

CUYALACA WATER COMPANY'S

EXHIBIT A

RAILROAD COMMISSION HEARING - APRIL 7th, 1924.

**OFFICE COPY**

DESCRIPTION OF CUYAMACA SYSTEM

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## DESCRIPTION OF CUYAMACA SYSTEM

### HISTORICAL

The properties of the Cuyamaca Water Company were acquired from the San Diego Flume Company which was organized in 1886, the promoters in 1885 having filed water appropriations on the San Diego River at various points and on all its tributary branches. This Company was incorporated in 1886 and construction work was started immediately, the major portion of the works being completed in 1888. Construction on a lesser scale was carried on for a number of years thereafter, the total cost of this work up to February 14, 1891, as given by L. F. Doolittle, the then Secretary of the San Diego Flume Company, in a sworn statement, was \$1,357,526.71. The large amount of capital expended on betterments subsequent to this date and prior to the sale of the property to the present owners on June 1st, 1910, would with the large amount expended since that date bring the historical cost of the various properties involved in this transaction up to a sum approximating \$3,000,000. *Alanson*

Immediately after the incorporation in 1886 the San Diego Flume Company appropriated 2000 miner's inches of water near the head of Boulder Creek at or about the present site of Cuyamaca dam. Also 4000 miner's inches of water on the South Fork of the San Diego River at a point about one mile above its junction with the main river. Also 6000 miner's inches of water about 1000 feet below the junction of Boulder Creek with the San Diego River at about the point where the present Diverting

Dam is located. All the waters of Chocolate Creek up to the extent of 100 miner's inches and various other filings, in addition to which they acquired riparian and diversion rights on a large portion of the river frontage. The present owners have acquired additional riparian and diversion rights until at this time they control 210,000 feet out of a total of 406,000 feet of river frontage from Diverting Dam to the ocean.

In addition to the filings made or acquired by the San Diego Flume Company the present owners of the property on June 1st, 1910, filed on all the waters of the San Diego River, both surface and subterranean, flow, to the extent of 100,000 miner's inches. This filing has been recognized by the State of California which has recently issued the owners of the property a certificate of due diligence.

The Flume Company constructed Cuyamaca Reservoir, a diversion dam just below the junction of the Boulder Creek with the San Diego River, approximately 36 miles of wooden flume 5' 10" wide and one foot deep which was so designed that its ultimate capacity was to have been 100 second feet. They also constructed the La Mesa Dam, an earth-fill dam now submerged by the concrete Murray Dam, and a number of miles of transmission mains.

Owing to the undue optimism of the promoters of the Flume Company as to the quantity of water available and the costs of operation the property was loaded down with contracts to sell in perpetuity large quantities of water, the price ranging from  $5/8$  to  $1\frac{1}{2}$  per thousand gallons. These prices fell far short of meeting fixed charges with the result that

the property was finally taken over and operated by a committee representing the bondholders. This committee likewise obligated themselves to furnish additional quantities of water at equally low prices, the result being that the property was so loaded down with litigation and obligations that it was considered to be of questionable value with the result that the property, including all rights of every character, was purchased on June 1st, 1910, by Ed Fletcher and James A. Murray. In 1913 William G. Henshaw purchased an interest in the property. Mr. Murray and Mr. Henshaw are now deceased, Mr. Henshaw having disposed of his interest prior to his death, leaving Ed Fletcher the sole remaining member of this co-partnership. Prior to Mr. Henshaw's entrance into the partnership the Railroad Commission of the State of California declared the system to be a public utility and, therefore, its rates were subject to change by the constituted authorities. This decision was fought thru the courts and affirmed by the supreme court, the company being thereby relieved of the obligation to render service at other than a reasonable rate, the result being that the system was rapidly transformed into a valuable property.

#### PHYSICAL STRUCTURES

##### 1. GUYAMACA RESERVOIR

This property consists of 980 acres of land, 978 acres of which is flooded and two acres used as site for necessary buildings; an earth fill dam 41.5 feet high, 665 feet in length, containing 31,729 cu. yds. of material and floods 978 acres, surrounded by five wire fence approximately 10 miles in length.

This fence was rehabilitated in 1922 and is therefore in first class condition. The reservoir capacity is 11,595 acre feet under normal conditions. Flash boards have been provided for the spillway which increased its capacity approximately 2000 acre feet. The outlet elevation is 4600 feet, the draft being measured at the outlet by weir. The drainage area tributary to this reservoir is 12 square miles which is somewhat increased by the Kelly Ditch one and a half miles long which diverts a portion of the drainage from North Peak into the reservoir. This ditch required the excavation of approximately 12,000 cu. yds. of material. It should be noted that the rainfall at Cuyamaca is, with one exception, the highest of any point in San Diego County.

