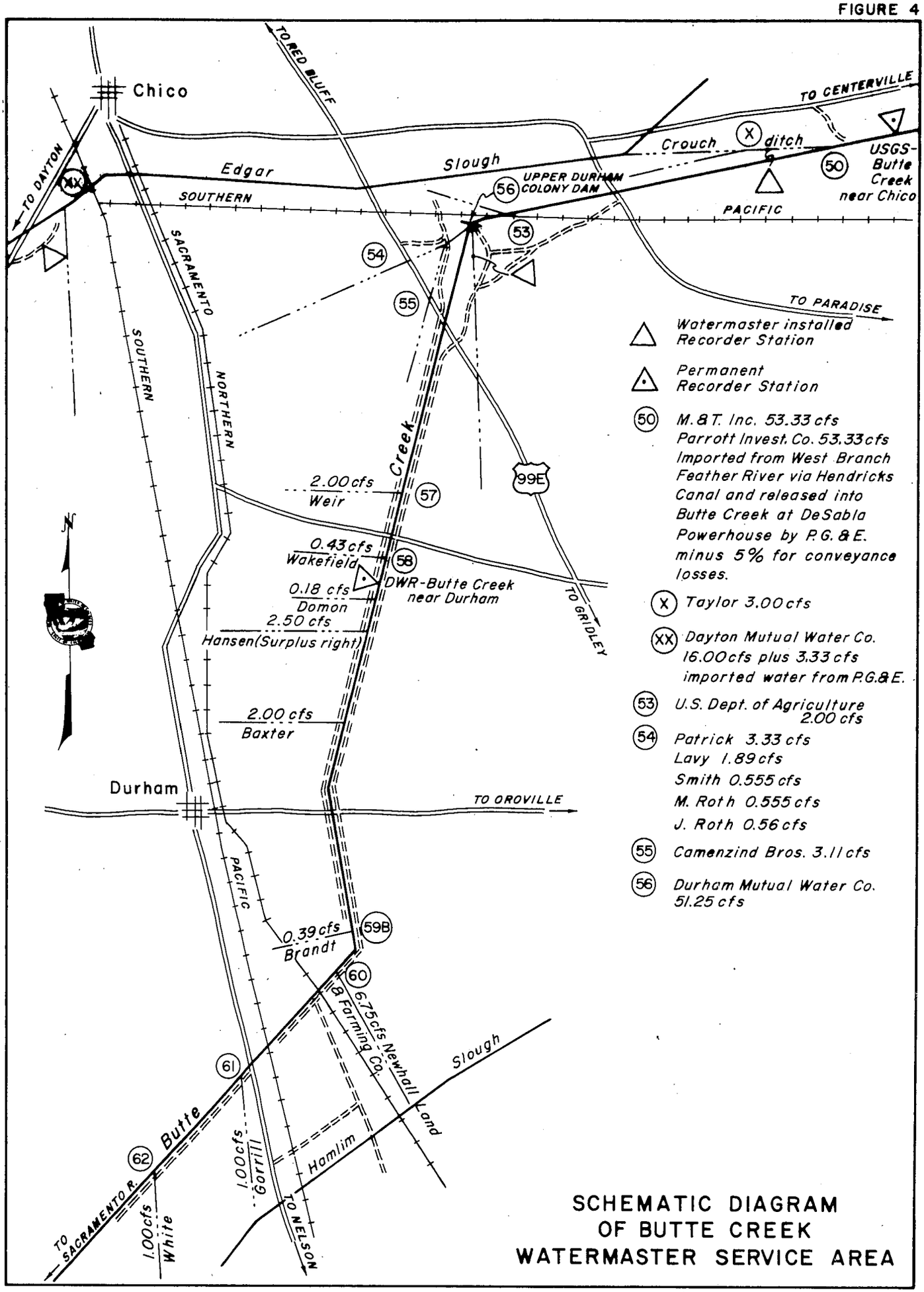
Watermaster service began May 5 and continued until September 30, in the Butte Creek Service Area. Ross P. Rogers, Water Resources Engineering Associate, was watermaster during this period.

The available water supply for the 1966 irrigation season on Butte Creek was below average. Close regulation of diversions was required throughout the season to ensure equitable distribution.

Sufficient water was available to satisfy all rights in the service area until approximately June 10. During the following week, the flow in Butte Creek decreased rapidly. All surplus and third priority allotments were cut off during this period. Second priority water was available until approximately June 22. Essentially all first priority allotments were satisfied until mid-July. The flow continued to decrease throughout July and early August, reaching the seasonal low of approximately 70 percent of first priority allotments in mid-August. Throughout the remainder of the season the available water supply fluctuated between 70 and 80 percent of the first priorities.

* See Table 1.

FIGURE 4



SCHEMATIC DIAGRAM
OF BUTTE CREEK
WATERMASTER SERVICE AREA

Cow Creek Watermaster Service Area

The Cow Creek Service Area is located in Shasta County in the foothills east of Redding. There are 87 water right owners in the area with total allotments of 56.356 cubic feet per second. The major streams in this area are: North Cow Creek (commonly called Little Cow Creek), Cedar Creek (which is tributary to North Cow), Oak Run Creek, and Clover Creek. These creeks, which are all tributaries of Cow Creek, flow in a westerly or southwesterly direction through narrow valleys joining Cow Creek near the town of Palo Cedro. The service area is located in the narrow valleys along the several creeks and consists of small parcels separated by brush-covered hills. The entire area is about 25 miles long by 10 miles wide and varies in elevation between about 500 and 2,000 feet.

A schematic drawing of each major stream system in the Cow Creek Service Area is presented as Figures 5 through 5c.

Water Supply

Water supply for this service area is derived mostly from springs and seepage with some early snowmelt runoff. The watershed consists primarily of low brushy hills which do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter normally produce substantial springs and seepage that flow throughout the irrigation season.

Cedar Creek flow is usually sufficient to supply all allotments until about July 15, after which time it steadily decreases throughout the remainder of the season.

The flow of North Cow Creek is generally adequate to supply all allotments. In dry years it is necessary to reduce allotments during the latter part of the summer.

The flow of Oak Run Creek is augmented by a first priority allotment of five cubic feet per second of imported water from the North Cow Creek watershed. The combined flow is generally adequate to supply all allotments throughout the season.

Clover Creek generally supplies enough water to meet all allotments throughout the season.

Records of the daily mean discharge at three stream gaging stations in the Cow Creek Service Area are presented in Tables A-10 through A-12.

Methods of Distribution

Water in the Cow Creek Service Area is used for domestic and stockwatering purposes and for irrigation of meadow hay, alfalfa, small orchards, and vegetable gardens. The alfalfa and hay lands are irrigated primarily by wild flooding, although some sprinklers are used. Furrows are used for irrigating gardens, and basins or checks and sprinklers are used for orchards. Much of the water applied is lost by surface runoff or by deep percolation, some of which returns to the creeks and thereby becomes available for rediversion downstream.

Only one priority allotment was provided in each of the Cow Creek Service Area decrees*, except that the Oak Run Creek decree also contains a surplus allotment.

1966 Distribution

Watermaster service began in the Cow Creek Service Area on June 2 and continued until October 8. Ross P. Rogers, Water Resources Engineering Associate, was watermaster during this period.

Cedar Creek. One of the driest years on record occurred this season on Cedar Creek. However, since the Truman Ranch did not use its allotment, the remaining water users received their full allotments until early August. A long hot spell resulted in considerable evaporation loss and caused the lower reach of the creek to dry up periodically during late August.

The water supply received by the lower user therefore fluctuated between zero and approximately 50 percent of his allotment. In September, cooler weather resulted in this user receiving nearly his full allotment.

North Cow Creek. The water supply of North Fork Cow Creek was one of the lowest on record. Below normal precipitation during the winter, and virtually no rain in the spring, severely depleted the underground reservoirs which contribute the major water supply to the headwaters of the creek in summer. Precipitation from October 1965 through September 1966, averaged only about 75 percent of normal. In addition prolonged high summer temperatures created excessive channel losses in the canyon of North Cow Creek between Round Mountain and Bella Vista, and caused high conveyance losses within the irrigation distribution systems.

Surplus water was generally available to North Cow Creek users until early July when all diversions were regulated to 100 percent of

* See Table 1

allotments. By August 1, the water supply had decreased to about 75 percent of allotments. The flow continued to drop rapidly, reaching 60 percent on August 10 and the seasonal low of 50 percent on August 15. Scattered thunder showers on August 28 brought some relief to the area, increasing the water supply to about 60 percent. A few additional storms, combined with slightly cooler weather, increased the supply to 70 percent on September 15 and to approximately 80 percent on September 30. Some regulation was required during the first part of October due to warm days and continued irrigation by the water users.

Several water right owners did not divert any water this season. Had this not occurred the water supply would have been reduced to about 40-45 percent of allotments, the lowest in 35 years.

Oak Run Creek. Oak Run Creek historically provides the best supply of all streams in the Cow Creek Service Area. The springs at its headwaters are not as severely affected in drought periods as those of neighboring streams. Although an extremely low water supply existed elsewhere in the Cow Creek Service Area, the Oak Run Creek supply, while being below average, was sufficient for normal irrigation.

A small surplus existed in Oak Run Creek until mid-July. Throughout the remainder of the season flows remained at about 100 percent of allotments.

The lowest user in the service area did not divert any water during the season, enabling the upper users to have more than their ordinary share of surplus water.

Clover Creek. The available water supply on Clover Creek was below average, but considerably better than had been anticipated at the beginning of the season.

Some surplus water was available until mid-July when all diversions were regulated to 100 percent of allotments. Constant regulation of diversions was required throughout the remainder of the season as flows continued to decrease. On July 22 all diversions were cut to 90 percent of allotments. A seasonal low of approximately 70 percent was reached in mid-August. Thereafter, scattered rainstorms and cooler weather helped to increase the water supply. During the latter part of August and the first half of September the supply varied between 70 and 80 percent.

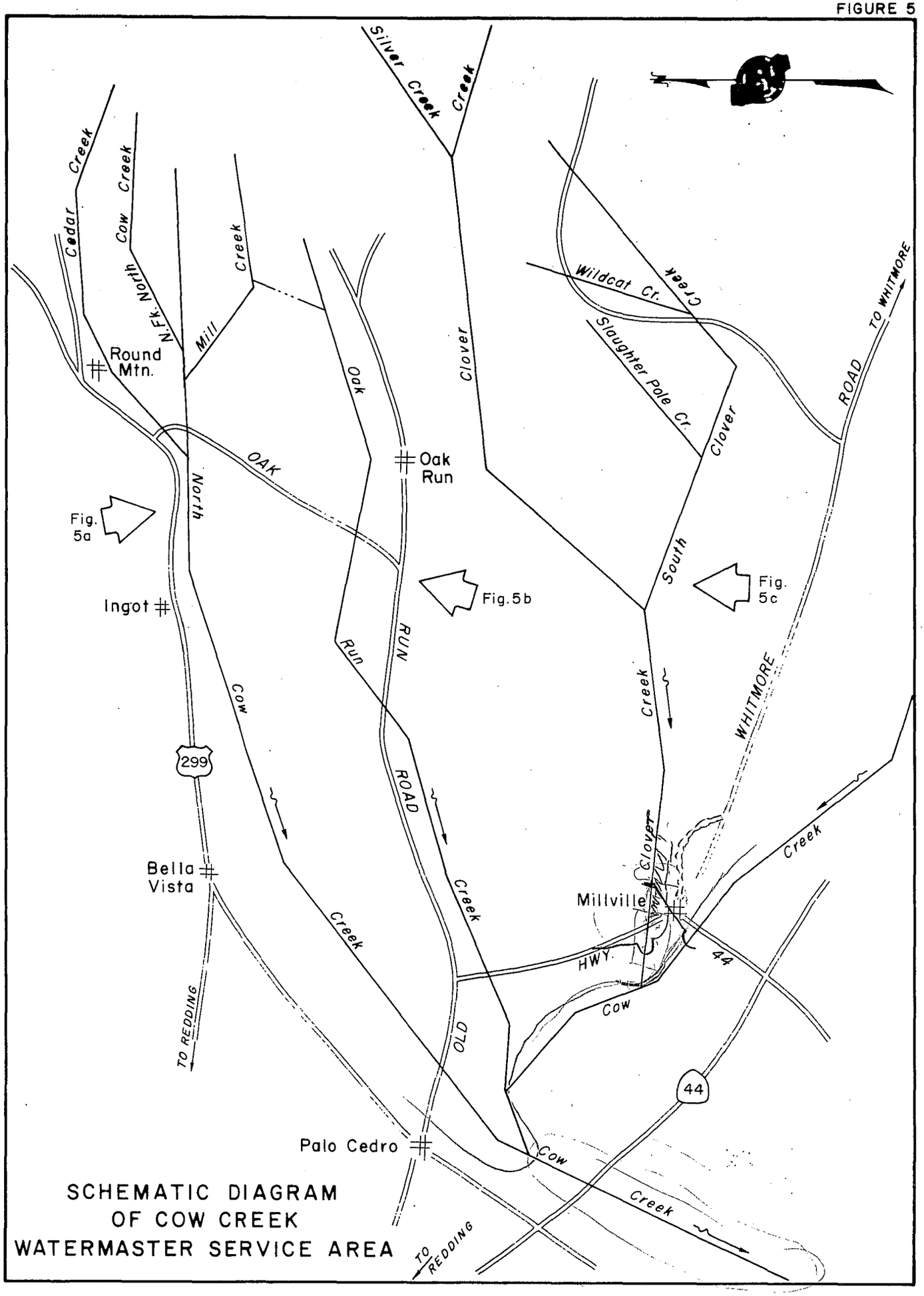
Flows continued to increase slightly and during the last half of September were generally at 80 to 100 percent of allotments.

Excessive channel loss, as usual, was a problem on Clover Creek because of the approximately 12 miles between the upper users near Fern and the lower users near Millville. During periods of extreme heat there is a high percentage of water lost in this reach.

Special occurrences. A concrete diversion and measuring box was constructed on the Welch-Strayer Ditch from Oak Run Creek. This structure provides an automatic equal division of water between two groups of users, and greatly eased the watermaster's work load in this area.

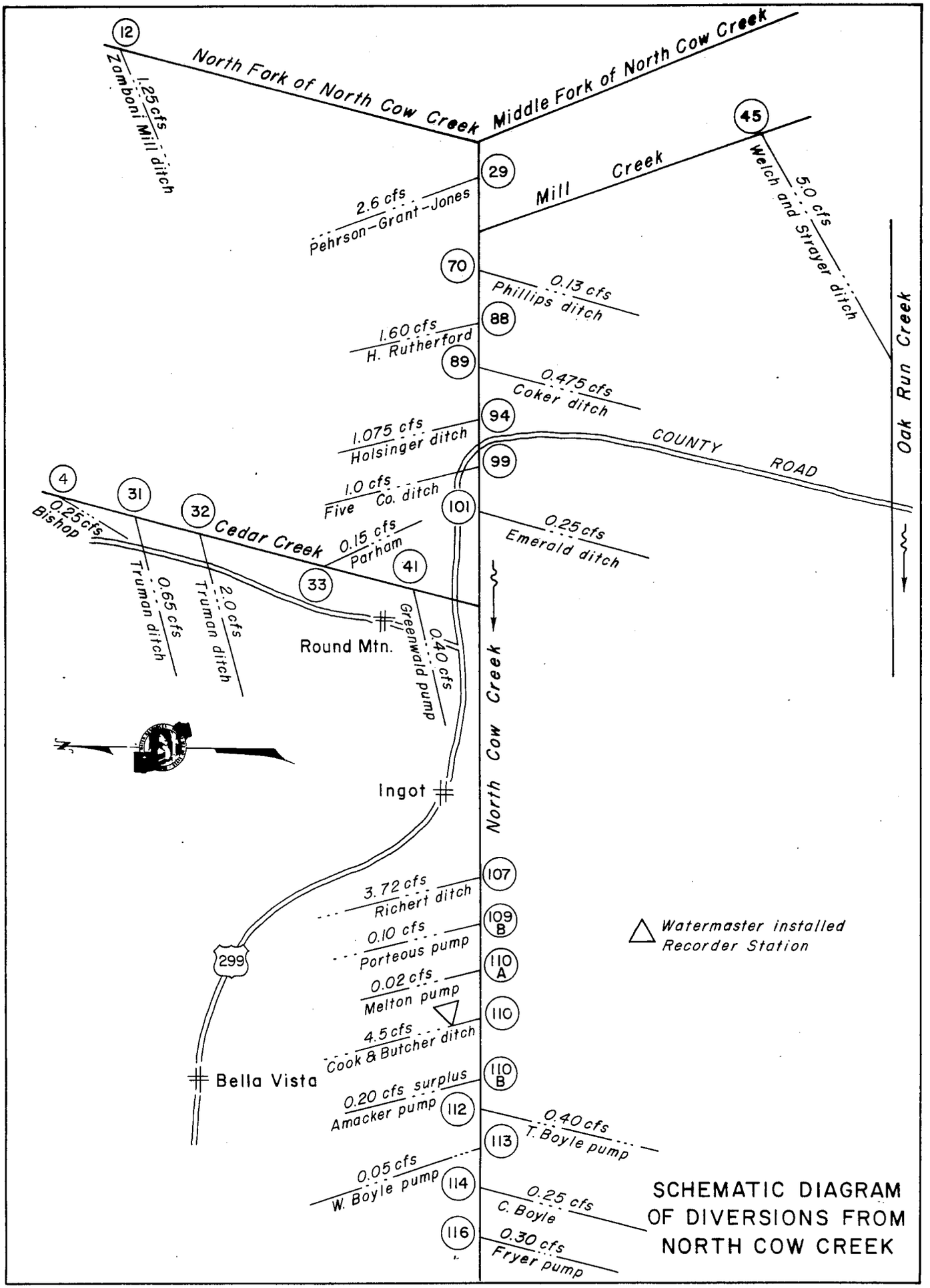
Two wooden weir boxes were installed on the Maxwell Ditch from Wyndham Creek, a tributary to Clover Creek. A wooden spill-back was installed on the Guttman Ditch from Clover Creek. These structures were built of wood rather than concrete because of difficult access.

FIGURE 5



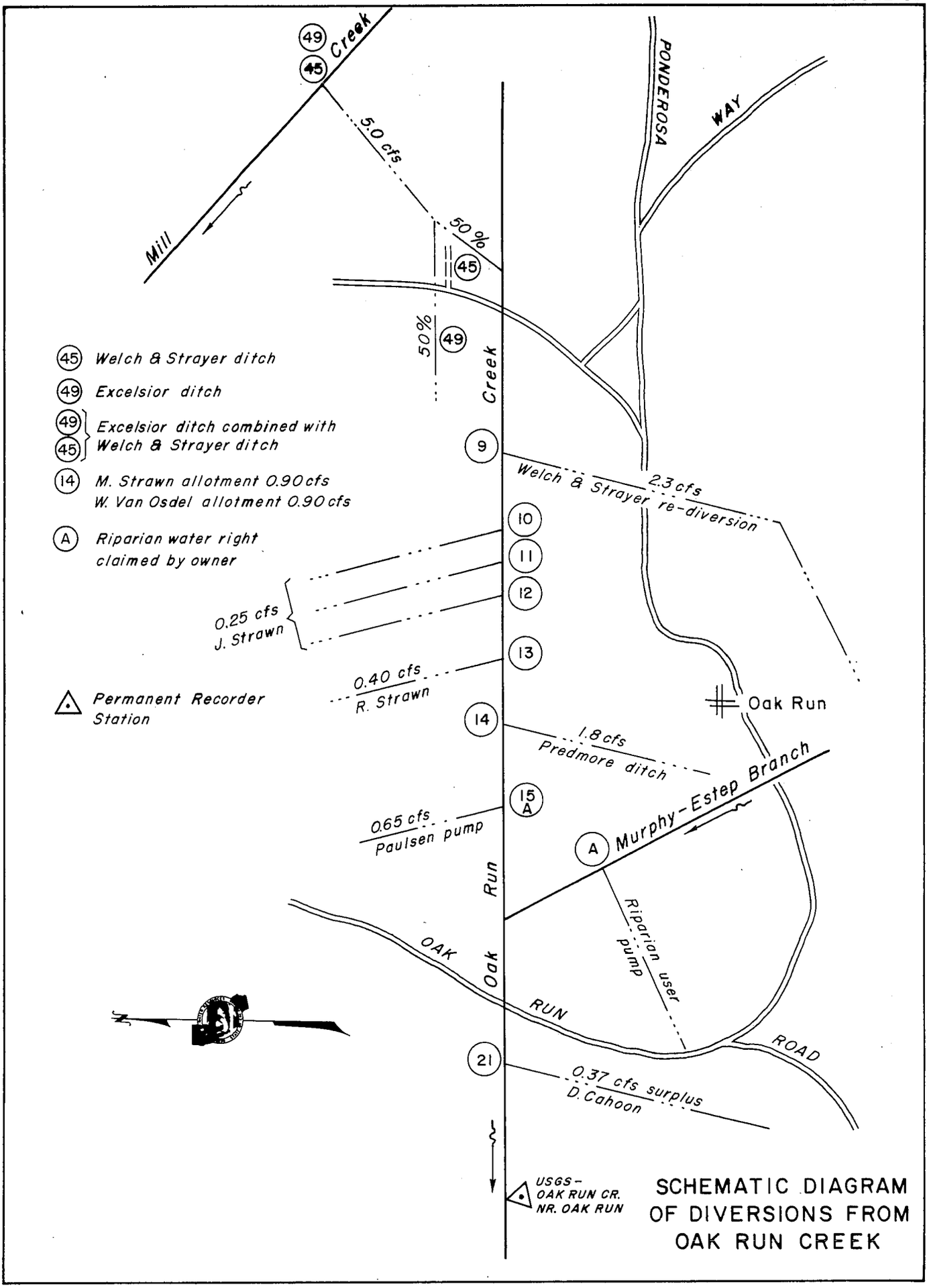
SCHEMATIC DIAGRAM
OF COW CREEK
WATERMASTER SERVICE AREA

FIGURE 5a



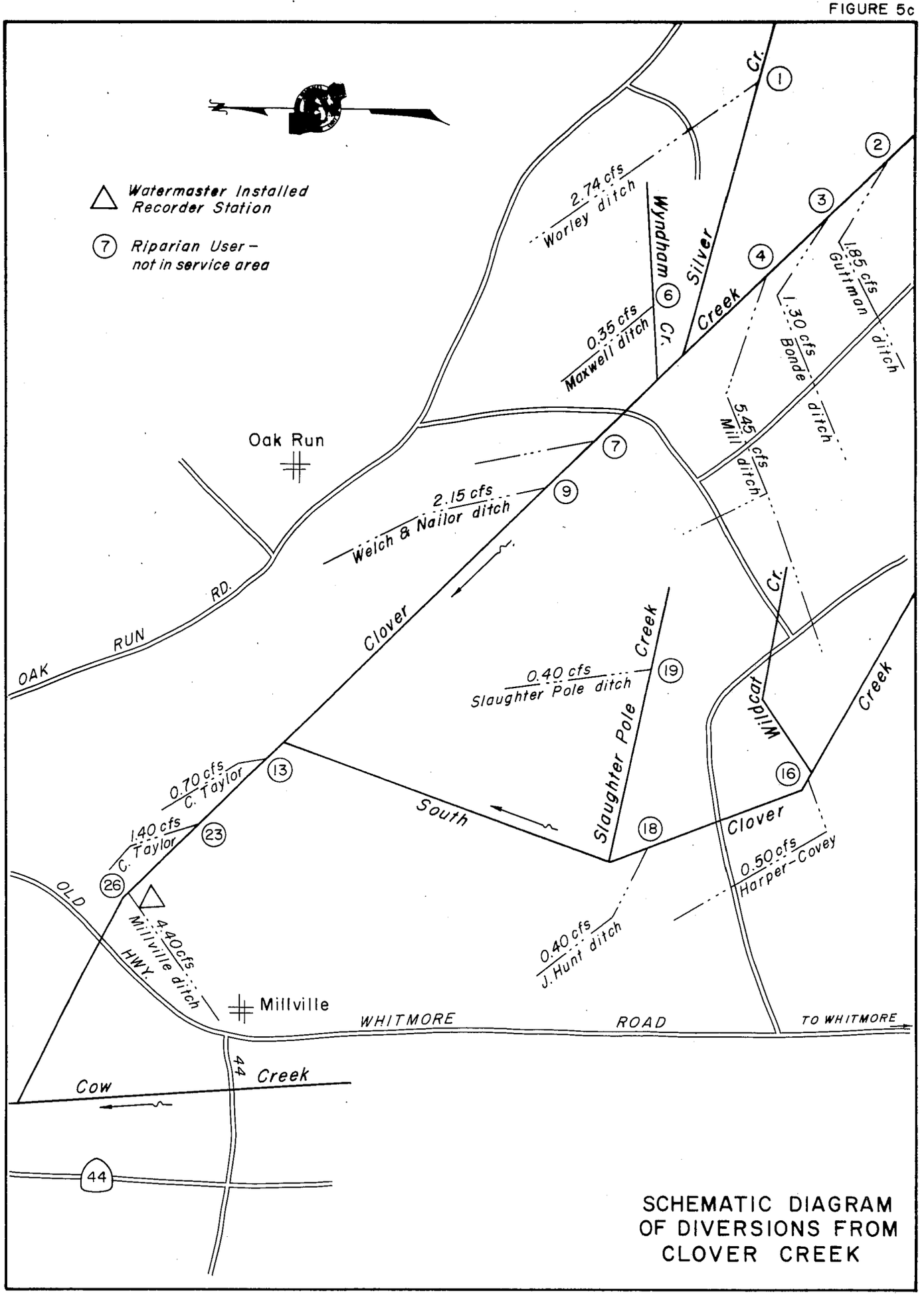
SCHEMATIC DIAGRAM OF DIVERSIONS FROM NORTH COW CREEK

FIGURE 5b



SCHEMATIC DIAGRAM OF DIVERSIONS FROM OAK RUN CREEK

FIGURE 5c



SCHEMATIC DIAGRAM OF DIVERSIONS FROM CLOVER CREEK

Digger Creek Watermaster Service Area

The Digger Creek Service Area is located in portions of southeastern Shasta County and northeastern Tehama County. There are 33 water right owners in the area with total allotments of 23.225 cubic feet per second.

Digger Creek forms a portion of the boundary line between Shasta County on the north and Tehama County on the south. It drains an area of approximately 45 square miles on the western slopes of mountains situated immediately west of Lassen National Park. The creek flows in a westerly direction through the town of Manton to its confluence with the North Fork Battle Creek. Manton, the only community in the area, is located approximately 40 miles northeast of Red Bluff.

A schematic drawing of the Digger Creek stream system is presented as Figure 6.

Water Supply

Precipitation, occurring principally in the winter months, is typical of Northern California foothill areas. Snowmelt contributes to the early runoff but the summer streamflow is primarily from springs. In average runoff years there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the entire irrigation season. However, serious deficiencies occur in dry years.

The daily mean discharge of Digger Creek below South Fork Branch is presented in Table A-13.

Method of Distribution

There are four court decrees* on Digger Creek. These decrees, in effect, have divided the water rights on the creek into two groups: the upper users and the lower users. The three upper users irrigate lands adjoining the stream, so that all water not consumptively used returns to Digger Creek. The lower users are located within a three mile reach of the stream and within a five-square-mile area. Very little runoff from the lower users returns to the creek.

The three upper users' water rights are absolute and not correlative to the lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. The lower users whose water rights total 12 cubic feet per second, have their allotments cut proportionally as the flow decreases. In effect, the upper users have

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* See Table 1

first priority allotments and the lower users have second priority allotments.

Irrigation is done principally by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1966 Distribution

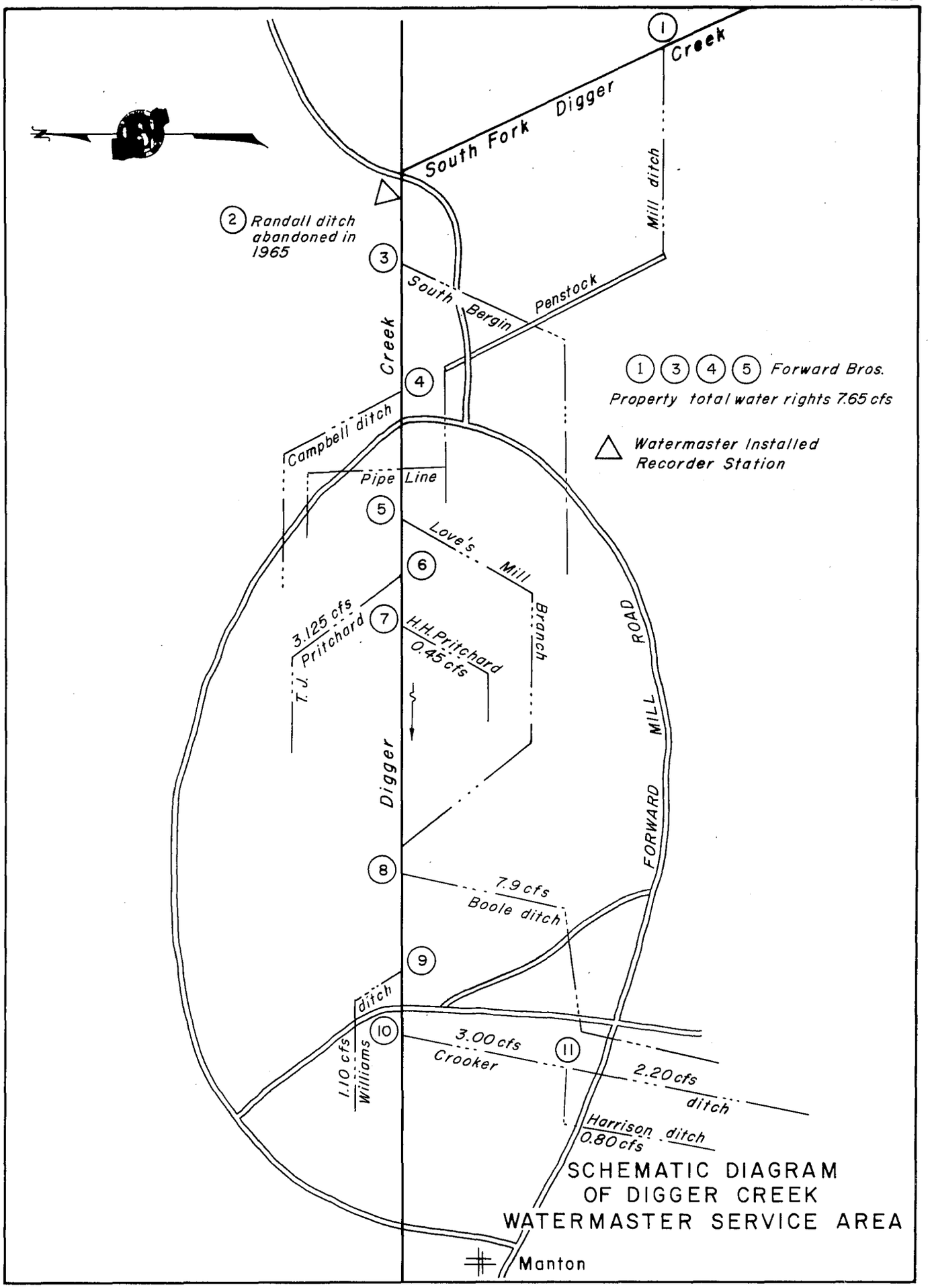
Watermaster service began July 1 and continued until September 30 in the Digger Creek Service Area. Ross P. Rogers, Water Resources Engineering Associate, was watermaster during this period.

Precipitation in the Digger Creek area was well below average during the winter with virtually none occurring during the spring. As a result, water users experienced a generally poor irrigation season. Adequate records are not available prior to the beginning of watermaster service on Digger Creek in 1964. However, water users in the area indicated that the 1966 season was one of the driest in many years.

The available water supply on Digger Creek was sufficient to satisfy all priority allotments (two priorities) and provide some surplus until mid-July. During most of the latter part of July, all allotments were served. Near the end of July the lower users' allotments were regulated to 90 percent. In early August the flow in Digger Creek continued to decrease, reaching the season low of 65 percent of the lower users allotments. Streamflow remained at this level until late August. Scattered rainstorms and slightly cooler weather resulted in an increase in the available water supply during September. Second priority users received 80 to 100 percent of their allotments depending on weather conditions.

Special occurrences. A two-foot concrete parshall flume was constructed in the recently combined Crooker-Harrison Ditch near its point of diversion from Digger Creek. Several diversion boxes are planned for construction on this ditch during the spring and summer of 1967. A permanent type combination headgate, weir box and spill-back in the Williams Ditch is also planned for construction next season.

FIGURE 6


1
South Fork Digger Creek
Mill ditch
2 Randall ditch abandoned in 1965
3
South Bergin Penstock
Creek
4
1 3 4 5 Forward Bros.
Property total water rights 7.65 cfs
Watermaster Installed Recorder Station
Campbell ditch
Pipe Line
5
Love's Mill Branch
6
3.125 cfs
T. J. Pritchard
7
H.H. Pritchard
0.45 cfs
Digger
ROAD
MILL
FORWARD
8
7.9 cfs
Boole ditch
9
ditch
10
1.10 cfs
Williams
3.00 cfs
Crooker
11
2.20 cfs
ditch
Harrison ditch
0.80 cfs
SCHEMATIC DIAGRAM
OF DIGGER CREEK
WATERMASTER SERVICE AREA
Manton

Hat Creek Watermaster Service Area

The Hat Creek Service Area is located in the eastern part of Shasta County north of Lassen Volcanic National Park. There are 44 water right owners in the area with total allotments of 135.535 cubic feet per second. Hat Creek, which flows in a northerly direction through the area, is the only source of water supply in the service area. The place of use, is Hat Creek Valley, which is approximately 20 miles long and two miles wide. Commencing at a point about three miles south of the town of Old Station, the valley extends northward to the confluence of Rising River and Hat Creek. The irrigable lands, which consist primarily of volcanic ash; are interlaced with large outcroppings of volcanic rock.

Schematic drawings for both the upper and lower users' diversion systems from Hat Creek are presented as Figures 7 through 7b.

Water Supply

The water supply of Hat Creek is derived from snowmelt runoff on Mount Lassen and from large springs. Snowmelt normally creates a high flow during May and June; however, the substantial portion of supply during the summer months comes from large springs which decrease only slightly in output. Only after a series of dry years does the flow of these springs fall much below 75 percent total allotments.

A record of the daily mean discharge of Hat Creek near the town of Hat Creek is presented in Table A-14.

Method of Distribution

The Hat Creek decree* divides the water rights on Hat Creek into two groups (upper users and lower users) who use the water on a ten-day rotation schedule, with one priority class for each group as the basis for distribution. This requires a complete reregulation of all diversions every ten days, alternating an irrigation supply to one group and a minimum flow (stockwater) to the other group.

Most irrigation in the area is accomplished by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the extremely porous soil. Diversion dams constructed across the creek serve to divert water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditch or from laterals. A few domestic rights are met by pumping directly from Hat Creek.

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* See Table 1

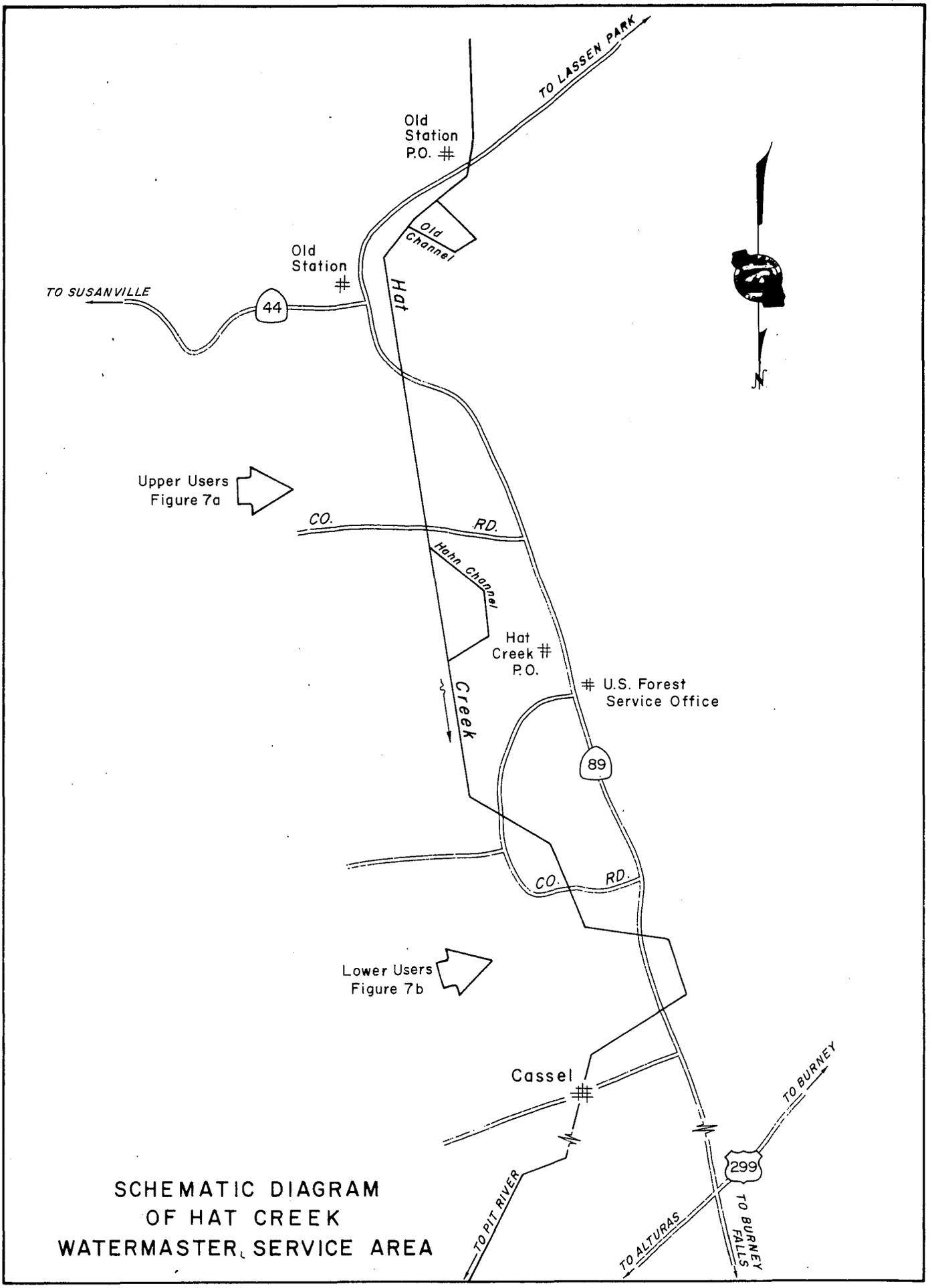
1966 Distribution

Watermaster service began May 1 in the Hat Creek Service Area and continued until September 30. Kenneth H. Lloyd, Water Resources Engineering Associate, was watermaster during this period.

The available water supply in the Hat Creek Service Area during the 1966 irrigation season was below average.

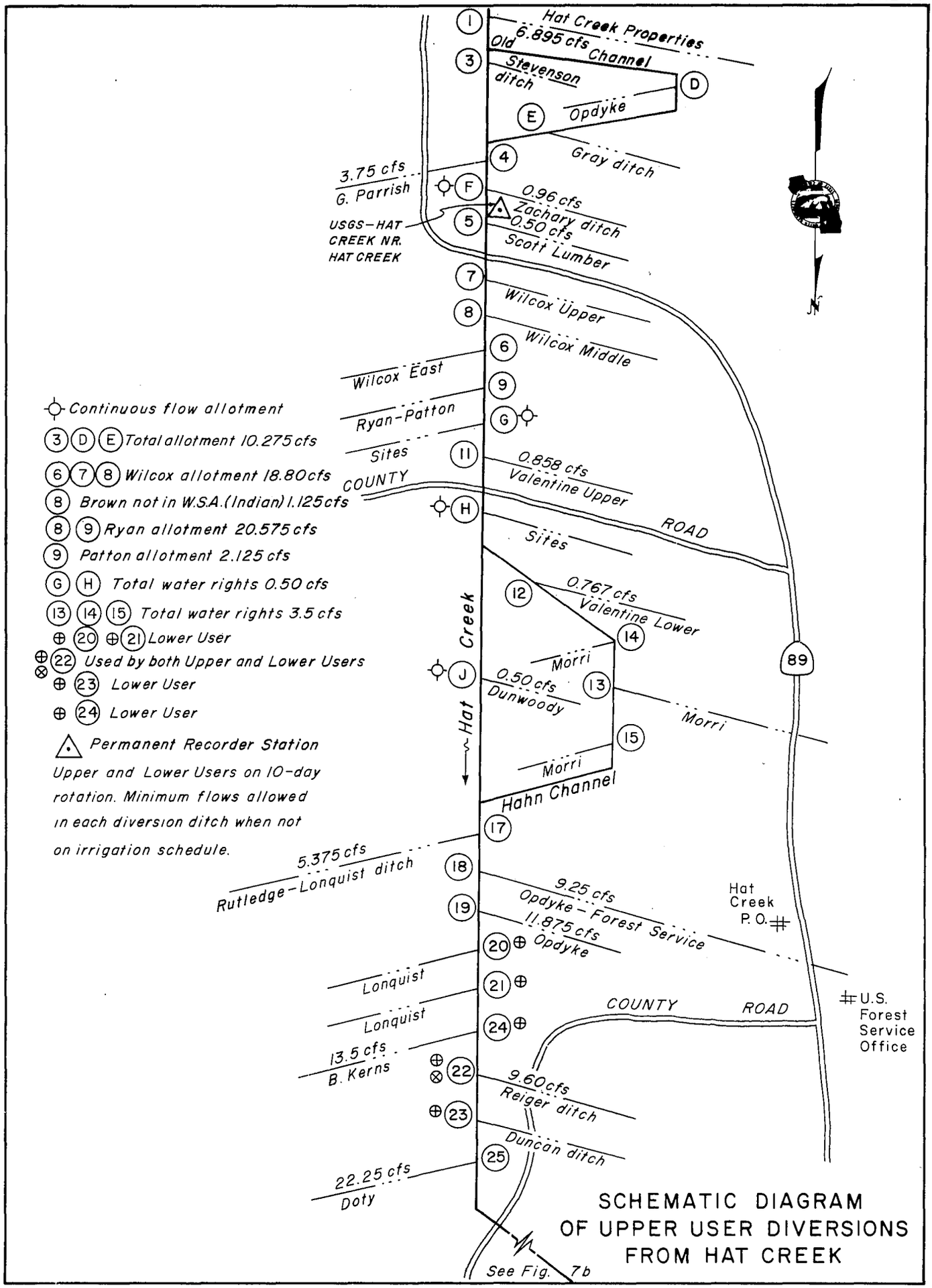
The distribution of Hat Creek water was continued on a ten-day rotation schedule (one priority) between the upper and lower users beginning May 1. Surplus water was available until June 20 when the upper users were regulated to their minimum stockwater allotments in order to provide full allotments to the lower users. The flow then graudually decreased until August 19 when the lower users were regulated to 75 percent of their irrigation allotments. The flow then remained constant until the end of the irrigation season.

FIGURE 7



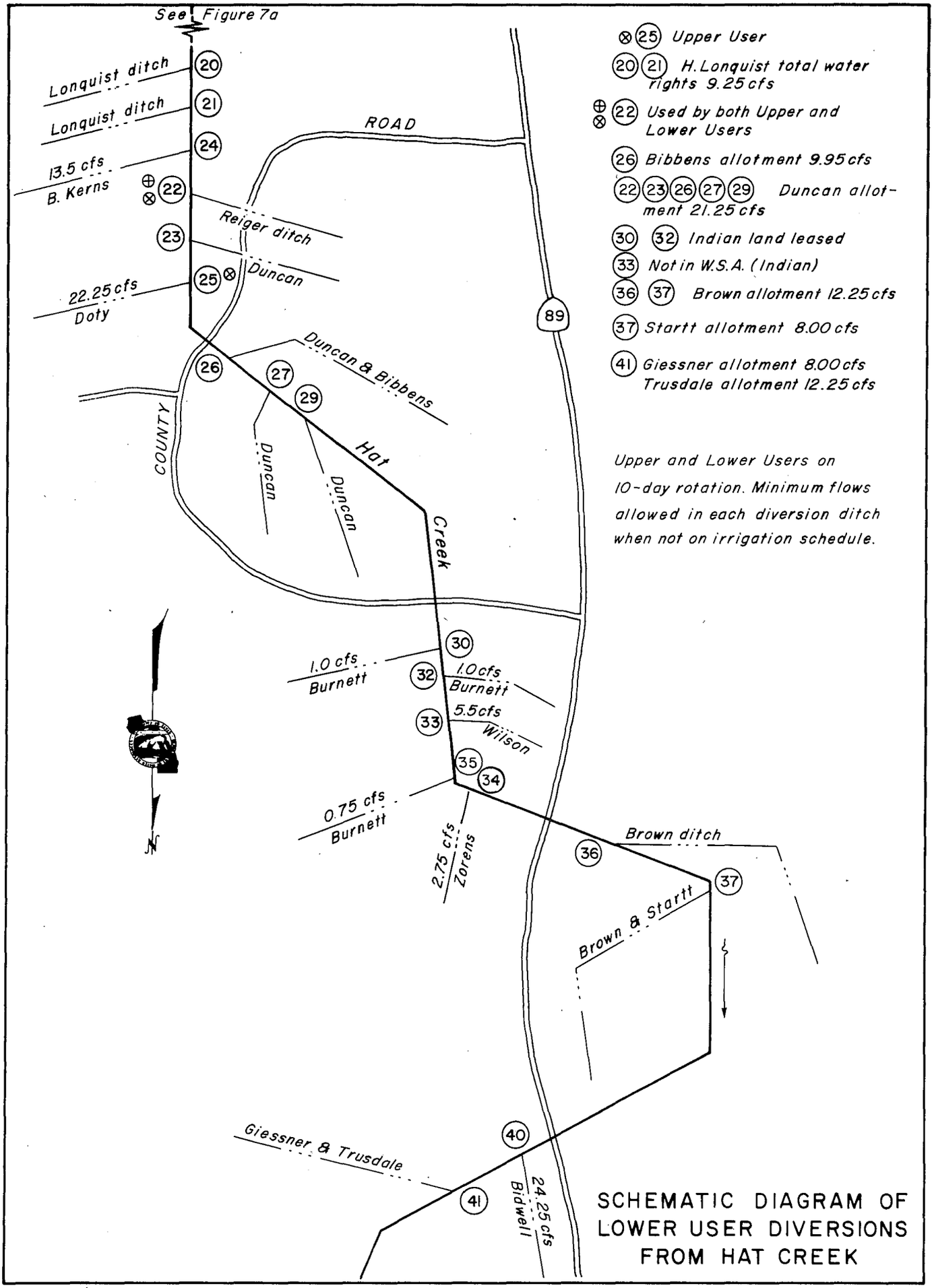
SCHEMATIC DIAGRAM
OF HAT CREEK
WATERMASTER SERVICE AREA

FIGURE 7a



SCHEMATIC DIAGRAM OF UPPER USER DIVERSIONS FROM HAT CREEK

FIGURE 7b



SCHEMATIC DIAGRAM OF LOWER USER DIVERSIONS FROM HAT CREEK

Indian Creek Watermaster Service Area

The Indian Creek Service Area is located in the north central part of Plumas County in the vicinity of the town of Greenville. There are 43 water right owners in the service area with total allotments of 97.015 cubic feet per second. The major sources of supply in the service area are Indian Creek and two major tributaries, Wolf Creek and Lights Creek. Indian Creek and its minor tributaries rise in the mountains east of the service area. It then flows through Gennessee Valley and through Indian Valley past the towns of Taylorsville and Crescent Mills to its confluence with the North Fork Feather River. Indian Creek is joined from the north by Lights Creek and Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, which is about four miles long and two and one-half miles wide. The average elevation is about 3,500 feet.

A schematic drawing of each major stream system within the Indian Creek Service Area is presented as Figures 8 through 8c.

Water Supply

The water supply in the Indian Creek Service Area is derived primarily from snowmelt runoff with springs and seepage maintaining some late summer flow. Flow of Wolf Creek is normally sufficient to supply all allotments until June 1, while Indian and Lights Creeks, with the exception of some tributaries, have sufficient flow to supply all allotments until July 1. After these dates, the flow steadily decreases throughout the season until by the end of August only a small portion of allotments is available.

A record of the daily mean discharge of Indian Creek near Taylorsville is presented in Table A-15.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are placed in the stream channels to divert the water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley. A few sprinkling systems are also in use.

The Indian Creek decree* establishes three priority classes for each of the major stream systems within the Indian Creek Service Area.

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* See Table 1

1966 Distribution

Watermaster service began in the Indian Creek Service Area on April 27 and continued until September 30. Harvey M. Jorgensen, Water Resources Engineering Associate, was field watermaster during this period.

A below average water supply existed in the service area during the 1966 season.

Wolf Creek. The available water supply of Wolf Creek was sufficient to satisfy all allotments until June 1. After that date the flow gradually decreased until only first priority allotments were being served on the 8th of August.

Lights Creek and Tributaries. The water supply of Lights Creek was sufficient to satisfy all allotments until the 1st of June. The streamflow then steadily decreased until the stream was dry on August 23.

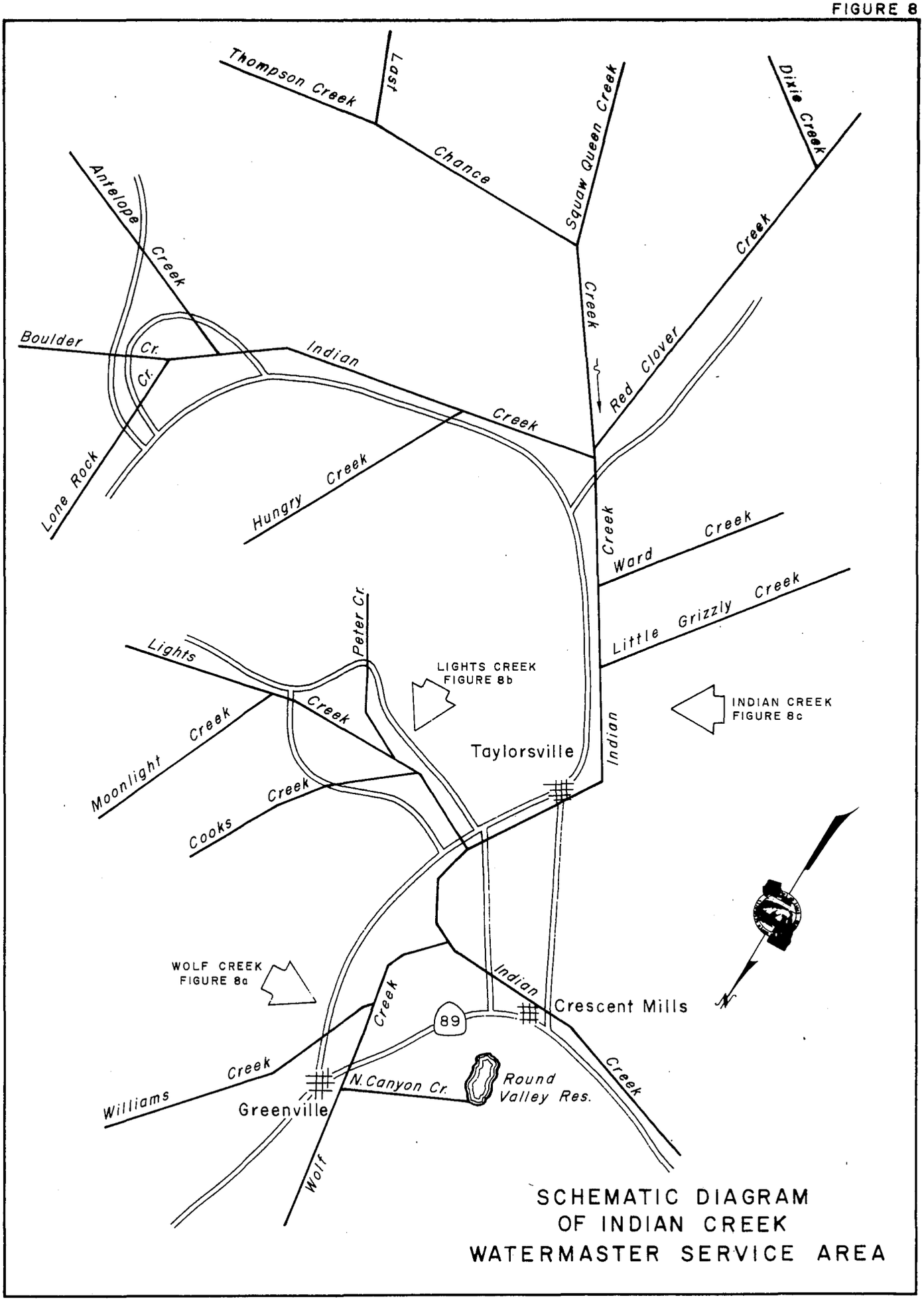
The available water supply of Cooks Creek satisfied all allotments until May 15. On June 15 the stream at diversion number 81 was dry.