The reservoir is located on the headwaters of Boulder Creek, the channel of which carries the water from Cuyamaca to the San Diego River a quarter of a mile above the Diverting Dam, a distance of approximately  $12\frac{1}{2}$  miles, the water from Cuyamaca dropping, in this distance, 3800 feet. Approximately seven miles below Cuyamaca Dam extensive preliminary work has been done with the object of installing a hydro-electric plant, the necessary permits for which have been granted by the State and Federal authorities, approximately \$20,000 having been expended on preliminary work in connection with the development of this project.

Just prior to its junction with the San Diego River the draft from Cuyamaca, as well as the natural flow of Boulder Creek, is measured by what is known as the Boulder Creek weir.

At Cuyamaca dam is located a good substantial keeper's house, barns, garage, and water supply system all in good condition, in excess of \$2,000 having been expended within the last few years in remodeling these buildings.

## 2. DIVERTING DAM

This is a rubble masonry structure 440 feet long, approximately 35 ft. in height, containing 5000 cu. yds. of material and is located about a quarter of a mile below the junction of Boulder Creek and the San Diego River at an elevation of 803 ft. and is within the boundaries of the Capitan Indian reservation. At this point is a good substantial keeper's house, barns, store houses, etc.

## 3. FLETCHER OR DIVERSION DAMSITES

Approximately a half mile above Diverting Dam is located what is variously known as the Diversion damsite, the Helena damsite, or the Fletcher damsite. At this point the company has carried on extensive core drilling and open pit explorations and has also acquired the lands necessary for the erection of a large dam and reservoir. The cost of these lands was in excess of \$40,000.

## 4. MAIN FLUME

This flume as originally constructed was 36 miles in length, 5' 10" wide and 12" to 14" in depth. The present owners have increased the depth to 30" for the first six miles and to 20" for the remaining distance. The total length has been decreased by the construction of siphons at various points to approximately 33 miles. The construction of this

flume which lies on a graded bench along the mountainside for most of its distance involved the excavation of 215,000 cu. yds. of material of which 82,400 cu. yds. were hard rock. The flume itself contained 8,837,000 feet of lumber. It has a grade of 4-3/4 feet per mile and a capacity of 31 sec. ft. About two miles below Diverting Dam, Sand Creek is crossed by means of a concrete conduit 1080 feet in length and a 40" concrete siphon 1230 feet in length, erected in 1913. At a point about seven miles below Diverting Dam the flume crosses the South Fork of the San Diego River by means of a 26" steel siphon erected in 1911 and a 24" steel siphon erected in 1916. On the south side of the South Fork is located the flume walker's cottage, etc. At this point is the junction of the diversion works carrying South Fork waters into the main flume and consisting of the following:

##### 5. SOUTH FORK FEEDER

This consists of 2350 feet of 20" riveted steel pipe line laid in 1915 and a parallel wooden flume 2' x 3' 2350 ft. long, built in 1916, ending in a concrete forebay from which point a #60 steel flume 2500 ft. in length runs to a concrete diversion dam which diverts the flood water from the South Fork drainage area to the main flume. This drainage area is 44 sq. miles in extent.

Approximately one mile below South Fork the water crosses the Chocolate Creek in a 30" steel syphon 2680 feet in length. This syphon is under a maximum head of 200 feet. At the outlet end of Chocolate syphon is located the Chocolate section house, garages, store houses, etc. Approximately

2350' long



nine miles below Chocolate section house or about eighteen miles below Diverting Dam is located the El Monte pumping plant pumping from the El Monte basin.

#### 6. EL MONTE PUMPING PLANT

This is an extensive deposit of gravels covering approximately 1400 acres and in excess of 125 feet in depth. The safe yield of these gravels has been computed at 4 million gallons daily. Extensive pumping was done at this site during the big drought of 1899 to 1904. The old steam plant in use at that time was scrapped and an electrically driven centrifugal plant installed in 1914 and 1915. Additions were made to this plant in 1919 and it now consists of seven wells from 84 to 95 ft. in depth, several hundred feet of suction lines, an 8" multiple stage centrifugal pump driven by a 200 h. p. motor, and discharges thru approximately a thousand feet of 20" steel pipe to a forebay thence thru a gravity line approximately 700 feet long to connect with the main flume. This plant is equipped with all necessary appurtenances and has a capacity of 3 million gallons daily against a total head of 320 feet.