Indian Creek. The flow of Indian Creek was sufficient to satisfy all allotments until June 15. On July 29 there was 30 cubic feet per second in Indian Creek at diversion 54. Sufficient underflow below the Mill Race Diversion Dam occurred to meet the allotments of the downstream users.

Special occurrences. During the 1966 watermaster season, control devices were installed in diversion 36, 54, and 55 to facilitate the routing of Project water from Antelope Lake past these points of diversion.

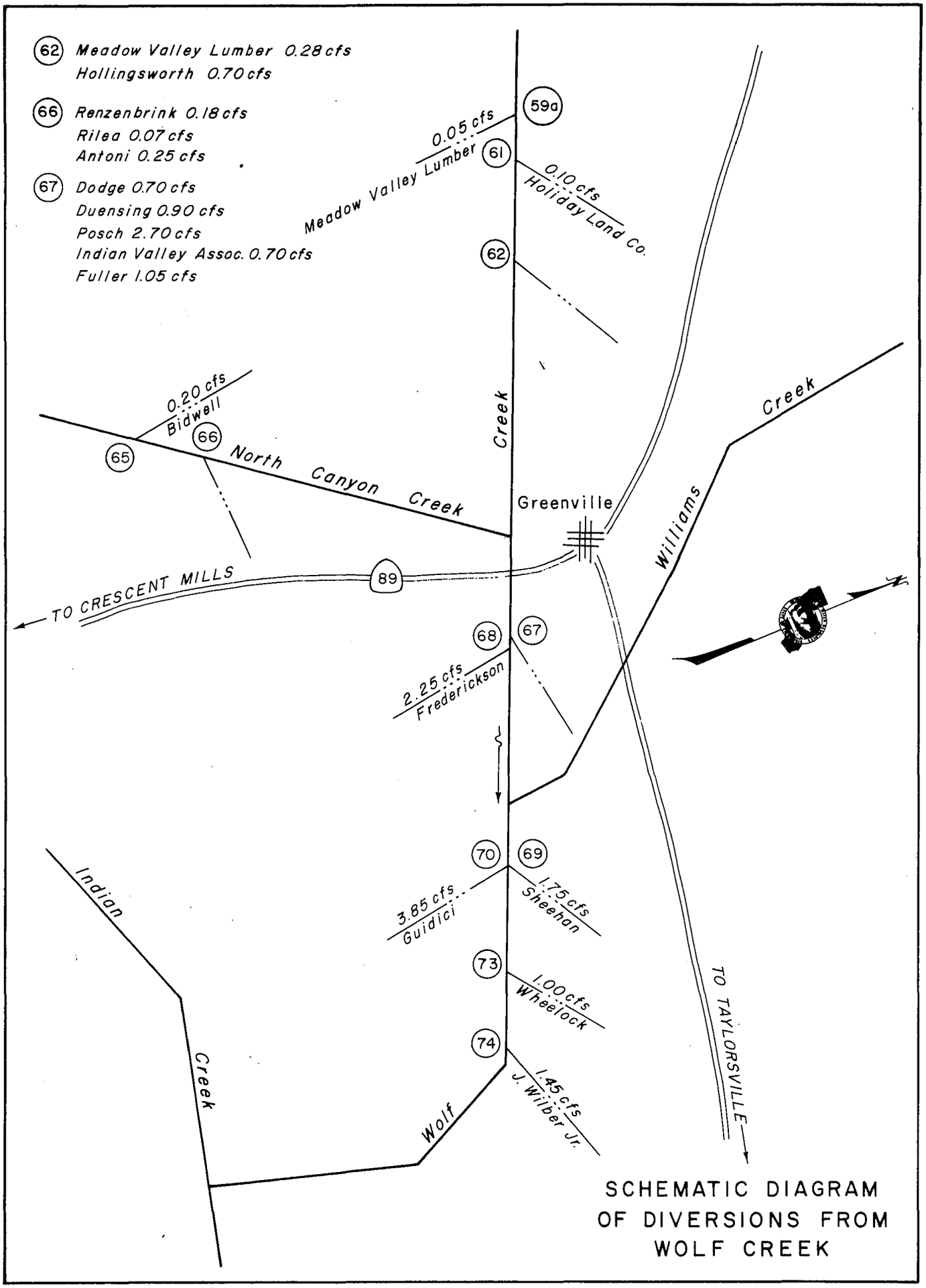
A permanent concrete control was constructed below the Gennessee Sawmill on Indian Creek to provide a control point for the regulation of Project water.

FIGURE 8



SCHEMATIC DIAGRAM
OF INDIAN CREEK
WATERMASTER SERVICE AREA

FIGURE 8a



SCHEMATIC DIAGRAM OF DIVERSIONS FROM WOLF CREEK

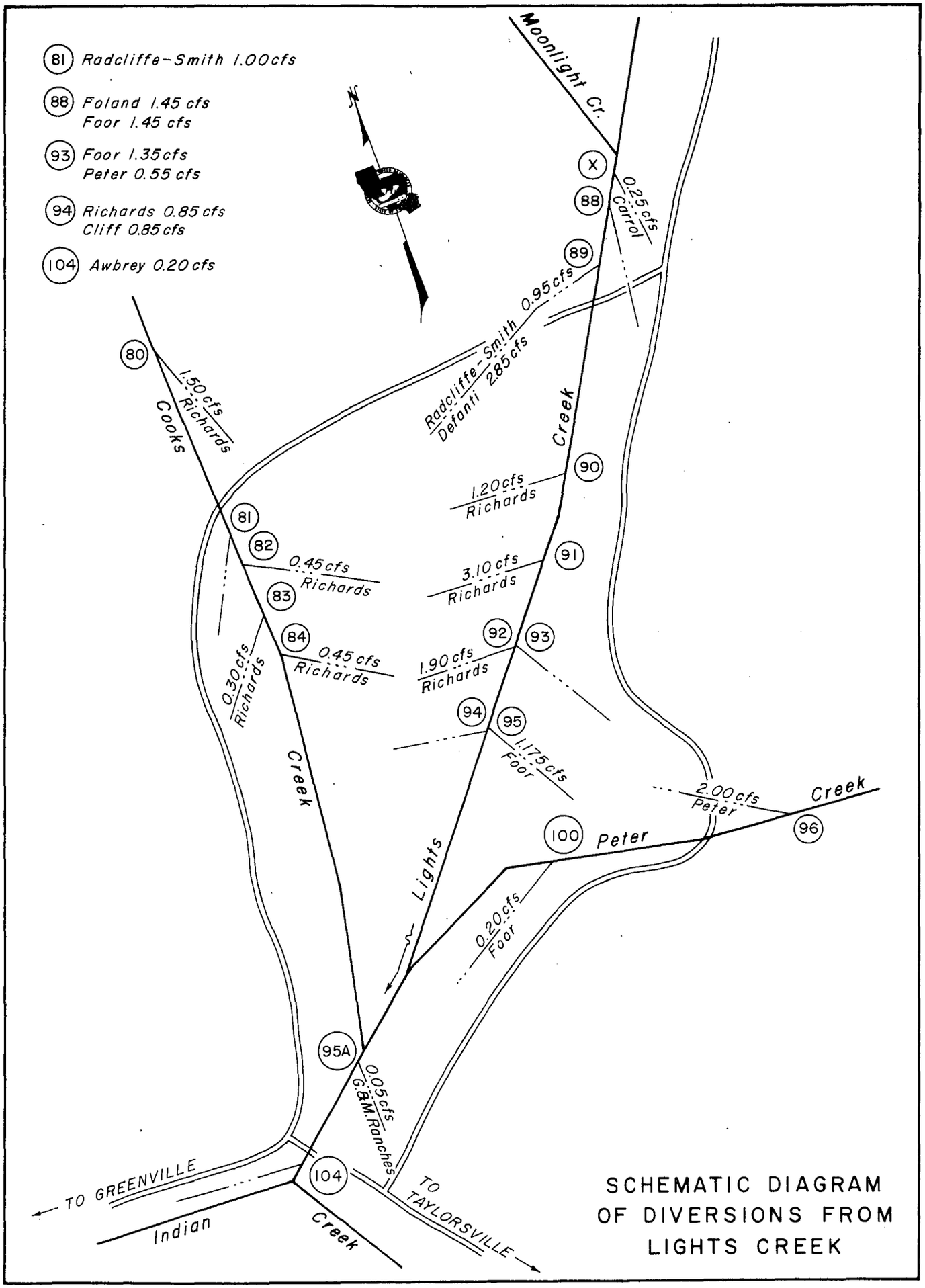
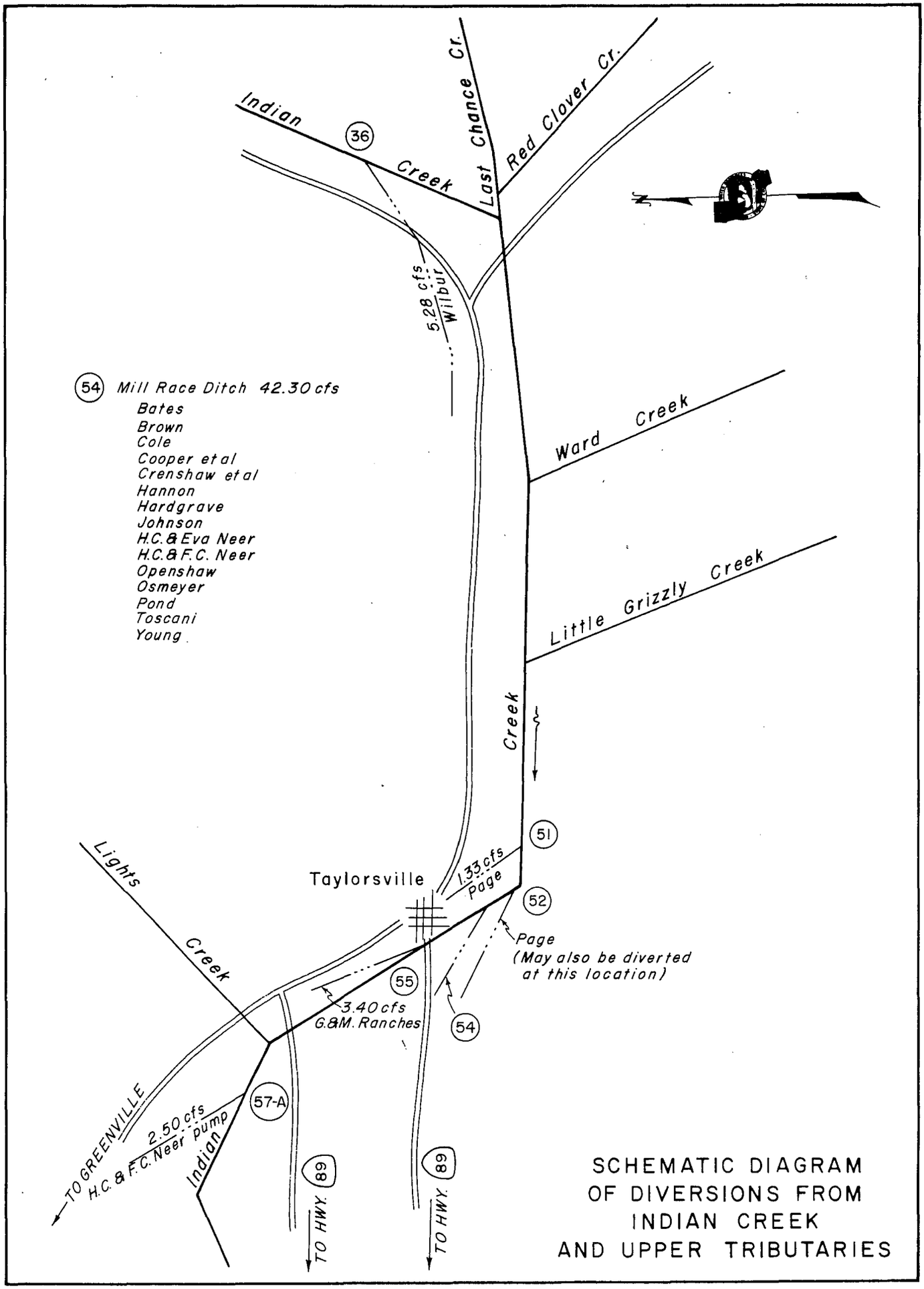

(81) Radcliffe-Smith 1.00cfs
(88) Foland 1.45 cfs
Foor 1.45 cfs
(93) Foor 1.35cfs
Peter 0.55 cfs
(94) Richards 0.85 cfs
Cliff 0.85cfs
(104) Awbrey 0.20 cfs
N
Moonlight Cr.
X
88
0.25 cfs Carrol
89
Radcliffe-Smith 0.95cfs
Defanti 2.85cfs
80
1.50 cfs Richards
Cooks Creek
90
1.20cfs Richards
81
82
0.45cfs Richards
91
3.10 cfs Richards
83
84
0.45 cfs Richards
92
93
1.90 cfs Richards
0.30 cfs Richards
Creek
94
95
1.175 cfs Foor
2.00 cfs Peter
Creek
96
100 Peter
Lights
0.20 cfs Foor
95A
0.05 cfs G.&M. Ranches
104
TO GREENVILLE
Indian Creek
TO TAYLORSVILLE
SCHEMATIC DIAGRAM OF DIVERSIONS FROM LIGHTS CREEK

FIGURE 8c



SCHEMATIC DIAGRAM OF DIVERSIONS FROM INDIAN CREEK AND UPPER TRIBUTARIES

Middle Fork Feather River Watermaster Service Area

The Middle Fork Feather River Service Area is located in the plateau area on the west slope of the Sierra Nevada in the eastern portions of Sierra and Plumas Counties. There are 91 water right owners with total allotments of 370.865 cubic feet per second.

Major sources of supply for this service area is the Middle Fork Feather River and its tributaries in Sierra Valley. The area is comprised of five major stream groups. These groups, starting in the north and east corner of the valley and proceeding in a southerly and westerly direction, are Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek. The Middle Fork Feather River channel flows in a general northerly direction for approximately 20 miles through Sierra Valley. It then flows in a westerly direction. The major place of use is in Sierra Valley, which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

A schematic drawing of the Middle Fork Feather River Service Area is presented as Figure 9.

Water Supply

The major water supply in the Middle Fork Feather River Service Area is derived from snowmelt runoff, with minor flow from springs and from supplemental stored and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam which was constructed by the Department of Water Resources in 1961. Stored water is released and used as needed under the provisions of an annual contract. Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases rapidly until about June 1. Only first and second priority allotments are then available for the remainder of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time up to 60 cubic feet per second is diverted from Little Truckee River to supplement the flow. This imported water is diverted through the Little Truckee Ditch into Cold Stream and then into Webber Creek for use of shareholders in the Sierra Valley Water Company. This supplemental

supply decreases rapidly during July producing only a small quantity during the latter part of the season. The West Side Canal streams normally supply all allotments until the first part of June. The flow then gradually declines throughout the season.

The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. The flow then gradually declines for the remainder of the season.

Records of daily mean discharge of several stream gaging stations in the Middle Fork Feather River Service Area are presented in Table A-16 through A-20.

Method of Distribution

Wild flooding is employed by the majority of the water users to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

The Middle Fork Feather River decree* establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River Service Area as follows: Little Last Chance Creek-five; West Side Canal Group - five; Fletcher Creek and Spring Channels - three; Sierra Valley Mutual Water Company - one; Webber Creek and tributaries - six; and Smithneck Creek - five.

1966 Distribution

Watermaster service began April 1 and continued until September 30 in the Middle Fork Feather River Service Area. Joe Nessler, Water Resources Engineering Associate, was field watermaster during this period. He was assisted by Conrad Lahr, Water Resources Technician II.

A below average water supply existed in the service area during the 1966 season.

Little Last Chance Creek. Frenchman Dam and Reservoir began its fifth season of operation in 1966. Agreements concerning storage and distribution were again negotiated with the users in this stream system. The resulting changes in procedures and specific details of distribution and operation are covered in a separate report prepared by the Operations Section of the Sacramento District.

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* See Table 1

West Side Canal Group. The West Side Canal Group, consisting of Hamlin, Miller, and Turner Creeks, received a sufficient water supply to satisfy all allotments (five priorities) until about June 1, after which regulation was required. At that time, a three week rotation schedule for users on Turner Creek below Highway 49-89 was initiated. This schedule remained in effect through the end of the season. From August 1 until the end of the season, the supply remained fairly constant at approximately 15 percent of second priority allotments. Stockwater was available throughout the season from the entire stream system.

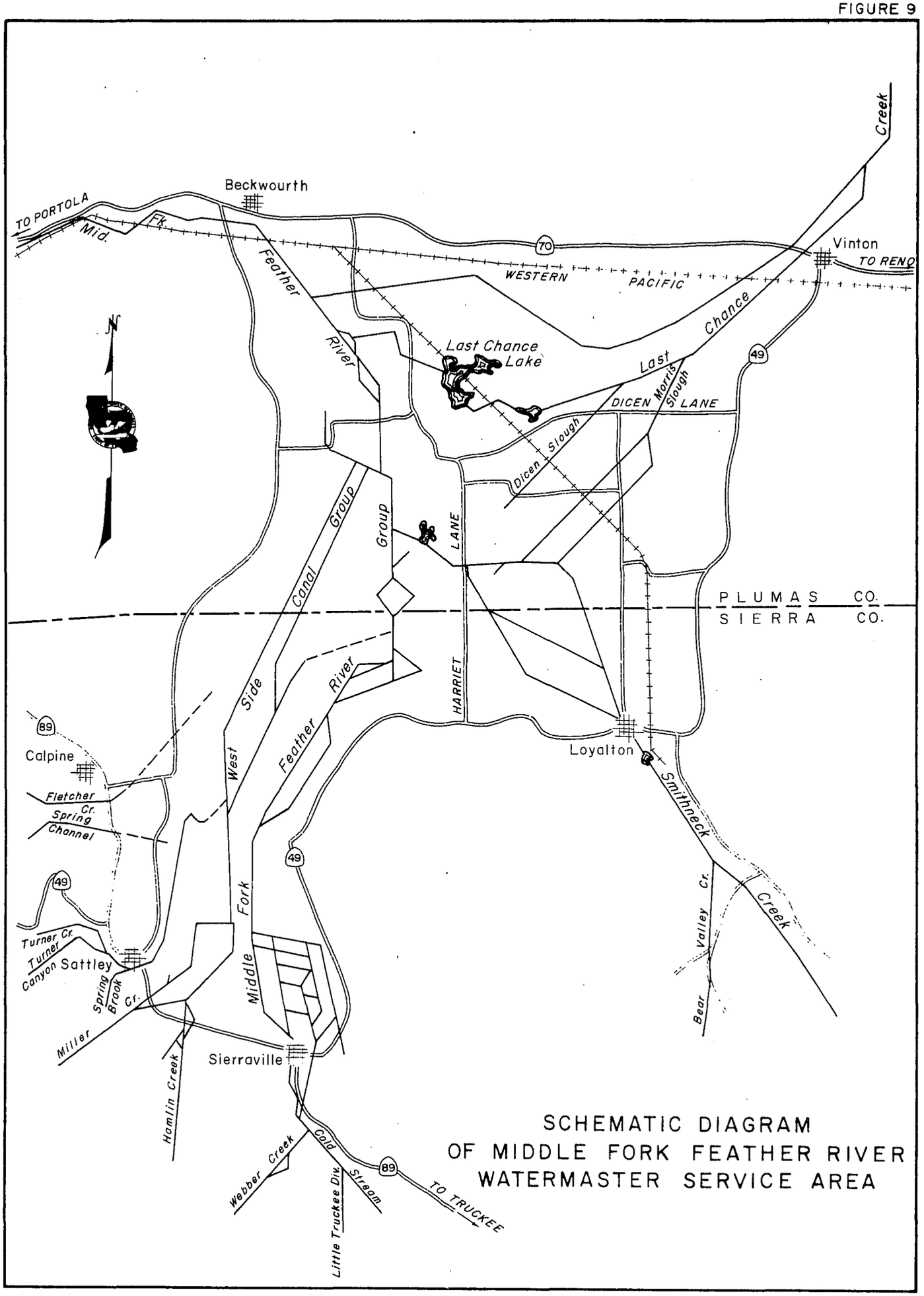
Fletcher Creek and Spring Channels. The available water supply was sufficient to satisfy all allotments (three priorities) until about June 15. The runoff then gradually decreased until by July 1 only about 30 percent of second priority allotments were being met.

Sierra Valley Mutual Water Company. The Little Truckee Ditch carried 6,886 acre-feet of water to the Sierra Valley Mutual Water Company during the period of April 8, through September 30, 1966. Water was distributed to shareholders in accordance with schedule 9 of the Middle Fork Feather River Decree.

Webber Creek and Tributaries. The natural flow of Webber Creek was sufficient to supply all allotments (six priorities) until May 1. Combined with the water imported from the Little Truckee River, beginning about April 8, the total supply was sufficient to satisfy all allotments of the Sierra Valley Mutual Water Company shareholders until June 1. The natural flow decreased gradually after June 1 and by June 15 was only enough for first priority allotments. From July 1 until the end of the season, an average of 50 percent of first priority allotments was available.

Smithneck Creek. The available water supply on Smithneck Creek was sufficient to satisfy all allotments (five priorities) until April 15. At that time the first and second priority allotments began diverting the entire flow. Starting on April 18, a rotation program among second priority allotment users below Loyalton was practiced. Due to insufficient flow the rotation schedule was terminated on July 1.

FIGURE 9



SCHEMATIC DIAGRAM
OF MIDDLE FORK FEATHER RIVER
WATERMASTER SERVICE AREA

North Fork Cottonwood Creek Watermaster Service Area

The North Fork Cottonwood Creek Service Area is located in the southwestern part of Shasta County near the towns of Ono and Gas Point. There are nine water right owners in the area with total allotments of 30.30 cubic feet per second.

North Fork Cottonwood Creek and its tributaries, Moon Creek and Jerusalem Creek, are the major sources of water supply in the area. These creeks rise on the east slopes of the foothills of the Coast Range Mountains. North Fork Cottonwood Creeks flows in a southeasterly direction to its confluence with Cottonwood Creek near Gas Point. The area is characterized by high summer temperatures and moderate rainfall. The irrigable land consists of sparsely scattered parcels separated by steep, brushy hills. These lands are at about the 1,000-foot elevation.

A schematic drawing of the North Fork Cottonwood Creek stream system is presented as Figure 10.

Water Supply

Snowmelt contributes to the flow in North Fork Cottonwood Creek during the early weeks of the irrigation season. However, perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table A-21. This stream gaging station is located downstream from most points of diversion on the creek but gives a general indication of the water supply.

Method of Distribution

The general practice throughout the area is to irrigate by wild flooding. One water user, however, pumps directly from the creek using a sprinkler system to irrigate his crops. Pumping was necessary at this diversion point because the irrigated land was higher in elevation than the creek channel.

The North Fork Cottonwood Creek decree* provides for distribution of water on an equal and correlative basis for all users - one priority class.

1966 Distribution

Watermaster service began July 1 and continued until September 30 in the North Fork Cottonwood Creek Service Area. Ross P. Rogers, Water

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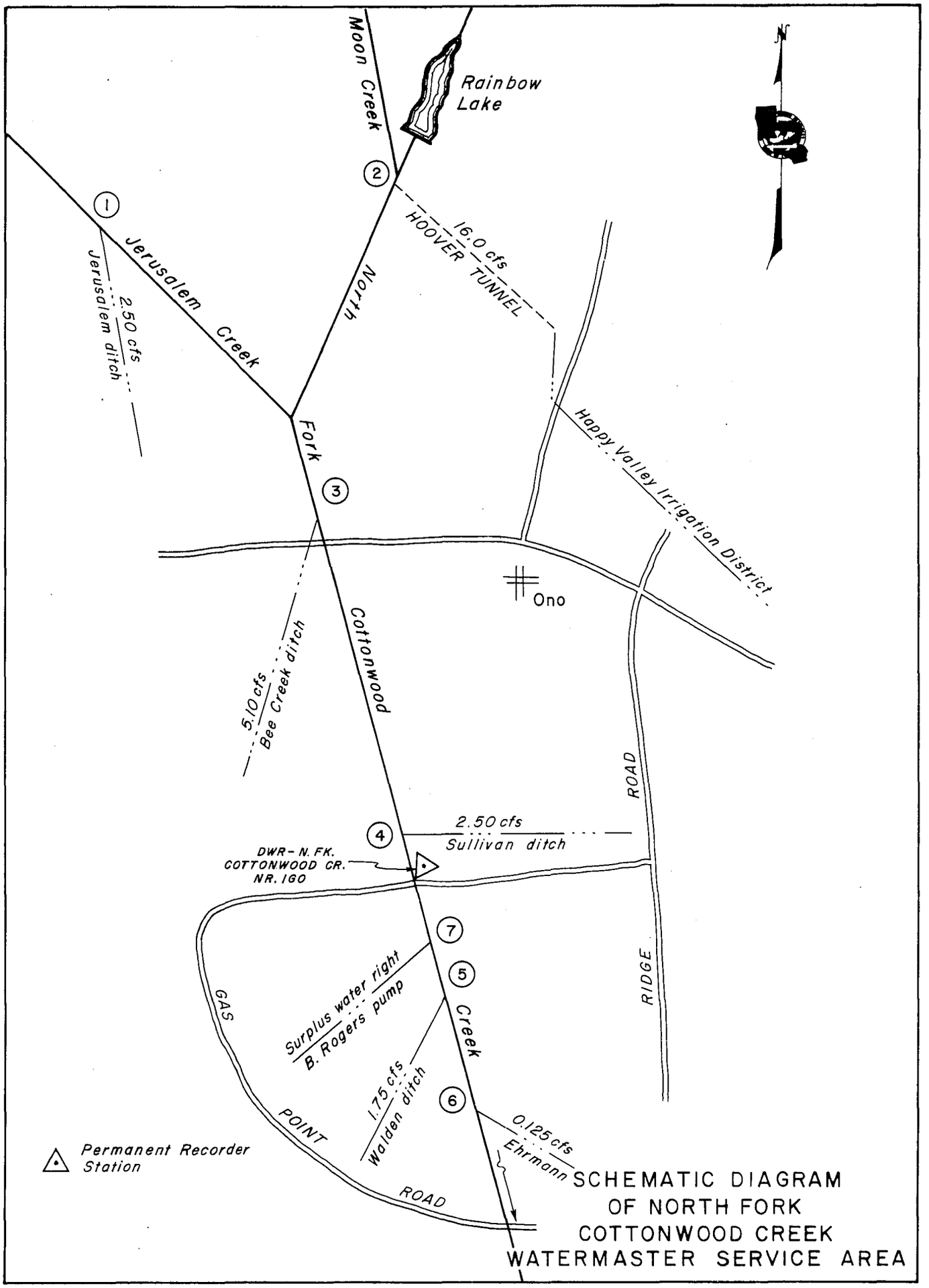
* See Table 1

Resources Engineering Associate, was field watermaster during this period.

Streamflow runoff in the North Fork Cottonwood Creek drainage area was well below average during the season. However, the available water supply for most lower users was adequate due to the continued leakage at the Happy Valley Irrigation District's diversion dam. This amount is usually greater than the total downstream allotments.

As stream gaging stations are not maintained in the upper portion of the service area, no exact streamflow comparison with previous years can be made. However, the North Fork Cottonwood Creek near Igo station recorded a total of 19,050 acre-feet of runoff between April 1 and September 30, which is approximately 61 percent of the mean for a ten year period of record.

FIGURE 10



SCHEMATIC DIAGRAM
OF NORTH FORK
COTTONWOOD CREEK
WATERMASTER SERVICE AREA

North Fork Pit River Watermaster Service Area

The North Fork Pit River Service Area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends from the Oregon border about 45 miles southward to a point just below Alturas. There are 96 water right owners in the area with total allotments of 215.065 cubic feet per second.

A number of small independent stream systems, rising on the west slope of the Warner Mountains and generally flowing in a westerly direction, comprise the major source of water supply. Three of these streams, New Pine Creek, Cottonwood Creek, and Davis Creek, are tributary to Goose Lake. The other streams in the service area are all tributary to North Fork Pit River. They are: Linville Creek, Franklin Creek, Joseph Creek, Thoms Creek, and Parker Creek. Shields Creek and Gleason Creek are tributaries to Parker Creek. The North Fork Pit River flows in a general southerly course from the south rim of Goose Lake to the confluence with the South Fork Pit River immediately below Alturas. The streams tributary to Goose Lake do not contribute to the flow of North Fork Pit River since the lake has not spilled into the river for nearly 100 years.

The place of use in the northern half of the area lies in a relatively long, narrow, sloping strip extending between the eastern shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, consisting of the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams.

A schematic drawing of each major stream system within the North Fork Pit River Service Area is presented as Figures 11 through 11k.

Water Supply

The streams which serve the area are fed by snowmelt runoff and springs in the Warner Mountains. A large portion of the runoff occurs early in the spring, decreasing rapidly in May and June. The watershed of New Pine Creek, however, is at a higher elevation and maintains a good supply well into the summer. After the snowpack is depleted, perennial springs at the headwaters of the tributaries are the main sources of water supply. Linville Creek, with its small drainage basin, depends almost entirely on the springs at its head. Gleason Creek, Thoms Creek, and Cottonwood Creek are usually dry in August, except during years

of above average water supply.

Some supplemental water is stored in small reservoirs throughout the area, none of which are operated by the watermaster. However, the inflows to some of these reservoirs are under the watermaster's jurisdiction.

Records of the daily mean discharge at several stream gaging stations in the North Fork Pit River Service Area are presented in Tables A-22 through A-33.

Methods of Distribution

Irrigation is accomplished primarily by wild flooding from random field ditches along high spots in the meadows. Various types of diversion structures are used to divert the natural streamflow into small earth ditches which convey it to the meadows. At present there is a limited amount of sprinkler irrigation, some by naturally developed pressure and some by direct pumping from small sumps in the ditches. Subirrigation by the use of large flashboard dams to raise the water level in the stream channel is being practiced on the North Fork Pit River between Parker Creek and Alturas.

The several decrees* which apply to the North Fork Pit River Service Area establish the following number of priority classes for the various stream systems: New Pine Creek - four; Cottonwood Creek - six; Davis Creek - four; Linville Creek - two; Franklin Creek - four; Joseph Creek - four; Thoms Creek - three; Parker Creek - four; Shields Creek - four; Gleason Creek - five; and North Fork Pit River - five.

1966 Distribution

Watermaster service began on April 18 and continued until September 30, 1966. Charles H. Holmes, Assistant Civil Engineer, was field watermaster during this period.

Throughout the service area the available water supply during the 1966 irrigation season was generally below average.

New Pine Creek. At the beginning of the season a small amount of surplus water was available. On June 30 (the end of the proration or correlative system of distribution) the flow of New Pine Creek had diminished to only 45 percent of allotments.

Commencing July 1, in accordance with the decree, distribution was based on the priority system (four priorities). At this time third

* See Table 1

priority users were receiving 25 percent of their allotments. The flow then gradually decreased until July 16 only second priority allotments were served. From that date the water supply continued to diminish until the end of the season when only 15 percent of second priority rights were being met.

Cottonwood Creek. The available water supply in Cottonwood Creek in mid-June was serving only 50 percent of first priority allotments (six priorities). At the end of the season the supply was virtually exhausted, as only 3 percent of first priority allotments were being filled.

Davis Creek. The available water supply in Davis Creek was sufficient to serve only 50 percent of third priority allotments (four priorities) on April 20. Between May 5 and May 8 the flow increased to permit a 5 percent allotment to fourth priority users. It then gradually receded reaching 100 percent of second priorities on July 12, and 75 percent at the end of the season.

Linville Creek. The available water supply in Linville Creek remained quite consistent throughout the irrigation season but was never enough to supply any second priority allotments (two priorities). The flow decreased from 60 percent of first priority allotments during the later part of April to 50 percent in mid-May. It then gradually increased to 60 percent of first priority at the end of the watermaster season.

Franklin Creek. The available water supply in Franklin Creek on April 22 was 30 percent of third priority allotments (four priorities). It then decreased gradually until the middle of July when only minimal quantities of third priority allotments were available. From then until the end of the watermaster season the flow remained fairly constant. On September 15 the winter schedule of priorities went into effect. Under this schedule, 50 percent of second priorities were served.

Joseph Creek. A surplus water supply existed in Joseph Creek until May 1. The flow then receded rapidly until mid-July when only 25 percent of first priority allotments (four priorities) was available. The flow then improved slightly until by the end of the season about 40 percent of first priority allotments were being served.

Thoms Creek. A sufficient water supply existed in Thoms Creek

to meet all allotments (three priorities) until June 11. The flow then receded to 50 percent of first priority allotments from mid-August to early September. It then gradually increased until by the end of the watermaster season all allotments were being fully met.

Gleason Creek. The available water supply in Gleason Creek on May 5 was able to satisfy only about 10 percent of third priority allotments (five priorities). The flow then decreased rapidly to 100 percent of first priorities on May 11. By August 11 the stream was dry.

Shields Creek. The flow in Shields Creek on April 25 was able to satisfy only 80 percent of second priority allotments (four priorities). A gradual decrease occurred until July 1 when 40 percent of first priority allotments was available. The flow then gradually increased to 25 percent of second priorities at the end of the season.

Parker Creek. The flow in Parker Creek in late April was sufficient to supply 100 percent of second priority allotments (four priorities). It then gradually decreased to 100 percent of first priorities in late June and to 50 percent by mid-September. For the remainder of the month a slight increase enabled 75 percent of first priority to be served.

North Fork Pit River. The flow in North Fork Pit River was able to supply only about 50 percent of second priority allotments (five priorities) on May 1. It then decreased steadily throughout the remainder of the season. On September 30 only 15 percent of first priority allotments were being met.

FIGURE II

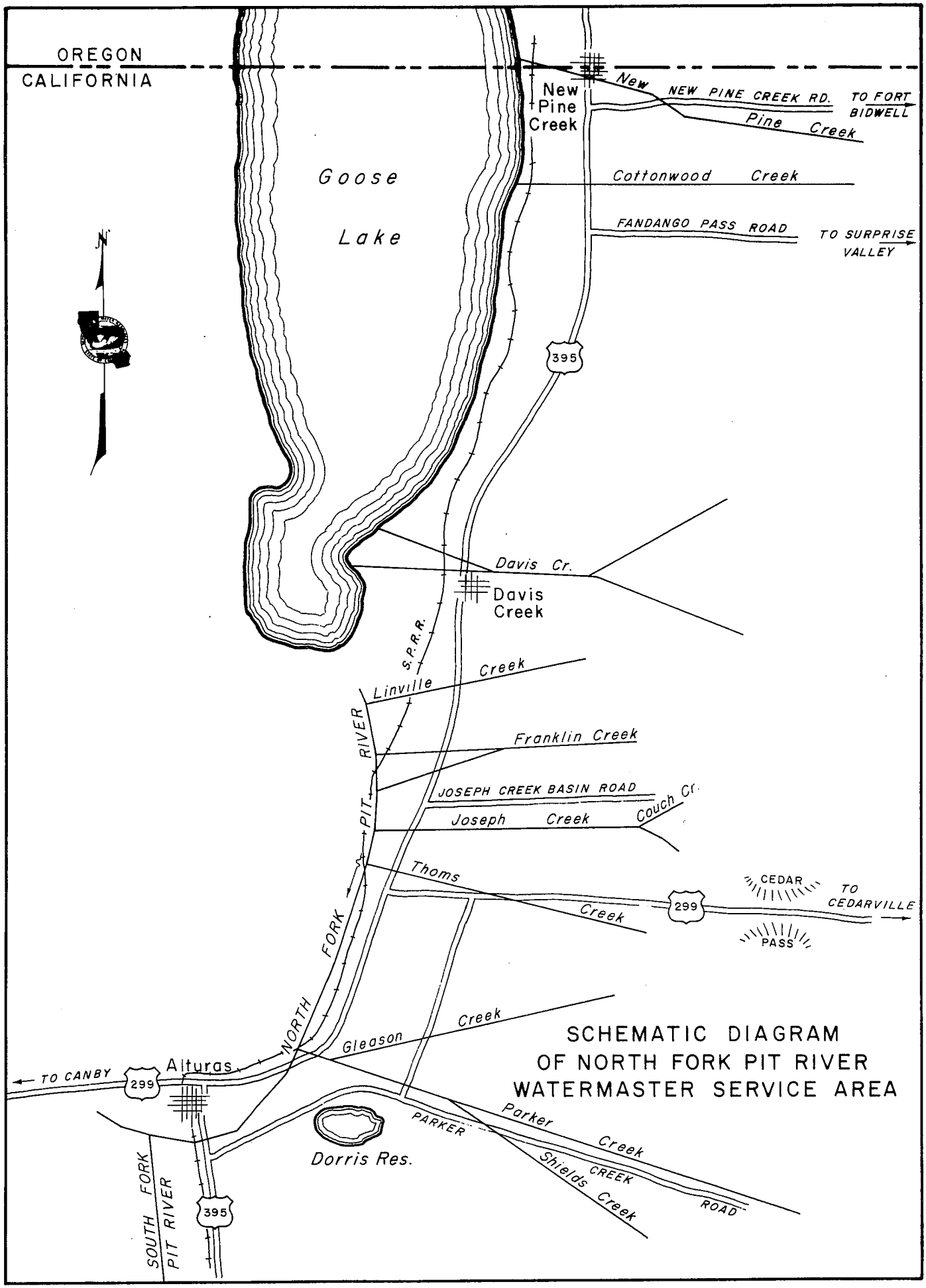
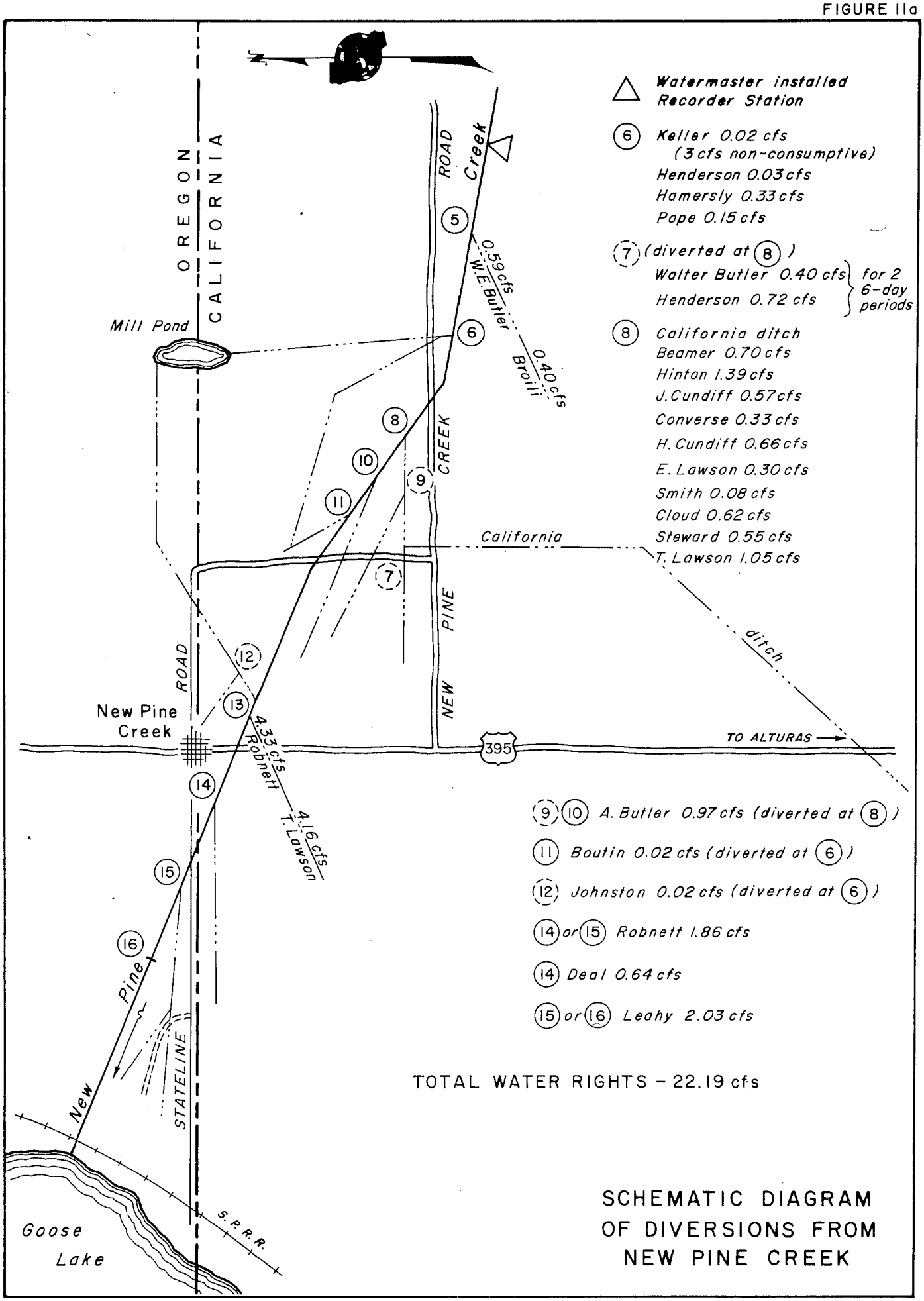

OREGON
CALIFORNIA
New Pine Creek
New
NEW PINE CREEK RD.
TO FORT BIDWELL
Pine Creek
Goose Lake
Cottonwood Creek
FANDANGO PASS ROAD
TO SURPRISE VALLEY
N
395
Davis Cr.
Davis Creek
S.P.R.R.
Linville Creek
RIVER
Franklin Creek
JOSEPH CREEK BASIN ROAD
Joseph Creek
Couch Cr.
PIT
Thoms Creek
299
CEDAR PASS
TO CEDARVILLE
FORK
NORTH
Gleason Creek
TO CANBY
299
Alturas
PARKER
Parker Creek
Shields Creek
CREEK ROAD
Dorris Res.
SOUTH FORK PIT RIVER
395
SCHEMATIC DIAGRAM
OF NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

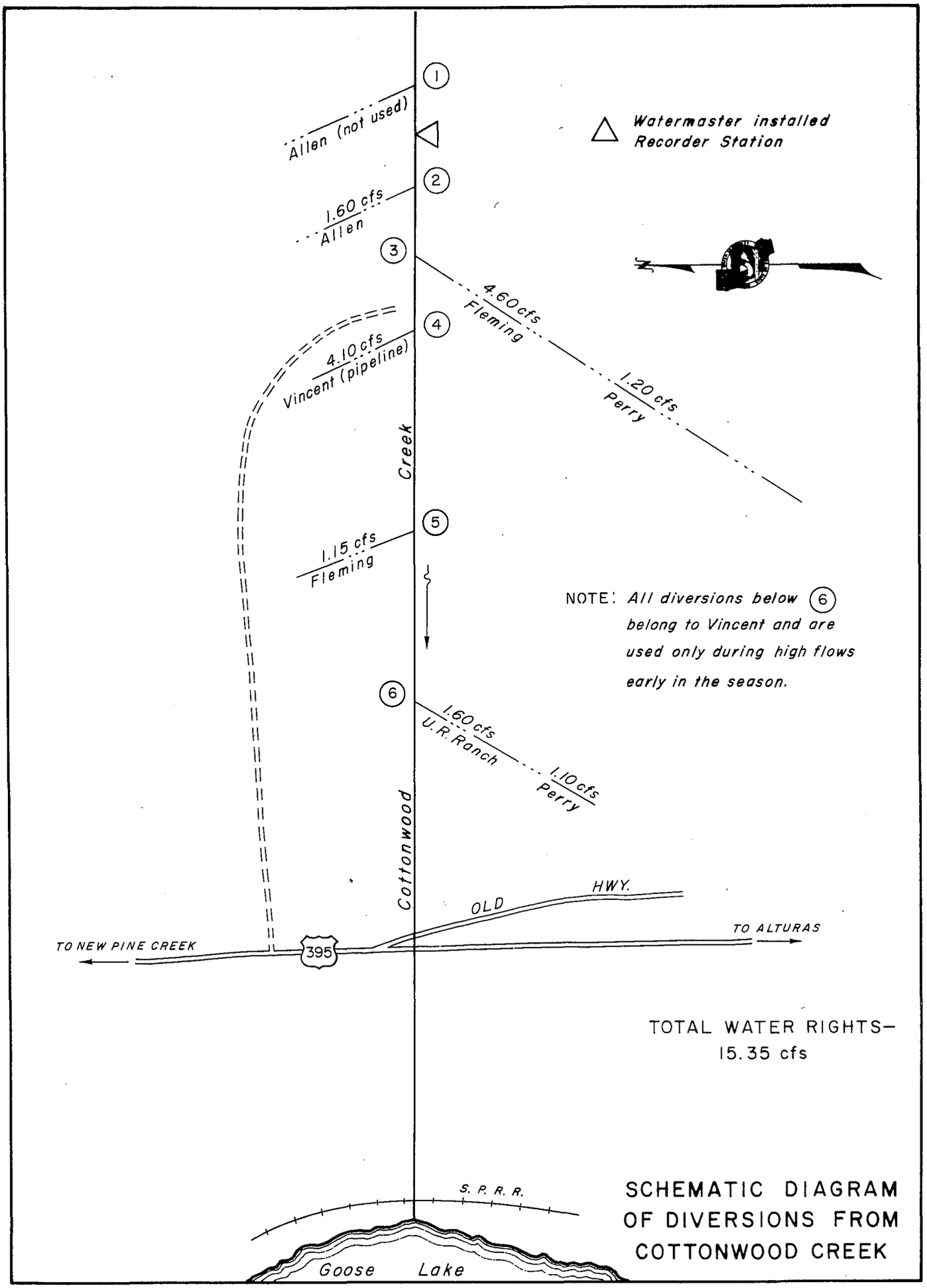
FIGURE IIa



TOTAL WATER RIGHTS - 22.19 cfs

SCHEMATIC DIAGRAM OF DIVERSIONS FROM NEW PINE CREEK

FIGURE 11b



SCHEMATIC DIAGRAM OF DIVERSIONS FROM COTTONWOOD CREEK

FIGURE IIc

△ Watermaster installed Recorder Station

(1) Crabtree 0.40 cfs
Grace 0.40 cfs

(4) C. Brunnemer 0.80 cfs

(6) C. Brunnemer 0.40 cfs

(4) to (6), (8), (9), (11), (16), (19), (20), (22), (24), (25) C.M. Bishop 6.175 cfs

(5) Mann 0.20 cfs
C.M. Bishop 0.125 cfs

(7) Brown 0.1125 cfs
Dolon 0.0375 cfs
Keaton 0.15 cfs

(8) Mulkey 0.15 cfs
E. Brunnemer 0.15 cfs
C. Brunnemer 0.15 cfs
Grivel 0.06 cfs
Pointere 0.04 cfs

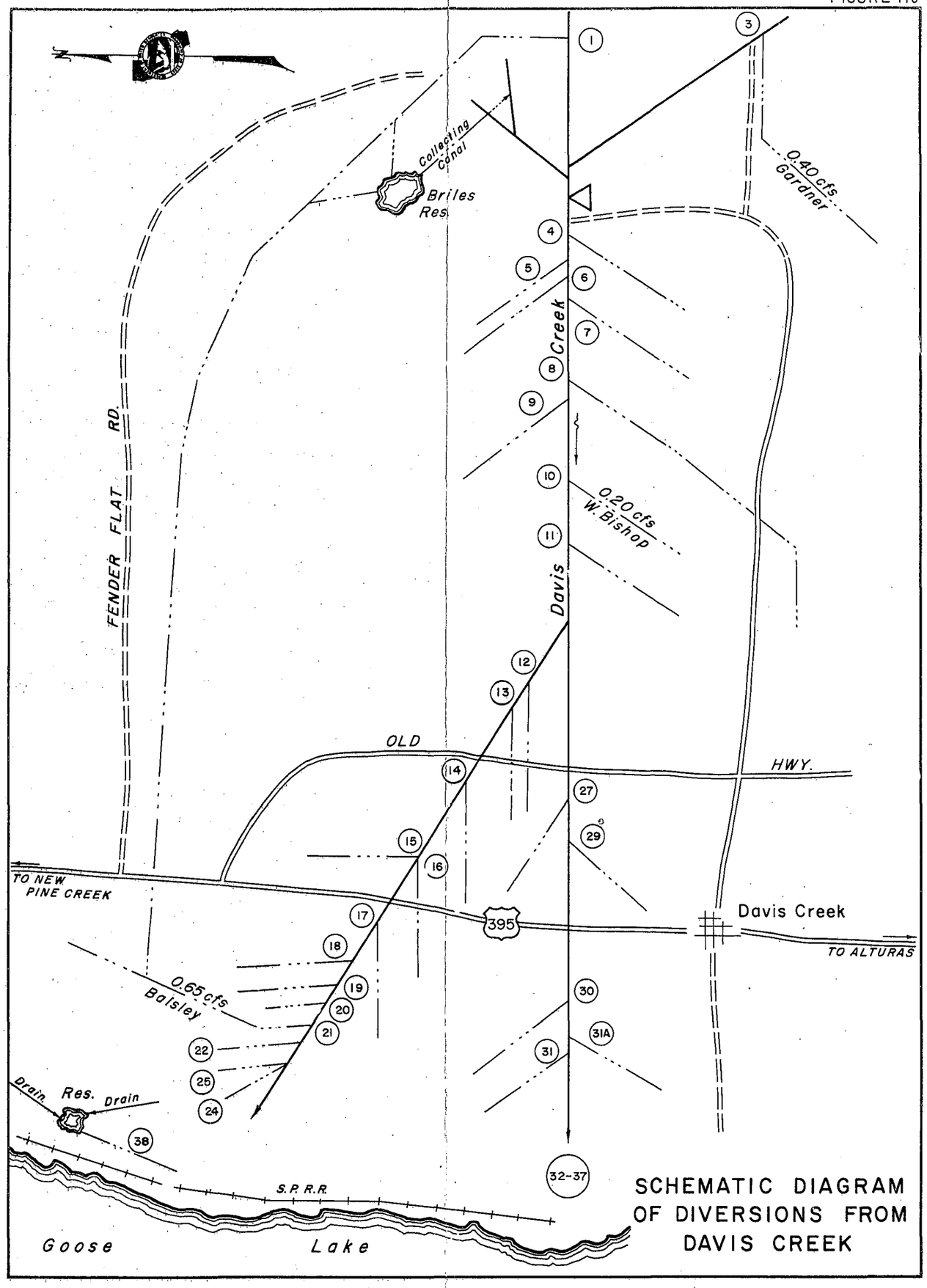
(9) Echard 0.10 cfs

(9) or (14) Dollarhide 0.15 cfs

(9), (12), (13), (16), (27), (30), (31), (31A) Echard 1.40 cfs

(9), (15), (17) to (19) Hammersly 1.50 cfs

(27), (29), (32) to (37) Grace 39.05 cfs



SCHEMATIC DIAGRAM OF DIVERSIONS FROM DAVIS CREEK

FIGURE 16b

△ **Watermaster Installed Recorder Station**

(2) Caldwell 0.38 cfs
Mellis 0.24 cfs

(3) Bettandorf 1.38 cfs
(May be combined with (17) in either ditch)
McDaniel 0.13 cfs

(4) Mix 0.32 cfs
Painter 0.26 cfs

(5) Caldwell 0.18 cfs

(7) (13) (29A) **Sevier 0.56 cfs**

(10) Larson 0.20 cfs

(11) M. Wimer 0.56 cfs
Jones 0.18 cfs

(12) Belding 0.50 cfs

(13) Smith 0.28 cfs

(15) Steward 0.21 cfs

(18) Slaybaugh 0.25 cfs
Larson 0.06 cfs

(28) Coppedge 0.09 cfs

(30) McCowin 0.12 cfs
Hamer 0.12 cfs

(31) Glassford 0.22 cfs

(32) Streig 0.21 cfs

(33) Slaybaugh 0.16 cfs

(35) to (38) Jacobs 1.30 cfs

(39) to (43) Cockrell 10.30 cfs

(42) G. Warrens 1.85 cfs

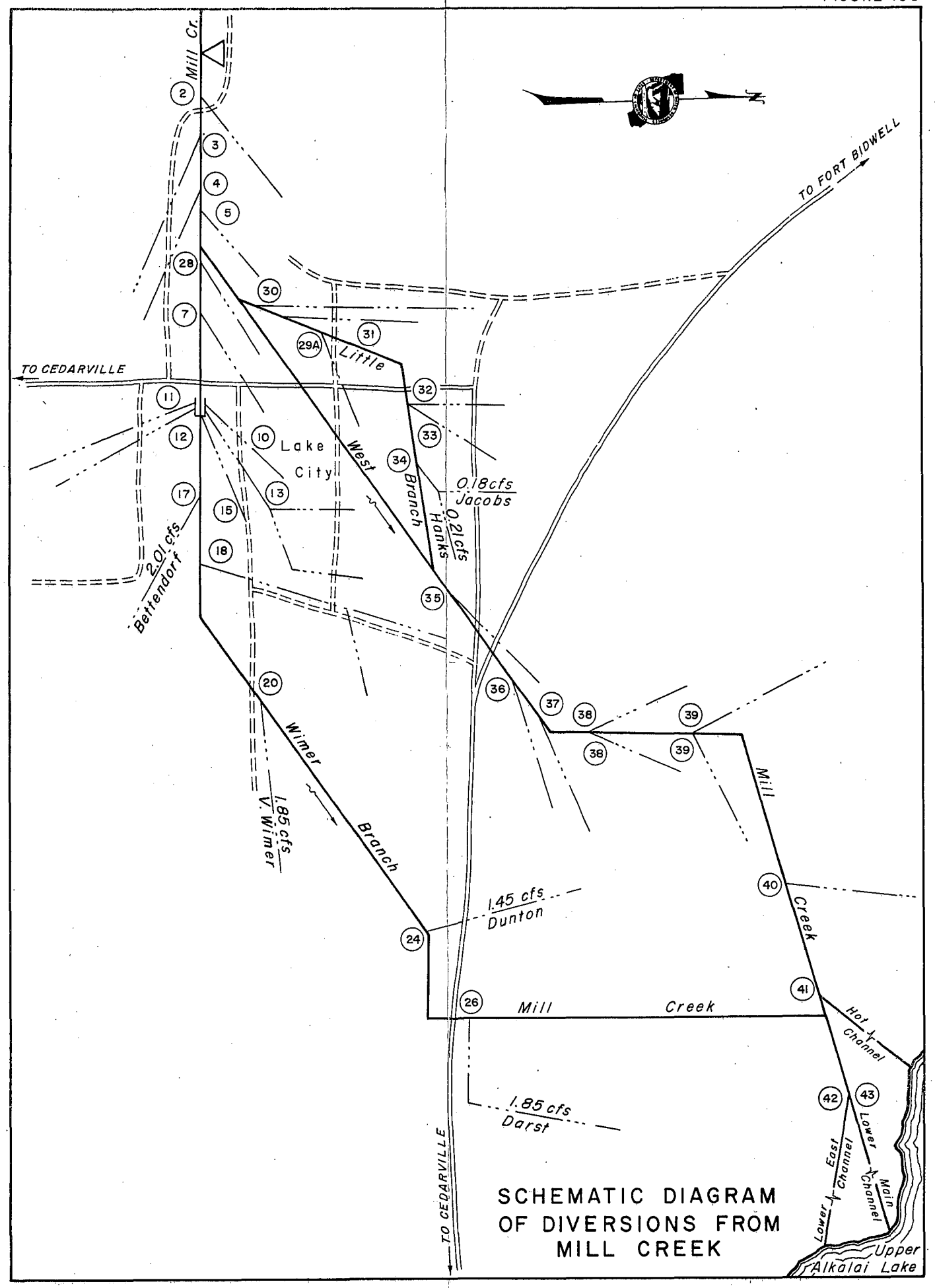
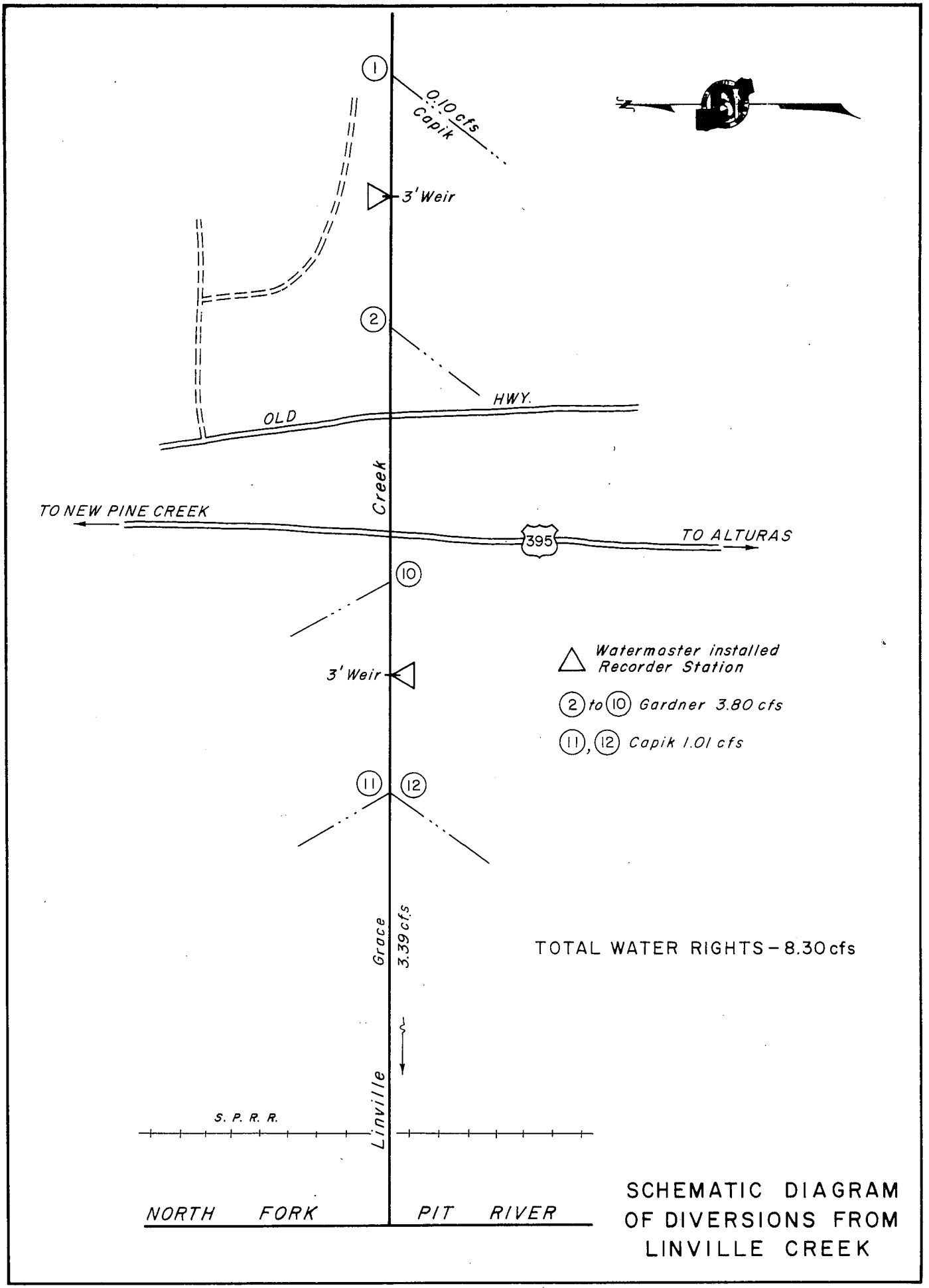
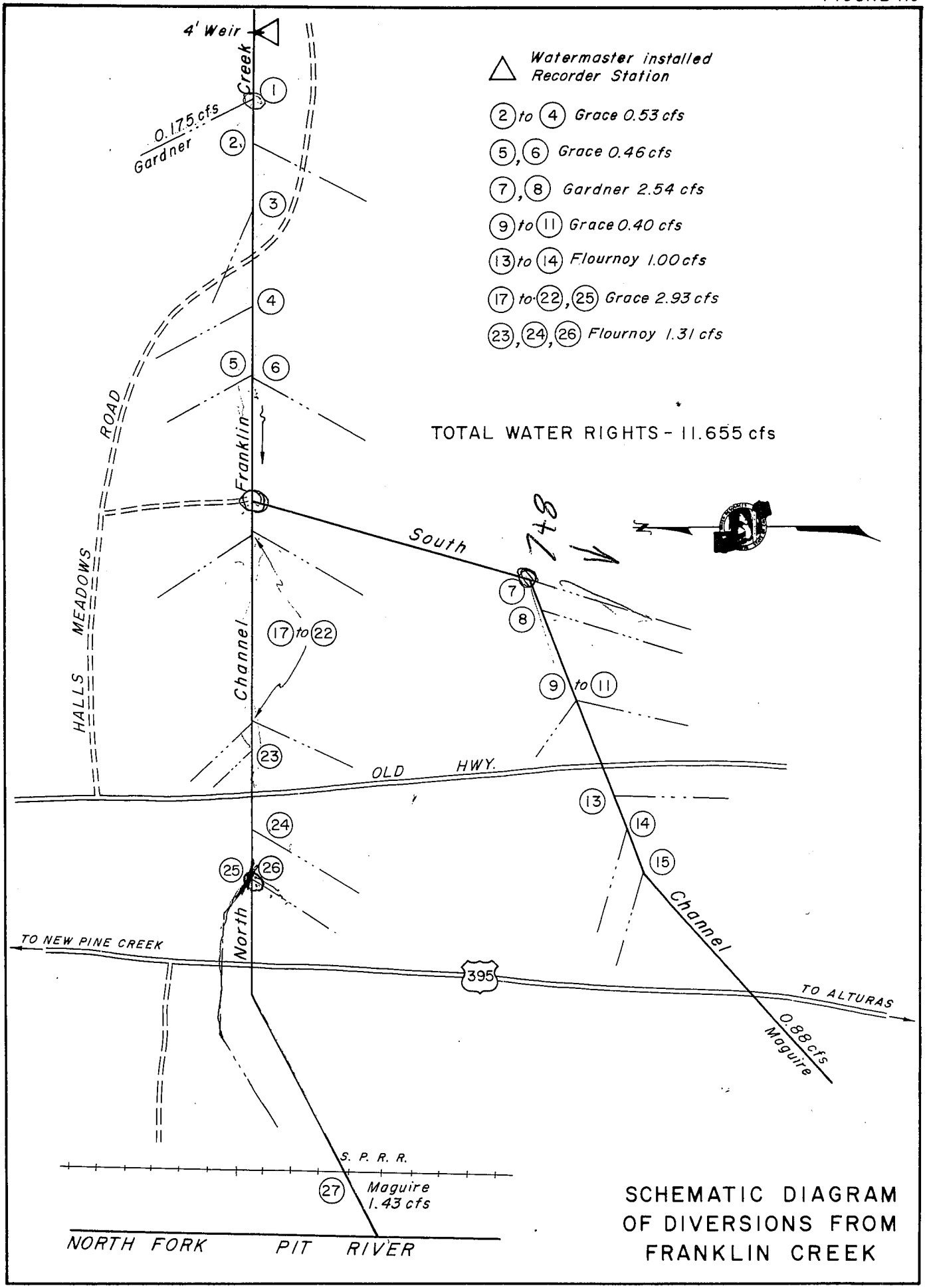


FIGURE IId



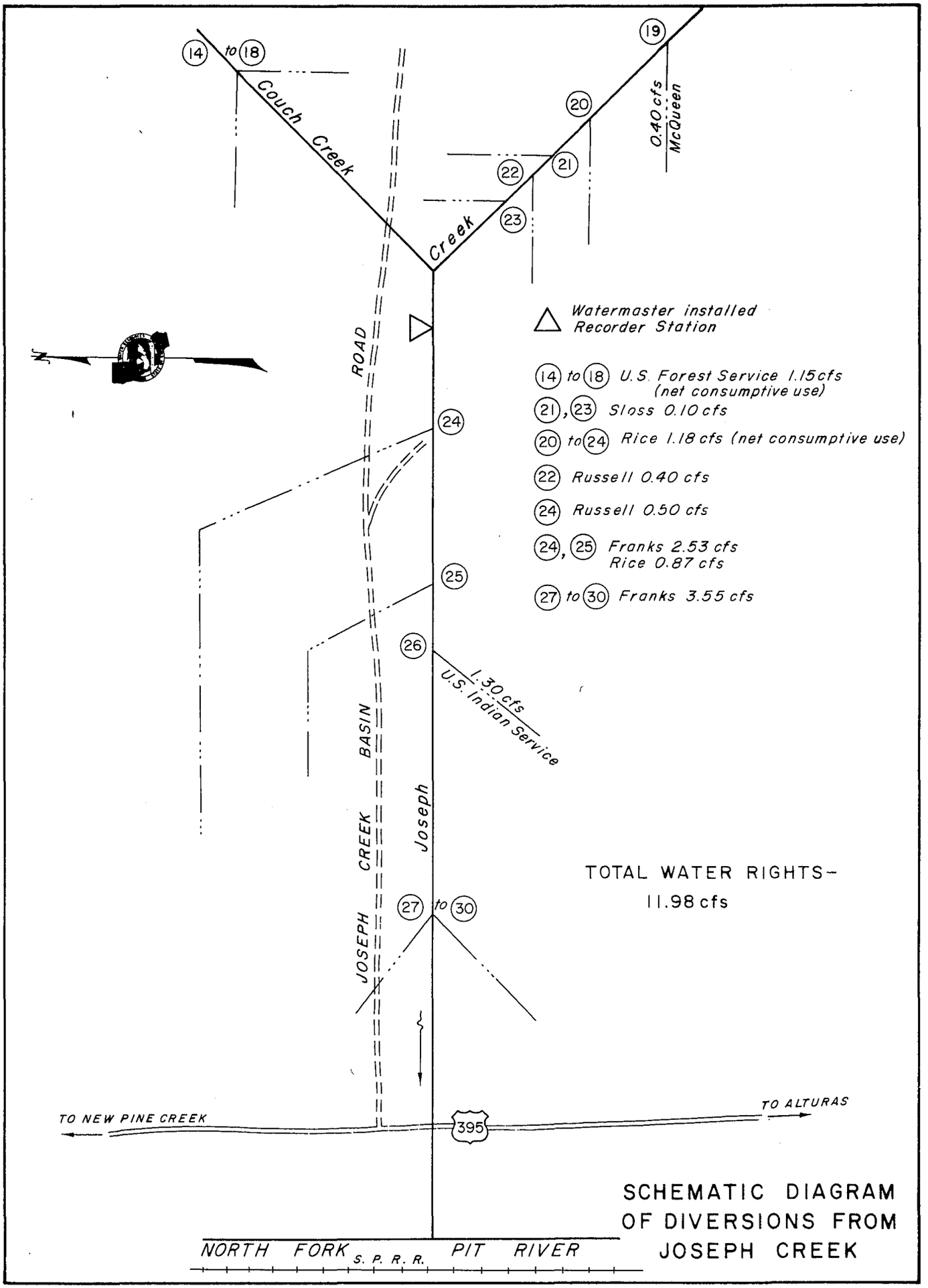
SCHEMATIC DIAGRAM OF DIVERSIONS FROM LINVILLE CREEK

FIGURE IIe



SCHEMATIC DIAGRAM OF DIVERSIONS FROM FRANKLIN CREEK

FIGURE II f



SCHEMATIC DIAGRAM OF DIVERSIONS FROM JOSEPH CREEK

FIGURE 11g

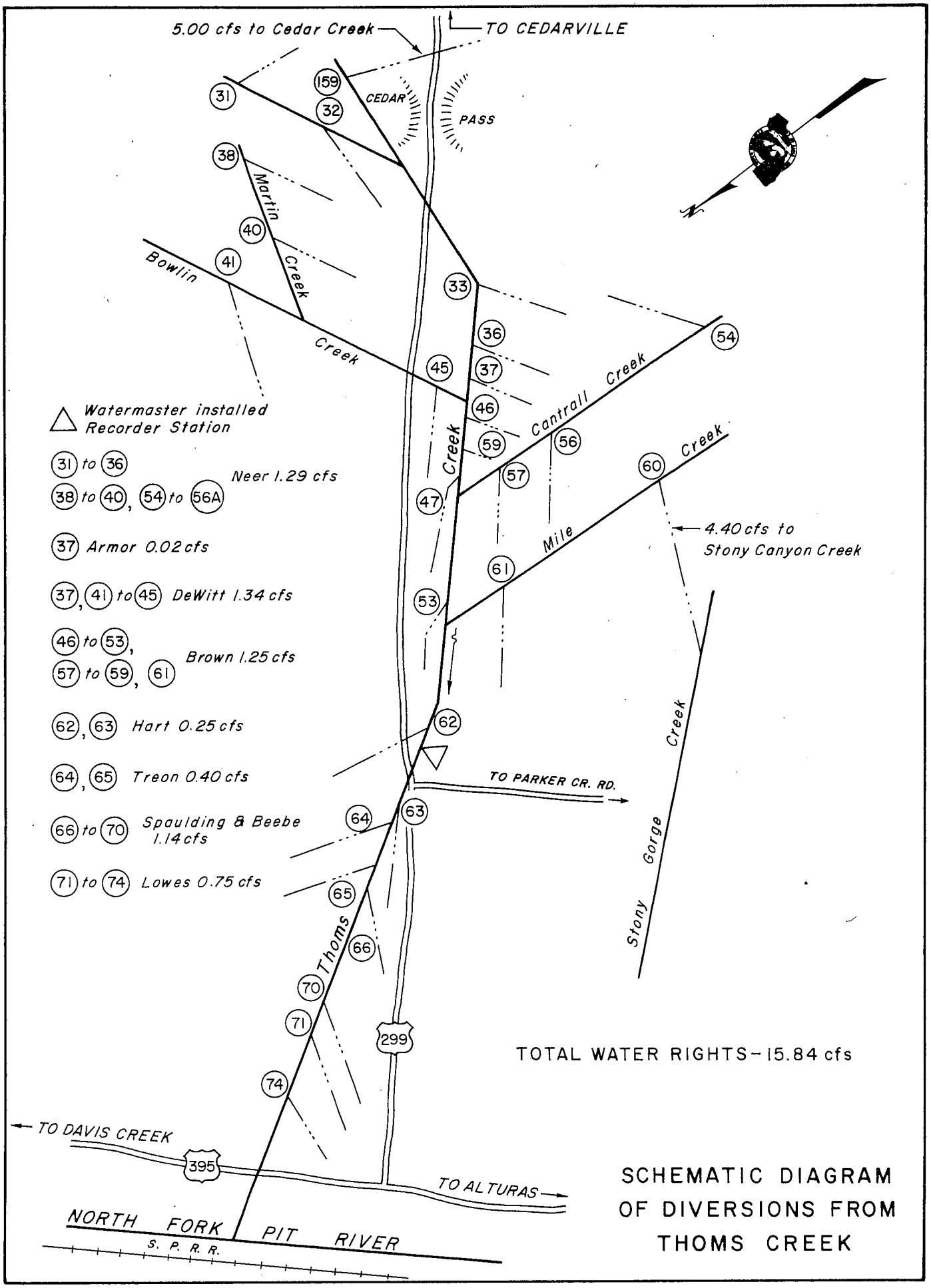

5.00 cfs to Cedar Creek
TO CEDARVILLE
CEDAR PASS
Martin Creek
Bowlin Creek
Cantrall Creek
Creek
Creek
Mile Creek
4.40 cfs to Stony Canyon Creek
Stony Gorge Creek
Thoms
TO PARKER CR. RD.
TO DAVIS CREEK
TO ALTURAS
NORTH FORK PIT RIVER
S. P. R. R.
299
395
Watermaster installed Recorder Station
31 to 36, 38 to 40, 54 to 56A Neer 1.29 cfs
37 Armor 0.02 cfs
37, 41 to 45 DeWitt 1.34 cfs
46 to 53, 57 to 59, 61 Brown 1.25 cfs
62, 63 Hart 0.25 cfs
64, 65 Treon 0.40 cfs
66 to 70 Spaulding & Beebe 1.14 cfs
71 to 74 Lowes 0.75 cfs
TOTAL WATER RIGHTS - 15.84 cfs
SCHEMATIC DIAGRAM OF DIVERSIONS FROM THOMS CREEK

FIGURE 11h

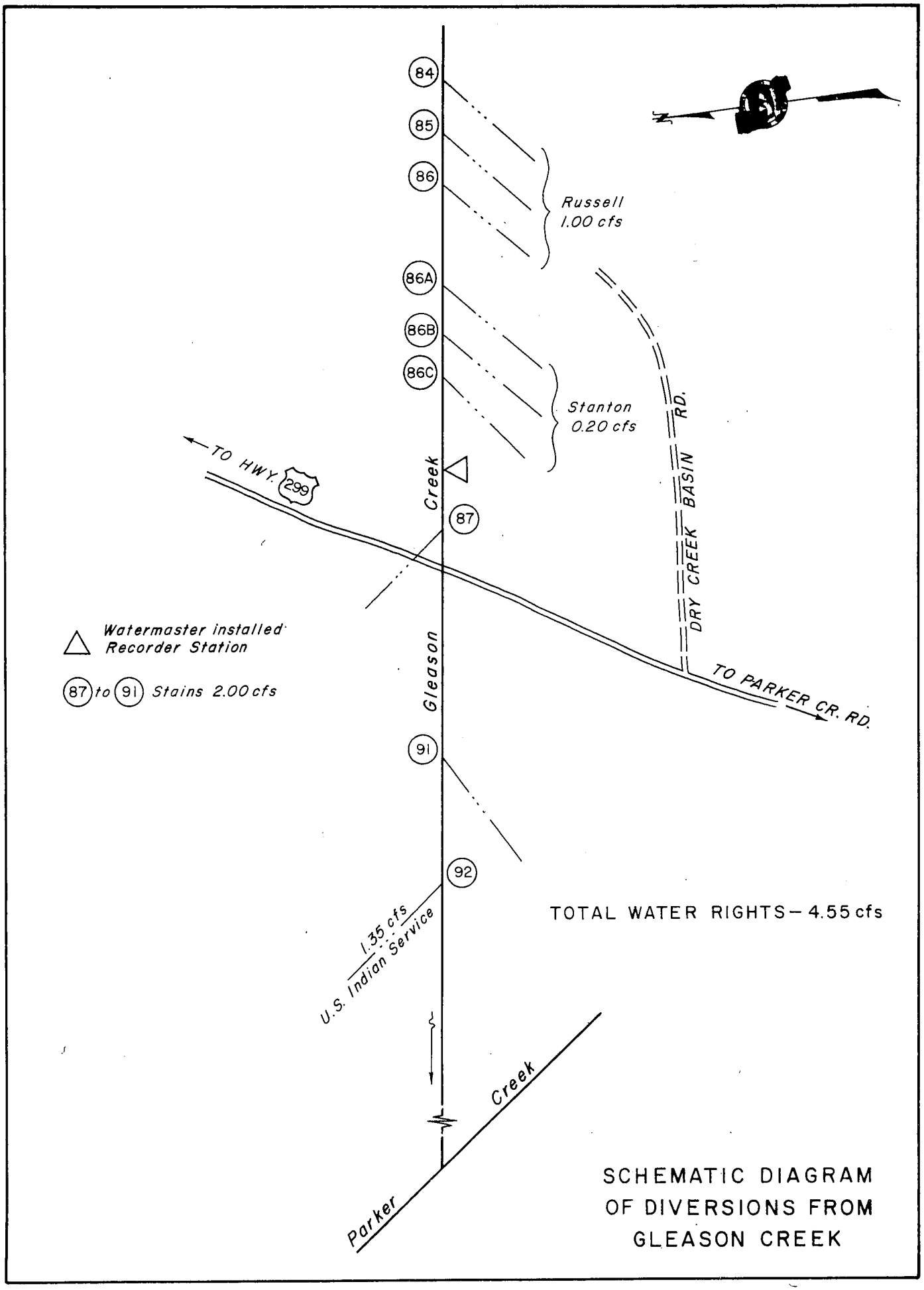

84
85
86
Russell
1.00 cfs
86A
86B
86C
Stanton
0.20 cfs
TO HWY. 299
Creek
87
DRY CREEK BASIN RD.
Watermaster installed
Recorder Station
87 to 91 Stains 2.00 cfs
Gleason
TO PARKER CR. RD.
91
92
1.35 cfs
U.S. Indian Service
TOTAL WATER RIGHTS – 4.55 cfs
Parker
Creek
SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
GLEASON CREEK

FIGURE III

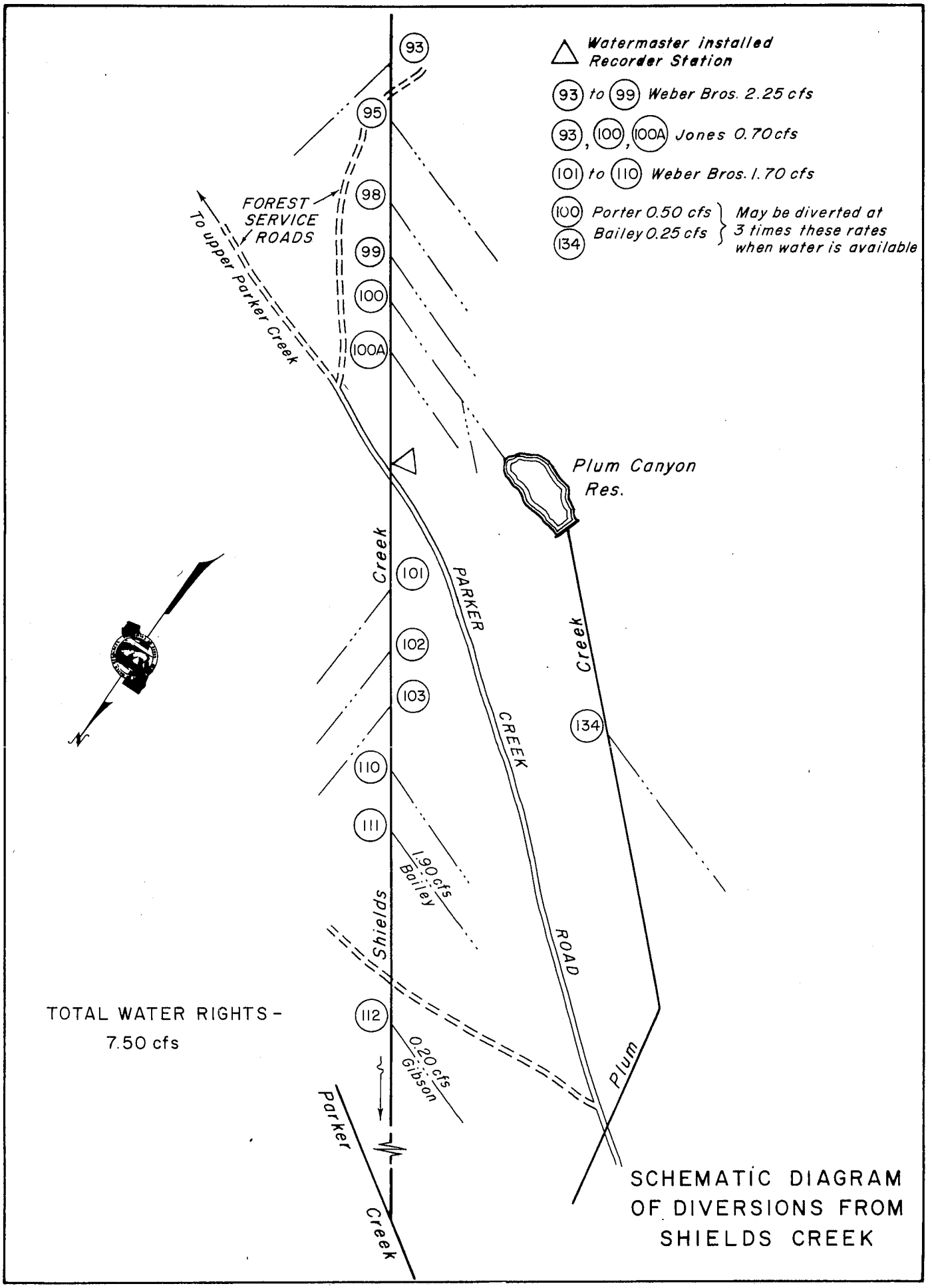

Watermaster installed Recorder Station
93 to 99 Weber Bros. 2.25 cfs
93, 100, 100A Jones 0.70 cfs
101 to 110 Weber Bros. 1.70 cfs
100 Porter 0.50 cfs
134 Bailey 0.25 cfs
May be diverted at 3 times these rates when water is available
FOREST SERVICE ROADS
To upper Parker Creek
Plum Canyon Res.
Parker Creek
PARKER CREEK ROAD
Plum Creek
Shields
1.90 cfs Bailey
0.20 cfs Gibson
Parker Creek
93
95
98
99
100
100A
101
102
103
110
111
112
134
TOTAL WATER RIGHTS - 7.50 cfs
SCHEMATIC DIAGRAM OF DIVERSIONS FROM SHIELDS CREEK

FIGURE 11j

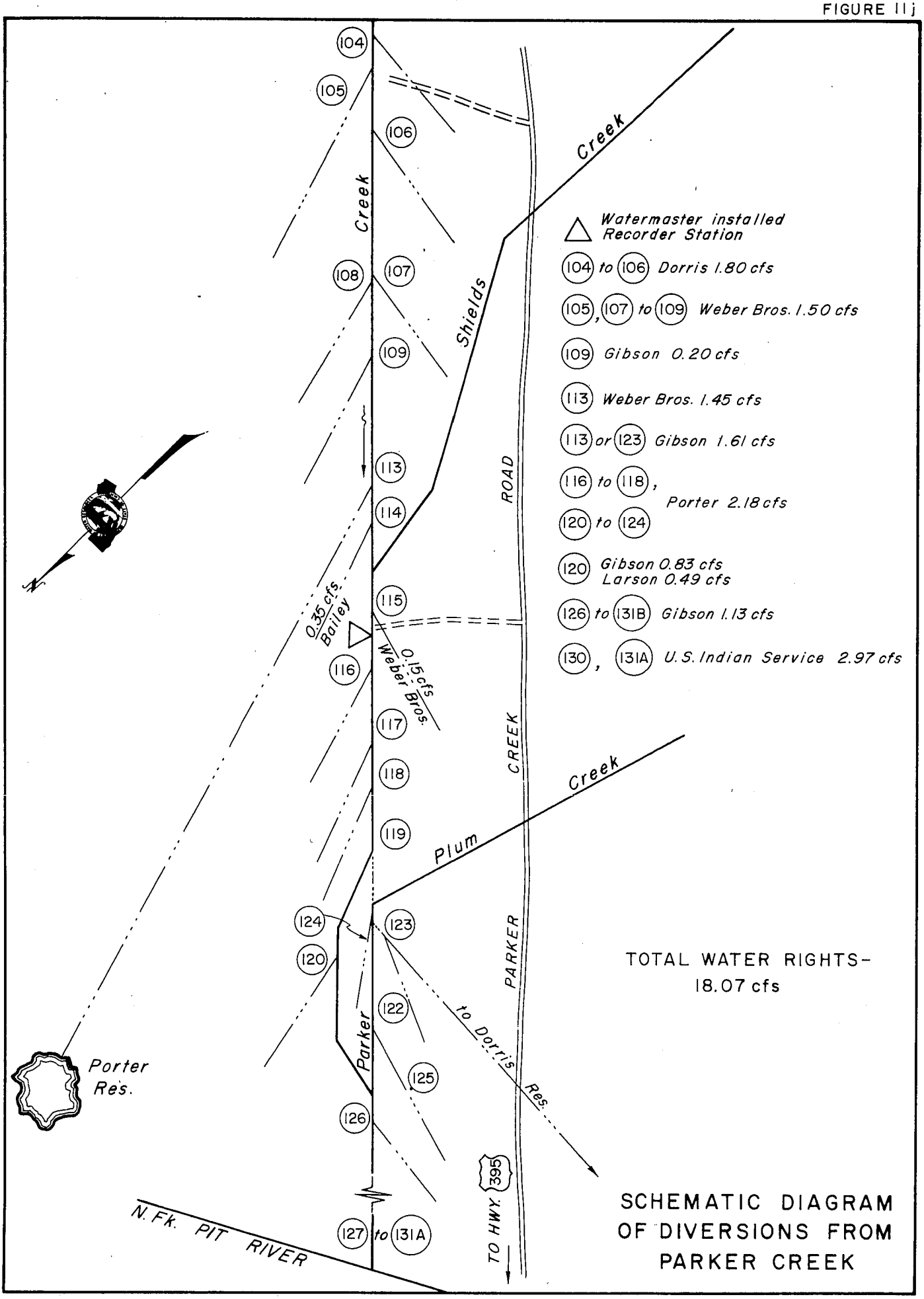
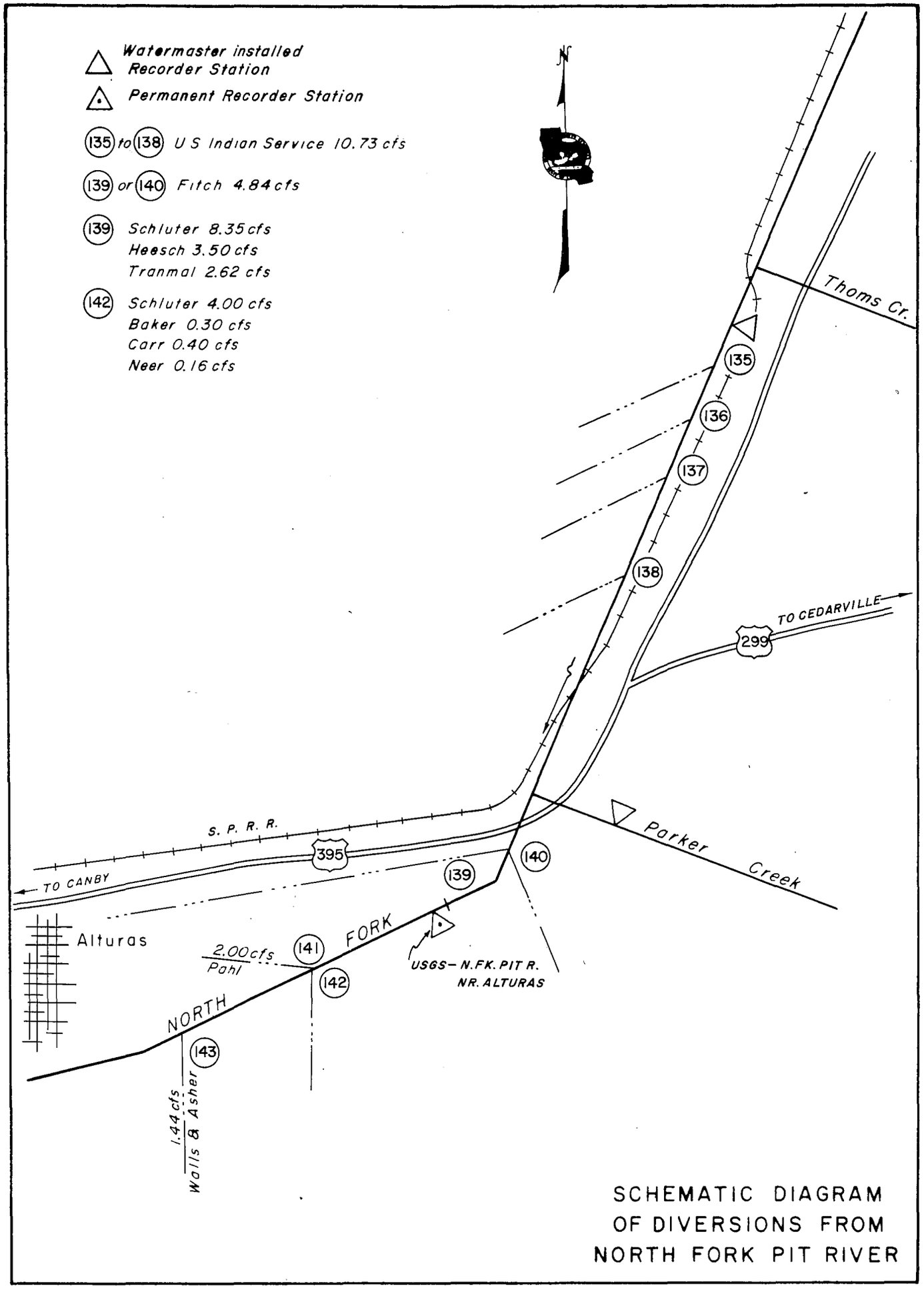

104
105
106
107
108
109
113
114
115
116
117
118
119
120
122
123
124
125
126
127 to 131A
Creek
Shields
ROAD
CREEK
PARKER
Plum
Creek
Parker
Creek
0.35 cfs. Bailey
0.15 cfs. Weber Bros.
Porter Res.
to Dorris Res.
TO HWY. 395
N. Fk. PIT RIVER
N
Watermaster installed Recorder Station
104 to 106 Dorris 1.80 cfs
105, 107 to 109 Weber Bros. 1.50 cfs
109 Gibson 0.20 cfs
113 Weber Bros. 1.45 cfs
113 or 123 Gibson 1.61 cfs
116 to 118, 120 to 124 Porter 2.18 cfs
120 Gibson 0.83 cfs
Larson 0.49 cfs
126 to 131B Gibson 1.13 cfs
130, 131A U.S. Indian Service 2.97 cfs
TOTAL WATER RIGHTS-
18.07 cfs
SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
PARKER CREEK

FIGURE 11k



SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
NORTH FORK PIT RIVER

Seiad Creek Watermaster Service Area

The Seiad Creek Service Area is located in northwestern Siskiyou County near the town of Seiad Valley. There are 10 water right owners in the area with total allotments of 6.82 cubic feet per second. Seiad Creek, a major source of supply for the area, has two tributaries (Canyon and Darky Creeks) which join the main stream from the north near the head of Seiad Valley. Seiad Creek traverses the northerly portion of the valley while the main body of agricultural land lies to the south.

The Seiad Creek Service Area comprises Seiad Valley and a narrow strip of land in a canyon extending upstream from the head of the valley for a distance of about two miles. Seiad Valley extends from the Klamath River, which forms the western boundary, for a distance of about one mile to the mouth of the canyon. The elevation of the valley is about 1,400 feet.

Many years ago gold dredging operations destroyed about 40 percent of the agricultural land within Seiad Valley. There have not been any attempts at reclamation.

A schematic drawing of the Seiad Creek stream system is presented as Figure 12.

Water Supply

Snowmelt from the higher elevations provides the main source of water supply to Seiad Valley, although flows from springs and seepage provide some water in the summer and fall. The watershed of the Seiad Creek stream system includes the heavily forested, steep, mountainous area on the southern slopes of the Siskiyou Range in Siskiyou County. It varies in elevation from 6,700 feet along the crest of those mountains bordering the basin on the north, to about 1,400 feet at the Klamath River on the south. The stream system drains an area of about 29 square miles. Of this total, 17 square miles are tributary to the main stream, nine square miles are tributary to Canyon Creek, and three square miles are tributary to Darky Creek.

Method of Distribution

Irrigation of the agricultural land is accomplished by wild flooding. Diverted water is used primarily for domestic gardens and lawns. Two of the diversions in use, 8 and 8A, are pump diversions

for domestic water and are located in Canyon Creek. Distribution of the remaining water is accomplished by small ditches and laterals.

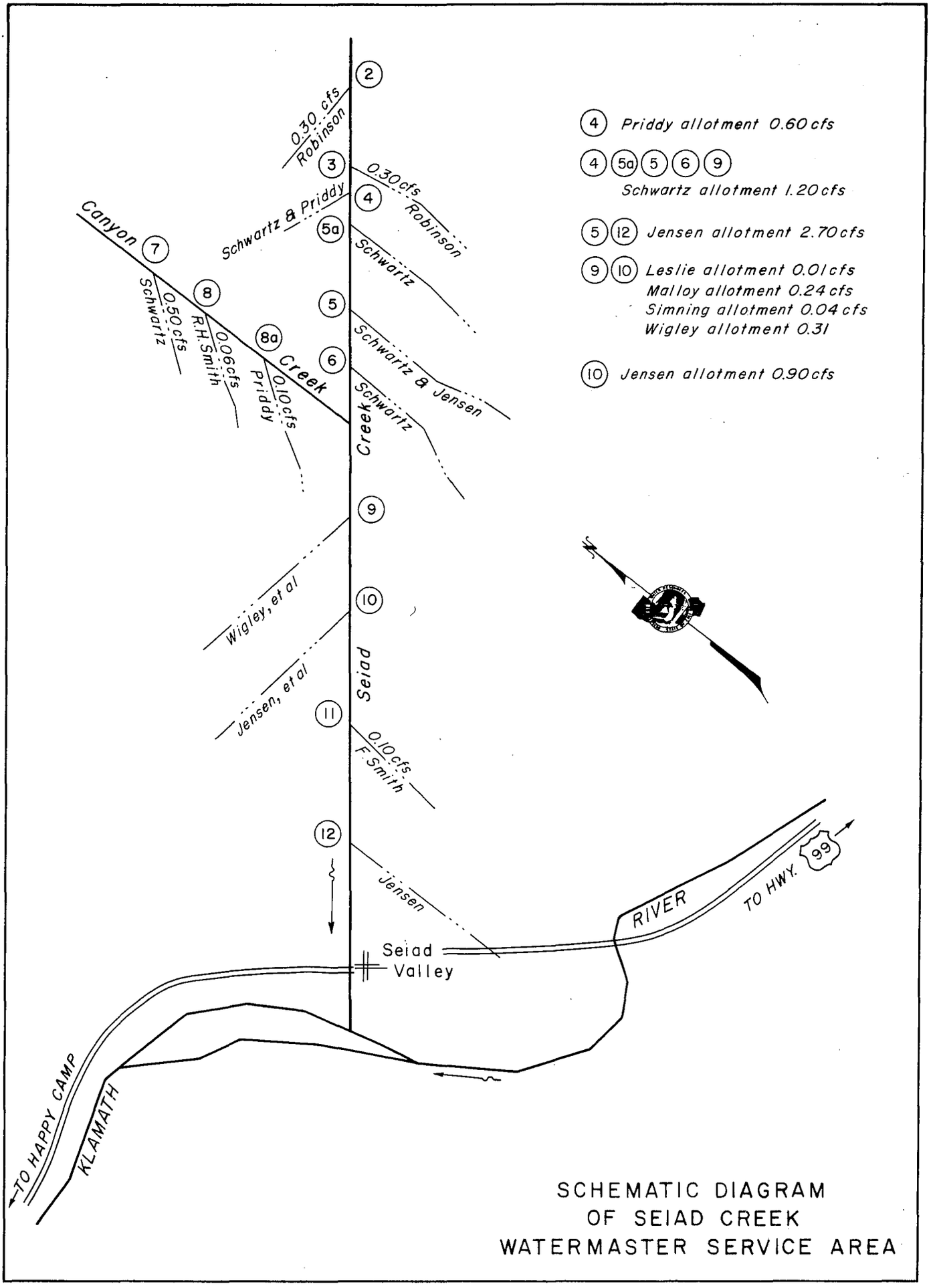
The Seiad Creek decree* provides two separate areas of distribution within the service area, and establishes the following priority classes: Seiad Creek - four, and Canyon Creek - two.

1966 Distribution

The Department of Water Resources suspended watermaster service in the Seiad Creek Service Area at the end of the 1964 season since it appeared that service may no longer be required. Periodic reappraisals will be conducted to determine if a need exists to have watermaster service reinstated.

* See Table 1

FIGURE 12



SCHEMATIC DIAGRAM
OF SEIAD CREEK
WATERMASTER SERVICE AREA

Shackleford Creek Watermaster Service Area

The Shackleford Creek Service Area is located in Western Siskiyou County near the town on Fort Jones in Scott Valley. There are 22 water right owners in the service area with total allotments of 63.98 cubic feet per second. The major sources of water supply for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about two miles wide by six miles long with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River.

A schematic drawing of the Shackleford Creek stream system is presented as Figures 13 and 13a.

Water Supply

The water supply for Shackleford Creek is derived from snowmelt runoff, springs and seepage, and supplemental stored water released from Cliff Lake and Campbell Lake. These lakes are located near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep, mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley.

Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow for second priority allotments in the Shackleford Ditch.

Records of daily mean discharge of several stream gaging stations in the Shackleford Creek Service Area are presented in Table A-34 through A-37.

Method of Distribution

Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about six miles and a capacity of about twelve cubic feet per second.

The Shackleford Creek decree* provides four separate areas of distribution within the service area and establishes the following number of priority classes for these areas: Upper Shackleford Creek- seven; Lower Shackleford Creek - seven; Upper Mill Creek - three; and Lower Mill Creek - two.

1966 Distribution

Watermaster service began in the Shackleford Creek Service Area on June 1 and continued until September 30. Harold B. German, Assistant Civil Engineer, was field watermaster during this period.

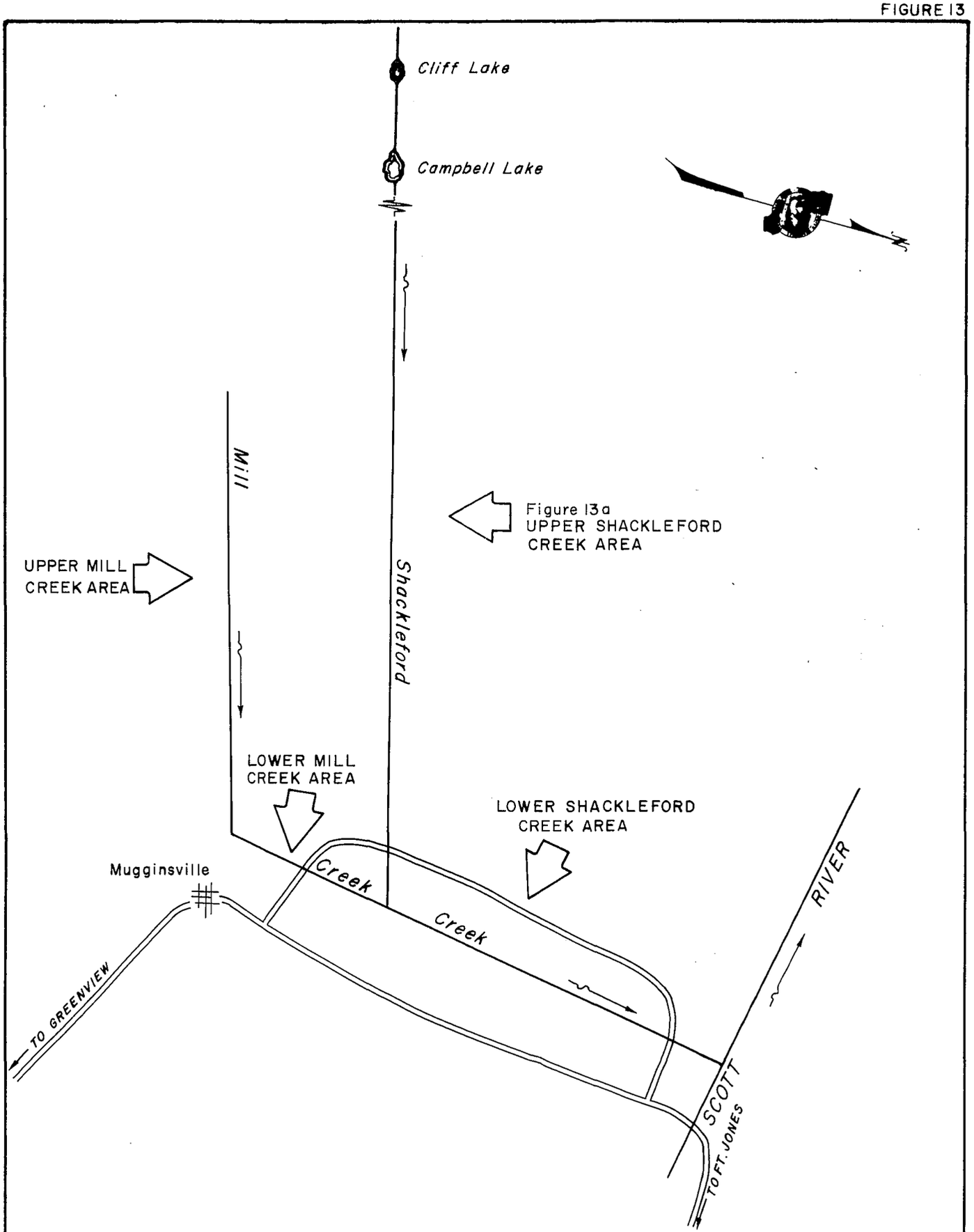
The 1966 season produced about an average water supply for the service area. No unusual problems of distribution were encountered. Additional water was available to the lower priority users (a total of seven priorities on the creek) until July 7 because a large second priority allotment from Shackleford Ditch was not used. A washed out culvert had prevented diversions into this ditch.

Special occurrences. The diversion dams of the Eastlick and Shackleford Ditches were rebuilt during the fall of 1965. These dams had been completely destroyed by the December, 1964 floods; consequently, no diversions were made during the 1965 season. The dams were constructed of large logs anchored by concrete and cables.

An automatic concrete diversion box was built in the Howard-Jones Ditch at the Spollino-Wallace diversion point. The Hayden diversion point was relocated and incorporated into this new structure. A lockable sliding steel gate was installed in the box to afford the owners the opportunity of rotating their water supplies.

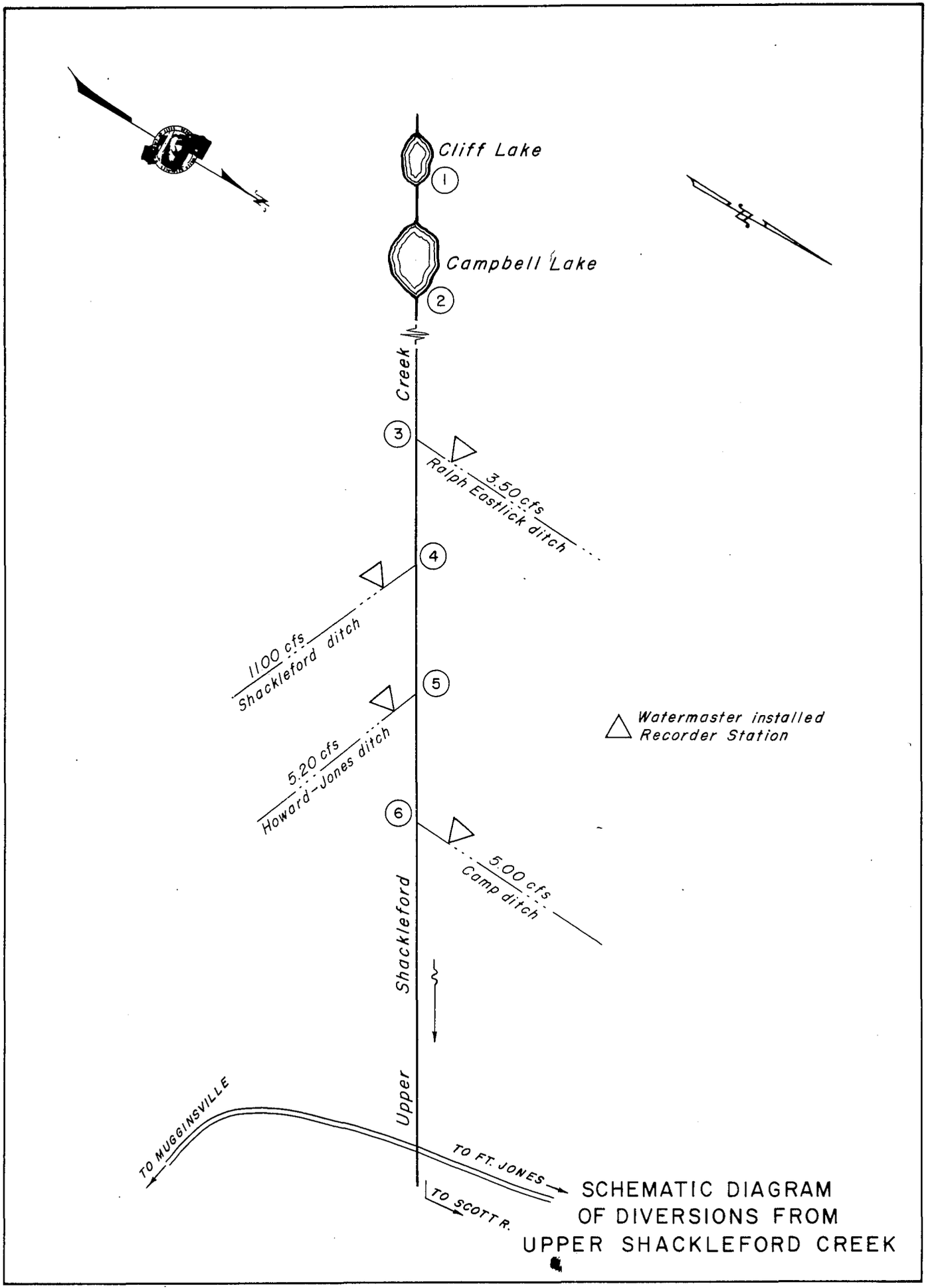
* See Table 1

FIGURE 13



SCHEMATIC DIAGRAM
OF SHACKLEFORD CREEK
WATERMASTER SERVICE AREA

FIGURE 13a



SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
UPPER SHACKLEFORD CREEK

Shasta River Watermaster Service Area

The Shasta River Service Area is located in the central part of Siskiyou County, south and east of the town of Yreka. There are 110 water right owners in the service area with total allotments of 594.612 cubic feet per second.

The source of water supply is Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of U. S. Highway 99, rises on the eastern slopes of the Trinity Mountains. All these streams join the main stem of the Shasta River above Dwinnell Reservoir near the town of Weed. As the Shasta River flows northward from Dwinnell Reservoir to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the western slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

The place of use is in Shasta Valley which is approximately 30 miles long and 30 miles wide. The valley has numerous small, cone-shape, volcanic hillocks scattered throughout its central portion that produce the effect of dividing the area into a number of distinctively separate parts. Because of these formations only about 141,000 acres of the approximately 507,000 acres within the valley are irrigable. The valley floor elevation averages approximately 3,000 feet.

A schematic drawing of each major stream system within the Shasta River Service Area is presented as Figures 14 through 14i.

Water Supply

The water supply for Shasta Valley is derived from snowmelt runoff and from springs and underground flow. In several portions of the stream system the spring and underground flow is adequate to supply most allotments throughout the season. Much of the underground flow is derived from the northern slopes of Mount Shasta, which rises to an elevation of 14,162 feet at the south end of Shasta Valley. Although

a normally heavy snowpack exists on Mount Shasta, only negligible surface runoff occurs.

Parks Creek, Upper Shasta River, and Little Shasta River derive a major portion of their water supply from snowmelt runoff. This flow is usually adequate to supply all allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Dwinnell Reservoir, Big Springs, and Lower Shasta River have enough runoff from springs to supply a large percentage of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River Service Area are presented in Tables A-38 through A-49.

Methods of Distribution

Irrigation of permanent pasture and alfalfa lands is accomplished principally by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands.

Water is diverted primarily by diversion dams and then conveyed by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cubic feet per second and a length of about 15 miles. Water is also supplied into ditch systems by pumped diversions. Most of these belong to the several irrigation districts, although several riparian water right users also use pump diversions.

Many privately-owned storage reservoirs exist in the area. Water stored in these reservoirs is used to regulate and supplement continuous flow allotments.

The Shasta River decree* provides eight separate areas of distribution within the service area. This decree established the following priority classes for these areas: Shasta River above the confluence with Big Springs Creek - 43; Boles Creek - 20; Beaughan Creek - 5; Carrick Creek - 13; Jackson Creek - 7; Parks Creek - 25; Shasta River below the confluence with Big Springs Creek - 29; and Little Shasta River - 7.

Four privately operated water districts within the service area have main diversions which are under supervision of the watermaster.

* See Table 1.

These are: Montague Water Conservation District, Shasta River Water Users Association, Grenada Irrigation District, and Big Springs Irrigation District.

A number of riparian water users along the Lower Shasta River were not included in the Shasta River decree. Owners of these undefined water rights are therefore not subject to watermaster supervision; consequently, in seasons of short supply these rights can be the cause of considerable water distribution problems.

1966 Distribution

Watermaster service began on April 1 in the Shasta River Service Area and continued through September 30. Harold B. German, Assistant Civil Engineer, was field watermaster during this period.

The available water supply in the service area was generally below average during the 1966 season.

Parks Creek. The flow in Parks Creek was sufficient to satisfy all allotments (25 priorities) until early June. Some water was available for diversion to the Edson-Foulke Yreka Ditch until July 23. Water users below the Yreka Ditch diversion received a portion of their allotments during the latter part of the season from return flow and from water rising in the gravel streambed.

Upper Shasta River. The water supply in this area (including Dale and Eddy Creeks), which depends almost entirely on snowmelt runoff, was below average for the season. However, no distribution problems were encoutered.

During early spring enough water was available to satisfy all allotments (eight priorities). As the flow decreased, the following levels of priority allotments were met: June 1 - all of fourth priority; June 23 - all of third priority (Yreka Ditch main allotment); and September 1 (the seasonal low) - 20 percent of the third priority. During September the flow increased slightly due to rainshowers.

Shasta River from Boles Creek to Dwinnell Reservoir. Boles Creek and Shasta River from Boles Creek to Dwinnell Reservoir were operated as one stream, with water being distributed on an equal and correlative basis. Adequate water was available to satisfy all allotments (20 priorities) until the middle of August. By the first week in September, the flow had receded to 60 percent of allotments.

Beaughan Creek. The flow of Beaughan Creek was sufficient to satisfy most demands (five priorities) for the entire season. The creek is routed through a mill pond owned by the International Paper Company where approximately 35 percent of the flow is used for industrial purposes.

Carrick Creek. The water supply in Carrick Creek was adequate to satisfy all allotments during the entire irrigation season.

Dwinnell Reservoir. Reservoir releases from Dwinnell Reservoir to the Montague Water Conservation District commenced on April 3 and continued through October. Reservoir operation data for the 1966 season are shown in Tables A-42 and A-43.

By agreements with the Montague Water Conservation District, natural flow water right owners below Dwinnell Reservoir receive stored water from the reservoir on demand in return for their natural flow rights. The agreement allotment totals and the seasonal amount delivered to each user are shown in the following tabulation.

DELIVERIES TO NATURAL FLOW WATER RIGHT OWNERS
BELOW DWINNELL RESERVOIR - 1966

Name of Water Right Owner	Allotment per agreement, in acre-feet	Amount Delivered from Dwinnell Reservoir	
		Acre-feet	% of Allotment
Flying L. Ranch	198	198	100
Ayers, Frank	464	464	100
J. N. Taylor	1,200	1,200	100
W. W. Valentine, Jr.			
Hole-in-the Ground Ranch	596	430	72
Seldom Seen Ranch	924	924	100
TOTALS	3,382	3,216	95

Big Springs. The available water supply was sufficient to satisfy most allotments throughout the season (three priorities). Big Springs Irrigation District was able to pump its full allotments during the spring and early summer months, but was cut slightly during July.

During August and September the flow in Big Springs increases, as snowmelt from higher elevations on Mount Shasta percolates into the ground and reappears as surface flow at Big Springs Lake. As a result Big Springs Irrigation District, a third priority user, was able to

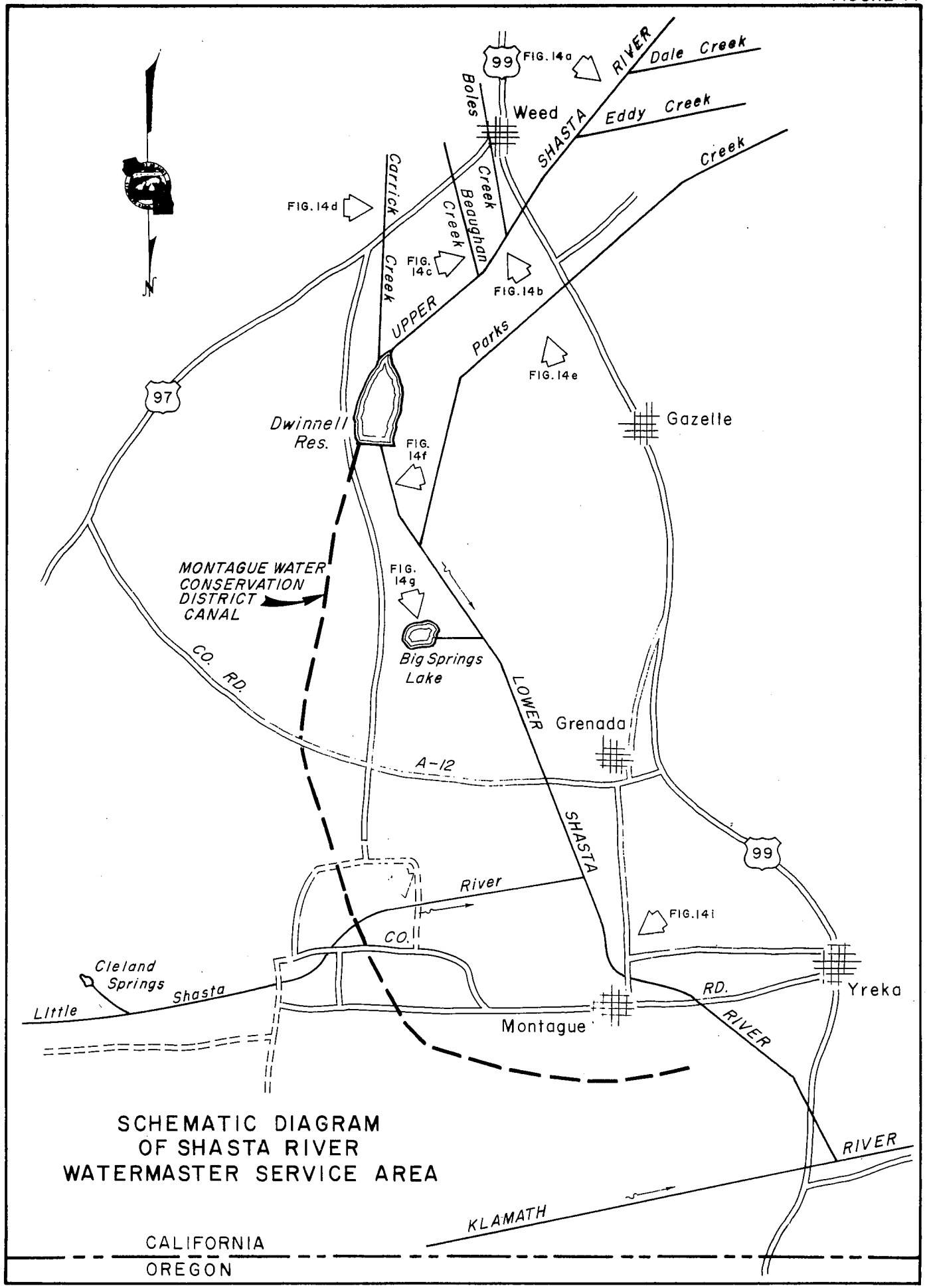
pump its full allotment during August and September.

Little Shasta River. Enough water was available in the Little Shasta River to satisfy all fifth priority allotments (seven priorities) until May 5. After that date close regulation became necessary to adequately distribute this priority. The flow steadily decreased to approximately 10 percent of fifth priority allotment by August 1. Throughout the remainder of the season it fluctuated between 10 and 20 percent.

The daily mean discharge of Little Shasta River near Montague is presented in Table A-47. This runoff is augmented by rising water along the river channel, and by sustantial inflow from Cleland Springs, a tributary approximately two miles downstream from the stream gaging station. Therefore, considerably more water is usually available for distribution at downstream diversion points than is indicated in the discharge table.

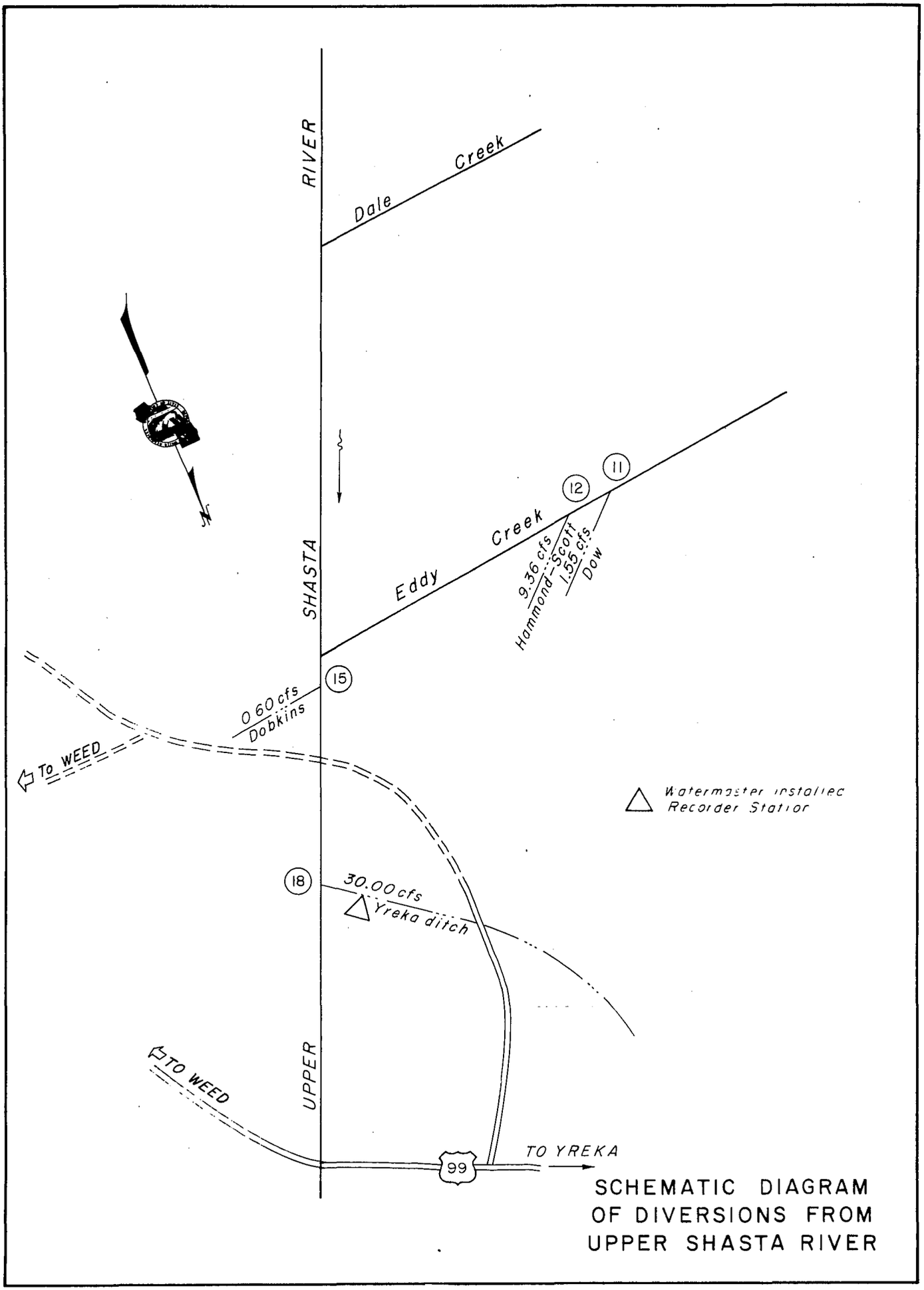
Lower Shasta River. The water supply to Lower Shasta River was sufficient to satisfy all allotments until June 24. From that date until the end of August, it became necessary to cut Grenada Irrigation District to a fluctuating schedule, varying between 34 cubic feet per second and 6 cubic feet per second. For the remainder of the season the district was able to return to its full allotment. Daily operation data for the Grenada Irrigation District and the Shasta River Water Users Association are presented in Tables A-45 and A-46.

FIGURE 14



SCHEMATIC DIAGRAM
OF SHASTA RIVER
WATERMASTER SERVICE AREA

FIGURE 14a



SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
UPPER SHASTA RIVER

FIGURE 14b

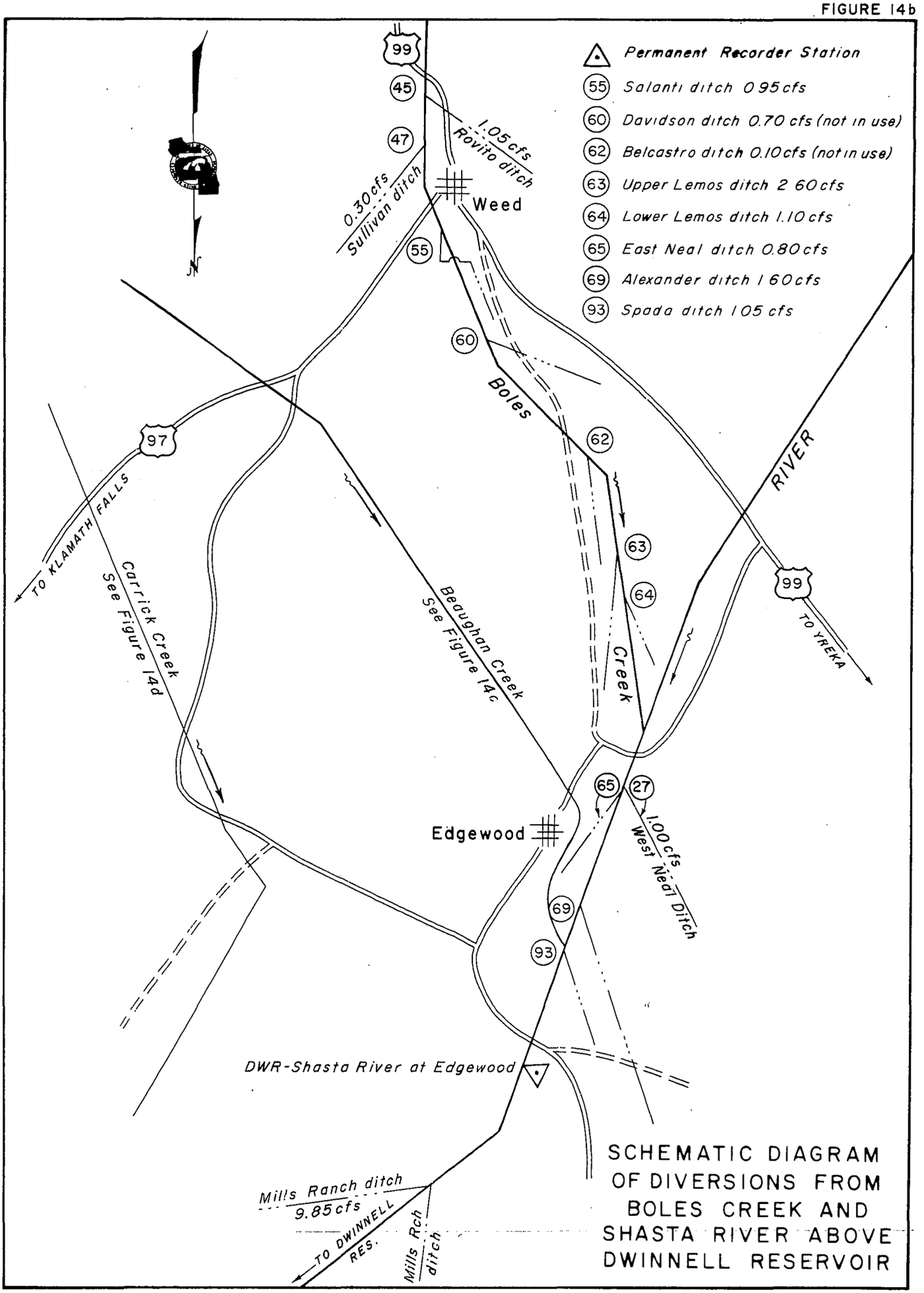
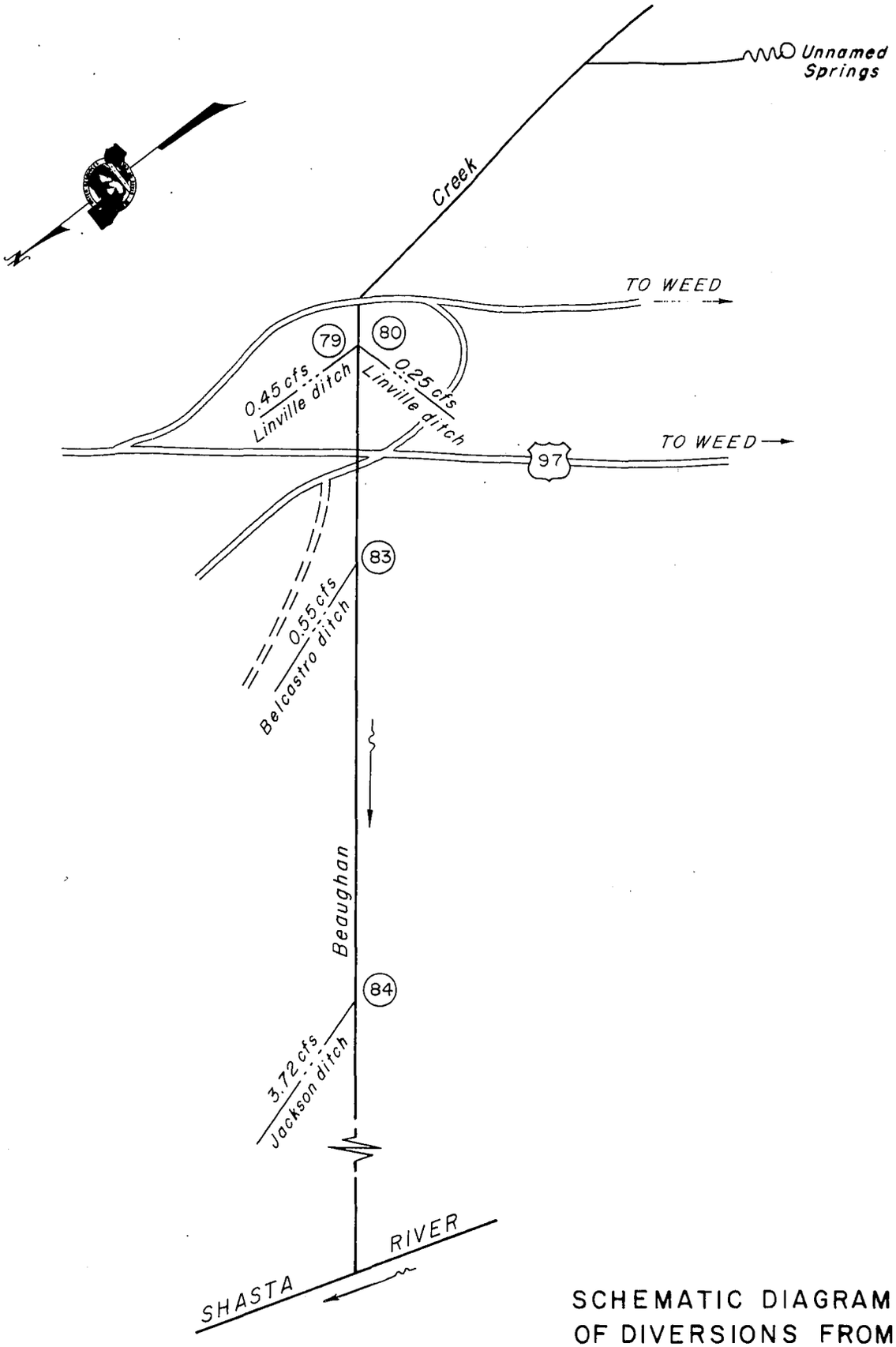
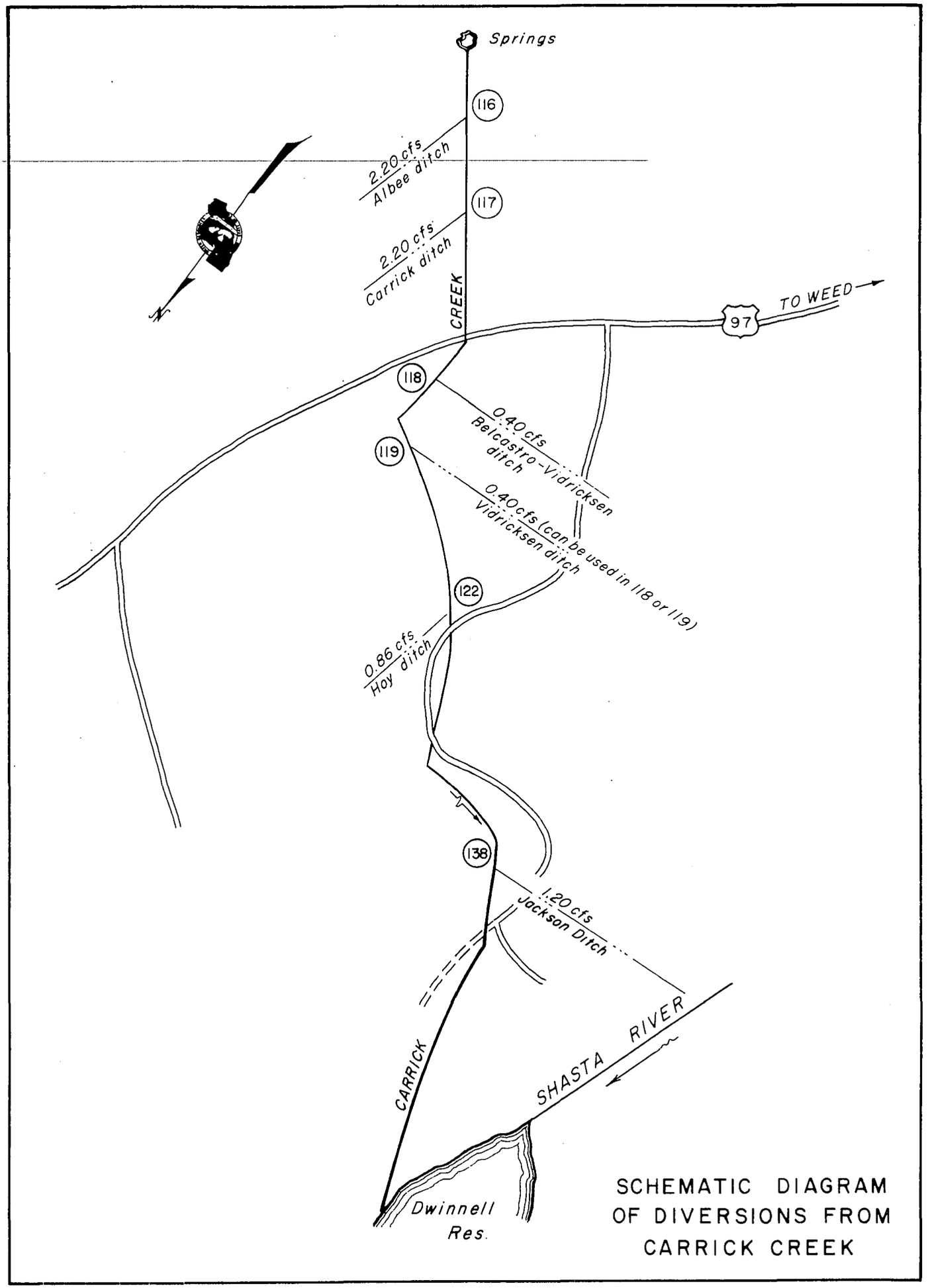

Permanent Recorder Station
55 Salanti ditch 0.95 cfs
60 Davidson ditch 0.70 cfs (not in use)
62 Belcastro ditch 0.10 cfs (not in use)
63 Upper Lemos ditch 2.60 cfs
64 Lower Lemos ditch 1.10 cfs
65 East Neal ditch 0.80 cfs
69 Alexander ditch 1.60 cfs
93 Spada ditch 1.05 cfs
99
45
47
1.05 cfs Rovito ditch
0.30 cfs Sullivan ditch
Weed
55
60
Boles
97
62
RIVER
TO KLAMATH FALLS
Carrick Creek See Figure 14d
Beaughan Creek See Figure 14c
63
64
Creek
99
TO YREKA
65
27
1.00 cfs West Neal Ditch
Edgewood
69
93
DWR-Shasta River at Edgewood
Mills Ranch ditch 9.85 cfs
TO DWINNELL RES.
Mills Rch ditch
SCHEMATIC DIAGRAM OF DIVERSIONS FROM BOLES CREEK AND SHASTA RIVER ABOVE DWINNELL RESERVOIR

FIGURE 14c



SCHEMATIC DIAGRAM OF DIVERSIONS FROM BEAUGHAN CREEK

FIGURE 14d



SCHEMATIC DIAGRAM OF DIVERSIONS FROM CARRICK CREEK

FIGURE 14e

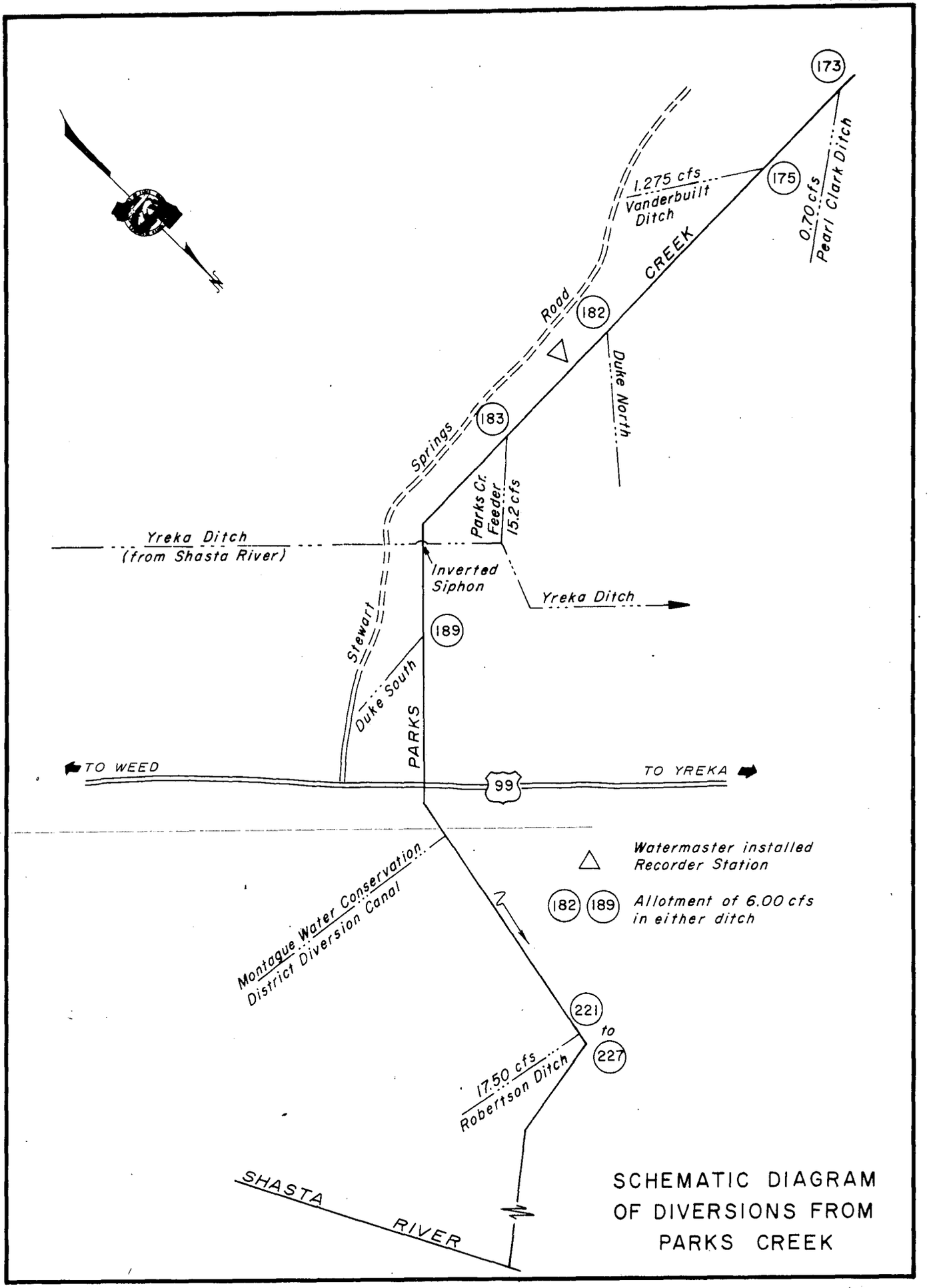
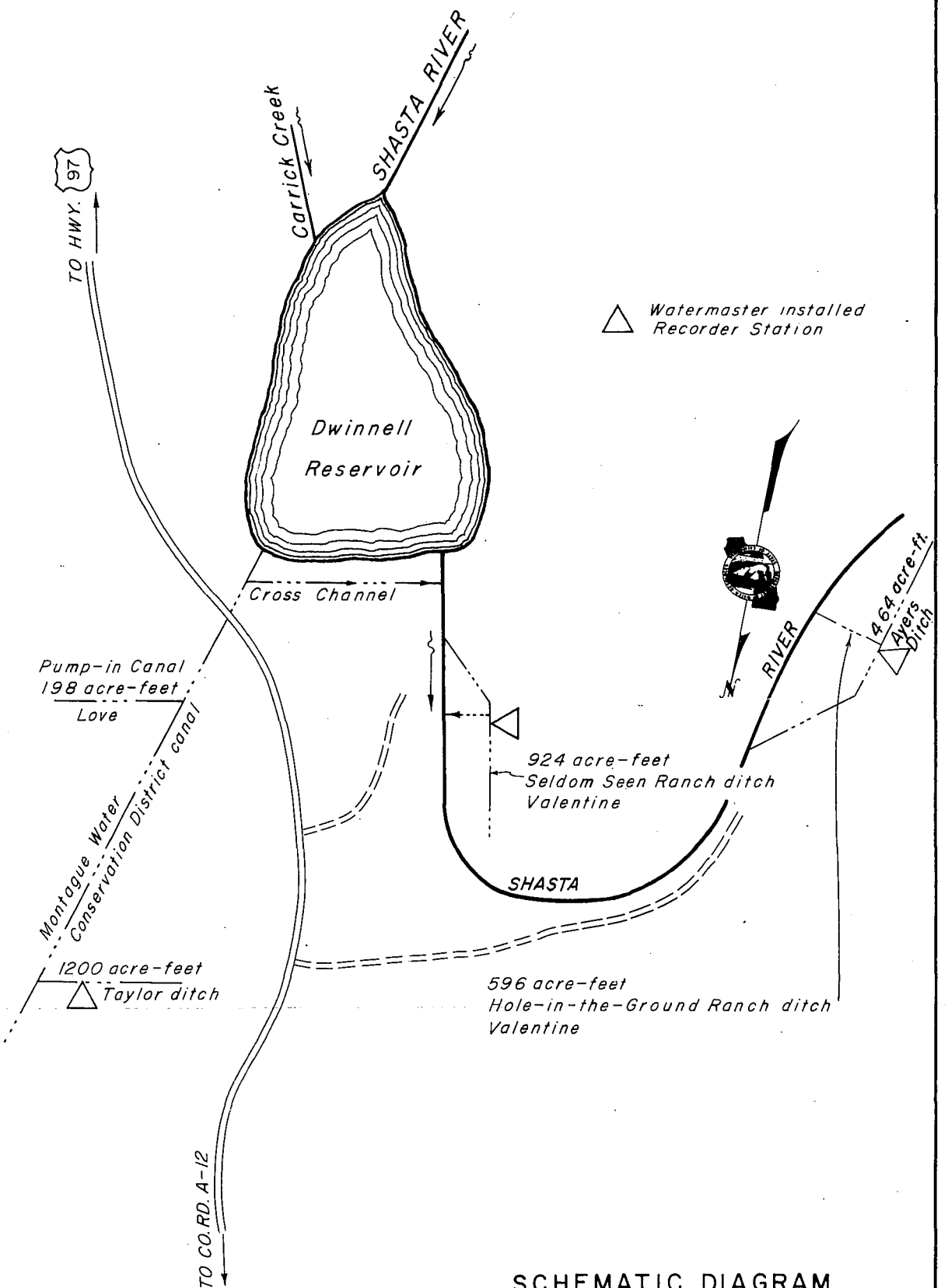
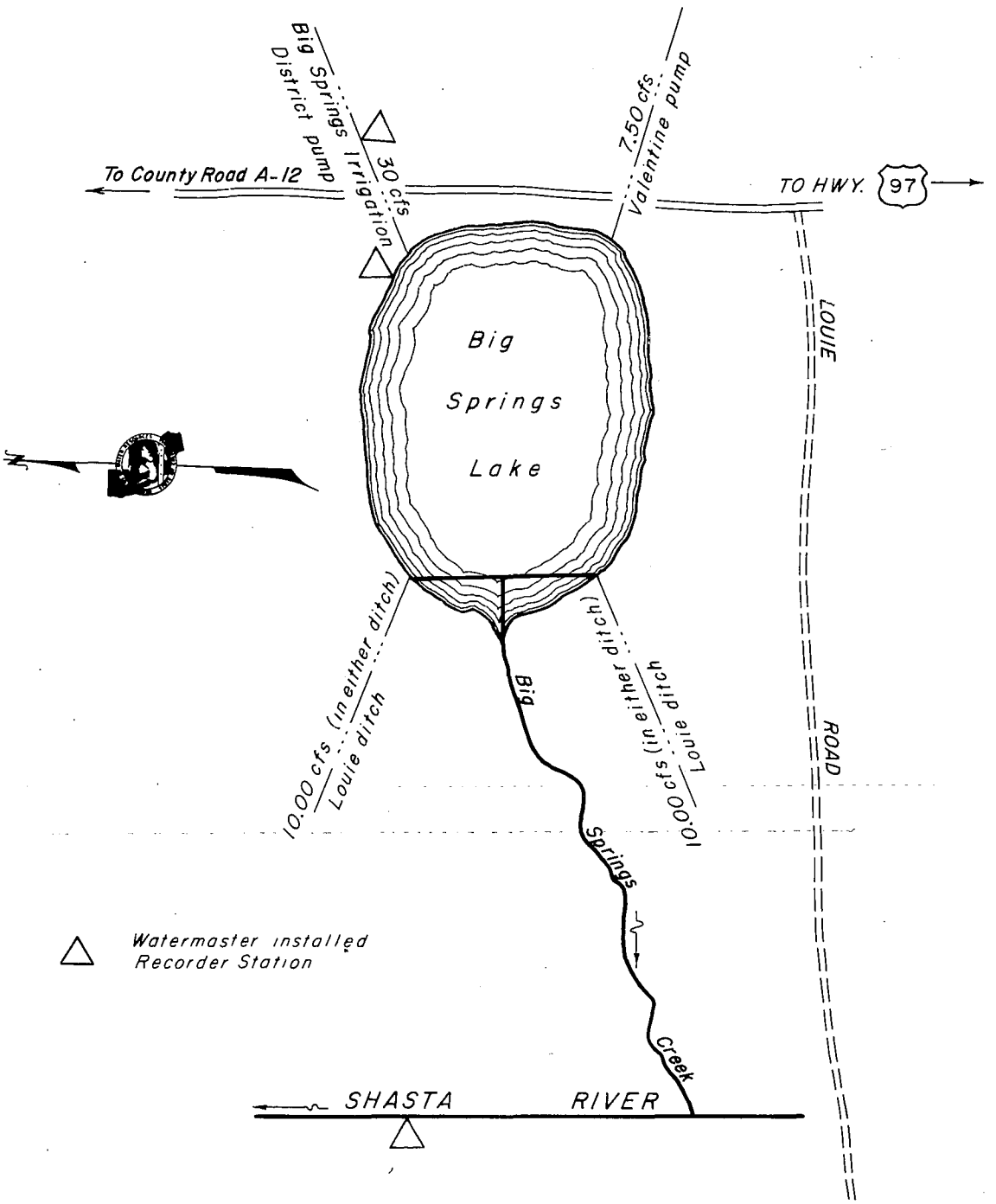

173
175
1.275 cfs
Vanderbilt Ditch
0.70 cfs
Pearl Clark Ditch
CREEK
Road
182
Duke North
Springs
183
Parks Cr. Feeder
15.2 cfs
Yreka Ditch
(from Shasta River)
Inverted Siphon
Yreka Ditch
Stewart
189
Duke South
PARKS
TO WEED
TO YREKA
99
Watermaster installed Recorder Station
182 189 Allotment of 6.00 cfs in either ditch
Montague Water Conservation District Diversion Canal
221
to
227
17.50 cfs
Robertson Ditch
SHASTA RIVER
SCHEMATIC DIAGRAM OF DIVERSIONS FROM PARKS CREEK

FIGURE 14f



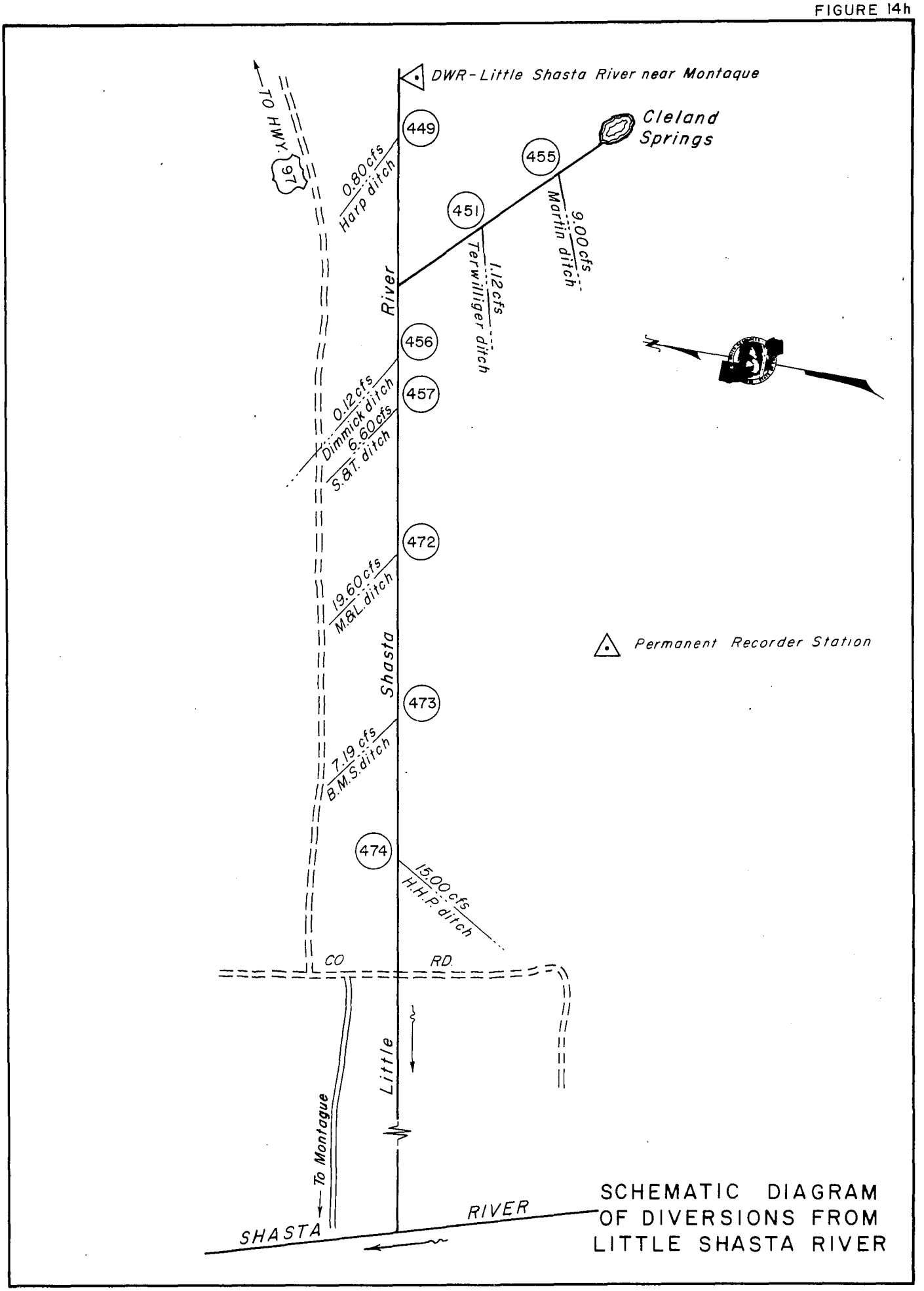
SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
SHASTA RIVER PRIOR RIGHTS
BELOW DWINNELL RESERVOIR

FIGURE 14g



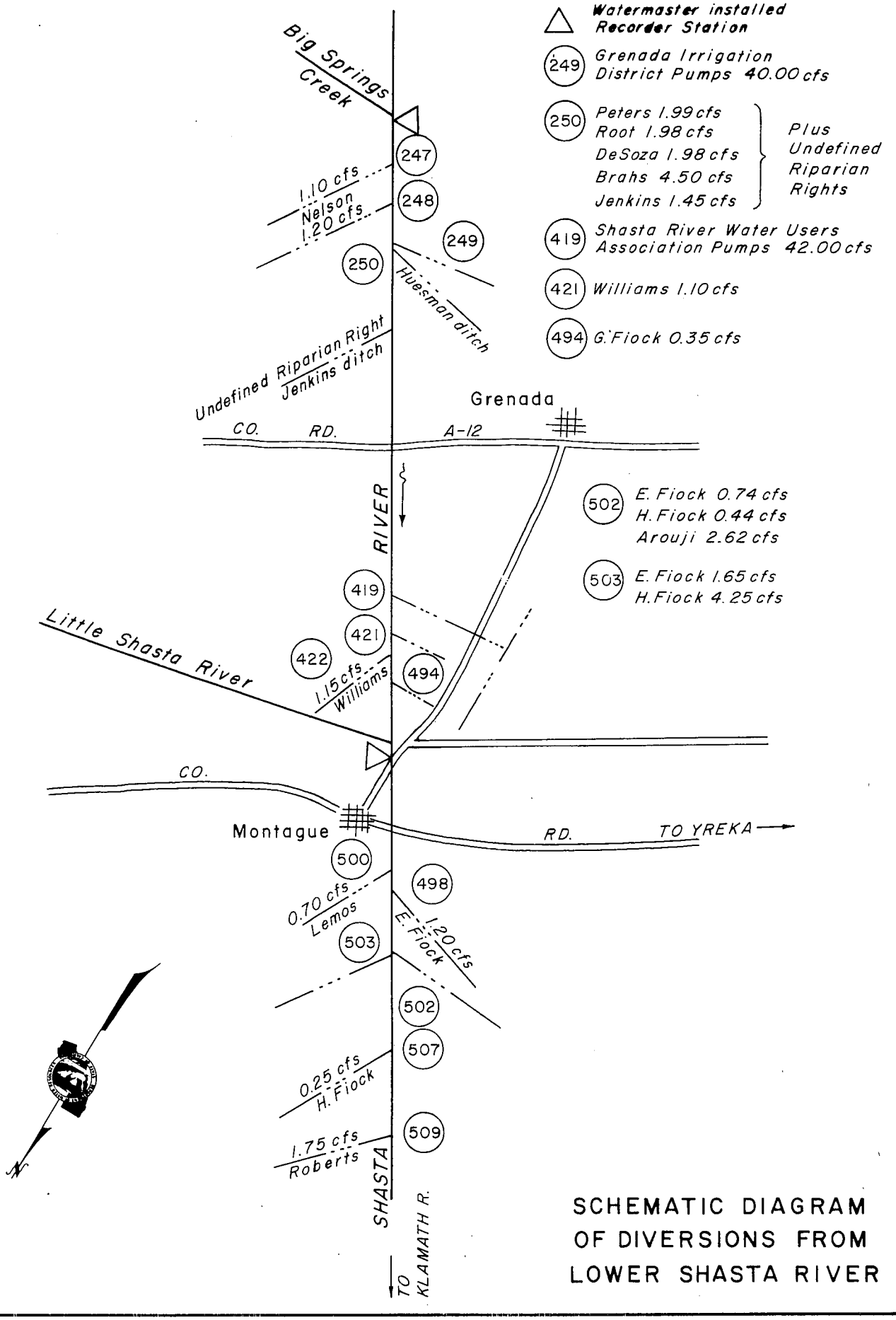
SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
BIG SPRINGS LAKE

FIGURE 14h



SCHEMATIC DIAGRAM OF DIVERSIONS FROM LITTLE SHASTA RIVER

FIGURE 14 i



SCHEMATIC DIAGRAM OF DIVERSIONS FROM LOWER SHASTA RIVER

South Fork Pit River Watermaster Service Area

The South Fork Pit River Service Area is located primarily in Modoc County with a small portion extending into the northern part of Lassen County. There are 38 water right owners in the area with total allotments of 350.97 cubic feet per second.

Water supply for this service area is obtained from the South Fork Pit River and its tributaries which rise on the western slopes of the Warner Mountains. The river flows in a westerly direction, entering South Fork Valley near Likely. It then flows north through the valley to its confluence with North Fork Pit River at Alturas. South Fork Pit River is joined from the east by Fitzhugh Creek near the middle of the valley and by Pine Creek just south of Alturas.

The major area of water use is in South Fork Valley between Likely and Alturas. South Fork Valley is about 16 miles long and 3 miles wide with the valley floor lying at an elevation of about 4,500 feet. The valley is bounded on both sides by a rocky plateau that separates it from the surrounding mountains.

A schematic drawing of each major stream system within the South Fork Pit River Service Area is presented as Figures 15 through 15d.

Water Supply

The water supply for Pine Creek is derived mostly from snowmelt runoff. Therefore, runoff is usually small in the early spring, increases to a peak in May as temperatures rise, and then gradually decreases throughout the remainder of the season. Therefore, water users supplement their irrigation supplies from other sources whenever possible.

The water supply for Fitzhugh Creek consists of snowmelt runoff early in the season and supplemental water diverted from Mill Creek above Jess Valley later in the season. Surplus water from Fitzhugh Creek is diverted into the Payne and French Reservoirs through Payne-French Ditch (Diversion 136) until about June, when the diversion is closed to supply downstream allotments. By July the creek has normally receded until only first priority allotments are available.

Payne Ditch (Diversion 1) is opened to import water from Mill Creek to Fitzhugh Creek when the snow has melted enough to allow

access. This imported water is rediverted from North Fork Fitzhugh Creek through the Bowman Ditch to the Bowman Ranch. Return flow from Bowman Ranch to the creek is rediverted through diversion 136 for stockwatering purposes in the Payne-French Ditch.

The water supply for South Fork Pit River is derived primarily from snowmelt runoff, supplemented by water released from West Valley Reservoir. A number of streams, which rise at high elevations, collect at the mouth of Jess Valley to form the South Fork Pit River. West Valley Reservoir is located on West Valley Creek which enters the river below Jess Valley.

Most of the water users on South Fork Pit River, except those in Jess Valley, are in the South Fork Irrigation District. The district stores water in West Valley Reservoir which has a capacity of 22,240 acre-feet and releases it to the South Fork Pit River as a supplemental supply when the natural flow becomes insufficient to meet demands. This usually occurs during the middle of June. Reservoir releases, together with the natural flow, are distributed by the watermaster in cooperation with the Board of Directors of the irrigation district. Except for extremely dry years natural flow, combined with stored water, is sufficient to supply all demands for water on the South Fork Pit River throughout the irrigation season.

Records of the daily mean discharge of the several stream gaging stations in the area are presented in Tables A-50 through A-53.

Methods of Distribution

Irrigation of the lands along tributary streams is accomplished by flooding through use of small lateral ditches. The water is distributed on a continuous flow basis to each user through gravity flow diversion systems. In some cases, rotation is practiced among several users.

Most irrigation in the South Fork Pit River area is by the check and border method. The lands receive water essentially on demand by supplementing natural flow with releases from West Valley Reservoir. However, irrigation between the various ranches must be coordinated to eliminate large peak demands from the reservoir and to utilize return flow as much as possible. Actual distribution varies each year as there is no specific irrigation schedule in use.

The South Fork Pit River decree* and the Pine Creek Agreement*

* See Table 1

establish a two-priority class system of distribution for the Fitzhugh Creek and Pine Creek stream systems. Distribution to the South Fork Pit River users (the decree provides for a two-priority class system) is carried out on an equal and correlative basis in accordance with the water requirements for each ranch. This method of operation was made possible by construction of West Valley Reservoir in 1937.

1966 Distribution

Watermaster service began in the South Fork Pit River Service Area on April 1 and continued until September 30. George H. Pape, Assistant Civil Engineer, was field watermaster during this period.

The water supply for the 1966 irrigation season was far below average. A very light snowpack and lack of rain during the important months of April and May resulted in severe water shortages in parts of the area.

Pine Creek. Close regulation was required throughout the irrigation season. On April 1, Pine Creek was flowing at 50 percent of first priority allotments. Therefore, diversion into Dorris Reservoir was immediately discontinued. The flow increased slightly until the peak for the season was reached in May. It soon became apparent that there would not be enough water to serve all the irrigable lands. Several ranchers then discontinued irrigation in some areas to conserve water for their best producing fields.

Following haying, each user concentrated his water on a further reduced area of land. Some diversions were not used for the remainder of the season. Flow in the creek decreased to a seasonal low of about 6.0 cubic feet per second in mid-August. This flow remained fairly constant throughout the remainder of the season.

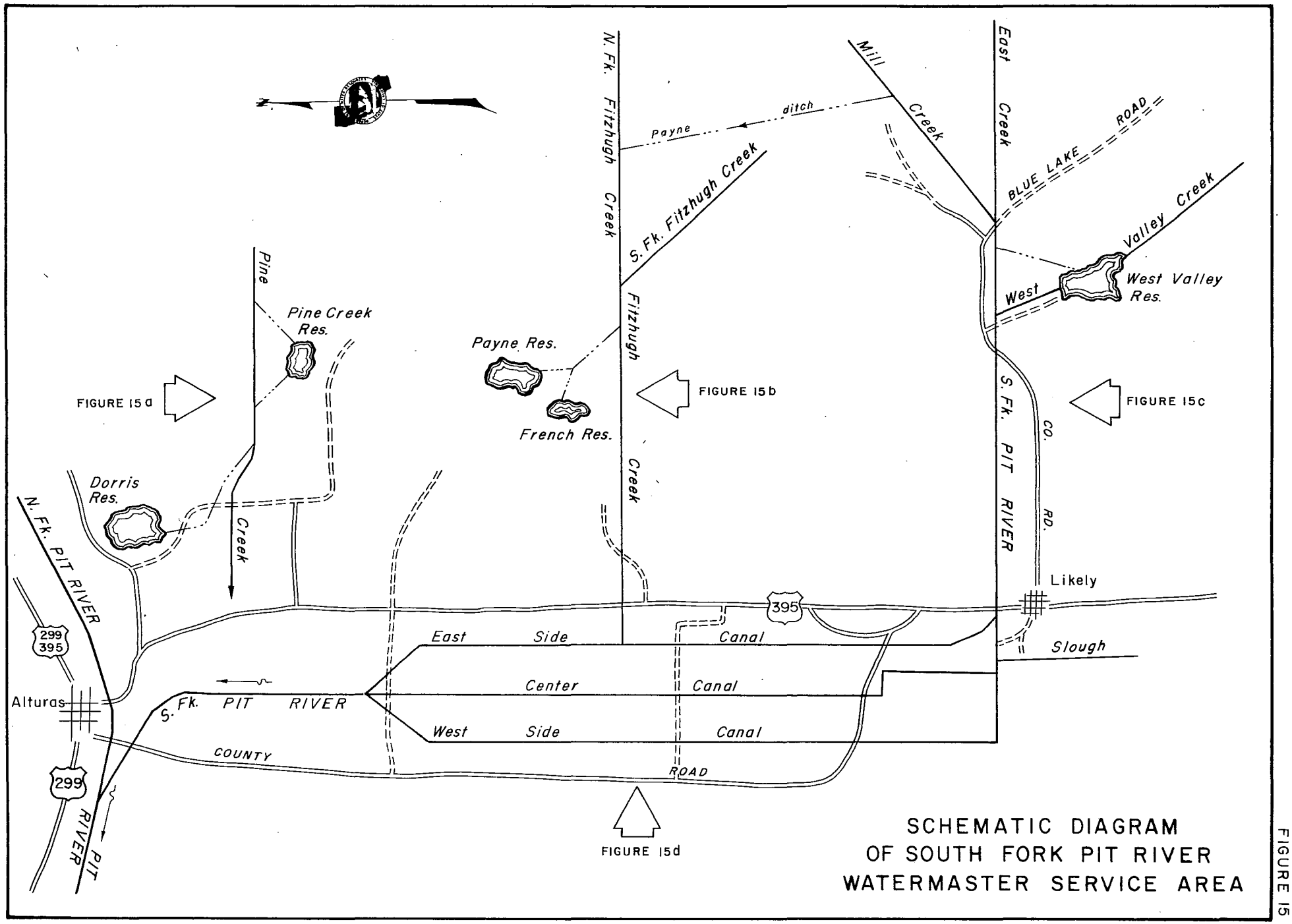
Fitzhugh Creek. In recent years distribution of Fitzhugh Creek water has been simplified by the Pit River Ranch leaving its land fallow and not utilizing its water right. In addition, Herb Bell again leased the Massae Ranch and its Payne-French Ditch water rights, making him the only water user below the confluence of the North and South Fork of Fitzhugh Creek.

Regulation of the Yankee Jim Ditch began in late April, at which time there was only enough water in the North Fork of Fitzhugh Creek to fill the first priority right.

Diversion at the Bowman Ditch began in early May. The Payne Ditch was opened on May 18 and the additional Mill Creek water was added to the Bowman Ditch allotment. Regulation of these higher altitude diversions began much earlier in the season than usual due to the limited water supply and to the lack of a significant snowpack which permitted earlier access.

South Fork Pit River. The natural flow of the South Fork Pit River was inadequate to supply demands throughout most of the season. Except for the period of April 11 to April 25, water was released from West Valley Reservoir on a demand basis continuously from mid-March through the end of the season. Enough water was available to allow one irrigation after haying.

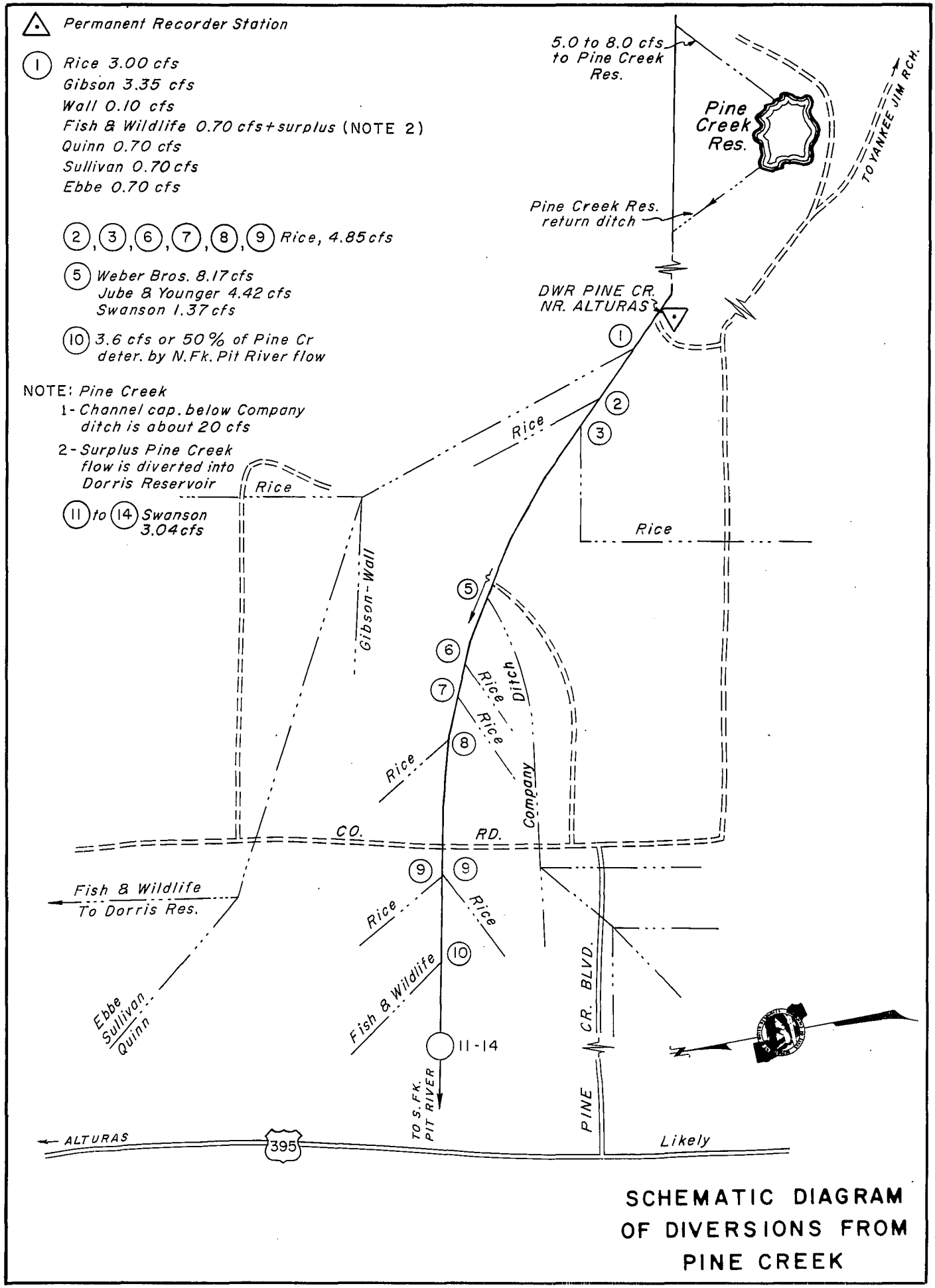
Reservoir storage at the beginning of April was 14,600 acre-feet. The reservoir reached dead storage on August 25 but the gates were left open to release the inflow from West Valley Creek.



SCHEMATIC DIAGRAM
OF SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA

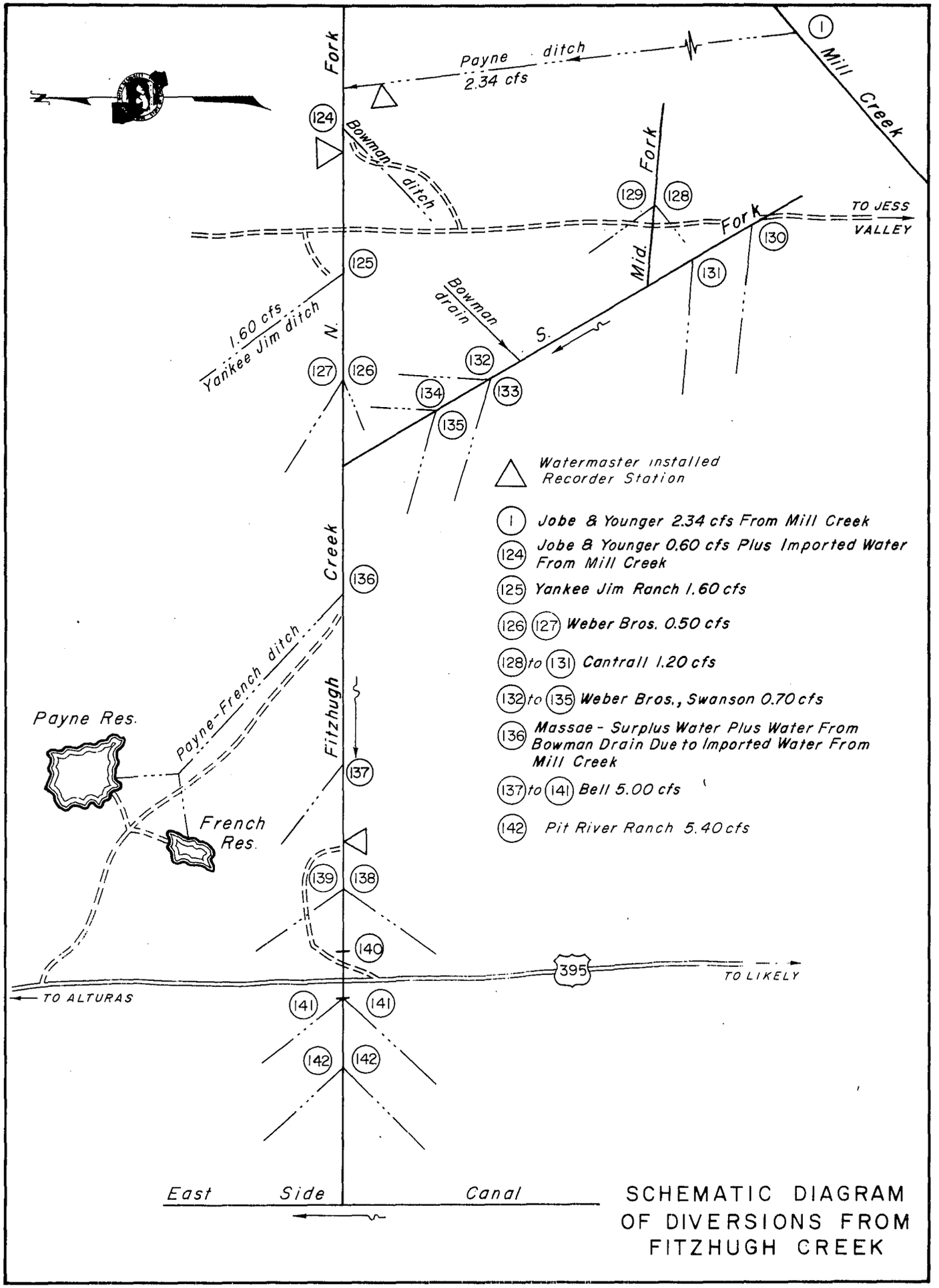
FIGURE 15

FIGURE 15a



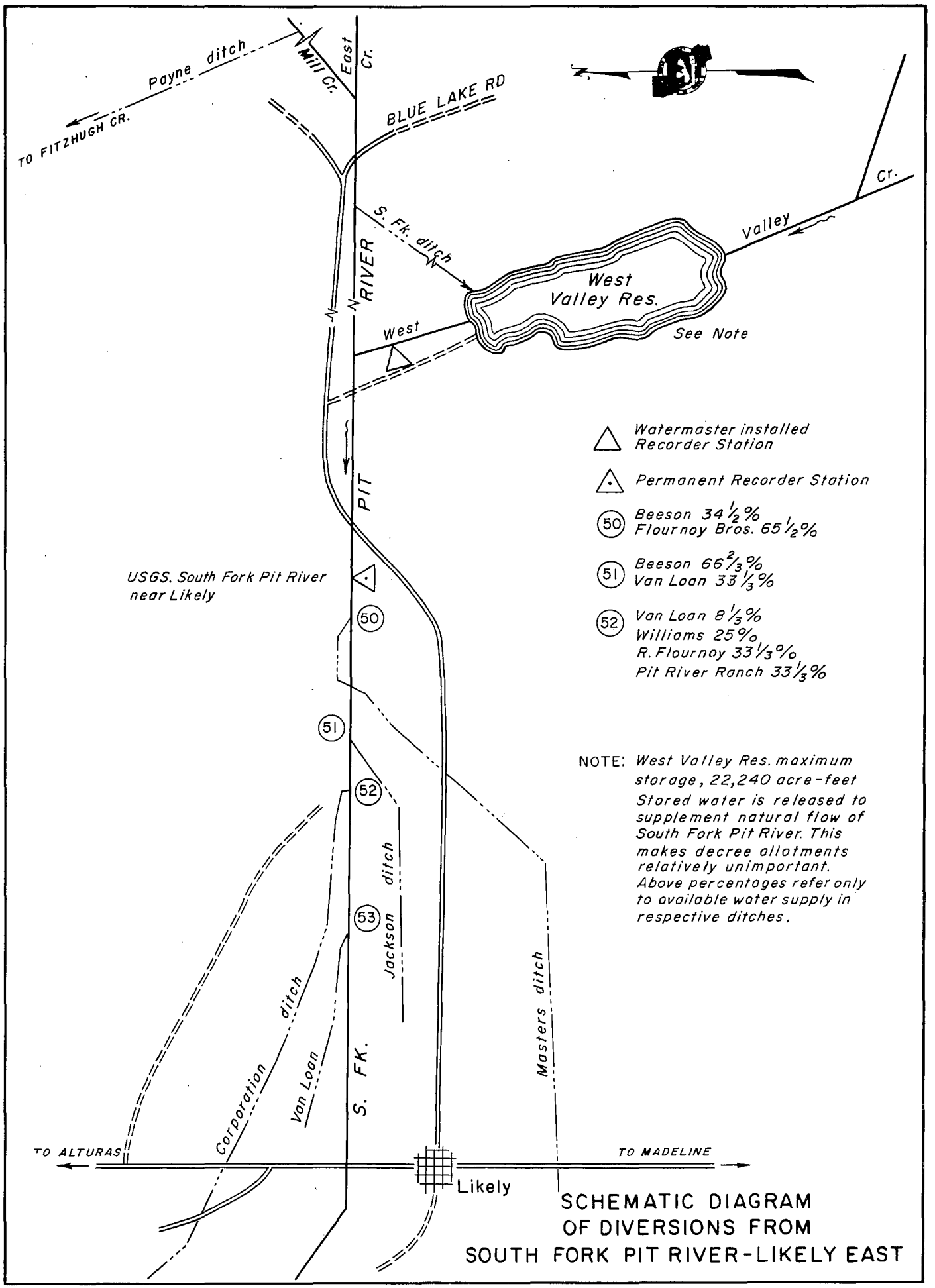
SCHEMATIC DIAGRAM OF DIVERSIONS FROM PINE CREEK

FIGURE 15b

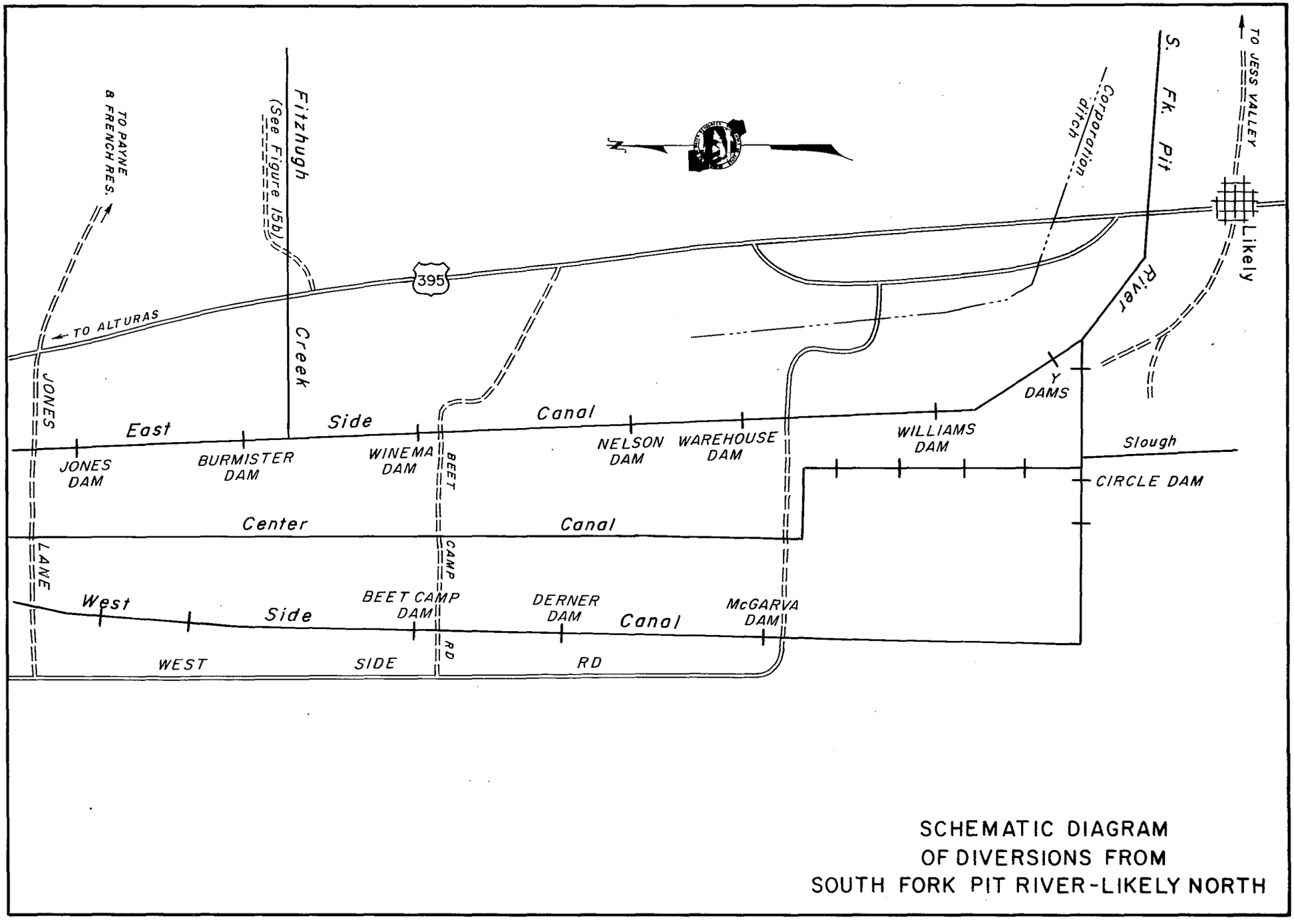


SCHEMATIC DIAGRAM OF DIVERSIONS FROM FITZHUGH CREEK

FIGURE 15c



SCHEMATIC DIAGRAM OF DIVERSIONS FROM SOUTH FORK PIT RIVER-LIKELY EAST



SCHEMATIC DIAGRAM
OF DIVERSIONS FROM
SOUTH FORK PIT RIVER-LIKELY NORTH

FIGURE 15d

Surprise Valley Watermaster Service Area

The Surprise Valley Service Area is located in the extreme eastern part of Modoc County. There are 171 water right owners in the service area with total allotments of 313.75 cubic feet per second. The source of water supply is comprised of 10 individual stream systems rising on the eastern slope of the Warner Mountains. These streams are fed by snowmelt runoff and traverse a fast precipitous course down the Warner's eastern slope to the valley floor. From that point numerous, scattered diversion ditches convey water to the irrigated lands. The place of use is situated in a long, narrow area extending in a north-south direction between the foot of the Warner Mountains and the Alkali Lakes which lie in the center of Surprise Valley.

Surprise Valley extends from nearly the Oregon border on the north to Lassen County on the south, a distance of approximately 50 miles. The valley varies in width from about eight to ten miles. It is bordered on the north, south, and west by the rugged Warner Range and on the east by the typical mountainous desert terrain of Nevada. The valley floor is at an elevation of approximately 4,700 feet.

A schematic drawing of each major stream system within the Surprise Valley Service Area is presented as Figures 16 through 16j.

Water Supply

The water supply is derived almost entirely from snowmelt runoff, with only minor spring-fed flows occurring in the latter part of the season. There are no known economically justified storage sites on the service area creeks. Because of the lack of regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. An extreme differential in day and night temperatures causes extensive variation in snowmelt runoff quantities. This problem is further aggravated by the relatively short and steep drainage area. In addition, occasional summer thunder showers may cause a creek to discharge a flow of mammoth portions for several hours. These flashes are apt to cause considerable damage in wash-outs and debris deposition, and are of such short duration that no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables A-54 through A-64.

Method of Distribution

The continuous flow method of distribution is employed on most creeks; however, in a few instances the available water supply is rotated among the users in accordance with either decree schedules or by mutual agreements.

Alfalfa and meadow hay, the major crops grown in the valley, are irrigated in most instances by wild flooding. There are also considerable lands dependent upon subsurface irrigation. In addition, recent development of numerous deep wells has popularized sprinkler irrigation. This type of irrigation, however, is limited because of available ground water supply and costs of installation and maintenance.

To facilitate distribution of irrigation waters, construction of permanent diversion dams, headgates, and measuring devices has been stressed during recent years. Although these control devices do not solve the problems of discharge variation and debris deposition, they do provide significant assistance in solving water measurement and distribution problems.

The several decrees* which apply to the Surprise Valley Service Area establish the following number of priority classes for the various stream systems: Bidwell Creek - four until July 10, five thereafter; Mill Creek - four; Soldier Creek - rotation March 19 to June 19 (upper users eight, lower users seven), twelve priorities are in effect during the remainder of the year; Pine Creek - a rotation schedule based on accumulative flow in acre-feet is used; Cedar Creek - four; Deep Creek - five; Owl Creek - twenty-one; Rader Creek - six; Eagle Creek - four; and Emerson Creek - four.

1966 Distribution

Watermaster service began in the Surprise Valley Service Area on March 19 and continued until September 30. John A. Nolan, Water Resources Technician II was field watermaster during this period.

The 1966 season was far below average for irrigation purposes throughout the valley. An extremely light snowpack on the Warner Mountains, combined with lack of rain during April, May, and June (about 25 percent of the annual precipitation usually occurs during this period),

* See Table 1

produced one of the lowest water supplies on record for all creeks in the valley.

Below average crop yields were experienced throughout the area. Some lands were unable to produce crops because of the inadequate water supply. After the first hay cuttings, only a few creeks had enough water to begin a second irrigation. From early July throughout the remainder of the season, the flows in all creeks declined steadily. In September only about 50 percent of first priority allotments (stockwater and domestic rights) were available.

The seasonal runoff (April 1 through September 30) on the various creeks ranged between 34 and 61 percent of the long-time averages.

Bidwell Creek. Total stream runoff available to Bidwell Creek users during the period April 1 through September 30 was 5,600 acre-feet, or approximately 45 percent of normal (based on records of seasonal runoff since 1955).

Because of a low snowpack in the Bidwell Creek Basin there was only enough runoff to supply the first priority allotments until early June (there are four priorities until July 10, five priorities thereafter). From then until July 10 close regulation was required as only a portion of first priority allotments was available. Throughout the remainder of the season, the discharge of Bidwell Creek receded at a fairly constant rate, reaching a low of approximately three cubic feet per second during the later part of September. This was enough to supply 75 percent of first priority allotments.

Mill Creek. Total stream runoff available to Mill Creek users during the period April 1, through September 30 was 2,280 acre-feet, or approximately 41 percent of normal.

Only enough irrigation water was available to supply two-thirds of third priority allotments through April and mid-May (four priorities). Third priority water was available in steadily decreasing quantities until the end of July. Throughout the remainder of the season the available water supply was adequate to satisfy first priority allotments and portions of the second priorities.

Soldier Creek. Total stream runoff available to Soldier Creek users during the period March 19 through September 30 was 2,100 acre-feet or approximately 56 percent of normal.

All diversions were closely regulated during the rotation periods (March 19 to June 19) as the stream runoff was inadequate to satisfy all priority allotments (eight priorities during the upper users' cycle, seven priorities during the lower users' cycle). After the middle of June the flow of Soldier Creek decreased at a fairly constant rate. Partial second priority allotments were satisfied through the first part of July after which the flow continued to recede until the seasonal low was reached in late September. At that time only partial first priority allotments were served.

Pine Creek. Total stream runoff available to Pine Creek users during the period March 20 through September 30 was 697 acre-feet or approximately 51 percent of normal. The stream system was operated according to the rotation schedule (an accumulative flow basis) set forth in the court decrees.

On April 26 the flow in Pine Creek dropped below 4.0 cubic feet per second, thereby ending the rotation schedule. From this date through May 8 the flow was divided between the Andrae and Eastlick Ranches. On May 9 the flow had receded to 1.6 cubic feet per second. In accordance with the decree, the entire flow was then diverted into the Cressler Ditch to the Bordwell Ranch. This diversion continued for about three weeks, or as long as the water would reach the place of use. From mid-June throughout the remainder of the season Pine Creek was essentially dry.

Cedar Creek. Total stream runoff available to Cedar Creek users during the period April 1 through September 30 was about 1,020 acre-feet or approximately 34 percent of normal.

No water was available for fourth priority users (a total of four priorities on the creek) this season. Third priority allotments were partially satisfied for a short period during early May. Second priority regulation began during the middle of May as the streamflow continued to decline.

The entire streamflow was diverted to the only first priority users from the middle of June to the end of the season.

Deep Creek. Total stream runoff available to Deep Creek users during the period April 1 through September 30 was 1,650 acre-feet, or approximately 44 percent of normal.

The total flow of North Deep Creek was diverted into the Company Ditch throughout the entire season since only partial first priority allotments were available (one priority on North Deep Creek).

Second priority regulation began on South Deep Creek (five priorities) at the beginning of the season and continued through May 7. Throughout the remainder of the season only first priority water was available in steadily declining amounts.

Owl Creek. Total stream runoff available to Owl Creek users during the period April 1 through September 30 was 3,100 acre-feet, or approximately 48 percent of normal.

The flood control and distribution project is providing an excellent means of equitable distribution of irrigation waters. During the 1966 season the highest flow recorded in the system was 27 cubic feet per second, which is far below the design capacity of the system. No distribution problems were encountered other than the usual one of gravel and debris accumulating at the intake, thereby restricting flows into the system. A routine flushing schedule for the intake works was employed to minimize this problem.

Enough water existed to fulfill only 16 of the 21 priorities throughout April and early May. For the remainder of the season the flow receded gradually. A low of approximately one cubic foot per second was reached in late September.

There was insufficient water available to supply any of the "special" eight priority allotments during their respective periods.

Rader Creek. Total stream runoff available to Rader Creek users during the period April 1 through September 30 was 2,000 acre-feet or approximately 61 percent of normal.

All users (six priorities) received ample irrigation water until the middle of May. As the streamflow began receding, close regulation of all diversions was required to maintain equitable distribution. Diversion #1 was closed June 16 (much earlier than usual) because there was not enough water available to reach the place of use. The flow then receded steadily throughout the remainder of the irrigation season. Second priority allotments terminated on August 31 in accordance with the decree. During September, first priority water was available in varying amounts.

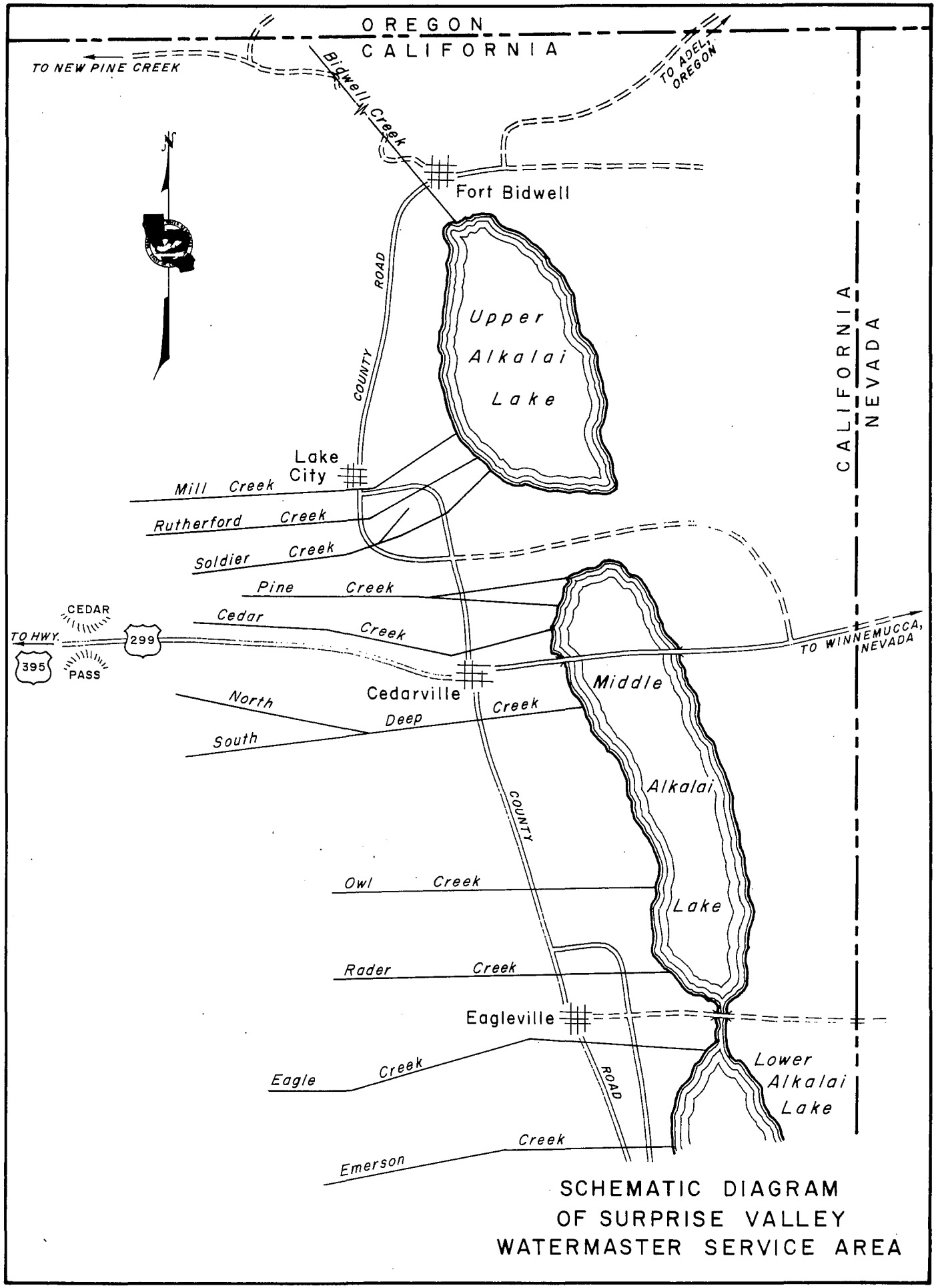
Eagle Creek. Total stream runoff available to Eagle Creek users during the period April 1 through September 30 was 2,140 acre-feet or approximately 36 percent of normal.

A sufficient water supply was available to all users (four priorities) until early June. Thereafter the flow steadily receded. As the third priority supply decreased, excessive channel losses prevented any practicable distribution in the lower reaches of the creek. In accordance with the decree, under these conditions, the Ford Ranch diverted all third priority water. Second priority allotments were shut off in mid-July. Thereafter, only first priority water was available (stockwater and domestic garden rights).

Emerson Creek. Total stream runoff available to Emerson Creek users during the period April 1 through September 30 was 1,600 acre-feet or approximately 44 percent of normal.

Third and fourth priority (a total of four priorities) users did not receive any water during the season. Approximately 50 percent of second priority allotments were satisfied until mid-May. The flow then receded steadily until a seasonal low of 3 cubic feet per second was reached in September. This amount supplied only about 10 percent of second priority allotments.

FIGURE 16



SCHEMATIC DIAGRAM
OF SURPRISE VALLEY
WATERMASTER SERVICE AREA

FIGURE 16a

△ Permanent Recorder Station

March 15 through July 9
(major season of use)

(5) G. Peterson 0.38 cfs
C. Bucher 0.45 cfs
Sweeney 0.07 cfs

(6) Sweeney 0.18 cfs

(7) G. Peterson 0.50 cfs

(8) McConnaughy 7.24 cfs*
Town Users 0.06 cfs

(9) Conlan 7.63 cfs
Town Users 0.22 cfs

(10) Carey 6.13 cfs
C. Bucher 0.66 cfs
P. Peterson 0.44 cfs
Town Users 0.30 cfs

(11) C. Bucher 0.38 cfs

(12) U.S. Indian Service 0.46 cfs
Green 0.14 cfs
Baty 0.12 cfs

(13) McConnaughy 5.24 cfs*
Town Users 0.44 cfs

(15) Fee 8.94 cfs
Sagehorn 1.34 cfs
O'Callaghan 2.88 cfs
Toney 0.42 cfs

(17) Kober 0.05 cfs

(20) Sagehorn 0.88 cfs

(19A) (20) (20A) Carey 1.43 cfs

(21) Sagehorn 1.39 cfs

(22) O'Callaghan 0.38 cfs

(23) Sagehorn 1.79 cfs

(X) Sagehorn — If flow is less than 3.82 cfs, deficiency is made up by additional diversion through (15) if Fee Ranch allotment is satisfied.

* May be used in either ditch

NOTE: Sagehorn and O'Callaghan waters may be used in any of their ditches at discretion of user and watermaster.

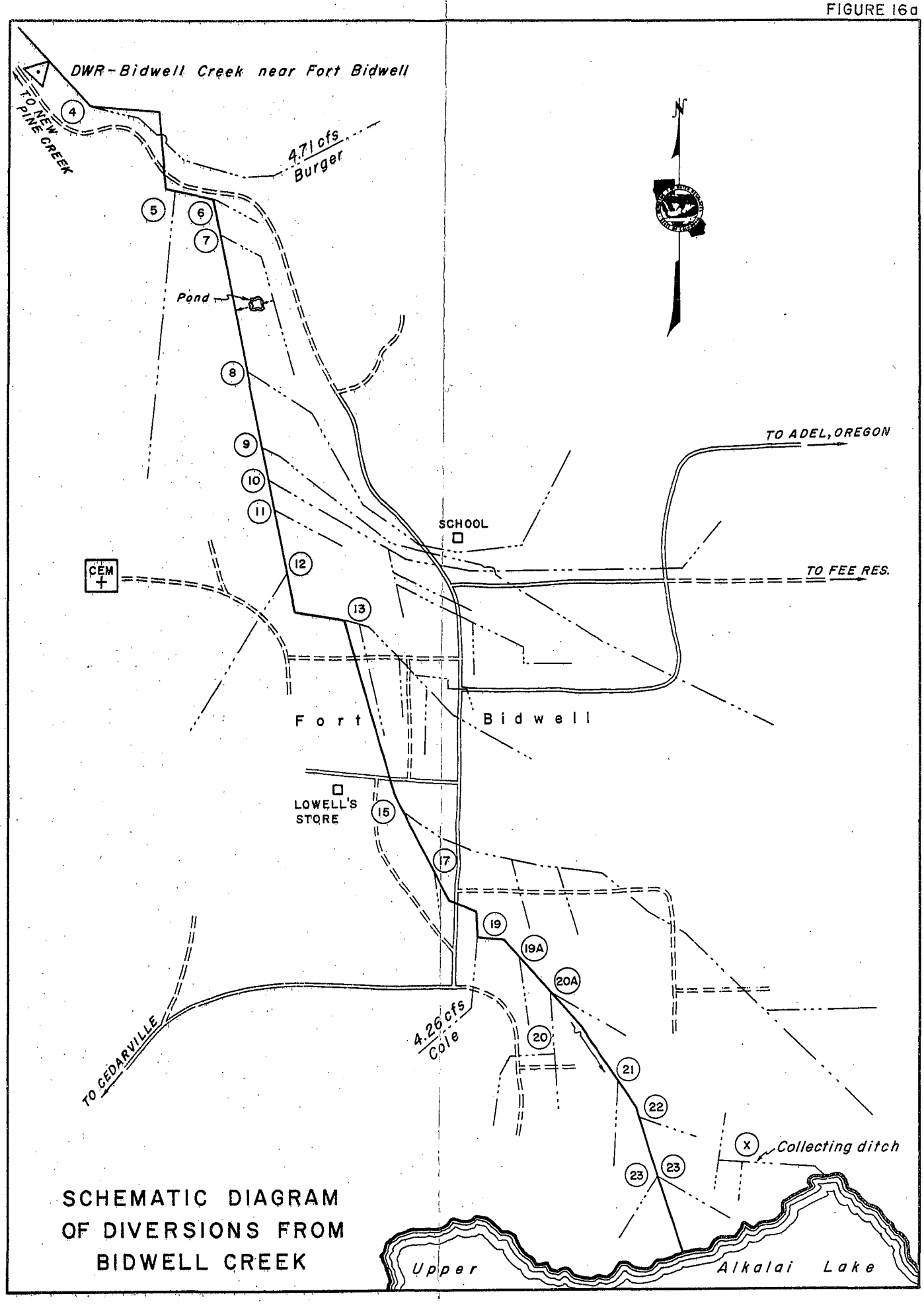


FIGURE 16b

△ **Watermaster Installed**
Recorder Station

(2) Caldwell 0.38 cfs
Mellis 0.24 cfs

(3) Bettandorf 1.38 cfs
(May be combined with (17) in either ditch)
McDaniel 0.13 cfs

(4) Mix 0.32 cfs
Painter 0.26 cfs

(5) Caldwell 0.18 cfs

(7) (13) (29A) **Sevier 0.56 cfs**

(10) Larson 0.20 cfs

(11) M. Wimer 0.56 cfs
Jones 0.18 cfs

(12) Belding 0.50 cfs

(13) Smith 0.28 cfs

(15) Steward 0.21 cfs

(18) Slaybaugh 0.25 cfs
Larson 0.06 cfs

(28) Coppedge 0.09 cfs

(30) McCowin 0.12 cfs
Hamer 0.12 cfs

(31) Glassford 0.22 cfs

(32) Streig 0.21 cfs

(33) Slaybaugh 0.16 cfs

(35) to (38) Jacobs 1.30 cfs

(39) to (43) Cockrell 10.30 cfs

(42) G. Warrens 1.85 cfs

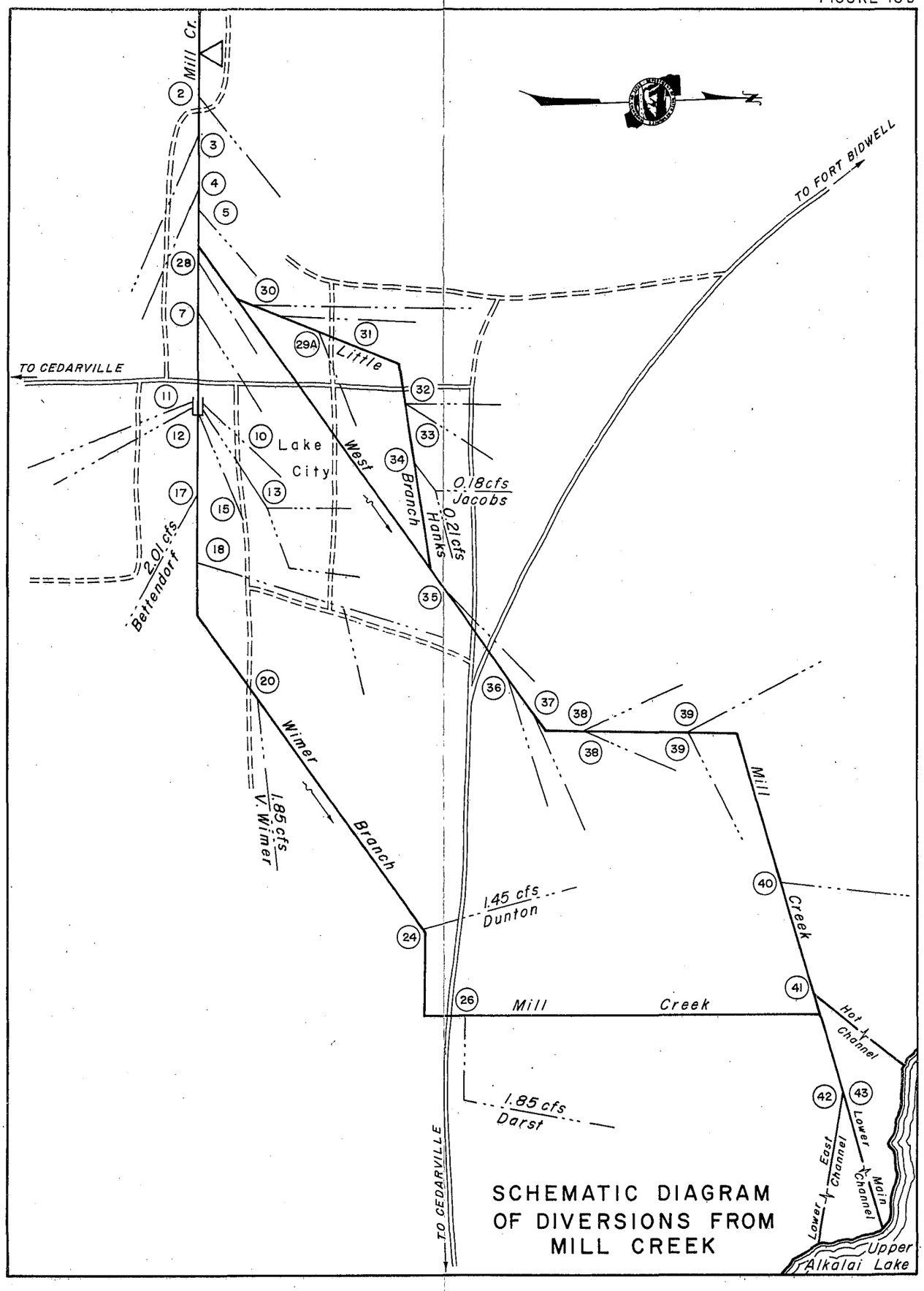


FIGURE 16c

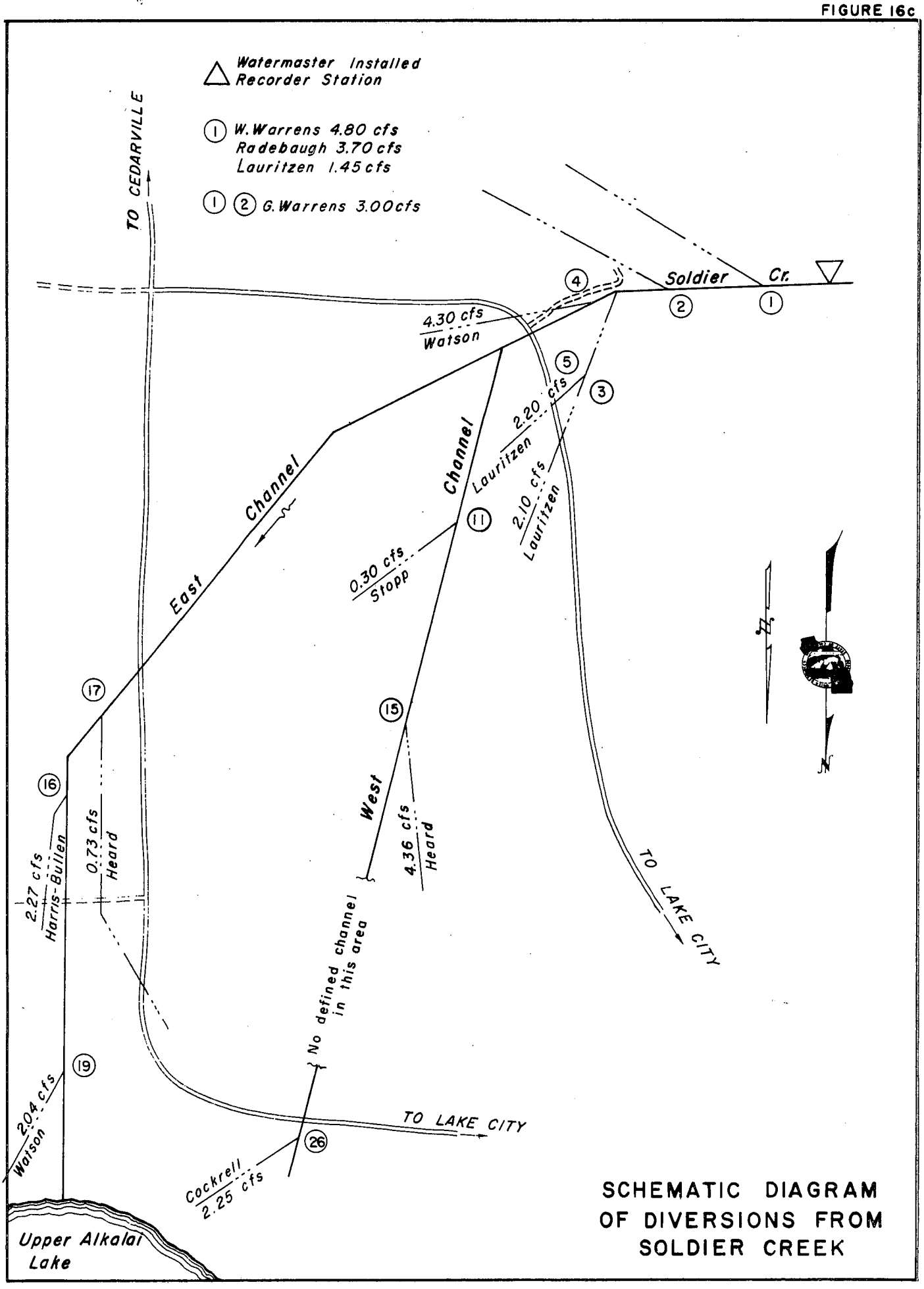

Watermaster Installed Recorder Station
(1) W. Warrens 4.80 cfs
Radebaugh 3.70 cfs
Lauritzen 1.45 cfs
(1) (2) G. Warrens 3.00 cfs
TO CEDARVILLE
Soldier Cr.
4.30 cfs Watson
2.20 cfs Lauritzen
2.10 cfs Lauritzen
Channel
East Channel
West
0.30 cfs Stopp
4.36 cfs Heard
0.73 cfs Heard
2.27 cfs Harris-Bullen
2.04 cfs Watson
Cockrell 2.25 cfs
No defined channel in this area
TO LAKE CITY
TO LAKE CITY
Upper Alkalai Lake
SCHEMATIC DIAGRAM OF DIVERSIONS FROM SOLDIER CREEK

FIGURE 16 d

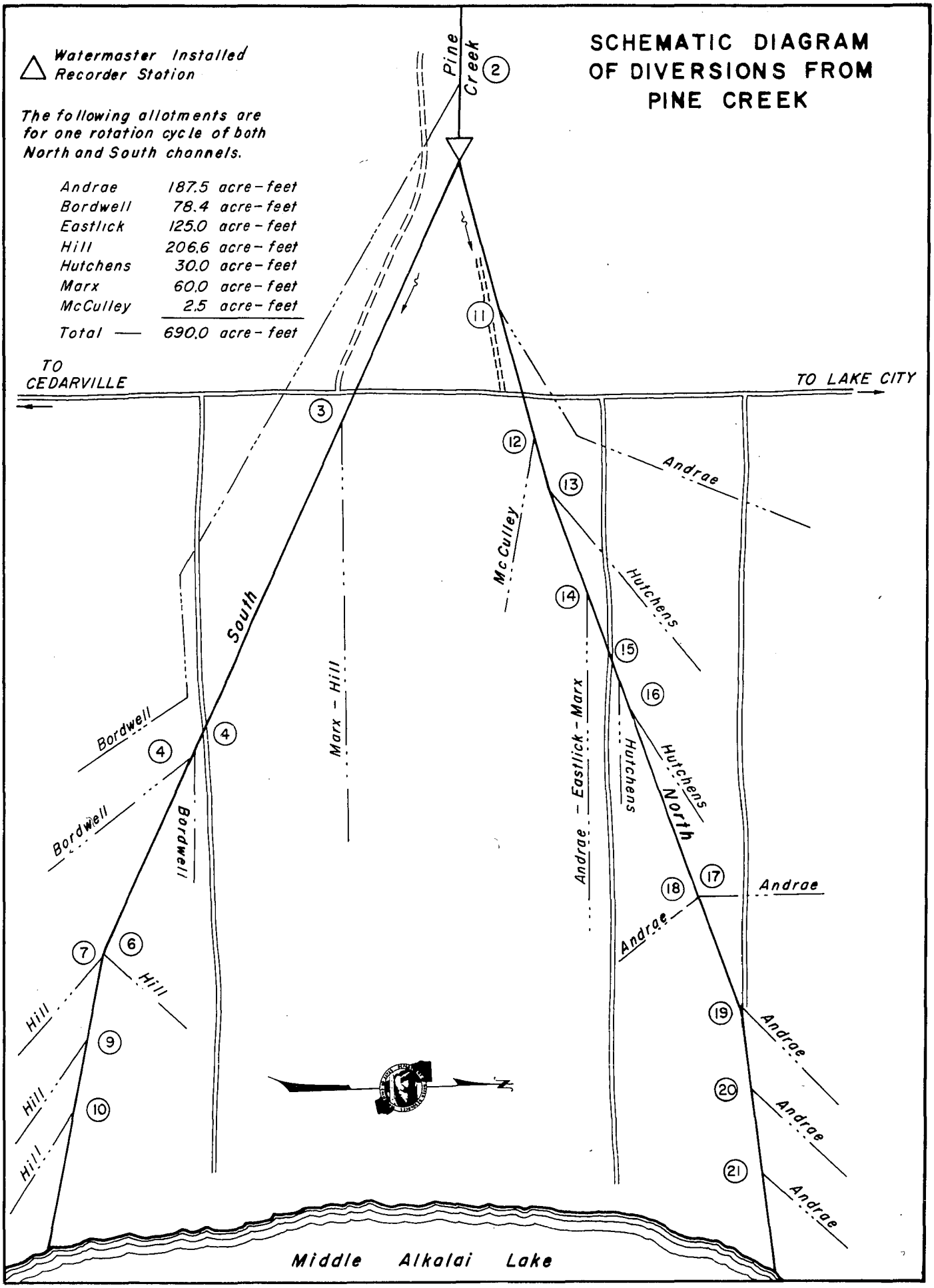

SCHEMATIC DIAGRAM OF DIVERSIONS FROM PINE CREEK
△ Watermaster Installed Recorder Station
The following allotments are for one rotation cycle of both North and South channels.
Andrae 187.5 acre-feet
Bordwell 78.4 acre-feet
Eastlick 125.0 acre-feet
Hill 206.6 acre-feet
Hutchens 30.0 acre-feet
Marx 60.0 acre-feet
McCulley 2.5 acre-feet
Total — 690.0 acre-feet
Pine Creek
TO CEDARVILLE
TO LAKE CITY
South
Bordwell
Marx - Hill
McCulley
Andrae
Hutchens
Andrae - Eastlick - Marx
North
Hill
Middle Alkalai Lake

FIGURE 16 e

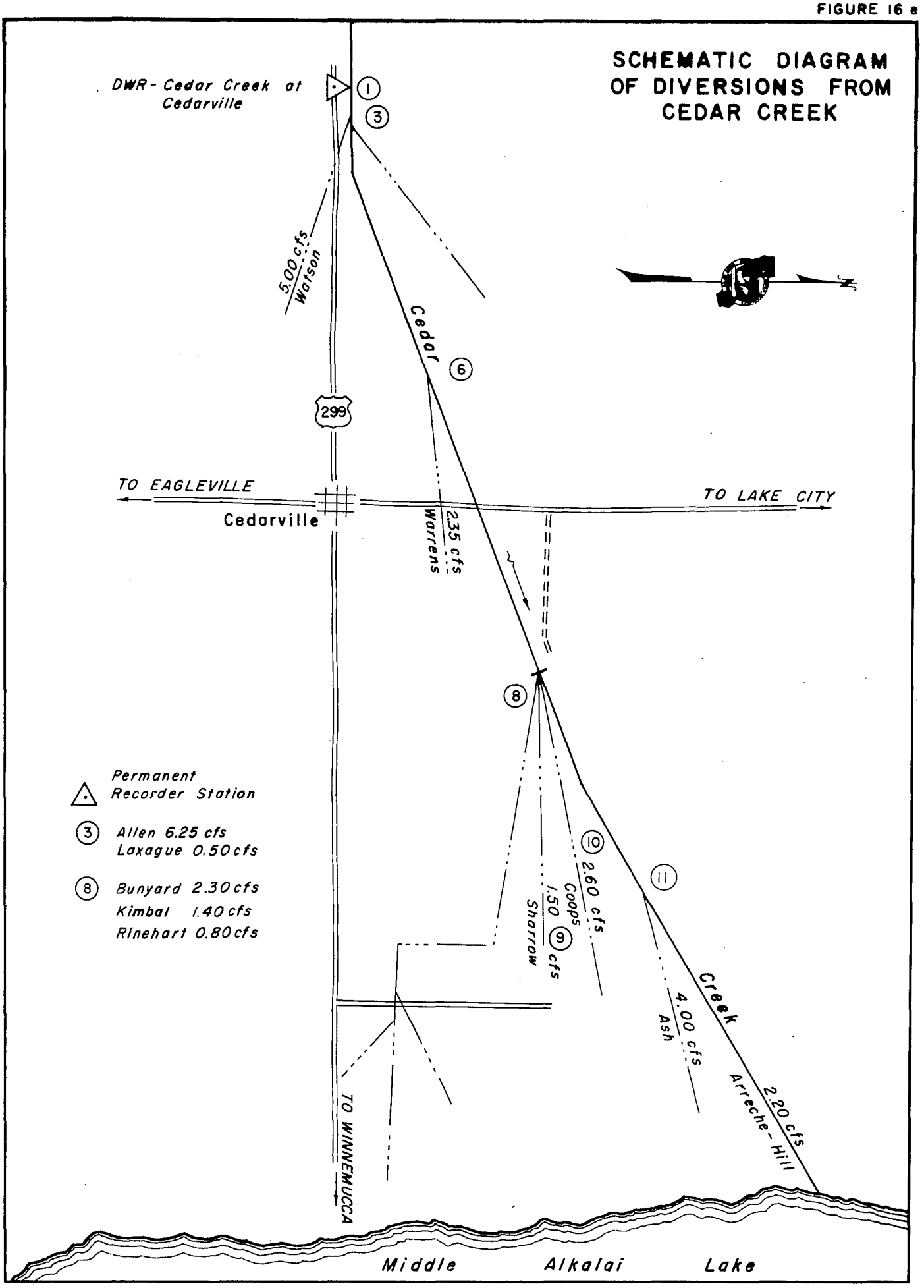

SCHEMATIC DIAGRAM OF DIVERSIONS FROM CEDAR CREEK
DWR - Cedar Creek at Cedarville
1
3
5.00 cfs Watson
Cedar
6
299
TO EAGLEVILLE
TO LAKE CITY
Cedarville
2.35 cfs Warrens
8
Permanent Recorder Station
3 Allen 6.25 cfs
Laxague 0.50 cfs
8 Bunyard 2.30 cfs
Kimbal 1.40 cfs
Rinehart 0.80 cfs
10
2.60 cfs
Coops
1.50
9
cfs
Sharrow
11
4.00 cfs
Ash
Creek
2.20 cfs
Arreche - Hill
TO WINNEMUCCA
Middle Alkalai Lake

FIGURE 16 f

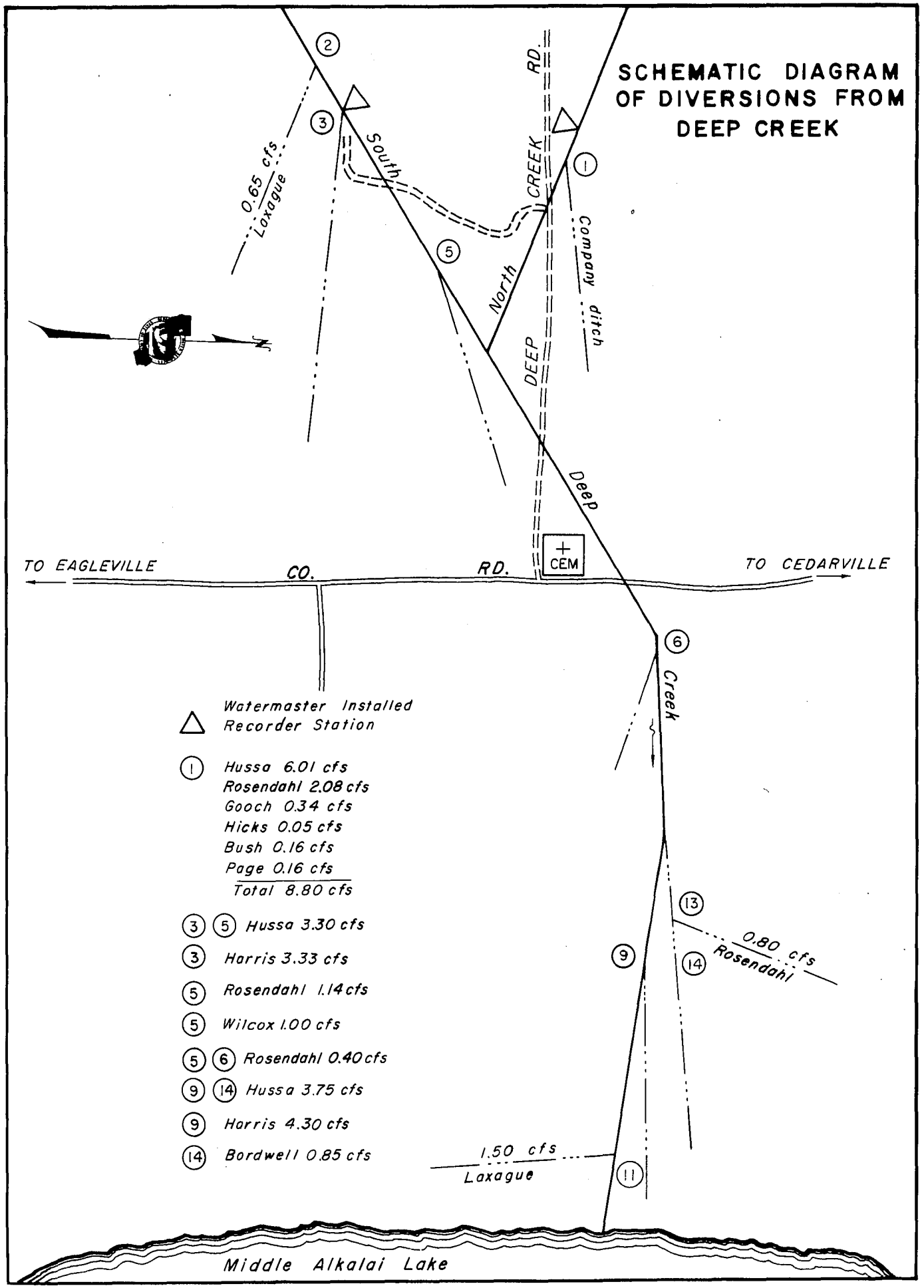

SCHEMATIC DIAGRAM OF DIVERSIONS FROM DEEP CREEK
RD.
South
CREEK
North
DEEP
Deep
Company ditch
0.65 cfs
Laxague
TO EAGLEVILLE
CO.
RD.
CEM
TO CEDARVILLE
Creek
Watermaster Installed Recorder Station
① Hussa 6.01 cfs
Rosendahl 2.08 cfs
Gooch 0.34 cfs
Hicks 0.05 cfs
Bush 0.16 cfs
Page 0.16 cfs
Total 8.80 cfs
③ ⑤ Hussa 3.30 cfs
③ Harris 3.33 cfs
⑤ Rosendahl 1.14 cfs
⑤ Wilcox 1.00 cfs
⑤ ⑥ Rosendahl 0.40 cfs
⑨ ⑭ Hussa 3.75 cfs
⑨ Harris 4.30 cfs
⑭ Bordwell 0.85 cfs
0.80 cfs
Rosendahl
1.50 cfs
Laxague
Middle Alkalai Lake

FIGURE 16g

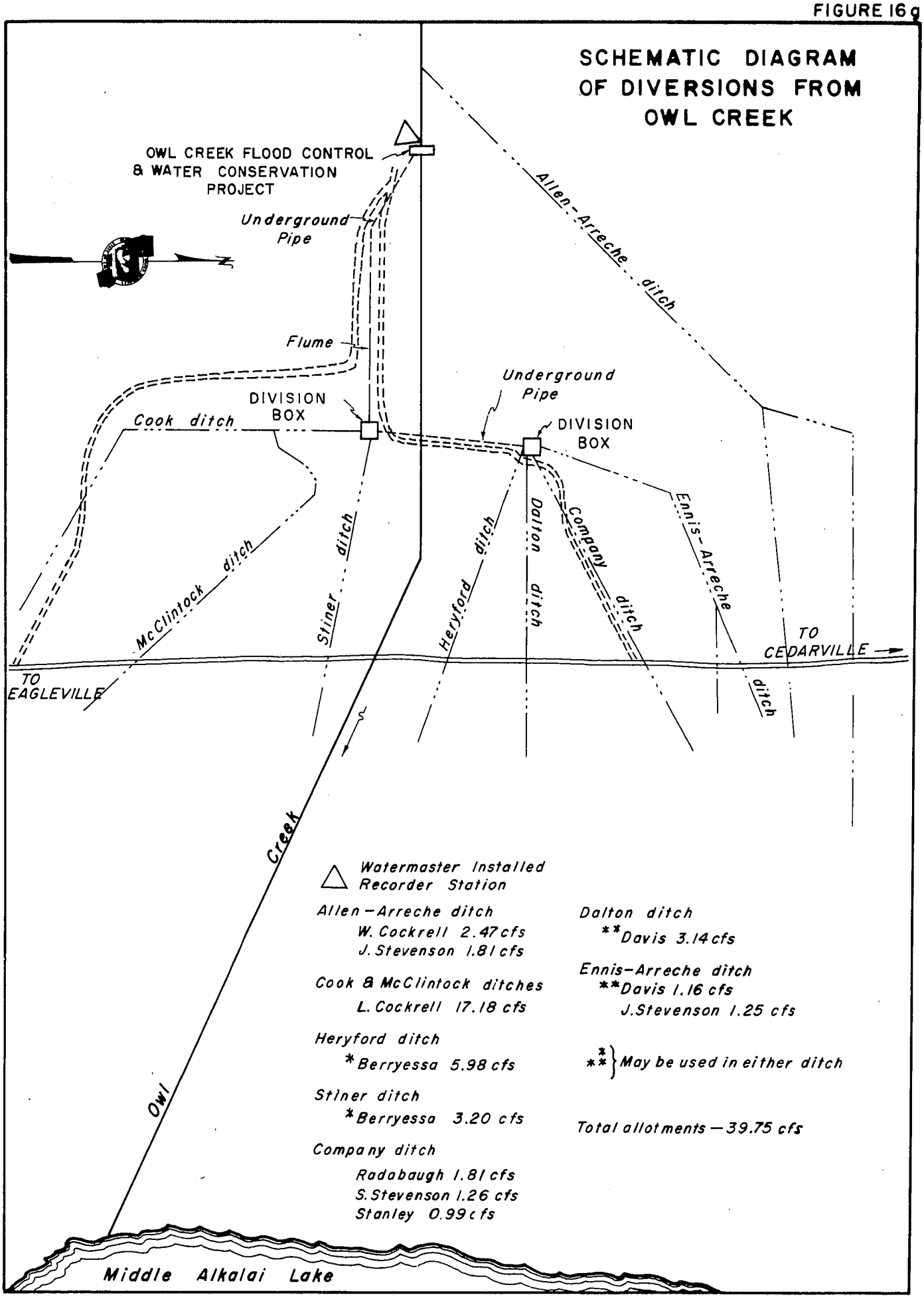
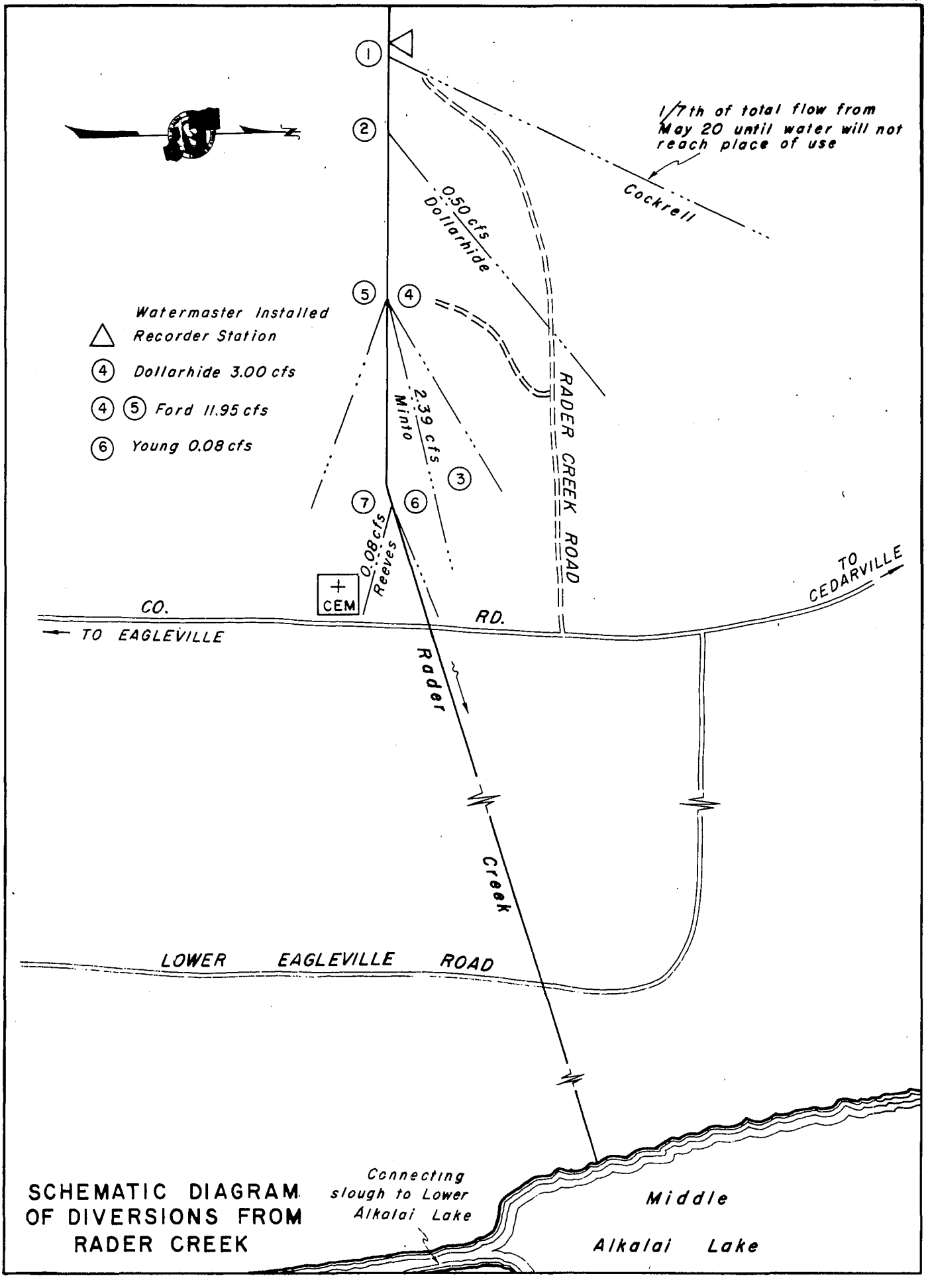

SCHEMATIC DIAGRAM OF DIVERSIONS FROM OWL CREEK
OWL CREEK FLOOD CONTROL & WATER CONSERVATION PROJECT
Underground Pipe
Flume
DIVISION BOX
Cook ditch
Underground Pipe
DIVISION BOX
Allen-Arreche ditch
McClintock ditch
Stiner ditch
Heryford ditch
Dalton ditch
Company ditch
Ennis-Arreche ditch
TO EAGLEVILLE
TO CEDARVILLE
Owl Creek
Middle Alkalai Lake
Watermaster Installed Recorder Station
Allen-Arreche ditch
W. Cockrell 2.47 cfs
J. Stevenson 1.81 cfs
Cook & McClintock ditches
L. Cockrell 17.18 cfs
Heryford ditch
*Berryessa 5.98 cfs
Stiner ditch
*Berryessa 3.20 cfs
Company ditch
Radabaugh 1.81 cfs
S. Stevenson 1.26 cfs
Stanley 0.99 cfs
Dalton ditch
**Davis 3.14 cfs
Ennis-Arreche ditch
**Davis 1.16 cfs
J. Stevenson 1.25 cfs
*, ** May be used in either ditch
Total allotments — 39.75 cfs

FIGURE 16 h



SCHEMATIC DIAGRAM OF DIVERSIONS FROM RADER CREEK

△ *Permanent Recorder Station*

(1) *Harris Bros. 0.31 cfs*
R. Minto 0.51 cfs
Morgan 0.36 cfs

(3) *Ford 5.00 cfs (after July 1, 0.50 cfs)*
Town Users 0.98 cfs

(4) *Ford 0.50 cfs*
Town Users 1.36 cfs

(4) (6) (8) (11) *Ford 3.90 cfs*

(5) *Harris Bros. 0.60 cfs*
(0.10 cfs may be taken through diversion (1))

(8) (9) (11) *Stevens 0.30 cfs*

(11) *Stevens 1.80 cfs*

(8) *to* (10) *M. Stevenson 3.15 cfs*
(Minus any water received from Prior Collecting ditch)

(X) *Harris Bros. 6.70 cfs*
(All diversions below (13))
(1.0 cfs may be taken through diversion (5))

(XX) *Any water over 0.75 cfs at this point must be deducted from (X))*

Total allotments – 29.57 cfs

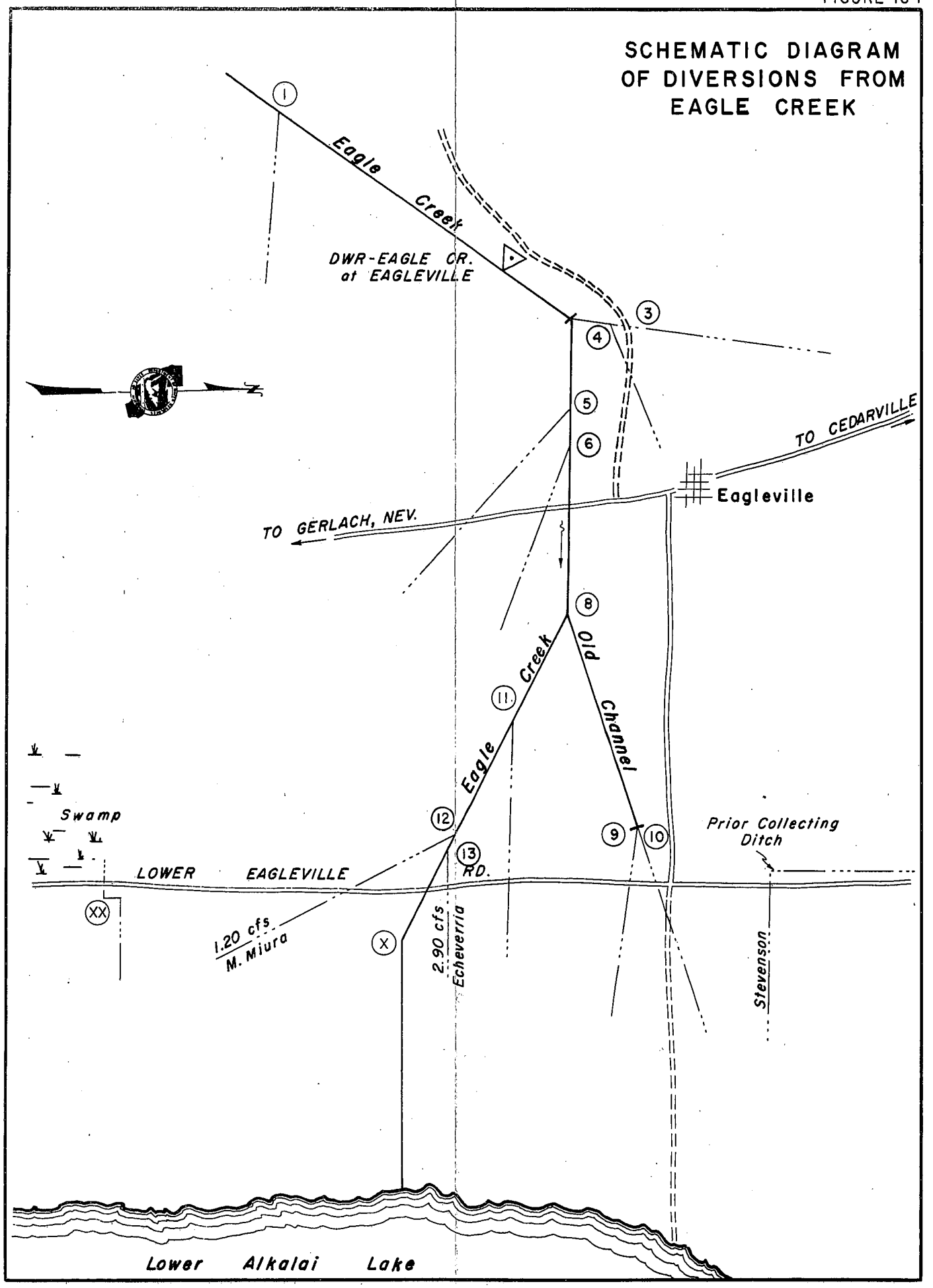
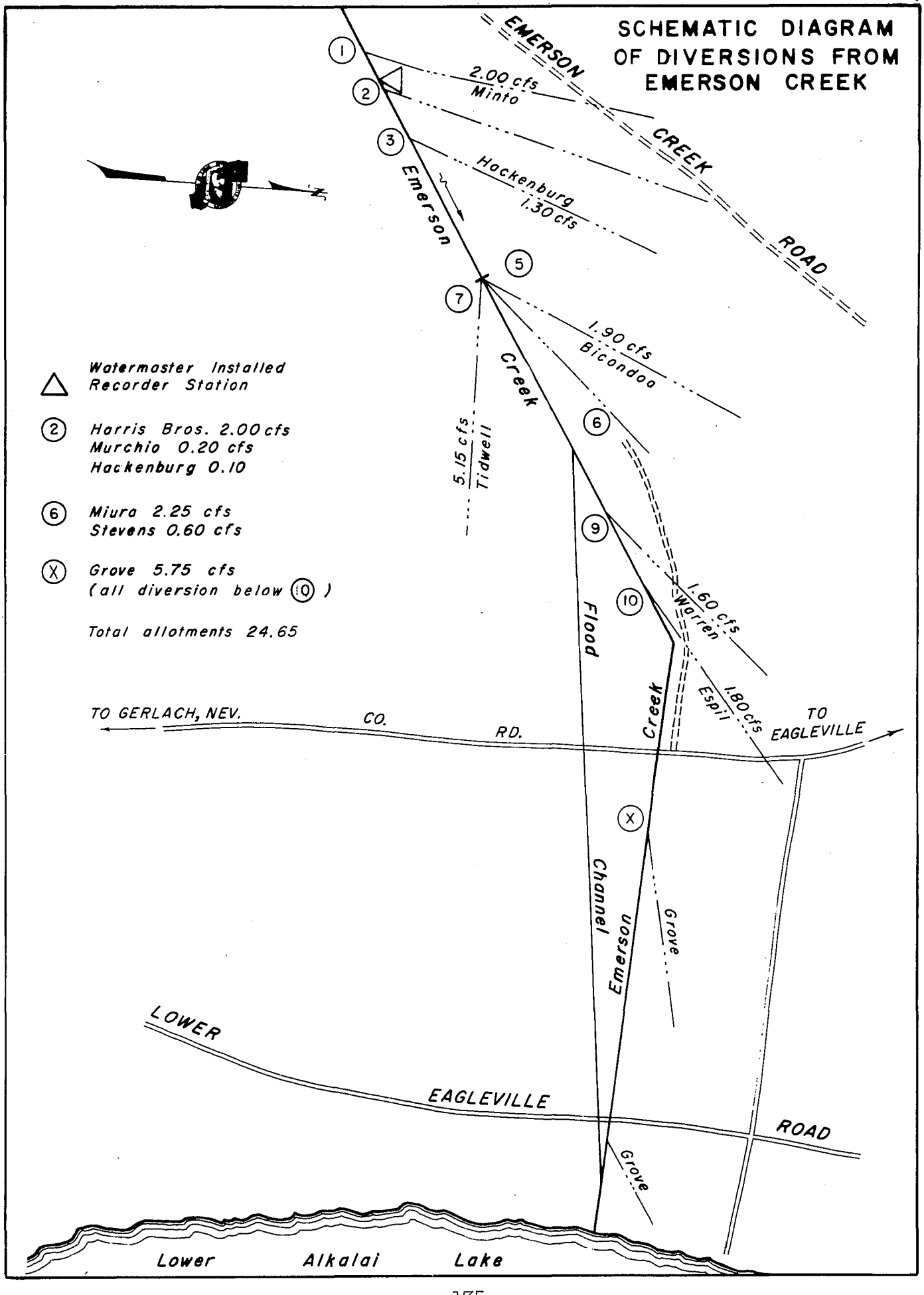


FIGURE 16


SCHEMATIC DIAGRAM OF DIVERSIONS FROM EMERSON CREEK
EMERSON CREEK ROAD
Emerson Creek
Flood Channel
Creek
1
2
3
5
6
7
9
10
X
2.00 cfs Minto
Hackenburg 1.30 cfs
1.90 cfs Bicondoa
5.15 cfs Tidwell
1.60 cfs Warren
1.80 cfs Espil
Grove
Grove
N
Watermaster Installed Recorder Station
(2) Harris Bros. 2.00 cfs
Murchio 0.20 cfs
Hackenburg 0.10
(6) Miura 2.25 cfs
Stevens 0.60 cfs
(X) Grove 5.75 cfs
(all diversion below (10))
Total allotments 24.65
TO GERLACH, NEV.
CO. RD.
TO EAGLEVILLE
LOWER EAGLEVILLE ROAD
Lower Alkalai Lake

Susan River Watermaster Service Area

The Susan River Service Area is located in the southern part of Lassen County in the vicinity of Susanville. There are 164 water right owners in the service area with total allotments of 351.732 cubic feet per second. The primary place of use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a distance of about 25 miles. The valley floor is at an elevation of about 4,00 feet. The source of supply is comprised of three stream systems: Susan River and tributaries, Baxter Creek and tributaries, and Parker Creek.

Susan River originates on the east slope of the Sierra Nevada immediately east of Lassen National Park at an elevation of about 7,900 feet. Its channel runs easterly from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

Susan River has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountains at lower elevations.

A short distance below its confluence with Willow Creek the Susan River divides into three channels: Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank further downstream.

The Baxter Creek stream system is located in Honey Lake Valley on the east slope of the Sierra Nevada about 10 miles southeast of Susanville. The principal creeks in the system are: Baxter Creek, which rises in the extreme western portion of the basin and flows in an easterly direction; Elesian Creek, Sloss Creek, and Bankhead Creek are tributaries of Baxter Creek from the south.

Parker Creek is situated in Honey Lake Valley on the east slope of the Sierra Nevada about 15 miles southeast of Susanville. It rises on the east slope of Diamond Mountain and flows in an easterly direction for about five miles into Honey Lake.

A schematic drawing of each major stream system within the Susan River Service Area is presented as Figures 17 through 17e.

Water Supply

The water supply in the Susan River Service Area is obtained from two major sources, snowmelt runoff and springs. Snowpack on the Willow Creek Valley and Piute Creek watersheds, which embrace more than one-half of the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this portion of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions Lassen, Gold Run, Baxter, and Parker Creeks and of Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

Lassen Irrigation District stores supplemental water in Hog Flat and McCoy Reservoirs, located on the headwaters of the Susan River. This stored water is released into the Susan River channel and commingled with the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation district.

Records of the daily mean discharge of the several stream gaging stations in the service area are presented in Tables A-65 through A-78.

Methods of Distribution

Irrigation in the Susan River Service Area is accomplished by placing dams in the main channels, thus raising the water level for subsequent diversion into canals and ditches. These diversion dams are relatively large on the Susan River channel and much smaller on the tributaries. Wild flooding is the most common method of irrigation in practice. Portions of the irrigated lands have been leveled, permitting a more efficient use of water by using border checks and furrows. Subirrigation occurs in some areas incidental to surface irrigation or as a result of seepage from ditches and creek channels.

Lassen Irrigation Company is entitled to divert or store up to the present capacity of its reservoirs from the natural flow of Susan River between March 1 and July 1 of each year when the flow of the Susan River immediately above Willow Creek is greater than 20 cubic feet per second. The company may divert at all other times

when the flow of the Susan River immediately above Willow Creek is more than 5 cubic feet per second, irrespective of and notwithstanding the allotments granted to users in Schedules 3 and 6 and to users of third priority class in Schedule 5 of the Susan River decree. When the flow of the Susan River immediately above Willow Creek is below the required amount the watermaster then measures the inflow to McCoy Flat Reservoir and if available, releases the amount required. A transportation loss of 15 percent of a minimum of 2 cubic feet per second is deducted from all water transferred from Lassen Irrigation Company upstream storage reservoirs, to Lake Leavitt.

The several decrees* which apply to the Susan River Service Area establish the following number of priority classes for the major stream systems and distribution areas: Baxter Creek - five; Parker Creek - four; Gold Run Creek - three; Lassen Creek - two; Piute and Hills Creeks - one; Willow Creek - two; and Susan River - three. Geographical features are such that the Susan River, Willow Creek, and Lower Susan River areas are subject to interrelated priorities.

1966 Distribution

Watermaster service began in the Susan River Service Area on March 15 and continued until October 31. Kenneth E. Morgan, Water Resources Engineering Associate, was field watermaster during this period.

The available natural flow water supply throughout the Susan River Service Area was much below average; however, due to a good carry-over from the end of the 1965 season at McCoy Flat Reservoir, the Lassen Irrigation Company water supply was about average.

Representatives of the United States Bureau of Land Management considered the Susanville area range land to be in the worst drought condition since 1924.

Parker Creek. The available water supply in Parker Creek was sufficient to satisfy all allotments (four priorities) until, April 20. From April 20 to May 20 the flow decreased rapidly to first priority allotments. From May 20 throughout the remainder of the season only first priority allotments (stockwater) were served.

Baxter Creek. The flow of Baxter Creek was enough to supply 50 percent of third priority allotments (a total of five priorities)

* See Table 1

during March, and 85 percent of second priority allotments during April. After May 10 the flow in Baxter Creek below Highway 395 was only enough for the upper users. The flow at diversion number 75 was 1.0 cubic feet per second on May 29. This condition required all of the flow at this point to be diverted into the Long Ditch. After June 1 only stockwater was available to the users at the head of the creek.

Lassen-Holtzclaw Creek. The available water supply in Lassen Haltzclaw Creek was sufficient to meet all allotments (two priorities) until May 1. The flow decreased to first priority allotments on May 15 and continued to decrease until these creeks were dry on June 15. They remained dry until October.

Hills Creek. The flow in Hills Creek was sufficient to supply all allotments (one priority) until about May 15. On June 6 approximately 25 percent of allotments were being served. There was insufficient flow in the creek to reach any of the water users after July 15.

All storage facilities on Hills Creek were filled during May. An automatic divide was constructed during April on the diversion number 220 ditch at the Faure-Madeley and Emerson Reservoir diversion point.

Gold Run Creek. The available water supply increased from about 10 percent of second priority allotments during March to 60 percent of second priority allotments during April and filled all allotments (three priorities) during most of May. It then decreased rapidly until only first priority allotments (stockwater) above Richmond Road were available after June 15.

Piute Creek. The available water supply in Piute Creek was sufficient to satisfy all allotments (one priority) until about May 10. From June 1 through September the flow was about 75 percent of allotments.

Willow Creek. Sufficient water was available to satisfy all requirements on Willow Creek until May 2 at which time the Hansen and Hagata Ranches began to irrigate. Throughout the remainder of the season the flow varied between 45 and 50 percent of second priority allotments (two priorities).

A problem of heavy growth of moss, weeds, etc., exists annually in Willow Creek during the summer months. This is especially acute in

a very flat reach of the creek between Walsh Dam and Horse Lake Road. In mid-July the lower users put a chemical solution into the creek at Walsh Dam. Some success was attained in the control of this growth as the water downstream from the dam was lowered about 0.8 foot by the end of July. This enabled more water to drain from lands above Walsh Dam.

Willow Creek channel above Walsh Dam through the Barron Ranch is virtually useless. Therefore, water for the lower users was diverted down Eagle Lake Canal and into the lower reservoir on the Barron Ranch. It was then diverted both into Willow Creek channel at Walsh Dam and back into the Eagle Lake Canal. The water released into Eagle Lake Canal was returned to Willow Creek at Horse Lake Road.

Susan River. The available water supply on Susan River was sufficient to satisfy all allotments on Schedule 3 (two priorities - Willow Creek and Lower Susan River area) until April 21. All allotments on Schedule 6 (three priorities - Susan River) were also satisfied until mid-April. Schedule 6 allotments are inferior to those of Schedule 3 and therefore terminated for the season on April 21. From mid-June throughout the remainder of the season there was enough water for about 50 percent of the second priority allotments of Schedule 3.

All allotments on Schedule 5 (three priorities - Upper Susan River area) were satisfied until May 17. Second priorities received about 80 percent of their allotments on June 1 and only 10 percent on July 1. From July 7 throughout the remainder of the season water was available for first priority allotments (stockwater) only.

None of the inflow (875 acre-feet) to McCoy Flat Reservoir from May 17 to June 3 was considered to be Lassen Irrigation Company water as the flow of the Susan River immediately above Willow Creek was below 20 cubic feet per second.

Lassen Irrigation District Reservoirs. With a carry-over of 4,800 acre-feet from the 1965 season, McCoy Flat Reservoir rose to a gage height of 12.3 feet on May 18, which is 0.3 foot below capacity. Of the 11,090 acre-feet released from McCoy Flat Reservoir in 1966, 875 acre-feet was not considered to be Lassen Irrigation Company water and 1,550 acre-feet was considered as a transportation loss to Lake Leavitt. Therefore, a net of 8,665 acre-feet was available at diversion number 41.

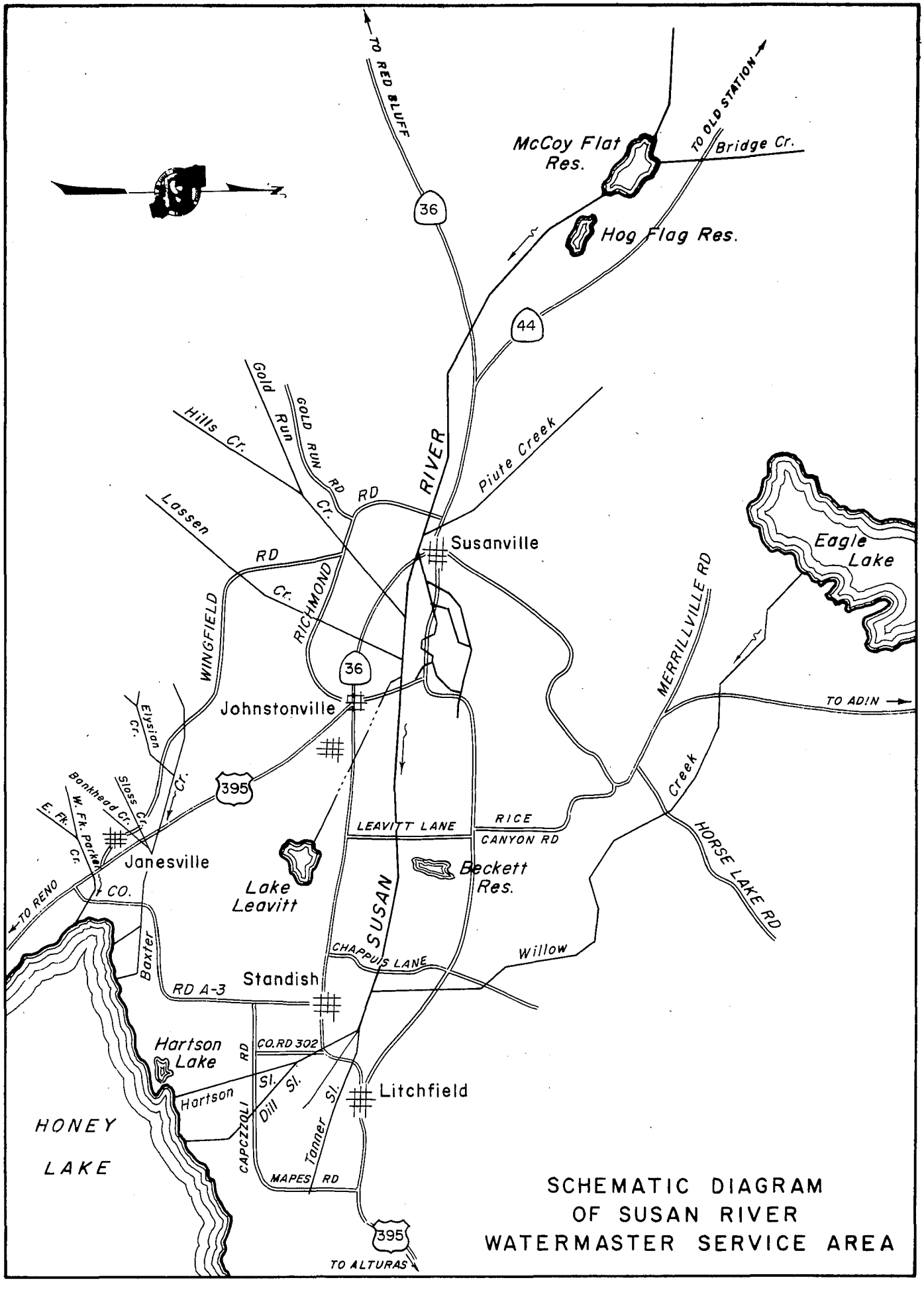
Lake Leavitt filled to capacity in early spring.

The Hog Flat Reservoir yield for 1966 was 1,107 acre-feet, minus a transportation loss of 166 acre-feet for a net of 941 acre-feet available at diversion number 41.

All of Lassen Irrigation Company reservoirs were empty at the end of the season.

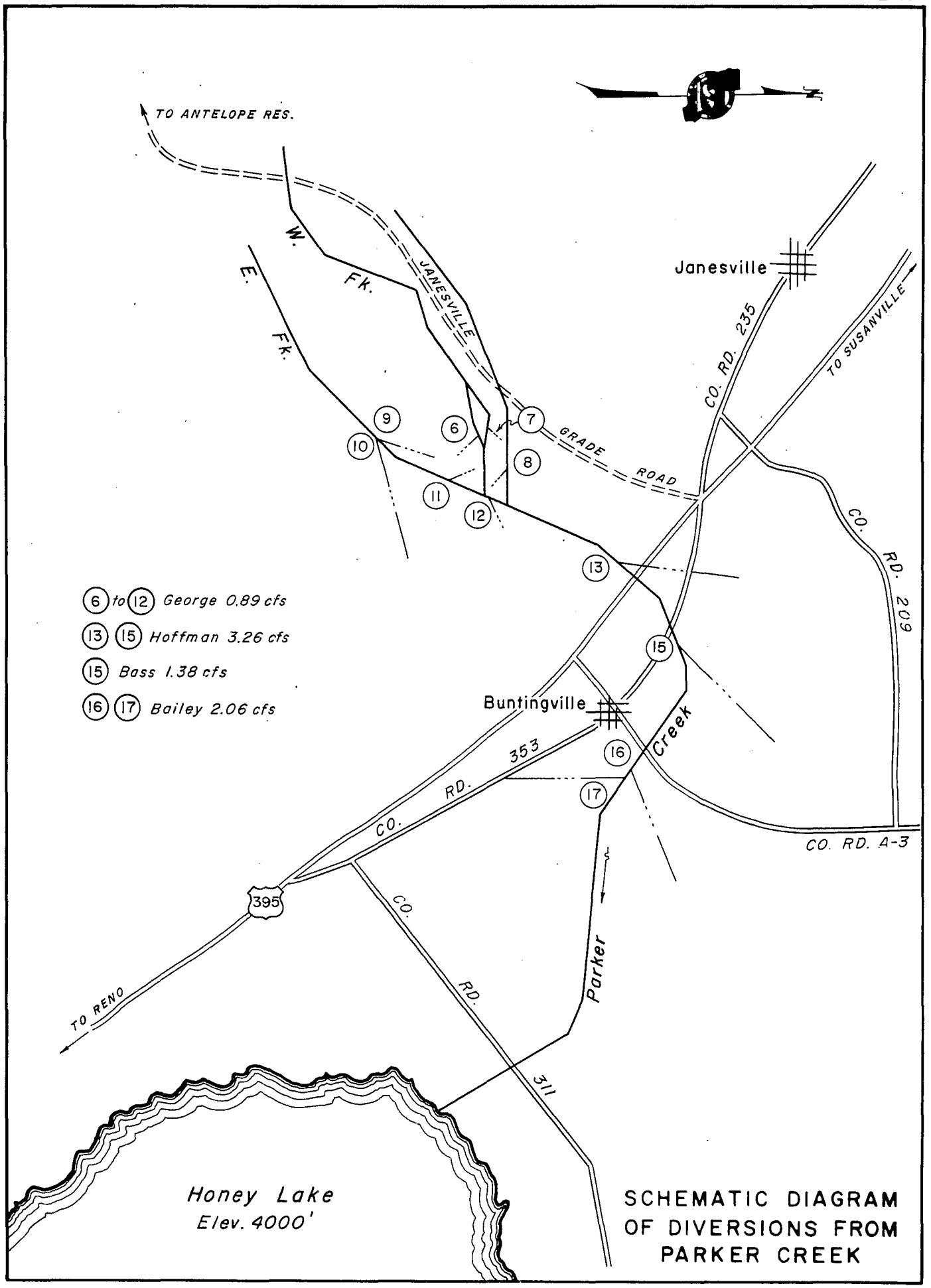
Special occurrences. Five new stream gaging stations in the Lower Susan River area were installed during October 1965. These stations were operated from November 1965 through February 1966 by the watermaster in cooperation with the State Department of Conservation. Valuable streamflow data was obtained to assist the Department of Conservation in planning work for the proposed Willow Creek Project. These stations were also operated by the watermaster during the irrigation season and are of great assistance in distributing water in the Lower Susan River area. These stations named below, will again be operated during the winter of 1966-67 for the Department of Conservation. Susan River above Willow Creek (Chappuis Lane), Tanner Slough at Head, Tanner Slough below Diversion number 84 (to Department of Fish and Game), Dill Slough at Head, and Hartson Slough flow to Hartson Lake.

FIGURE 17



SCHEMATIC DIAGRAM
OF SUSAN RIVER
WATERMASTER SERVICE AREA

FIGURE 17a


TO ANTELOPE RES.
W. FK.
E. FK.
JANESVILLE
Janesville
CO. RD. 235
TO SUSANVILLE
GRADE ROAD
6 to 12 George 0.89 cfs
13 15 Hoffman 3.26 cfs
15 Bass 1.38 cfs
16 17 Bailey 2.06 cfs
Buntingville
Parker Creek
CO. RD. 353
CO. RD. 209
CO. RD. A-3
395
TO RENO
CO. RD. 311
Honey Lake
Elev. 4000'
SCHEMATIC DIAGRAM OF DIVERSIONS FROM PARKER CREEK

ALLOCATIONS FROM SLOSS AND BANKHEAD CREEKS

Diversion Number	Present Owner 1965	cfs Allotments			
		First	Second	Third	Total
42	Bowersox	.02			0.02
44	Thornton	.002			0.002
45	Spears			.08	0.08
46	Grover	.10	1.10		1.20
46,47	Peterson	.10	1.10		1.20
48,49,50	Row	.02	.13		0.15
52,53,55	De Rocher			.48	0.48
56, 62	Ashmore	.25	3.23		3.48
63,65	Thomasson	.05		.30	0.35
66,67	Fritts	.06		.20	0.26

ALLOCATIONS FROM BAXTER AND ELESIAN CREEK

Diversion Number	Present Owner 1965	cfs Allotments		
		First	Second	Third
3,4,5	Ellena	2.50		
6,7,8,10	Gray Eagle Corp.	.68		.20
11	Burnett, Baker			.20
8,9,12,10	Griffin	2.80	.43	
8,12,13,14,15,16	Melton	2.53	.97	
16	Gray Eagle Corp.	.10	.42	
17,18	Jack	.16		
17-21,26,27	Bass	4.10		
17,22;24,28,32,33	Kanavel	2.82		
17,22-24,28,32,33	Kanavel	4.58		
36-39	Peterson			1.42
70	Ahern	.02		
71,72	A & K Company	.02		1.69
81-83	A & K Company			2.88
78	A & K Company			1.05
73,75	Garza		.89	.28
74,76	Slippey		.98	
74,76	Hemphill		.98	
91-93	Bailey			3.02
75,77	Dieter		1.55	.40
75,77,80	Dieter		.30	
77-79	Mulroney		.90	.90
78	Mulroney			.67
78	Cummings			.15
85-89	Damon, McDonald			1.60
75,77,79,80	A & K Company		.64	
81,83	Blankenship			.50
84,90	Triami Cattle Co.			1.81

Figure 17A
Parker Creek

SCHEMATIC DIAGRAM OF DIVERSIONS FROM BAXTER CREEK

FIGURE 17c

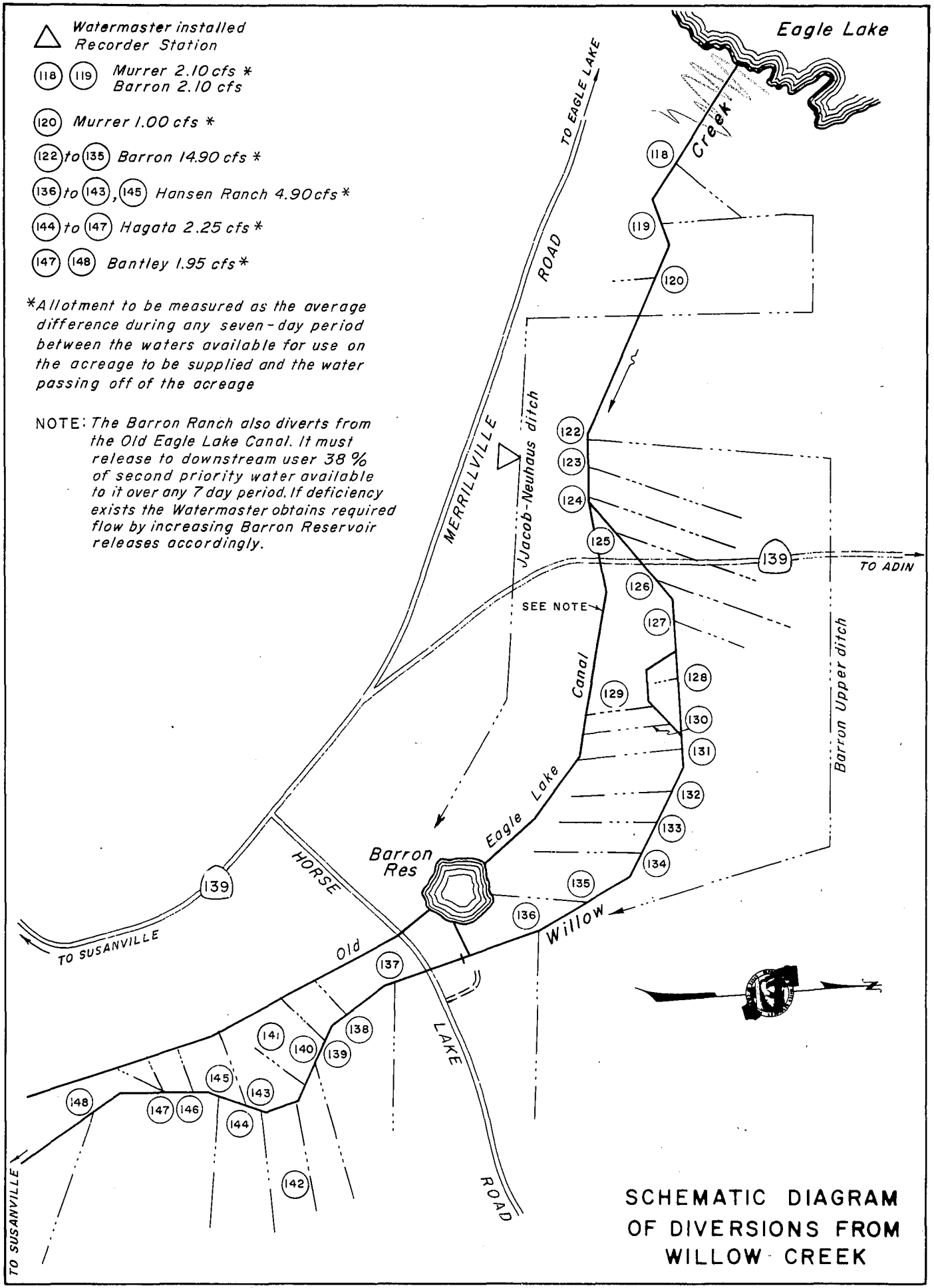
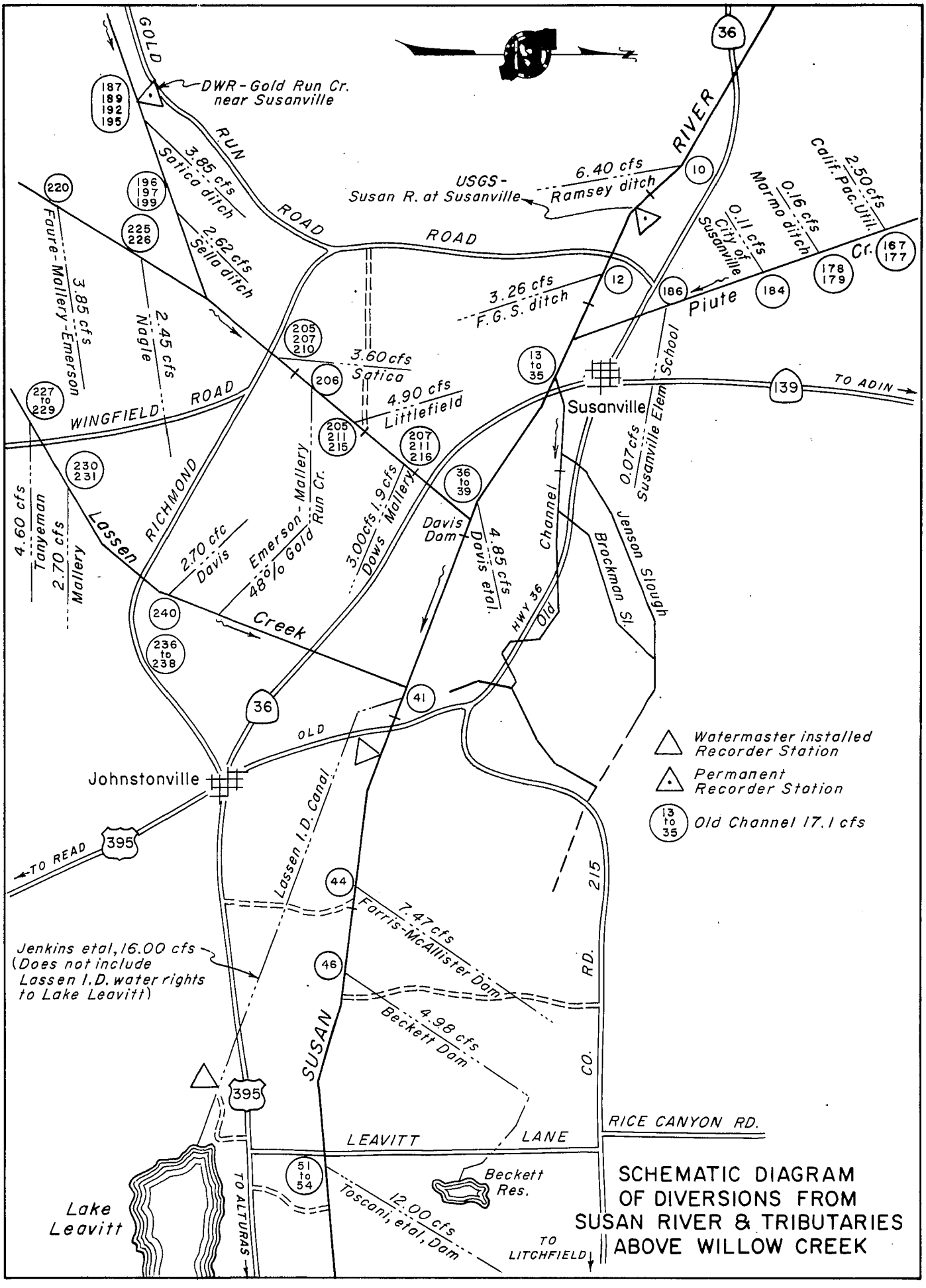

Watermaster installed Recorder Station
118 119 Murrer 2.10 cfs * Barron 2.10 cfs
120 Murrer 1.00 cfs *
122 to 135 Barron 14.90 cfs *
136 to 143, 145 Hansen Ranch 4.90 cfs *
144 to 147 Hagata 2.25 cfs *
147 148 Bantley 1.95 cfs *
*Allotment to be measured as the average difference during any seven-day period between the waters available for use on the acreage to be supplied and the water passing off of the acreage
NOTE: The Barron Ranch also diverts from the Old Eagle Lake Canal. It must release to downstream user 38 % of second priority water available to it over any 7 day period. If deficiency exists the Watermaster obtains required flow by increasing Barron Reservoir releases accordingly.
Eagle Lake
Creek
TO EAGLE LAKE
ROAD
MERRILLVILLE
Jacob-Neuhaus ditch
TO ADIN
SEE NOTE
Canal
Barron Upper ditch
Barron Res
Eagle Lake
HORSE
Willow
Old
LAKE
ROAD
TO SUSANVILLE
TO SUSANVILLE
SCHEMATIC DIAGRAM OF DIVERSIONS FROM WILLOW CREEK

FIGURE 17d


GOLD RUN
DWR - Gold Run Cr. near Susanville
187 189 192 195
3.85 cfs Satica ditch
196 197 199
220
225 226
2.62 cfs Sello ditch
Faure-Mallery-Emerson 3.85 cfs
2.45 cfs Nagle
227 to 229
WINGFIELD ROAD
230 231
4.60 cfs Tanyeman
2.70 cfs Mallery
Lassen
RICHMOND ROAD
2.70 cfc Davis
Emerson-Mallery 48% Gold Run Cr.
240
236 to 238
Creek
36
41
OLD
Johnstonville
TO READ
395
Lassen I.D. Canal
44
7.47 cfs Farris-McAllister Dam
Jenkins etal, 16.00 cfs (Does not include Lassen I.D. water rights to Lake Leavitt)
46
SUSAN
4.98 cfs Beckett Dam
395
LEAVITT LANE
RICE CANYON RD.
CO. RD. 215
51 to 54
Beckett Res.
12.00 cfs Tosconi, etal, Dam
TO LITCHFIELD
TO ALTURAS
Lake Leavitt
205 207 210
206
3.60 cfs Satica
4.90 cfs Littlefield
205 211 215
207 211 216
3.00 cfs 1.9 cfs Dows Mallery
36 to 39
Davis Dam
4.85 cfs Davis etal.
HWY 36
Old Channel
Brockman Sl.
Jenson Slough
0.07 cfs Susanville Elem School
13 to 35
Susanville
139
TO ADIN
12
3.26 cfs F.G.S. ditch
186
184
178 179
167 177
Piute Cr.
0.11 cfs City of Susanville
0.16 cfs Marmo ditch
2.50 cfs Calif. Pac. Util.
10
6.40 cfs Ramsey ditch
USGS - Susan R. at Susanville
36
RIVER
Watermaster installed Recorder Station
Permanent Recorder Station
13 to 35 Old Channel 17.1 cfs
SCHEMATIC DIAGRAM OF DIVERSIONS FROM SUSAN RIVER & TRIBUTARIES ABOVE WILLOW CREEK

APPENDIX A

STREAMFLOW RECORDS

TABLE OF CONTENTS

DAILY MEAN DISCHARGE TABLES

TABLE A-1

DAILY MEAN DISCHARGE
ASH CREEK AT ADIN

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	66	81	26	29	16	21	15
2	52	81	25	26	19	20	16
3	44	75	25	24	19	20	15
4	43	75	26	23	17	19	15
5	53	73	27	21	16	19	15
6	197	74	27	22	15	19	13
7	257	74	26	25	15	20	8.6
8	187	77	27	23	17	20	9.7
9	215	77	31	22	18	20	10
10	343	118	30	18	18	20	12
11	193	161	22	16	18	20	15
12	227	193	22	16	19	20	14
13	477	120	21	17	18	15	15
14	228	96	21	19	18	16	18
15	161	90	18	13	18	17	17
16	145	89	18	13	18	17	12
17	141	84	18	15	16	19	11
18	155	78	16	15	17	25	17
19	185	67	14	15	17	22	18
20	128	64	12	14	20	22	17
21	105	59	13	15	24	21	16
22	90	55	14	16	20	18	16
23	90	50	15	16	20	19	16
24	97	48	15	15	19	20	17
25	106	41	15	16	23	20	18
26	107	38	12	15	19	19	19
27	107	39	13	14	21	15	20
28	104	37	14	14	21	16	20
29	100	32	18	15	22	14	20
30	95	29	24	20	21	15	22
31	90		27		22	15	
Mean	148	75.8	20.4	18.1	18.7	18.8	15.6
Runoff in acre-feet	9100	4512	1250	1080	1150	1160	927

TABLE A-2

DAILY MEAN DISCHARGE
PIT RIVER NEAR CANBY

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	152	210	19	33	26	13	37
2	129	228	16	94	32	12	12
3	98	219	13	106	50	13	12
4	89	181	12	93	57	12	13
5	92	165	12	109	58	15	12
6	133	167	12	113	62	16	11
7	259	176	14	110	57	22	9.7
8	428	174	20	99	31	24	14
9	430	160	40	91	12	20	18
10	570	189	43	108	13	15	14
11	648	244	99	97	22	12	11
12	592	270	133	94	33	14	11
13	739	273	156	97	71	24	12
14	738	237	108	89	31	61	12
15	503	183	101	97	24	47	6.7
16	296	166	102	81	16	50	5.4
17	214	171	95	71	20	49	2.8
18	199	182	93	64	21	16	8.9
19	269	167	63	59	22	11	58
20	240	145	66	53	23	10	81
21	390	133	66	46	21	9.6	62
22	298	127	59	41	20	8.8	50
23	162	118	72	37	20	8.3	29
24	138	89	83	35	19	13	23
25	134	84	40	32	18	52	19
26	128	73	22	24	17	53	16
27	133	54	8.8	17	14	40	18
28	157	40	8.6	15	15	14	16
29	200	31	7.3	16	14	9.5	15
30	215	22	11	25	15	18	17
31	219		14		14	61	
Mean	290	156	51.9	68.2	28.0	24.0	20.9
Runoff in acre-feet	17840	9280	3190	4060	1720	1470	1240

TABLE A-3

DAILY MEAN DISCHARGE

PIT RIVER NEAR BIEBER

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	258	580	14	4.0	2.3		
2	250	550	22	11	2.5		
3	231	520	14	13	2.0		
4	188	490	12	5.8	1.6		
5	152	442	23	2.9	1.2		
6	294	394	12	2.5	0.9		
7	591	370	7.0	4.2	0.8		
8	1280	362	6.1	3.7	0.8		
9	1820	366	6.1	3.5	0.8		
10	2040	422	5.8	3.1	11		
11	2300	615	5.6	3.5	18	N	N
12	2020	858	5.3	3.5	11	O	O
13	1900	935	5.3	1.8	4.9		
14	2300	823	5.3	2.0	2.7	F	F
15	2400	694	7.0	4.9	2.0	L	L
						O	O
16	2020	565	6.1	14	1.7	W	W
17	1430	478	6.4	5.8	1.7		
18	1100	438	5.1	11	2.2		
19	1000	422	5.3	14	2.3		
20	1100	394	5.1	14	2.0		
21	935	358	2.9	26	1.6		
22	858	320	2.2	12	1.1		
23	788	292	1.2	3.3	0.8		
24	625	270	0.8	1.1	0.5		
25	605	216	1.1	0.6	0.3		
26	630	171	2.7	13	0.2		
27	620	164	8.5	4.9	0.0		
28	610	57	3.3	3.7	0.0		
29	595	19	2.0	3.1	0.0		
30	600	13	1.8	2.3	0.0		
31	590		3.7		0.0		
Mean	1036	420	6.7	6.6	2.5		
Runoff in acre-feet	63730	24990	414	393	153		

TABLE A-4

DAILY MEAN DISCHARGE
BURNEY CREEK NEAR BURNEY

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	34	142	97	36	14	13	12
2	34	156	96	33	15	13	12
3	32	163	103	30	16	13	12
4	31	166	104	27	16	13	12
5	32	170	104	21	16	12	11
6	37	175	106	22	16	12	11
7	44	180	95	25	15	12	11
8	72	186	96	27	18	13	12
9	80	199	96	27	18	13	12
10	137	296	95	24	18	13	12
11	106	324	89	20	17	13	12
12	93	321	79	21	16	12	13
13	134	238	76	20	16	12	13
14	151	197	76	18	16	13	12
15	150	193	68	17	15	13	12
16	123	199	65	15	15	13	12
17	92	207	62	16	15	13	11
18	79	197	60	15	15	13	12
19	79	162	57	14	14	13	11
20	68	143	54	19	13	13	9.9
21	63	128	52	25	13	12	9.2
22	59	119	49	18	14	11	11
23	57	120	44	18	13	11	12
24	50	120	42	17	13	12	12
25	64	124	41	17	13	12	13
26	87	125	40	19	13	12	12
27	65	118	37	18	13	12	11
28	77	101	35	18	12	12	11
29	101	97	34	16	12	12	11
30	117	99	33	14	12	12	11
31	128		34		13	12	
Mean	79.9	172	68.4	20.9	14.7	12.4	11.6
Runoff in acre-feet	4910	10250	4200	1240	902	764	690

TABLE A-5

DAILY MEAN DISCHARGE

BUTTE CREEK NEAR CHICO

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	385	655	472	251	138	141	112
2	367	680	465	249	138	136	109
3	342	671	458	246	137	133	106
4	330	656	464	241	137	148	103
5	328	645	471	237	135	114	103
6	338	645	463	235	133	131	106
7	382	649	445	246	133	128	103
8	391	641	432	242	135	125	106
9	427	653	435	233	136	140	109
10	570	1040	460	220	134	98	106
11	567	977	438	214	134	106	109
12	517	994	404	207	137	109	112
13	695	858	384	200	136	103	112
14	702	757	375	190	135	109	116
15	654	717	362	187	136	109	115
16	601	715	346	184	134	109	113
17	529	739	339	181	133	112	111
18	491	745	327	173	131	114	114
19	514	665	319	167	131	112	120
20	489	613	313	164	129	114	114
21	463	582	307	163	128	114	111
22	447	571	301	162	128	114	109
23	434	564	292	163	131	112	111
24	439	561	283	157	129	109	110
25	443	570	275	150	128	112	111
26	461	578	271	146	128	109	111
27	492	530	265	143	141	109	110
28	523	507	263	139	137	109	106
29	558	489	259	139	137	112	105
30	578	477	256	139	138	112	72
31	623		255		147	120	
Mean	486	671	361	192	134	117	108
Runoff in acre-feet	29910	39960	22050	11440	8260	7190	6460

TABLE A-6

DAILY MEAN DISCHARGE
BUTTE CREEK NEAR DURHAM

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	360	599	257	101	12	7.6	10
2	343	605	246	92	12	6.1	10
3	319	597	240	91	13	6.1	11
4	305	577	254	92	13	9.2	11
5	301	562	276	92	12	7.6	11
6	304	543	308	82	12	6.8	11
7	343	517	303	90	11	6.1	12
8	353	506	294	83	10	6.8	12
9	380	505	299	82	10	6.1	10
10	493	780	316	73	12	6.8	10
11	509	771	307	68	9.2	6.1	11
12	467	762	284	69	8.4	5.4	14
13	597	696	271	68	11	5.4	16
14	640	624	251	56	9.2	5.4	22
15	602	549	244	46	9.2	5.4	24
16	563	520	222	44	9.2	5.4	24
17	499	514	214	44	10	5.4	24
18	467	517	204	41	9.2	6.1	28
19	481	442	190	28	8.4	6.1	37
20	475	381	164	24	7.6	6.1	31
21	452	330	145	23	7.6	6.1	26
22	433	313	138	27	6.8	6.1	24
23	423	305	127	27	6.8	4.7	24
24	423	304	103	21	6.8	6.1	19
25	428	311	69	23	7.6	6.8	20
26	440	328	63	19	7.6	7.6	32
27	465	289	76	19	7.6	8.4	28
28	493	271	81	19	7.6	8.4	22
29	512	262	73	17	7.6	9.2	20
30	533	252	75	16	7.6	10	16
31	575		89		7.6	10	
Mean	451	484	200	52.6	9.3	6.8	19.0
Runoff in acre-feet	27730	28820	12260	3130	574	416	1130

TABLE A-7

DAILY MEAN DISCHARGE
DURHAM COLONY DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1				56	45	49	45
2				55	49	47	44
3				55	48	49	44
4				52	52	53	43
5			50*	49	50	47	43
6			51	53	49	47	42
7			51	54	51	47	39
8			51	53	49	46	38
9			49	51	50	46	38
10			47	49	47	40	40
11			45	47	52	38	42
12			43	47	52	37	43
13			42	45	58	37	47
14			50	42	55	37	50
15			53	46	54	36	50
16			55	52	53	37	49
17			55	53	59	38	48
18			55	52	58	40	46
19			55	51	52	40	47
20			55	53	45	44	46
21			57	53	45	44	47
22			56	56	47	42	46
23			56	56	49	43	46
24			55	53	50	42	46
25			53	51	49	40	46
26			53	51	49	37	47
27			56	49	49	38	47
28			55	49	46	42	46
29			54	49	47	42	46
30			54	45	48	44	46**
31			55		51	46	
Mean			49.9	50.9	50.3	42.4	44.9
Runoff in acre-feet			2800	3030	3090	2610	2670

* Beginning of Record
** End of Record

TABLE A-8

DAILY MEAN DISCHARGE
PARROTT DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1				115	79	79	64
2				116	79	78	64
3				116	79	72	64
4				113	77	72	63
5				112	71	64	64
6				111	71	74	63
7				116	71	74	63
8				119	71	74	62
9				117	71	71	62
10				115	71	56	62
11				114	71	62	61
12				104	67	63	55
13				103	65	61	47
14				107	67	64	39
15				105	67	65	39
16				100	64	65	39
17				98	51	65	39
18				94	53	64	39
19				93	64	61	39
20				90	72	60	38
21				89	71	62	38
22				83	67	65	38
23				84	66	63	42
24				84	64	60	49
25				81	62	60	41
26			145*	78	62	62	35
27			140	75	73	63	35
28			135	73	77	61	35
29			135	75	76	62	35
30			136	80	78	64	26**
31			124		80	67	
Mean			136	98.7	69.6	65.6	48.0
Runoff in acre-feet			1620	5870	4280	4030	2860

* Beginning of Record
** End of Record

TABLE A-9

DAILY MEAN DISCHARGE

TOADTOWN CANAL ABOVE BUTTE CANAL

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	90	120	106	109	55	67	48
2	87	117	105	108	54	66	49
3	83	112	106	109	53	66	48
4	80	108	107	110	53	65	49
5	81	110	110	108	54	67	49
6	88	110	110	108	54	67	50
7	98	110	110	110	54	67	48
8	102	110	110	107	55	65	50
9	110	112	111	105	56	64	51
10	115	116	111	101	55	50	50
11	108	114	110	98	54	50	51
12	109	116	110	96	53	50	53
13	106	114	110	94	53	47	50
14	106	113	109	89	53	48	53
15	102	111	109	85	56	49	53
16	108	110	110	82	56	48	52
17	109	110	112	78	56	50	51
18	110	109	111	72	56	54	53
19	109	109	111	69	55	52	54
20	107	109	110	67	54	54	52
21	111	109	110	66	56	54	51
22	110	108	110	65	56	55	51
23	110	109	109	65	57	52	51
24	110	108	107	61	56	50	51
25	109	108	107	58	55	50	51
26	110	109	107	58	58	48	51
27	109	108	107	56	71	49	50
28	109	108	107	54	66	48	49
29	110	108	108	54	67	48	49
30	114	108	109	55	69	49	51
31	120		110		72	53	
Mean	104	111	109	83	57	55	51
Runoff in acre-feet	6400	6580	6700	4960	3520	3380	3020

TABLE A-10

DAILY MEAN DISCHARGE
MILLVILLE DITCH-CLOVER CREEK

April through October 1966
(In second-feet)

Day	April	May	June	July	August	September	October
1				6.2*	4.4	3.7	3.8
2				6.2	4.3	3.4	4.1
3				6.3	4.2	3.3	4.3
4				6.1	3.4	3.1	4.5
5				6.5	4.0	3.2	4.7
6				6.5	4.1	3.0	4.5
7				6.6	3.7	2.6	4.5
8				6.4	3.5	2.7	3.6
9				5.9	3.4	2.6	3.5
10				6.1	3.0	2.9	3.4
11				5.7	3.0	2.7	3.3
12				5.8	4.2	3.1	3.6
13				5.7	4.1	3.3	3.2
14				5.9	3.7	3.9	3.9
15				5.9	3.8	3.8	4.8
16				5.6	3.8	4.2	4.8
17				5.6	3.8	5.2	4.4
18				5.4	3.7	5.1	4.1
19				5.1	3.7	4.9	3.8
20				4.9	3.9	4.7	3.4
21				4.7	3.6	4.6	2.4
22				4.6	3.6	4.6	2.2**
23				4.5	3.6	4.7	
24				4.5	3.8	4.0	
25				4.5	3.7	3.9	
26				4.4	3.9	3.8	
27				4.3	4.5	3.8	
28				4.2	4.7	4.2	
29				4.2	5.1	3.7	
30				4.2	4.2	3.9	
31				4.2	3.9		
Mean				5.4	3.9	3.8	3.9
Runoff in acre-feet				331	239	223	168

* Beginning of record
** End of record

TABLE A-11

DAILY MEAN DISCHARGE
COOK AND BUTCHER DITCH FROM LITTLE COW CREEK

April through October 1966
(In second-feet)

Day	April	May	June	July	August	September	October
1				5.5*	5.4	3.3	3.3
2				6.2	4.0	3.1	3.9
3				6.4	3.4	3.0	4.3
4				5.8	3.0	2.8	3.6
5				6.0	2.5	2.7	3.4
6				6.2	2.7	3.1	4.3
7				5.9	2.6	2.8	4.3
8				6.1	3.1	3.3	3.8
9				5.8	2.7	3.8	4.5
10				5.5	3.4	4.0	4.1
11				6.2	3.1	3.3	3.9
12				6.0	2.6	3.5	4.1
13				5.8	2.5	4.7	4.9
14				5.4	2.8	4.9	5.6
15				5.4	2.4	4.7	5.6
16				5.1	2.2	4.7	6.7
17				5.1	2.2	4.8	7.1
18				4.9	2.5	4.9	7.5
19				4.4	4.1	4.6	6.9
20				4.3	2.4	4.5	6.7**
21				4.5	2.4	4.5	
22				3.0	2.7	4.3	
23				2.4	3.1	4.3	
24				2.6	2.8	4.6	
25				4.0	3.2	4.5	
26				4.0	3.4	4.3	
27				4.0	3.3	4.0	
28				4.0	2.7	4.1	
29				3.4	2.7	3.4	
30				3.5	3.4	2.8	
31				4.1	3.6		
Mean				4.9	3.0	3.9	4.9
Runoff in Acre-feet				300	184	233	195

* Beginning of record
** End of record

TABLE A-12

DAILY MEAN DISCHARGE

OAK RUN CREEK NEAR OAK RUN

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	22	12	6.9	4.1	1.6	1.7	1.5
2	20	12	5.3	4.1	1.7	1.6	1.6
3	19	10	5.8	3.4	1.9	1.3	1.6
4	18	8.5	5.7	2.5	1.8	0.7	1.6
5	23	8.1	6.0	1.9	1.9	1.3	1.8
6	29	9.3	5.5	2.0	1.6	1.2	2.9
7	30	9.7	6.1	3.5	1.4	1.5	2.8
8	59	10	6.7	3.4	2.1	1.7	2.6
9	40	26	6.6	3.1	1.4	1.6	0.6
10	82	34	6.6	3.1	0.9	1.2	1.9
11	42	45	5.5	2.4	1.5	1.2	1.5
12	34	83	5.4	1.6	1.5	1.5	2.2
13	36	28	5.4	2.4	2.0	1.3	2.6
14	41	21	5.6	1.6	1.6	0.8	2.7
15	43	18	5.2	1.3	1.9	1.8	1.2
16	41	16	5.1	1.4	1.9	1.6	2.0
17	29	15	5.5	1.6	1.9	1.2	1.8
18	29	14	5.5	1.8	2.0	1.3	2.4
19	40	13	5.8	1.9	2.2	1.1	2.6
20	26	12	4.2	2.2	2.0	0.7	2.6
21	24	11	4.2	3.0	1.9	1.0	2.5
22	21	11	4.1	1.8	1.9	1.3	2.5
23	20	9.6	3.9	1.2	1.8	1.6	2.9
24	19	9.5	3.7	1.6	1.7	1.2	2.6
25	18	8.8	3.8	1.6	1.5	1.7	3.1
26	17	8.4	4.3	2.0	1.6	1.9	3.1
27	15	7.8	3.4	2.5	1.2	2.1	2.9
28	15	7.4	3.7	2.1	0.7	2.4	2.5
29	14	6.9	2.8	2.3	0.8	2.7	2.3
30	13	7.0	3.0	2.2	1.2	1.9	2.0
31	13		3.4		1.6	1.6	
Mean	28.3	18.4	4.7	2.5	1.6	1.4	2.3
Runoff in acre-feet	1740	976	291	138	101	89	136

TABLE A-13

DAILY MEAN DISCHARGE

DIGGER CREEK BELOW SOUTH FORK BRANCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11	NO RECORD AVAILABLE						
12							
13	FOR 1966 SEASON						
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Mean							
Runoff in acre-feet							

TABLE A-14

DAILY MEAN DISCHARGE
HAT CREEK NEAR HAT CREEK

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	143	154	172	169	134	136	122
2	142	156	180	161	136	136	123
3	141	156	187	157	134	136	122
4	141	156	194	156	133	136	124
5	145	157	210	156	132	136	126
6	146	160	207	158	131	136	126
7	145	161	202	163	131	134	124
8	145	160	210	157	130	134	128
9	146	162	212	157	130	128	132
10	147	166	215	158	137	122	133
11	146	161	216	157	140	122	132
12	146	157	207	153	140	122	133
13	151	154	205	151	140	122	133
14	149	156	216	151	140	123	133
15	148	158	208	152	140	124	133
16	146	161	199	152	139	124	132
17	142	166	190	151	139	122	128
18	146	167	193	149	139	122	126
19	145	160	197	149	138	128	123
20	142	154	202	153	129	131	120
21	143	152	207	151	126	131	118
22	143	153	197	149	126	132	118
23	143	157	190	149	126	132	118
24	145	161	191	149	126	132	118
25	145	170	193	148	127	132	119
26	146	174	194	147	127	132	123
27	147	167	187	146	126	132	122
28	148	163	183	146	126	132	122
29	149	163	180	145	127	126	128
30	152	169	177	138	134	120	128
31	152		176		138	121	
Mean	146	160	191	153	133	129	126
Runoff in acre-feet	8960	9540	12090	9080	8170	7930	7470

TABLE A-15

DAILY MEAN DISCHARGE
INDIAN CREEK NEAR TAYLORSVILLE

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	106	791	340	113	60	43	31
2	99	806	33	113	52	43	30
3	88	724	343	104	49	41	28
4	91	643	358	99	48	41	27
5	105	596	387	94	46	40	26
6	100	600	386	95	47	39	26
7	115	606	352	102	46	37	31
8	131	581	339	100	45	36	33
9	153	554	352	101	45	36	32
10	244	717	629	94	46	35	32
11	281	721	500	91	46	37	32
12	320	611	389	87	44	36	32
13	594	526	340	85	44	35	32
14	843	479	301	83	43	35	33
15	793	475	280	82	44	35	31
16	580	509	263	78	44	35	30
17	413	565	240	77	43	35	20
18	413	627	218	80	43	34	29
19	497	555	199	77	43	33	31
20	432	490	189	74	43	32	34
21	428	458	185	69	41	33	37
22	451	435	179	69	42	32	38
23	420	417	163	69	41	31	36
24	484	409	153	70	42	32	36
25	565	428	147	65	39	32	36
26	618	439	138	64	39	31	37
27	681	403	132	62	40	31	37
28	719	374	127	63	39	31	37
29	741	353	120	62	39	30	35
30	759	346	118	62	39	31	36
31	766		115		42	32	
Mean	420	541	268	82.8	44.0	35.0	32.5
Runoff in acre-feet	25850	32210	16490	4930	2700	2150	1940

TABLE A-16

DAILY MEAN DISCHARGE

LITTLE LAST CHANCE CREEK NEAR CHILCOOT

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	2.1	3.8	14	64	1.6	95	1.7
2	2.1	3.7	24	54	1.7	95	1.6
3	2.1	3.4	33	53	1.7	73	1.6
4	2.1	3.2	33	51	1.7	56	1.7
5	2.1	3.0	33	46	1.5	43	1.8
6	2.3	16	33	45	1.4	20	1.8
7	2.8	48	33	45	1.5	19	1.8
8	3.0	48	33	71	1.7	19	1.8
9	3.5	48	43	93	1.8	19	1.8
10	4.0	48	52	93	1.7	19	1.8
11	3.9	48	36	92	1.7	19	1.8
12	4.4	48	18	91	1.8	19	1.8
13	5.5	48	27	91	1.8	19	1.9
14	5.2	49	27	100	1.8	18	1.9
15	4.5	51	21	106	2.3	12	1.8
16	3.8	53	16	96	3.9	7.9	1.9
17	3.6	54	64	79	4.0	7.9	1.7
18	3.1	53	89	79	3.7	7.9	1.9
19	3.5	53	89	58	3.6	7.9	1.9
20	3.4	53	92	28	42	7.9	1.6
21	3.2	45	95	28	67	7.9	1.1
22	3.0	35	95	28	84	7.9	1.0
23	2.9	49	112	28	103	7.6	1.1
24	2.9	49	139	24	103	7.5	1.1
25	2.9	46	139	9.8	103	7.1	1.2
26	3.4	33	139	9.1	130	7.1	1.3
27	3.5	14	139	8.4	150	6.9	1.4
28	3.7	14	104	8.3	147	6.7	1.4
29	3.7	14	69	8.3	147	6.7	2.2
30	3.7	14	69	5.3	147	6.9	2.5
31	3.8		69		116	4.8	
Mean	3.3	34.9	63.8	53.1	44.5	21.3	1.7
Runoff in acre-feet	206	2080	3920	3160	2740	1310	99

TABLE A-17

DAILY MEAN DISCHARGE

LITTLE TRUCKEE DITCH AT HEAD

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			30	54	17	4.2	2.2
2			30	50	16	4.2	2.0
3			42	47	15	3.9	1.7
4			61	52	14	3.3	1.7
5			63	65	13	3.1	1.7
6			62	65	12	2.8	2.0
7			60	65	11	2.8	2.0
8		0.1 *	61	60	9.8	2.8	2.0
9		0.3	66	59	9.5	2.6	1.7
10		0.3	67	59	9.2	2.6	1.7
11		0.3	54	59	8.6	2.4	1.7
12		0.3	53	59	8.2	2.2	1.7
13		0.3	53	59	7.6	2.2	1.7
14		0.3	52	59	7.3	2.2	1.7
15		0.3	52	59	6.7	2.2	1.7
16		0.3	51	56	6.5	2.2	1.7
17		0.3	51	52	5.9	2.2	1.7
18		0.3	51	49	5.7	2.0	1.7
19		0.3	46	46	5.4	2.0	1.7
20		0.2	50	43	5.4	2.0	1.7
21		0.2	56	40	5.1	2.0	1.7
22		0.2	56	36	4.9	1.7	1.7
23		0.2	57	34	4.6	1.7	1.7
24		0.3	58	31	4.4	1.7	1.7
25		0.3	58	29	4.2	1.6	1.7
26		0.4	58	27	3.9	1.6	1.7
27		0.4	57	24	3.7	1.6	1.7
28		0.4	59	21	3.5	1.7	1.7
29		0.4	59	21	3.3	1.7	1.7
30		20	57	19	3.5	2.0	1.7
31			57		4.2	2.2	
Mean		1.1	54	47	7.7	2.4	1.8
Runoff in acre-feet		52	3340	2770	475	145	104

*Beginning of record

TABLE A-18

DAILY MEAN DISCHARGE
MIDDLE FORK FEATHER RIVER NEAR POTROIA

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	148	472	54	28	5.1	0.2	0.1
2	135	451	50	24	3.9	0.2	0.1
3	124	395	46	21	2.9	0.3	0.1
4	119	352	39	18	2.6	0.3	0.1
5	95	323	41	16	2.1	0.3	0.2
6	100	309	43	15	1.9	0.2	0.2
7	135	291	41	12	2.3	0.1	0.2
8	232	190	39	11	1.9	0.1	20
9	529	191	58	9.4	1.6	0.1	12
10	1320	363	255	8.4	1.3	0.1	1.6
11	1590	337	127	7.3	1.1	0.1	0.7
12	1650	291	110	6.2	0.9	0.1	0.5
13	1700	262	106	5.9	0.8	0.1	0.5
14	1390	244	107	6.4	0.9	0.1	0.5
15	1050	209	107	6.9	0.5	0.1	0.5
16	705	189	93	6.8	0.4	0.1	0.3
17	542	184	69	5.7	0.4	0.1	0.4
18	463	245	58	5.9	0.3	0.0	0.3
19	414	182	46	5.5	0.3	0.0	0.4
20	376	155	42	5.9	0.3	0.0	0.4
21	333	146	40	5.0	0.3	0.0	0.2
22	298	134	36	5.2	0.3	0.0	0.2
23	250	121	31	5.3	0.1	0.0	0.2
24	248	112	29	4.9	0.2	0.0	0.1
25	261	106	26	4.7	0.1	0.0	0.2
26	289	99	24	5.6	0.1	0.0	0.1
27	318	79	21	24	0.1	0.1	0.1
28	351	69	20	16	0.1	0.1	0.1
29	390	62	18	11	0.1	0.1	0.1
30	423	57	19	7.1	0.1	0.1	0.2
31	445		25		0.2	0.2	
Mean	530	221	58.7	10.5	1.1	0.1	1.4
Runoff in acre-feet	32580	13130	3610	623	66	6	81

TABLE A-19

DAILY MEAN DISCHARGE

SMITHNECK CREEK NEAR LOYALTON

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	10	17	6.8	4.8	4.0	3.3	3.5
2	10	17	6.7	4.7	4.1	4.3	3.6
3	10	16	6.6	4.6	4.1	6.0	3.7
4	10	15	6.7	4.6	4.0	4.7	3.7
5	9.9	15	6.6	4.6	3.9	4.3	3.7
6	9.7	15	6.5	5.0	3.8	4.0	3.8
7	10	14	6.3	5.2	3.7	3.8	3.8
8	9.4	14	6.4	5.1	4.0	4.0	3.8
9	9.5	13	6.9	5.1	4.2	4.0	3.8
10	8.2	13	9.6	4.7	4.0	3.9	3.8
11	11	13	7.0	4.5	4.0	3.8	3.8
12	12	13	6.4	4.3	4.1	3.8	3.8
13	16	12	6.3	4.1	4.0	3.6	3.8
14	16	11	6.2	4.3	4.0	3.7	3.8
15	15	10	6.0	4.5	3.6	3.8	3.8
16	14	9.7	5.7	4.4	3.6	3.8	4.2
17	13	9.9	5.4	4.4	3.4	3.4	4.2
18	12	10	5.3	4.3	3.4	3.4	4.2
19	13	9.8	5.2	4.4	3.4	3.6	4.2
20	12	8.9	5.1	4.3	3.2	3.6	4.2
21	12	8.3	5.1	4.4	3.3	3.6	4.5
22	12	7.8	5.1	4.3	3.3	3.5	4.5
23	12	7.6	5.1	4.4	3.2	3.4	4.5
24	14	7.3	5.1	4.6	3.0	3.3	4.5
25	15	7.2	5.1	4.5	3.1	3.3	4.5
26	16	7.1	4.9	4.4	3.3	3.7	4.5
27	16	7.1	4.9	4.2	3.3	3.6	4.5
28	17	7.2	4.8	4.1	3.3	3.4	4.5
29	16	6.9	4.9	4.1	3.3	3.5	4.5
30	16	6.7	5.2	4.1	3.6	3.5	4.5
31	16		4.9		3.8	3.5	
Mean	12.7	11.0	5.9	4.5	3.6	3.8	4.1
Runoff in acre-feet	779	654	363	268	224	232	242

TABLE A-20

DAILY MEAN DISCHARGE

MILLER CREEK NEAR SATTLEY

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	5.8	18	20	15	7.2	6.4	4.6
2	5.8	19	22	14	7.3	6.5	4.6
3	5.7	18	23	13	7.1	6.4	4.6
4	5.9	18	26	13	7.0	5.9	4.6
5	5.8	19	29	13	6.7	5.8	4.5
6	6.1	21	26	13	6.4	5.7	4.3
7	6.4	21	27	13	6.4	5.7	4.3
8	6.3	21	30	13	6.2	5.8	4.4
9	6.9	20	35	12	6.5	5.7	4.7
10	8.5	20	46	11	6.5	5.6	4.7
11	7.7	16	33	10	6.3	5.4	4.8
12	7.4	14	29	10	6.2	5.3	4.8
13	10	13	28	9.8	6.1	5.2	4.8
14	9.3	15	27	9.7	6.7	5.2	4.9
15	8.5	17	25	9.7	6.4	5.2	4.8
16	7.6	20	24	9.4	6.6	5.1	4.4
17	7.2	24	23	9.2	6.5	5.1	4.7
18	7.0	19	23	9.1	6.3	4.8	4.9
19	7.1	15	21	8.8	6.6	4.8	5.1
20	6.8	14	21	8.2	6.5	4.8	5.1
21	6.8	15	21	8.2	6.5	4.9	4.9
22	6.8	14	20	8.2	6.5	4.6	5.0
23	6.9	16	19	8.4	6.3	4.6	5.1
24	7.2	18	18	8.6	6.2	4.3	5.1
25	7.3	22	18	8.4	6.1	4.6	5.1
26	8.2	22	17	8.0	5.8	4.7	4.5
27	9.2	19	17	7.7	6.3	4.8	4.9
28	11	19	17	7.5	6.5	4.8	4.9
29	12	18	16	7.4	6.3	4.7	5.0
30	14	20	16	6.8	6.6	4.7	4.8
31	15		15		6.7	4.8	
Mean	7.9	18.2	23.6	10.1	6.5	5.2	4.8
Runoff in acre-feet	488	1080	1450	601	399	321	283

TABLE A-21

DAILY MEAN DISCHARGE

NORTH FORK COTTONWOOD CREEK NEAR IGO

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	250	316	76	48	16	9.7	11
2	236	314	72	46	15	11	11
3	223	304	74	46	15	11	9.9
4	234	286	69	46	14	11	8.4
5	336	270	71	46	11	10	9.1
6	265	261	74	45	7.1	9.5	7.0
7	241	254	73	42	6.4	9.5	5.7
8	241	252	70	44	7.0	11	5.7
9	434	260	70	42	7.7	11	6.4
10	730	254	73	37	7.7	9.2	7.7
11	527	248	75	36	7.7	9.1	7.7
12	451	236	74	34	7.0	9.1	7.7
13	493	223	76	34	9.9	9.9	8.4
14	531	198	73	35	10	11	9.1
15	555	198	70	33	6.2	11	9.9
16	550	194	68	33	4.9	11	9.9
17	501	189	67	31	3.8	12	9.9
18	443	182	66	31	3.6	12	11
19	398	168	61	30	4.1	13	13
20	356	145	59	29	3.8	13	12
21	335	140	55	28	3.6	13	9.9
22	327	128	54	28	3.6	13	8.4
23	316	123	54	28	3.6	13	7.7
24	312	102	52	28	5.0	13	7.7
25	277	97	54	26	5.7	13	7.7
26	280	93	49	24	7.2	12	8.4
27	289	89	48	22	8.5	9.9	9.1
28	307	86	48	19	8.8	9.9	8.4
29	313	85	50	19	8.8	9.9	7.0
30	318	82	51	17	8.4	9.9	6.4
31	320		51		8.5	11	
Mean	367	193	63.8	33.6	7.7	11.0	8.7
Runoff in acre-feet	22590	11460	3920	2000	475	678	518

TABLE A-22

DAILY MEAN DISCHARGE
NEW PINE CREEK BELOW SCHROEDER'S

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1				20	9.2	4.9	3.5
2				19	8.8	4.9	3.5
3			22 *	18	8.8	4.9	3.3
4			23	16	8.8	4.9	3.3
5			23	16	8.8	4.9	3.3
6			26	16	8.5	4.9	3.0
7			26	16	8.5	4.9	3.0
8			26	18	8.5	4.8	3.0
9			26	20	8.1	4.8	3.0
10			26	16	8.1	4.8	3.0
11			24	16	7.6	4.8	3.0
12			24	16	7.6	4.5	3.0
13			23	16	7.6	4.5	3.3
14			23	16	7.3	4.5	3.3
15			22	16	7.3	4.5	3.5
16			22	16	7.3	4.3	3.5
17			21	15	6.5	4.3	3.5
18			21	15	6.5	4.3	3.5
19			21	15	6.5	4.0	3.5
20			21	14	6.5	4.0	3.6
21			22	14	6.2	3.9	3.6
22			22	13	6.2	3.9	3.5
23			23	13	5.4	3.8	3.5
24			21	10	5.4	3.8	3.3
25			20	10	5.4	3.8	3.3
26			21	10	5.4	3.8	3.3
27			20	10	5.4	3.6	3.3
28			20	10	5.4	3.6	3.3
29			22	10	5.4	3.6	3.3
30			20	10	5.1	3.6	3.5
31			20		5.0	3.5	
Mean			21.8	18.4	6.6	4.4	3.3
Runoff in acre-feet			1250	1100	461	271	197

*Beginning of record

TABLE A-23

DAILY MEAN DISCHARGE
COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1					1.1	0.2	0.1
2					0.9	0.2	0.1
3					0.9	0.2	0.1
4					0.8	0.2	0.1
5					0.8	0.2	0.1
6					0.8	0.2	0.1
7					0.7	0.2	0.1
8					0.6	0.2	0.1
9					0.6	0.2	0.1
10					0.6	0.2	0.1
11					0.6	0.2	0.1
12					0.5	0.2	0.1
13					0.5	0.2	0.1
14					0.5	0.2	0.1
15					0.5	0.2	0.1
16					0.5	0.2	0.1
17					0.5	0.2	0.1
18					0.5	0.2	0.1
19					0.5	0.2	0.1
20				2.0 *	0.5	0.2	0.1
21				2.0	0.5	0.2	0.1
22				1.9	0.4	0.1	0.1
23				1.9	0.4	0.1	0.1
24				1.8	0.4	0.1	0.1
25				1.7	0.4	0.1	0.1
26				1.6	0.4	0.1	0.1
27				1.5	0.4	0.1	0.1
28				1.4	0.4	0.1	0.1
29				1.3	0.3	0.1	0.1
30				1.4	0.3	0.1	0.1
31					0.3	0.1	
Mean				1.6	0.6	0.2	0.1
Runoff in acre-feet				37	34	10	6

*Beginning of record

TABLE A-24

DAILY MEAN DISCHARGE
DAVIS CREEK AT OLD FISH WHEEL

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			23	11.0	5.6	3.9	3.9
2			23	11.0	7.3	3.9	3.9
3			24	10.0	5.9	3.9	3.9
4			34	10.0	5.4	3.9	3.9
5			38	8.8	5.0	3.9	3.9
6			40	8.0	5.0	3.9	3.9
7			38	7.6	5.2	3.9	3.9
8			36	7.2	5.4	3.9	3.9
9			35	7.6	6.1	3.9	3.9
10			32	6.9	5.9	3.9	3.9
11			29	6.9	5.4	3.9	3.9
12			28	6.6	5.0	3.9	3.9
13			25	6.6	4.8	3.9	3.9
14			23	6.6	4.7	3.9	3.9
15			19	6.3	4.7	3.9	3.9
16			17	6.3	4.5	3.9	3.9
17			15	6.3	4.3	3.9	3.9
18			16	6.3	4.8	3.9	3.8
19			15	6.6	4.7	4.1	3.8
20			15	6.6	4.3	4.1	3.8
21			14	6.3	4.3	3.9	3.8
22			13	6.6	4.2	3.9	3.9
23			11	7.2	4.2	3.9	3.9
24			11	6.8	4.1	3.9	3.9
25			10	6.8	3.9	3.9	3.9
26			10	6.6	3.8	4.1	3.9
27		21*	10	6.6	3.8	3.9	3.9
28		21	10	6.6	3.8	3.9	3.9
29		21	11	6.6	3.8	3.9	3.9
30		22	14	6.6	3.8	3.9	3.9
31			11		3.8	3.9	
Mean		21.6	21.0	7.3	4.8	3.9	3.9
Runoff in acre-feet		168	1290	435	292	241	230

*Beginning of record

TABLE A-25

DAILY MEAN DISCHARGE

LINVILLE CREEK AT OLD POWER HOUSE

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			2.3	2.1	2.1	2.1	2.3
2			2.3	2.1	2.1	2.1	2.3
3			2.3	2.1	2.1	2.1	2.3
4			2.3	2.1	2.1	2.1	2.3
5			2.3	2.1	2.1	2.1	2.3
6			2.3	2.1	2.1	2.1	2.3
7			2.3	2.1	2.1	2.1	2.3
8			2.3	2.1	2.1	2.1	2.3
9			2.2	2.1	2.1	2.1	2.3
10			2.2	2.1	2.1	2.1	2.3
11			2.2	2.1	2.1	2.1	2.3
12			2.2	2.1	2.1	2.1	2.3
13			2.2	2.1	2.1	2.1	2.3
14			2.2	2.1	2.1	2.1	2.3
15			2.2	2.1	2.1	2.1	2.3
16			2.1	2.0	2.1	2.1	2.3
17			2.0	2.0	2.1	2.1	2.3
18			2.0	2.0	2.1	2.2	2.3
19			2.0	2.0	2.1	2.2	2.3
20			2.1	2.0	2.1	2.2	2.3
21			2.1	2.0	2.1	2.2	2.4
22			2.2	2.0	2.1	2.2	2.4
23			2.2	2.1	2.1	2.2	2.4
24			2.2	2.1	2.1	2.2	2.4
25			2.2	2.1	2.1	2.2	2.4
26		2.4 *	2.2	2.1	2.1	2.2	2.4
27		2.4	2.2	2.1	2.1	2.2	2.4
28		2.4	2.1	2.1	2.1	2.2	2.4
29		2.4	2.1	2.1	2.1	2.3	2.4
30		2.4	2.1	2.1	2.1	2.3	2.4
31		2.4	2.1		2.1	2.3	
Mean		2.4	2.2	2.1	2.1	2.2	2.3
Runoff in acre-feet		29	134	123	129	132	139

*Beginning of recrod

TABLE A-26
DAILY MEAN DISCHARGE
FRANKLIN CREEK ABOVE DIVERSIONS

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			4.3	3.3	2.0	2.1	1.9
2			4.2	3.2	2.0	2.1	1.9
3			4.2	3.1	1.9	2.0	1.9
4			4.2	2.8	1.9	2.0	1.9
5			4.2	2.7	1.8	2.0	1.9
6			4.1	2.8	1.9	2.0	1.9
7			4.1	2.7	1.9	2.0	1.9
8			3.9	3.2	1.9	2.0	1.9
9			3.8	2.1	1.9	2.0	1.9
10			3.8	2.7	1.9	2.0	1.9
11			3.7	2.7	1.9	2.0	1.9
12			3.7	2.7	1.9	2.0	1.9
13			3.5	2.7	1.9	1.9	1.9
14			3.5	2.7	1.8	1.9	1.9
15			3.5	2.7	1.8	1.9	1.9
16			3.4	2.7	1.8	1.9	1.9
17			3.4	2.7	1.8	1.9	1.9
18			3.3	2.7	2.1	1.9	1.9
19			3.3	2.7	2.1	1.9	1.9
20			3.2	2.7	2.1	1.9	1.9
21			3.2	2.6	2.1	1.9	1.9
22		4.9 *	3.1	2.6	2.1	1.9	1.9
23		4.9	3.2	2.2	2.1	1.9	1.9
24		4.9	3.3	2.1	2.1	1.9	1.9
25		4.9	3.4	1.9	2.1	1.9	1.9
26		4.9	3.7	1.8	2.1	1.9	1.9
27		4.9	3.8	1.8	2.1	1.9	1.9
28		4.7	3.9	1.7	2.1	1.9	1.9
29		4.6	4.5	1.7	2.1	1.9	1.9
30		4.5	4.1	1.7	2.1	1.9	1.9
31			3.5		2.1	1.9	
Mean		4.8	3.7	2.6	1.9	1.9	1.9
Runoff in acre-feet		86	228	150	118	119	113

*Beginning of record

TABLE A-27
DAILY MEAN DISCHARGE
JOSEPH CREEK BELOW COUCH CREEK

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			8.8	2.6	1.5	0.8	0.8
2			7.6	2.6	0.9	0.8	0.8
3			8.3	2.3	0.9	0.8	0.8
4			8.8	2.6	0.9	0.8	0.8
5			10.	2.6	0.9	0.8	0.8
6			9.8	2.6	0.9	0.8	0.8
7			9.8	2.6	0.8	0.8	0.9
8			10.	2.5	0.8	0.8	0.9
9			11.	5.6	0.8	0.8	0.9
10			11.	1.4	0.8	0.8	0.9
11			8.8	1.4	0.8	0.8	0.9
12			5.8	1.4	0.8	0.8	0.9
13			5.7	1.4	0.8	0.8	0.9
14			5.6	0.9	0.7	0.8	0.9
15			4.8	0.9	0.7	0.8	0.9
16			4.5	0.9	0.7	0.8	0.9
17			3.9	0.9	0.7	0.8	0.9
18			3.4	0.9	0.7	0.8	0.9
19			2.6	0.9	0.7	0.8	0.9
20			2.6	0.9	0.7	0.8	0.9
21			2.6	0.8	0.8	0.8	0.9
22			2.8	0.9	0.8	0.8	0.9
23			2.6	0.9	0.8	0.8	0.9
24			2.6	0.9	0.8	0.8	0.9
25		11.5*	2.5	0.9	0.8	0.8	0.9
26		11.0	2.2	0.9	0.8	0.8	0.9
27		10.8	2.2	0.9	0.8	0.9	0.9
28		10.7	2.2	0.9	0.8	0.9	0.9
29		9.8	2.5	0.8	0.8	0.9	0.9
30		8.7	4.1	0.9	0.8	0.9	0.9
31			5.8		0.8	0.8	
Mean		10.4	5.6	1.6	0.8	0.8	0.9
Runoff in acre-feet		124	347	93	51	50	52

*Beginning of record

TABLE A-28

DAILY MEAN DISCHARGE
NORTH FORK PIT RIVER BELOW THOMS CREEK

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			11. *	6.2	1.1	4.9	0.7
2			10.	5.9	1.6	4.7	0.6
3			10.	6.4	1.6	4.7	0.6
4			9.2	6.0	1.4	4.9	0.7
5			8.6	6.2	1.6	4.5	0.7
6			8.4	5.6	1.5	4.5	0.6
7			8.6	5.2	1.5	4.4	0.6
8			8.6	6.4	1.4	4.3	0.5
9			8.4	4.8	1.7	4.1	0.6
10			8.0	6.6	1.9	4.1	0.6
11			8.1	6.0	1.8	4.1	0.7
12			8.0	4.6	2.8	3.8	0.8
13			8.0	3.8	5.0	3.4	0.9
14			8.0	3.0	5.2	2.6	1.5
15			7.7	2.7	5.2	1.2	1.4
16			7.7	2.6	5.2	0.6	1.4
17			8.0	2.6	5.2	0.5	1.4
18			7.7	2.5	5.2	0.3	1.5
19			7.3	2.2	5.2	0.6	1.4
20			7.3	2.1	5.2	0.5	1.4
21			7.3	2.2	5.2	0.5	1.4
22			7.1	2.2	5.2	0.5	1.4
23			7.1	2.2	5.2	0.6	1.4
24			7.1	1.8	5.0	0.7	1.4
25			6.9	1.7	4.9	0.7	1.4
26			6.9	1.5	5.0	0.7	1.4
27			6.9	1.5	5.0	0.7	1.4
28			6.6	1.3	5.0	0.7	1.4
29			6.6	1.2	5.0	0.6	1.4
30			6.4	1.1	4.9	0.7	1.4
31			6.4		5.0	0.8	
Mean			7.0	3.6	3.6	2.3	1.1
Runoff in acre-feet			428	214	221	138	65

*Beginning of record

TABLE A-29

DAILY MEAN DISCHARGE

THOMS CREEK AT CEDARVILLE-ALTURAS HIGHWAY

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			8.4	3.5	0.9	0.2	0.0
2			8.9	3.8	0.9	0.1	0.0
3			9.3	3.5	0.9	0.1	0.0
4			10.3	3.2	0.9		0.0
5			10.5	2.7	0.9		0.0
6			9.5	2.9	0.9	N	0.4
7			8.4	2.9	0.7	O	0.5
8			5.7	2.8	0.7		0.6
9			5.9	2.6	0.7	F	1.0
10			5.7	2.4	0.7	L O	1.0
11			5.4	2.2	0.7	W	1.0
12			5.2	2.1	0.6		1.2
13			5.2	2.1	0.5		1.5
14			4.9	1.8	0.4		1.5
15			4.4	1.6	0.3		1.5
16			4.1	1.6	0.5		2.1
17			3.8	1.6	0.4		2.1
18			3.4	1.6	0.4		2.7
19			3.1	1.5	0.4		2.7
20			3.7	1.5	0.4		2.7
21			3.2	1.5	0.3		2.4
22			2.8	1.4	0.3		2.1
23			2.2	1.3	0.2		1.5
24			2.4	1.2	0.3		2.1
25		12.4*	2.7	1.2	0.2		2.4
26		12.1	2.6	1.1	0.2		2.4
27		10.9	2.2	1.0	0.1		2.4
28		8.6	1.8	0.9	0.3		2.4
29		8.6	1.9	0.9	0.4		2.4
30		8.4	2.9	0.9	0.5		2.4**
31			3.8		0.4		
Mean		10.2	5.0	2.0	0.5	0.0	1.5
Runoff in acre-feet		121	306	118	32	1	89

*Beginning of record
**End of record

TABLE A-30

DAILY MEAN DISCHARGE
PARKER CREEK AT FOGARTY RANCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			9.6	2.9	0.0	0.0	0.6
2			8.2	2.7	4.7	0.0	0.4
3			8.4	2.7	8.6	0.0	0.1
4			8.4	2.7	2.2	0.0	0.1
5			8.0	2.5	0.8	0.0	0.1
6			7.4	1.6	6.7	0.0	0.2
7			6.7	2.2	1.3	0.0	0.4
8			6.0	5.6	1.0	0.0	0.4
9			6.0	7.2	1.1	0.0	0.1
10			6.0	2.2	0.4	0.0	0.5
11			6.0	6.0	0.4	0.0	0.6
12			6.4	7.4	0.5	0.0	0.8
13			7.0	6.7	0.5	0.0	1.0
14			6.7	4.0	0.4	0.0	0.8
15			6.7	2.7	1.0	0.0	0.8
16			7.0	3.1	0.5	0.0	0.5
17			7.0	1.6	0.3	1.6	0.3
18			6.3	1.0	0.1	9.3	0.5
19			6.3	1.3	0.0	2.2	0.3
20			4.7	1.3	0.0	0.8	0.4
21			4.3	1.6	0.0	1.6	1.6
22			5.2	8.4	0.0	1.4	1.7
23			4.0	1.9	0.0	0.8	1.5
24			3.3	0.8	0.5	0.6	1.4
25			3.1	1.7	0.8	0.9	1.4
26			2.9	3.1	0.0	1.0	1.2
27			3.1	3.1	0.0	0.8	1.2
28			3.1	0.5	0.0	0.5	1.3
29		12 *	3.3	0.4	0.0	0.6	1.3
30		10	3.1	0.2	0.0	1.0	1.4
31			2.9		0.0	1.2	
Mean		11	5.7	3.0	1.0	0.8	0.8
Runoff in acre-feet		44	351	176	63	48	49

*Beginning of record

TABLE A-31

DAILY MEAN DISCHARGE
SHIELDS CREEK BELOW PEPPERDINE RANCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			1.7	2.7	0.4	1.2	0.6
2			1.6	2.5	0.3	1.4	0.6
3			2.7	2.6	0.7	1.4	0.7
4			2.8	2.4	1.0	1.6	0.8
5			3.7	2.5	1.4	1.7	1.0
6			4.1	2.4	0.8	1.6	1.0
7			4.2	2.8	0.4	1.4	1.1
8			4.1	3.3	0.4	1.5	1.2
9			2.9	3.3	0.8	1.4	1.3
10			1.7	3.2	0.7	1.5	1.4
11			2.2	3.1	0.6	1.5	1.3
12			3.3	3.2	0.6	1.6	1.3
13			3.3	3.4	0.8	1.6	1.4
14			3.3	4.6	0.8	1.7	1.5
15			3.3	4.1	2.2	1.9	1.6
16			3.3	4.1	2.0	1.7	1.7
17			3.3	3.9	1.7	1.7	1.6
18			3.3	3.7	1.7	1.5	1.5
19			3.5	3.7	1.9	1.3	1.4
20			3.3	3.7	1.9	1.2	1.2
21			3.4	3.3	1.7	1.1	1.2
22			3.3	2.7	1.5	1.0	1.2
23			2.2	2.1	1.3	0.8	1.2
24			2.3	1.0	1.7	0.8	1.2
25		3.4*	1.5	0.9	1.8	1.2	1.1
26		2.7	1.4	0.8	1.7	0.9	1.1
27		1.9	0.8	0.2	1.2	0.8	1.1
28		2.1	0.6	0.4	0.8	0.8	1.1
29		2.3	0.8	0.6	1.0	0.7	1.1
30		1.7	2.1	0.8	1.1	0.7	1.2
31			2.3		1.1	0.6	
Mean		2.4	2.6	2.5	1.2	1.3	1.1
Runoff in acre-feet		28	157	149	71	79	66

*Beginning of record

TABLE A-32

DAILY MEAN DISCHARGE

PARKER CREEK ABOVE HIGHWAY 395 NEAR ALTURAS

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			5.2	8.8	0.9	0.1	
2			8.7	6.1	1.0	0.1	
3			8.7	4.4	1.0	0.1	
4			3.3	3.4	1.0	0.1	
5			2.9	2.4	1.0	0.0	
6			4.7	1.9	0.8		
7			6.1	3.0	0.7	N	N
8			9.1	4.2	0.7		
9			8.8	5.5	0.5	0	0
10			8.7	4.7	0.4		
11			10.1	2.5	0.3		
12			10.0	2.1	0.2	F	F
13			10.1	1.8	0.2		
14			9.8	1.6	0.2	L	L
15			9.1	1.2	0.2		
						0	0
16			8.7	1.0	0.2		
17			7.9	0.8	0.2	W	W
18			7.9	0.8	0.2		
19			7.1	0.7	0.1		
20			5.5	0.7	0.1		
21		8.7 *	5.0	0.8	0.1		
22		7.7	4.9	0.8	0.1		
23		5.2	4.2	0.7	0.1		
24		3.7	4.0	0.7	0.1		
25		3.7	3.2	0.8	0.1		
26		4.7	2.1	1.0	0.1		
27		3.3	2.0	1.0	0.1		
28		3.5	1.8	1.0	0.1		
29		3.5	2.1	1.0	0.1		
30		6.8	6.1	0.8	0.1		**
31			6.1		0.1		
Mean		5.1	6.3	2.2	0.3	0.4	
Runoff in acre-feet		101	384	131	22	1	

*Beginning of record
**End of record

TABLE A-33

DAILY MEAN DISCHARGE

NORTH FORK PIT RIVER NEAR ALTURAS

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	40	93	1.0	1.3	0.8	0.4	0.1
2	24	93	1.1	6.3	0.8	0.4	0.2
3	16	70	0.8	5.3	0.8	0.3	0.2
4	13	60	0.7	1.7	1.0	0.2	0.2
5	18	57	0.5	1.0	1.1	0.2	0.2
6	86	59	0.3	4.0	0.7	0.3	0.2
7	137	54	0.4	3.3	0.7	0.2	0.2
8	117	40	0.4	2.4	0.8	0.4	0.2
9	139	50	0.4	2.4	0.8	0.6	0.2
10	173	76	0.4	1.9	0.8	0.7	0.2
11	117	79	0.7	1.1	0.7	0.8	0.2
12	119	88	1.9	1.3	1.0	0.8	0.2
13	165	70	3.0	1.3	1.0	0.8	0.2
14	104	64	2.4	1.1	1.0	0.8	0.2
15	62	65	2.4	1.0	0.7	0.8	0.2
16	45	69	4.8	1.0	0.2	0.8	0.2
17	38	67	5.3	0.8	0.2	0.8	0.2
18	67	74	3.3	0.8	0.3	0.8	0.2
19	69	40	2.7	0.7	0.3	0.8	0.2
20	48	29	3.3	0.6	0.3	0.7	0.2
21	40	24	3.3	0.4	0.3	0.7	0.2
22	29	19	3.3	0.4	0.3	0.8	0.2
23	27	22	3.3	0.5	0.4	1.0	0.2
24	32	3.6	3.3	0.6	0.4	0.3	0.2
25	40	1.3	4.0	0.5	0.5	0.2	0.2
26	52	1.9	3.3	0.6	0.5	0.2	0.3
27	76	3.0	3.6	0.7	0.5	0.2	0.3
28	88	4.0	3.0	0.7	0.5	0.2	0.4
29	92	1.5	2.4	0.7	0.7	0.2	0.4
30	97	1.1	3.6	1.0	0.7	0.2	0.4
31	102		1.7		0.4	0.2	
Mean	73.3	45.9	2.3	1.5	0.6	0.5	0.2
Runoff in acre-feet	4510	2730	140	90	38	31	13

TABLE A-34

DAILY MEAN DISCHARGE
RALPH EASTLICK DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1					1.8	0.0	
2					2.5	0.0	
3					3.6	0.0	
4					3.4	0.0	
5					3.2	0.0	
6					2.9	0.0	
7					2.9	0.0	
8					4.5	0.0	
9					4.7	0.0	
10					4.7	0.3	
11					4.5	4.5	N
12					4.3	4.3	O
13					3.9	3.9	
14					3.7	3.9	F
15					3.9	2.9	L
16				1.5*	4.2	0.0	O W
17				2.3	3.6		
18				2.5	3.4		
19				2.9	3.2	N	
20				2.9	2.7	O	
21				1.9	2.5	F	
22				1.6	2.0	L	
23				1.6	2.5	O	
24				1.2	5.0	W	
25				1.4	4.5		
26				2.9	3.9		
27				2.9	3.9		
28				2.9	2.1		
29				2.9	0.0		
30				2.5	0.0		**
31					0.0		
Mean				2.3	3.2	0.6	
Runoff in acre-feet				67	194	39	

* Beginning of record
** End of record

TABLE A-35
DAILY MEAN DISCHARGE
SHACKLEFORD DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1						9.9	6.5
2						9.9	5.9
3						9.7	5.9
4						9.7	5.7
5						9.0	5.7
6						8.8	5.5
7					2.8*	8.6	5.3
8					2.8	8.4	5.3
9					2.8	8.4	5.5
10					12	7.9	5.3
11					12	7.3	5.1
12					12	7.3	5.1
13					12	6.9	5.5
14					12	6.5	5.3
15					12	6.7	5.3
16					12	7.9	5.0
17					12	8.1	4.6
18					12	8.6	9.0
19					12	7.9	5.9
20					12	7.9	5.5
21					13	7.7	5.1
22					13	7.5	4.8
23					11	7.3	4.6
24					6.9	7.1	4.4
25					6.9	6.9	4.2
26					6.9	7.3	4.2
27					6.9	7.1	4.2
28					7.5	6.9	4.2
29					10	6.9	3.7**
30					10	7.1	
31					10	7.1	
Mean					9.7	7.9	5.2
Runoff in acre-feet					481	484	302

* Beginning of record
** End of record

TABLE A-36

DAILY MEAN DISCHARGE
HOWARD-JONES DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1					1.9		
2					2.5		
3					1.8		
4					1.5	N	N
5					1.3	O	O
6					1.2	F	F
7					0.6	L	L
8					0.9	O	O
9					0.9	W	W
10					0.0		
11							
12					N		
13					O		
14							
15					F		
					L		
16				6.8*	O		
17				6.8	W		
18				5.6			
19				5.4			
20				4.5			
21				3.6			
22				3.4			
23				3.2			
24				3.0			
25				2.5			
26				2.0			
27				2.0			
28				2.0			
29				1.9			
30				1.6			**
31							
Mean				3.6	0.4	0.0	0.0
Runoff in acre-feet				108	25	0	0

* Beginning of record
** End of record

TABLE A-37
DAILY MEAN DISCHARGE
CAMP DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1					10	1.9	2.0
2					10	1.8	2.2
3					10	1.7	2.4
4					9.9	1.8	2.0
5					9.9	2.0	2.0
6					9.9	1.9	1.9
7					8.8	1.8	1.9
8					6.8	1.7	1.9
9					6.4	1.7	1.9
10					5.0	1.7	2.0
11					4.7	1.7	2.0
12					4.3	1.8	2.1
13					3.9	1.7	2.2
14					3.9	1.6	2.2
15					3.0	1.8	2.2
16				6.2*	2.5	2.1	2.0
17				6.2	2.5	2.3	2.0
18				6.2	2.5	2.3	3.7
19				6.2	2.5	2.0	2.6
20				6.2	2.5	2.0	2.5
21				6.2	2.5	2.0	2.5
22				6.8	2.5	2.0	2.5
23				11	2.3	2.0	2.5
24				11	1.5	2.0	2.5
25				11	1.4	2.0	2.5
26				11	1.5	2.0	2.5
27				11	1.5	2.0	2.5
28				11	1.6	2.0	2.5
29				11	1.9	2.0	2.5**
30				10	1.9	2.0	
31					2.0	2.0	
Mean				8.7	4.5	1.9	2.3
Runoff in acre-feet				258	279	117	131

* Beginning of record
** End of record

TABLE A-38

DAILY MEAN DISCHARGE
EDSON-FOULKE YREKA DITCH AT SHASTA RIVER

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			34	30	23	7.7	4.0
2			34	30	22	7.5	3.8
3			34	28	20	8.0	3.8
4			34	26	18	8.0	3.8
5			34	24	16	8.0	3.8
6			34	25	16	7.7	3.8
7			34	24	16	7.1	4.0
8			34	24	14	6.7	3.8
9			34	24	15	5.6	3.8
10			34	24	16	5.0	4.0
11			34	24	16	5.6	4.1
12		32 *	34	24	15	5.6	4.0
13		30	34	24	15	5.2	4.3
14		30	33	26	15	5.2	4.5
15		32	33	30	14	5.0	4.5
16		33	33	31	13	4.7	4.1
17		33	32	30	11	4.9	4.1
18		32	32	28	11	4.7	10
19		30	32	27	10	5.0	6.2
20		28	32	25	10	4.7	5.8
21		28	32	24	9.6	4.7	5.6
22		30	32	22	9.6	4.7	5.2
23		32	32	21	9.4	4.3	4.7
24		34	31	20	9.4	3.8	4.7
25		34	31	20	9.1	3.8	4.7
26		33	31	21	8.9	4.1	4.7
27		33	31	21	8.4	4.1	4.7**
28		32	31	22	8.2	3.8	
29		32	31	22	8.0	3.6	
30		32	31	21	8.0	3.8	
31			30		7.7	4.0	
Mean		31.6	32.7	24.7	13.0	5.4	4.6
Runoff in acre-feet		1190	2060	1470	796	330	246

* Beginning of record
** End of record

TABLE A-39

DAILY MEAN DISCHARGE
SHASTA RIVER AT EDGEWOOD

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	68	326	101	33	14	4.8	7.1
2	63	312	106	31	17	4.8	6.6
3	61	206	106	33	17	4.9	7.6
4	57	154	109	31	16	4.9	8.1
5	63	112	112	31	13	4.9	7.1
6	81	89	101	31	10	4.9	6.1
7	87	104	94	33	8.6	4.9	6.1
8	156	120	85	31	9.3	4.9	6.1
9	245	112	81	33	8.7	4.9	6.1
10	286	101	74	31	7.6	4.9	6.6
11	172	92	69	22	6.1	4.2	5.7
12	176	85	61	23	5.3	4.2	6.6
13	264	81	58	19	4.9	4.2	8.1
14	210	70	51	15	4.9	4.5	8.7
15	174	65	47	35	4.2	4.9	8.1
16	136	65	43	33	3.9	4.2	7.6
17	104	67	39	24	3.3	4.5	7.1
18	80	69	37	24	3.6	5.7	21
19	87	70	37	22	3.9	7.1	14
20	69	72	35	22	4.2	6.1	13
21	63	74	37	23	3.3	5.7	12
22	60	76	35	23	3.3	5.7	11
23	58	81	35	23	3.3	5.3	11
24	60	83	35	23	3.3	4.9	11
25	67	85	33	21	3.1	4.9	11
26	81	87	35	19	3.1	5.3	11
27	102	89	33	16	3.1	8.1	10
28	132	92	33	15	4.2	8.7	10
29	172	94	31	15	4.5	9.3	10
30	213	99	33	14	4.5	9.3	7.6
31	295		31		4.5	8.7	
Mean	127	108	58.6	24.3	6.6	5.6	9.1
Runoff in acre-feet	7820	6410	3600	1490	408	346	540

TABLE A-40

DAILY MEAN DISCHARGE

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			58	32	11	3.8	2.6
2			62	33	11	3.6	2.6
3			70	35	11	4.0	2.6
4			79	32	10	3.8	2.6
5			96	27	9.2	3.4	2.6
6			85	27	9.2	3.4	2.6
7			75	27	9.2	3.2	2.6
8			75	29	9.0	3.0	2.8
9			75	29	9.0	2.6	3.0
10			66	29	8.6	2.6	3.0
11			62	28	8.6	2.6	3.0
12		52*	58	27	8.4	2.6	3.4
13		55	58	24	8.2	2.6	3.8
14		52	55	22	8.0	2.6	3.8
15		58	52	21	7.8	2.6	3.8
16		70	48	20	7.6	2.4	3.8
17		69	48	19	7.4	2.4	3.6
18		62	52	18	7.2	2.8	8.0
19		55	52	17	6.6	2.6	5.0
20		52	52	15	5.0	2.4	4.2
21		48	48	15	5.0	2.2	4.2
22		46	41	15	5.0	2.0	4.2
23		48	41	14	5.0	1.8	4.2
24		52	39	13	5.0	2.0	4.2
25		62	39	13	5.0	2.0	4.2
26		62	39	12	5.0	2.0	4.2
27		55	39	11	4.8	2.4	4.2
28		52	40	11	4.6	2.4	0.0**
29		55	35	11	4.4	2.4	
30		55	39	11	4.2	2.8	
31			35		4.0	2.6	
Mean		55.8	55.3	21.2	7.2	2.7	3.7
Runoff in acre-feet		2100	3400	1263	444	166	196

* Beginning of record

** End of record

TABLE A-41

DAILY MEAN DISCHARGE

YREKA DITCH DIVERSION FROM PARKS CREEK

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1					7.2		
2					7.2		
3					7.2		
4					6.4		
5					5.7		
6					5.7	N	N
7					5.7	O	O
8					5.5	F	F
9					5.5	L	L
10					5.3	O	O
						W	W
11					5.3		
12					5.3		
13					5.3		
14				10*	5.3		
15				12	4.2		
16				11	4.2		
17				10	4.2		
18				10	4.2		
19				10	4.2		
20				10	3.4		
21				9.3	3.4		
22				9.1	3.4		
23				8.9	2.3		
24				8.9	0.0		
25				8.0	0.0		
26				7.8	0.0		
27				7.5	0.0		
28				7.2	0.0		
29				7.2	0.0		
30				7.2	0.0		**
31					0.0		
Mean				9.1	3.7	0.0	0.0
Runoff in acre-feet				305	230	0.0	0.0

* Beginning of record
** End of record

TABLE A-42

DAILY MEAN STORAGE IN DWINNELL RESERVOIR

October 1, 1965 through September 30, 1966 (In acre-feet)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16,830	15,720	20,800	23,700	29,920	32,380	35,910	33,050	28,020	22,480	15,140	8,830
2	16,700	15,720	20,870	23,820	30,000	32,430	36,200	32,800	27,870	22,270	14,900	8,650
3	16,580	15,720	21,010	23,980	30,190	32,450	36,370	32,610	27,870	22,060	14,720	8,510
4	16,520	15,720	21,080	24,350	30,320	32,560	36,460	32,400	27,870	21,850	14,480	8,330
5	16,400	15,720	21,150	25,180	30,510	32,580	36,370	32,320	27,870	21,640	14,240	8,200
6	16,280	15,730	21,250	26,080	30,720	32,610	36,280	32,240	27,800	21,500	14,020	8,060
7	16,220	15,740	21,360	26,680	30,830	32,640	36,110	32,160	27,720	21,220	13,800	7,930
8	16,160	15,820	21,430	27,200	31,930	32,800	36,030	32,000	27,570	20,940	13,580	7,750
9	16,100	15,870	21,570	27,530	31,020	33,060	36,030	31,840	27,350	20,660	13,310	7,610
10	16,040	15,870	21,640	27,760	31,120	33,260	36,030	31,680	27,200	20,450	13,090	7,430
11	15,980	15,880	21,740	27,940	31,200	33,480	35,940	31,600	27,120	20,170	12,870	7,300
12	15,920	15,960	21,800	28,070	31,280	33,680	35,770	31,440	26,820	19,890	12,650	7,160
13	15,860	15,980	21,860	28,190	31,330	33,900	35,690	31,280	26,600	19,610	12,430	7,030
14	15,800	16,000	21,930	28,320	31,390	34,160	35,600	31,200	26,450	19,400	12,210	6,890
15	15,740	16,360	21,990	28,430	31,440	34,330	35,430	31,040	26,150	19,190	12,000	6,760
16	15,740	16,830	22,000	28,550	31,490	34,500	35,350	30,880	25,920	18,910	11,750	6,670
17	15,720	17,220	22,060	28,640	31,520	34,510	35,260	30,720	25,700	18,700	11,550	6,530
18	15,700	18,000	22,090	28,730	31,570	34,620	35,180	30,480	25,470	18,490	11,400	6,490
19	15,690	18,770	22,130	28,800	31,620	34,670	35,090	30,240	25,250	18,210	11,200	6,400
20	15,690	18,860	22,170	28,850	31,680	34,720	35,010	30,080	25,020	18,000	11,000	6,360
21	15,700	19,200	22,200	28,900	31,740	34,760	34,840	30,000	24,800	17,740	10,800	6,280
22	15,700	19,240	22,260	28,960	31,840	34,790	34,670	29,840	24,570	17,480	10,600	6,240
23	15,700	19,540	22,270	29,000	31,920	34,800	34,500	29,520	24,270	17,280	10,450	6,160
24	15,700	19,780	22,340	29,080	32,000	34,840	34,330	29,300	24,050	17,020	10,300	6,120
25	15,700	20,030	22,370	29,150	32,110	34,860	34,160	29,150	23,820	16,760	10,100	6,040
26	15,700	20,200	22,400	29,200	31,180	34,910	33,990	28,850	23,600	16,580	9,850	6,000
27	15,700	20,350	22,620	29,310	32,240	34,960	33,820	28,620	23,390	16,340	9,750	5,920
28	15,700	20,480	22,970	29,340	32,300	35,060	33,650	28,470	23,180	16,100	9,600	5,840
29	15,700	20,590	23,420	29,400		35,210	33,480	28,250	22,900	15,860	9,400	5,760
30	15,700	20,090	23,530	29,680		35,380	33,310	28,100	22,690	15,620	9,250	5,680
31	15,700		23,630	29,840		35,620		28,100		15,380	9,050	5,600

TABLE A-43

DAILY MEAN RELEASES
DWINNELL RESERVOIR

April through October 1966
(In second-feet)

Day	April	May	June	July	August	September	October
1		76	66	83	91	75	38
2		76	56	77	91	73	38
3	10*	80	22	76	88	73	41
4	54	85	5.0	76	97	73	43
5	60	85	5.0	76	95	73	42
6	62	85	14	77	95	68	41
7	72	87	50	85	92	62	42
8	72	87	58	88	92	64	40
9	77	86	64	89	91	65	26
10	77	86	66	90	91	67	18
11	77	86	66	88	92	62	19
12	77	85	70	88	91	59	11
13	76	85	69	88	90	60	0.0**
14	74	83	74	86	90	56	
15	74	85	84	80	90	47	
16	73	82	86	80	90	44	
17	63	80	90	80	90	49	
18	60	82	90	80	90	46	
19	57	84	90	82	90	42	
20	56	90	90	83	90	35	
21	55	91	88	86	87	32	
22	54	91	88	88	82	31	
23	55	91	86	87	80	32	
24	58	91	82	87	76	31	
25	64	91	82	90	77	32	
26	73	91	82	92	79	33	
27	76	91	82	91	80	35	
28	78	91	82	88	81	37	
29	76	91	84	88	80	43	
30	72	82	85	90	78	42	
31		72		90	75		
Mean	65.4	85.5	68.5	84.8	87.3	51.4	30.8
Runoff in Acre-feet	3630	5250	4080	5210	5360	3060	790

* Reservoir opened.
** Reservoir closed.

TABLE A-44
DAILY MEAN DISCHARGE
BIG SPRINGS IRRIGATION DISTRICT FLUME

April through October 1966
(In second-feet)

Day	April	May	June	July	August	September	October
1		25	30	26	29	29	28
2		26	30	26	29	33	23
3		27	30	26	29	33	28
4		27	30	26	28	33	32
5		27	30	26	28	33	32
6		27	30	25	29	33	27
7		27	27	24	29	31	23
8		27	17	24	29	29	30
9		27	0.0	24	30	23	26
10		28	0.0	24	30	28	16**
11		28	0.0	24	30	24	
12	23*	28	16	24	30	28	
13	23	28	22	19	30	33	
14	22	27	5.0	9.0	30	35	
15	22	25	0.0	27	29	34	
16	7.0	27	20	27	30	35	
17	0.0	27	30	27	31	35	
18	0.0	29	30	27	30	33	
19	14	30	30	27	31	30	
20	22	30	30	27	32	15	
21	23	30	30	27	32	0.0	
22	25	30	30	27	32	0.0	
23	29	30	30	27	32	0.0	
24	27	30	30	27	32	0.0	
25	25	28	30	27	28	0.0	
26	25	24	27	27	31	0.0	
27	25	24	25	27	30	0.0	
28	25	24	25	28	30	12	
29	25	24	25	28	31	33	
30	25	30	25	29	30	33	
31		30		29	29		
Mean	20.4	27.4	22.8	25.5	30.0	22.8	26.5
Runoff in Acre-feet	768	1690	1360	1570	1840	1360	526

* Beginning of record.
** Plant shut down for season.

TABLE A-45

DAILY MEAN DISCHARGE
GRENADA IRRIGATION DISTRICT PUMPING PLANT

April through October 1966

(In second-feet)

Day	April	May	June	July	August	September	October
1	34	34	0.0	34	29	34	34
2	34	34	0.0	34	34	34	26
3	34	34	0.0	34	34	34	18
4	30	34	0.0	34	34	34	18*
5	31	34	0.0	34	26	34	
6	31	34	24	34	24	34	
7	31	34	34	34	21	34	
8	33	34	25	34	26	34	
9	34	34	18	33	34	34	
10	34	34	15	31	32	34	
11	34	34	6.0	27	24	34	
12	34	34	3.0	26	24	34	
13	34	34	0.0	18	24	22	
14	33	34	0.0	21	24	34	
15	34	34	26	34	24	34	
16	34	34	34	34	24	34	
17	34	34	34	34	24	34	
18	23	34	34	34	20	34	
19	0.0	34	34	34	24	34	
20	0.0	34	34	29	24	13	
21	0.0	34	34	15	24	0.0	
22	0.0	34	34	24	24	0.0	
23	18	34	34	24	29	0.0	
24	18	34	25	24	23	0.0	
25	34	34	24	12	18	0.0	
26	34	34	24	15	29	0.0	
27	34	34	24	18	29	0.0	
28	34	34	24	21	24	23	
29	34	34	28	24	24	34	
30	34	34	34	24	28	34	
31		29		24	34		
Mean	27.5	33.8	20.2	27.5	26.3	24.6	24.0
Runoff in acre-feet	1640	2080	1200	1690	1620	1460	190

* Plant shut down for season.

TABLE A-46

DAILY MEAN DISCHARGE
SHASTA RIVER WATER ASSOCIATION PUMPING PLANT

April through October 1966
(In second-feet)

Day	April	May	June	July	August	September	October
1	47	47	43	42	42	42	47
2	47	47	41	42	42	42	47
3	47	47	0.0	42	42	42	47
4	47	47	0.0	42	42	42	47
5	47	47	48	42	42	42	47
6	47	47	47	42	42	42	47
7	47	47	47	42	42	42	43
8	37	47	47	42	42	42	39
9	47	47	47	42	42	42	39
10	47	47	47	40	42	42	39
11	47	47	47	40	42	42	39
12	47	47	47	42	42	42	39
13	47	47	47	42	42	42	39
14	47	47	47	38	42	42	30
15	47	47	47	42	42	42	10*
16	47	47	47	42	42	42	
17	47	47	47	42	42	42	
18	47	46	47	42	39	16	
19	33	42	47	39	42	0.0	
20	31	22	26	42	42	0.0	
21	31	47	39	42	42	0.0	
22	31	42	47	42	42	0.0	
23	31	46	47	38	33	0.0	
24	33	47	44	42	42	0.0	
25	47	47	47	42	41	0.0	
26	47	47	47	42	41	0.0	
27	47	47	38	42	42	0.0	
28	47	47	42	42	42	0.0	
29	47	47	42	42	41	47	
30	47	47	42	42	42	47	
31		47		42	42		
Mean	43.6	45.5	41.7	41.5	41.5	27.4	39.9
Runoff in acre-feet	2590	2720	2480	2550	2550	1630	1190

* Plant shut down for season

TABLE A-47

DAILY MEAN DISCHARGE
LITTLE SHASTA RIVER NEAR MONTAGUE

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	8.1	73	24	9.8	5.2	2.9	2.9
2	7.0	68	23	9.7	5.2	2.9	2.9
3	7.2	58	23	11	5.2	2.9	2.6
4	10	53	23	8.8	5.1	2.9	2.6
5	7.8	53	23	8.4	4.8	2.9	2.3
6	13	52	21	8.5	4.7	2.9	2.3
7	15	51	20	10	4.7	2.9	2.3
8	16	48	20	9.6	4.4	2.9	2.3
9	33	50	23	9.6	4.4	3.3	2.3
10	51	49	20	7.5	4.4	3.3	2.3
11	31	45	18	6.5	4.4	3.3	2.6
12	38	38	18	6.5	4.4	3.3	2.6
13	54	36	17	6.3	4.4	3.3	2.6
14	49	37	16	6.3	4.4	3.3	2.9
15	37	42	15	5.4	4.4	3.3	2.9
16	24	44	15	5.7	4.4	2.9	2.9
17	18	42	14	6.2	4.0	3.3	2.9
18	18	36	12	5.8	4.0	3.6	5.2
19	18	31	12	5.8	3.6	4.0	3.3
20	16	30	11	5.6	3.6	2.9	2.9
21	14	29	11	5.6	3.6	2.6	2.9
22	12	30	11	5.6	3.6	2.6	2.6
23	14	30	10	7.4	3.6	2.9	2.6
24	19	31	11	6.6	3.6	2.6	2.9
25	34	31	10	6.4	3.6	2.6	2.9
26	44	27	10	5.4	3.6	3.6	2.9
27	49	26	9.5	5.2	3.3	3.3	2.9
28	56	26	9.2	5.6	3.3	2.9	2.9
29	63	25	9.4	5.6	3.3	2.9	2.9
30	64	24	11	5.5	3.3	2.9	2.9
31	68		12		3.3	3.3	
Mean	29.3	40.5	15.6	7.1	4.1	3.1	2.8
Runoff in acre-feet	1800	2410	956	420	253	189	167

TABLE A-48

DAILY MEAN DISCHARGE
SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1			56	104	33	26	20
2			56	110	25	16	33
3			56	150	22	20	29
4			56	136	20	14	18
5			56	116	18	13	18
6			56	65	18	10	19
7			62	53	18	15	19
8			68	59	13	26	26
9			68	80	15	20	29
10			62	86	17	13	32
11		116*	62	80	22	17	40
12		104	56	70	16	17	39
13		99	62	74	26	22	47
14		89	68	74	39	17	49
15		86	68	68	30	20	47
16		92	68	80	22	18	47
17		99	68	39	20	16	39
18		104	62	28	26	17	86
19		130	59	33	22	29	128
20		123	65	39	15	22	123
21		110	54	26	26	25	143
22		104	54	15	26	17	143
23		99	41	29	10	26	143
24		92	42	26	2	15	143
25		68	41	20	4	22	141
26		56	41	26	26	29	146
27		50	44	20	21	15	131
28		56	53	34	22	25	128**
29		56	60	30	25	29	
30		56	69	29	17	26	
31			80		17	22	
Mean		89.3	58.5	60.0	20.4	20.0	66.9
Runoff in acre-feet		3550	3600	3570	1260	1230	3980

* Beginning of record
** End of record

TABLE A-49

DAILY MEAN DISCHARGE
SHASTA RIVER NEAR YREKA

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	211	158	71	99	22	8.0	16
2	212	132	72	134	24	10	16
3	210	108	68	173	20	12	24
4	207	96	66	155	13	11	25
5	204	88	73	135	13	11	18
6	202	104	67	86	13	8.6	16
7	206	98	73	61	9.2	11	16
8	215	120	80	62	13	9.5	15
9	210	111	83	71	10	19	15
10	280	152	75	88	12	18	18
11	294	160	68	80	8.8	9.0	24
12	268	153	66	82	11	12	36
13	272	131	66	67	11	13	42
14	281	117	71	68	21	14	45
15	267	114	77	65	34	13	45
16	259	114	74	77	22	15	44
17	237	114	70	61	19	15	45
18	235	117	71	31	16	14	65
19	236	143	63	31	17	17	114
20	225	141	59	32	16	21	109
21	215	134	53	44	14	19	120
22	202	122	51	24	14	17	127
23	189	121	55	18	20	14	122
24	192	109	45	26	12	23	120
25	167	95	43	22	9.0	14	120
26	172	74	46	22	6.4	12	124
27	171	73	46	23	10	16	124
28	175	67	57	17	15	11	120
29	200	74	63	22	15	12	69
30	205	72	77	21	13	16	54
31	182		92		11	17	
Mean	220	114	65.9	63.2	15.0	13.9	62.4
Runoff in acre-feet	13520	6770	4050	3760	921	853	3700

TABLE A-50

DAILY MEAN DISCHARGE

SOUTH FORK PIT RIVER NEAR LIKELY

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	2.5	86	122	108	55	176	12
2	4.5	99	117	92	56	129	9.7
3	12	92	118	90	57	103	9.3
4	21	96	120	85	44	96	9.3
5	35	114	125	77	30	92	9.7
6	65	124	129	86	28	86	9.3
7	80	129	132	114	27	87	10
8	59	125	159	125	27	81	10
9	59	117	189	124	40	71	9.7
10	69	117	198	118	61	61	9.3
11	57	114	191	112	60	49	9.0
12	59	93	172	109	59	41	9.7
13	74	76	114	108	76	36	10
14	59	81	141	104	109	29	16
15	49	92	161	100	127	24	16
16	42	100	155	97	125	21	14
17	34	103	125	100	125	18	15
18	47	94	61	97	124	16	16
19	47	78	49	96	124	14	19
20	37	72	48	93	118	13	17
21	55	71	49	92	109	12	17
22	92	63	50	60	104	10	12
23	90	48	50	41	102	8.3	10
24	93	52	48	41	99	6.9	10
25	94	77	43	41	125	6.1	10
26	97	118	40	40	168	6.1	11
27	99	129	41	50	143	9.3	11
28	94	127	44	57	187	8.3	10
29	74	125	44	55	185	7.6	12
30	77	124	63	54	181	8.3	12
31	80		93		179	12	
Mean	59.9	97.9	103	85.5	100	43.2	11.8
Runoff in acre-feet	3680	5820	6330	5090	6160	2650	704

TABLE A-51

DAILY MEAN DISCHARGE

WEST VALLEY CREEK BELOW WEST VALLEY RESERVOIR

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11	NO RECORD AVAILABLE						
12							
13	FOR 1966 SEASON						
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Mean							
Runoff in acre-feet							

TABLE A-52

DAILY MEAN DISCHARGE

FITZHUGH CREEK BELOW DIVERSION NO. 137

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11	NO RECORD AVAILABLE						
12							
13	FOR 1966 SEASON						
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Mean							
Runoff in acre-feet							

TABLE A-53

DAILY MEAN DISCHARGE

PINE CREEK NEAR ALTURAS

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	11	12	21	26	14	10	8.4
2	11	14	21	24	15	9.8	8.4
3	12	15	22	25	14	9.7	8.2
4	12	15	23	24	13	9.4	8.2
5	12	15	24	23	13	9.4	7.9
6	12	16	23	23	13	9.4	7.7
7	12	16	23	24	13	9.2	7.7
8	12	17	24	22	13	9.2	7.7
9	12	17	26	22	13	9.2	7.7
10	12	18	27	20	14	9.2	7.7
11	12	16	28	20	13	8.9	7.7
12	12	16	29	19	13	8.9	7.7
13	12	15	29	18	12	8.9	7.7
14	12	16	30	18	12	8.9	8.4
15	12	17	29	18	12	8.9	8.7
16	12	19	29	18	12	8.7	8.2
17	12	21	27	17	12	8.7	7.9
18	12	20	27	17	12	8.9	7.9
19	12	19	26	16	11	8.9	8.2
20	12	19	26	16	11	8.7	7.9
21	12	19	25	16	11	8.4	7.5
22	12	19	25	16	11	8.4	7.5
23	12	20	25	16	11	8.4	7.5
24	12	21	24	16	11	8.2	7.5
25	12	22	24	15	11	8.2	7.5
26	12	21	24	15	10	8.4	7.5
27	13	20	24	15	10	8.7	7.7
28	14	20	24	15	10	8.7	7.7
29	14	20	24	14	10	8.4	7.7
30	15	21	25	14	10	8.4	7.5
31	15		25		11	8.7	
Mean	12.3	17.9	25.3	18.7	12.0	8.9	7.9
Runoff in acre-feet	756	1060	1550	1120	736	547	467

TABLE A-54

DAILY MEAN DISCHARGE
BIDWELL CREEK NEAR FORT BIDWELL

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	5.6	50	27	19	8.7	4.3	3.1
2	5.4	52	29	17	9.8	4.3	3.0
3	5.6	43	32	17	8.8	4.2	2.8
4	5.6	37	40	16	8.2	3.8	2.8
5	5.6	34	45	15	7.9	3.4	2.8
6	5.9	42	48	15	7.7	3.4	2.8
7	5.9	47	47	15	7.5	3.3	2.8
8	6.1	48	44	15	7.6	3.3	2.8
9	6.3	50	46	17	7.8	3.4	2.8
10	7.1	50	46	16	7.5	3.4	2.8
11	7.4	42	42	15	7.1	3.4	3.0
12	9.1	35	36	15	6.8	3.3	3.1
13	15	29	34	14	6.6	3.3	3.1
14	14	30	32	13	6.1	3.3	6.1
15	13	33	30	14	6.0	3.1	4.2
16	10	45	26	13	5.6	3.0	3.6
17	8.8	48	25	13	5.5	3.1	3.3
18	7.9	43	25	12	5.3	3.8	4.0
19	8.2	36	24	12	5.2	3.6	3.4
20	8.2	29	23	12	5.2	3.3	3.3
21	7.4	25	25	12	5.0	3.1	3.0
22	7.9	23	26	12	4.9	3.3	3.0
23	8.2	25	24	12	4.7	3.1	2.8
24	8.8	25	21	11	4.4	3.1	2.8
25	12	32	20	10	4.4	3.1	3.0
26	15	33	20	9.7	4.3	3.4	3.0
27	17	30	20	9.2	4.1	3.4	3.1
28	22	29	18	8.8	4.4	3.1	3.1
29	26	28	20	8.4	4.2	3.1	2.8
30	33	28	21	8.3	4.3	3.3	2.8
31	33		19		4.3	3.3	
Mean	11.3	36.7	30.2	13.2	6.1	3.4	3.2
Runoff in acre-feet	696	2180	1860	786	377	209	188

TABLE A-55

DAILY MEAN DISCHARGE
MILL CREEK

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1		9.8*	11	8.6	4.7	3.0	2.7
2		9.8	12	8.4	5.0	2.9	2.7
3		10	12	8.4	4.6	2.8	2.7
4		11	13	8.2	4.6	2.8	2.6
5		11	14	7.7	4.4	2.8	2.6
6		11	15	7.3	4.3	2.8	2.5
7		11	13	7.3	4.3	2.8	2.5
8		11	12	7.3	4.3	2.7	2.5
9		11	13	7.1	4.4	2.7	2.5
10		16	13	6.7	4.3	2.7	2.5
11		12	13	6.7	4.1	2.7	2.6
12		12	13	6.5	3.9	2.7	2.6
13		12	12	6.4	3.8	2.7	2.6
14		12	12	6.0	3.7	2.7	2.6
15		12	11	5.7	3.7	2.7	2.6
16		13	11	5.7	3.7	2.7	2.5
17		14	10	5.1	3.7	2.7	2.5
18		13	9.5	5.0	3.7	2.7	2.5
19		12	8.8	4.8	3.7	2.7	2.5
20		11	8.4	4.8	3.7	2.7	2.5
21		11	8.2	4.8	3.7	2.7	2.5
22		11	8.4	4.8	3.7	2.7	2.5
23		12	8.6	4.8	3.7	2.7	2.5
24		13	8.6	4.8	3.6	2.7	2.5
25		15	8.4	4.7	3.6	2.7	2.4
26		15	7.9	4.4	3.6	2.7	2.4
27		13	7.9	4.3	3.5	2.6	2.4
28		12	7.9	4.3	3.4	2.6	2.4
29		10	7.9	4.4	3.2	2.6	2.4
30		11	8.4	4.4	3.1	2.6	2.4
31			8.6		3.2	2.6	
Mean		11.9	10.6	6.0	3.9	2.7	2.5
Runoff in acre-feet		709	650	356	240	167	150

* Beginning of record

TABLE A-56

DAILY MEAN DISCHARGE

SOLDIER CREEK

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1		24	10	5.0	2.2	1.1	0.7
2		14	11	4.7	2.2	1.3	0.7
3		10	14	4.7	2.2	1.6	0.7
4		8.4	16	4.3	2.2	1.4	0.7
5		12	16	4.0	2.1	1.4	0.7
6		16	15	4.0	1.9	1.3	0.6
7		19	12	3.8	1.8	1.3	0.6
8		21	12	3.5	1.8	1.1	0.6
9		22	10	3.4	1.8	1.0	0.6
10		20	9.8	3.3	1.8	0.9	0.6
11		17	8.4	3.3	1.8	0.8	0.6
12		14	8.4	3.1	1.7	0.8	0.6
13		12	8.4	3.1	1.7	0.8	0.6
14		16	7.1	2.8	1.7	0.8	0.6
15		19	6.8	2.8	1.5	0.8	0.6
16		22	6.5	2.7	1.5	0.7	0.6
17		17	6.3	2.6	1.3	0.7	0.6
18		12	6.0	2.6	1.3	0.7	0.7
19	2.4*	10	5.7	2.5	1.3	0.7	0.7
20	2.5	8.7	5.7	2.5	1.2	0.7	0.7
21	2.7	7.9	5.5	2.5	1.2	0.7	0.7
22	2.9	8.4	5.2	2.5	1.2	0.7	0.7
23	4.0	10	5.0	2.5	1.2	0.7	0.7
24	6.0	12	5.0	2.5	1.2	0.7	0.7
25	12	14	4.7	2.5	1.1	0.7	0.7
26	16	12	4.5	2.4	1.1	0.7	0.7
27	22	9.8	4.5	2.4	1.1	0.7	0.6
28	29	9.8	4.3	2.2	1.1	0.7	0.6
29	28	9.8	4.5	2.2	1.1	0.7	0.6
30	32	9.3	4.5	2.2	1.1	0.7	0.6
31	31		4.7		1.1	0.7	
Mean	14.6	13.9	8.0	3.1	1.5	0.9	0.6
Runoff in acre-feet	378	827	491	184	94	55	38

* Beginning of record

TABLE A-57

DAILY MEAN DISCHARGE

PINE CREEK

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1		17	2.4	0.3			
2		16	2.3	0.2			
3		11	2.3	0.2			
4		8.9	2.2	0.2			
5		8.9	2.1	0.2			
6		9.9	2.0	0.2			
7		10	1.9	0.2			
8		9.1	1.7	0.2			
9		8.9	1.6	0.2			
10		8.7	1.5	0.2			
11		9.1	1.4	0.1			
12		9.1	1.3	0.1			
13		9.9	1.1	0.1			
14		12	1.0	0.1			
15		12	0.8	0.1			
16		11	0.6	0.1			
17		8.7	0.6	0.0**			
18		6.0	0.6				
19		4.9	0.6				
20	1.9*	4.1	0.6				
21	2.0	4.1	0.5				
22	2.2	4.1	0.5				
23	2.2	4.1	0.5				
24	2.6	4.4	0.5				
25	4.2	4.5	0.4				
26	6.8	3.8	0.4				
27	9.5	3.1	0.4				
28	11	3.1	0.3				
29	13	2.8	0.3				
30	14	2.5	0.3				
31	15		0.3				
Mean	7.0	7.7	1.1	0.1			
Runoff in acre-feet	167	460	65	5			

* Beginning of record
** No Flow for remainder of season

TABLE A-58

DAILY MEAN DISCHARGE

CEDAR CREEK AT CEDARVILLE

March through September 1966
(In second-feet)

Day	March	April	May	June	July	August	September
1	0.7	10	7.6	3.0	0.7	0.2	0.1
2	1.6	9.6	7.3	2.8	0.7	0.2	0.1
3	1.8	9.2	7.3	2.7	0.7	0.2	0.1
4	1.9	9.0	7.2	2.5	0.7	0.2	0.1
5	2.1	8.7	7.1	2.4	0.7	0.1	0.1
6	2.8	9.1	7.1	2.2	0.7	0.1	0.1
7	2.8	9.1	6.7	2.0	0.7	0.1	0.1
8	2.9	9.1	6.4	1.9	0.7	0.1	0.1
9	3.3	9.7	6.4	1.7	0.7	0.1	0.1
10	3.9	9.8	6.3	1.6	0.7	0.1	0.1
11	3.9	10	6.1	1.4	0.6	0.1	0.1
12	4.5	10	5.8	1.3	0.6	0.1	0.1
13	5.0	10	5.7	1.2	0.6	0.1	0.1
14	4.4	11	5.5	1.0	0.6	0.1	0.1
15	4.2	10	5.4	1.0	0.6	0.1	0.1
16	3.9	11	5.2	1.0	0.5	0.1	0.1
17	4.3	11	5.1	1.0	0.5	0.1	0.1
18	4.9	10	5.0	1.0	0.5	0.1	0.1
19	5.8	10	5.0	1.0	0.5	0.1	0.1
20	6.2	9.5	4.8	1.0	0.4	0.1	0.1
21	6.8	9.6	4.5	0.9	0.4	0.1	0.1
22	8.3	9.4	4.4	0.9	0.4	0.1	0.1
23	8.6	9.1	4.3	0.9	0.4	0.1	0.1
24	9.1	9.2	4.0	0.9	0.4	0.1	0.2
25	10	9.2	4.2	0.8	0.4	0.1	0.2
26	9.6	8.8	3.9	0.8	0.4	0.1	0.2
27	10	8.7	3.8	0.8	0.4	0.1	0.2
28	10	8.0	3.7	0.8	0.4	0.1	0.2
29	11	7.8	3.5	0.8	0.3	0.1	0.2
30	11	7.8	3.3	0.7	0.3	0.1	0.2
31	12		3.2		0.3	0.1	
Mean	5.7	9.4	5.3	1.4	0.5	0.1	0.1
Runoff in acre-feet	352	562	329	83	33	7	7