Approximately  $2\frac{1}{2}$  miles below the El Monte pumping plant is the flume foreman's house, barns, store sheds, etc., as well as the flume walker's cottage.

Approximately 5 miles below the El Monte plant the flume enters the northeastern corner of the El Cajon Valley proper thru a tunnel approximately 1900 ft. in length and runs south along the eastern edge of the valley approximately six

miles where it turns to the west and crosses the Sweetwater Pass thru a 39" concrete syphon 1250 ft. in length, built in 1919. About one mile below this point is located the El Cajon section house, store sheds, etc.

Three miles below the El Cajon section house the flume leaves the El Cajon Valley thru Eucalyptus Pass near Grossmont. Here is located the Grossmont pumping plant consisting of a 30 h.p. motor, 2 triplex pumps pumping against a total head of 400 feet, 4 concrete distribution reservoirs with capacity of 50,000 gallons each, and an extensive distribution system.

A thousand feet below this point is a 36" reinforced concrete pipe line 1950 feet in length carrying water to Grossmont reservoir formerly known as Murray Hill reservoir.

This is a distribution reservoir 570 feet in length, 35 feet high, containing 26,603 cu. yds. of earth, flooding 12 acres, and containing 127 acre feet of water.

4000 ft. below this point is the Eucalyptus reservoir at the end of the flume.

#### 7. EUCALYPTUS RESERVOIR

This is a receiving or balancing reservoir and acts as a distribution reservoir for the high service area. It is of earth fill construction, 34 ft. in height and 275 feet in length. The elevation when full being 644 feet and the elevation of the outlet 620 feet. This reservoir covers three acres and has a capacity of 26 acre feet. The outlet elevation of this reservoir is the same as that of the Grossmont Reservoir previously mentioned and the outlets are connected by 5322 feet of reinforced concrete pipe of which 726 feet is thru a tunnel.

At this site is located the Superintendent's house, pipe foreman's house, store house, black-smith shop, garages, etc.

#### 8. LA MESA DITCH

La Mesa Ditch joins the main flume a few hundred feet above Eucalyptus Reservoir and carries flood water to the Murray dam. The total length is 3.68 miles of which 1237 feet is 36" redwood syphon. This ditch has a capacity of 31 second feet.

#### 9. MURRAY RESERVOIR

The Murray Reservoir is a receiving basin at the end of the La Mesa Ditch and acts as a distribution reservoir for the low service area. The total height of the dam is 117 feet and stores water to a depth of 100 feet. The elevation of the outlet is 440 feet. The area flooded is 200 acres and the capacity is 6085 acre feet or two billion gallons. The area of the watershed immediately tributary is 4.5 square miles. This reservoir is a multiple arch concrete structure and was erected in 1918 and completely submerges the old La Mesa Dam, an earth-fill structure 65 feet in height. At this dam is located club house and grounds, keeper's house, garage, store house, chlorination plant, etc.

#### 10. TRANSMISSION AND DISTRIBUTION MAINS - Length 56.58 miles.

From the Eucalyptus reservoir the water is transported into the high service area thru a 16" riveted steel pipe laid in 1914 and 1915. This line runs southwesterly a distance of approximately one mile to El Cajon Avenue which it follows to the easterly edge of the low service area approximately  $3\frac{1}{2}$  miles. At this point it is connected with a 24" redwood stave pipe 5000 ft.

in length running due south from the Murray dam. From this connection the transmission line runs westerly on Cajon Avenue approximately three miles to a point about one and a half miles east of the westerly city limits of San Diego. Many distribution lines branch from these main transmission lines at various points as shown approximately on the attached map of the system. The sizes, lengths, and kind of each pipe is shown in tabulation headed "Pipe Lines" and included in this report. In order to make available for the high service area in time of emergency, waters stored in the Murray reservoir a pumping plant is located at the junction with the 24" wood line from Murray dam with the steel line from Eucalyptus. This plant consists of an 8" multiple stage centrifugal pump direct connected to 150 h.p. motor with all necessary appurtenances.

The following is a brief inventory of the holdings of the Cuyamaca Water Company:

#### BRIEF INVENTORY

##### Collection System

Cuyamaca Dam  
 Kelly Ditch  
 Keeper's house  
 Barns  
 Garage  
 10 miles fence  
 Weir

##### Fletcher Damsite

Preliminary work, surveys, maps, etc. collected at cost of  
 \$25,000.

Diverting Dam

Keeper's house

Store houses, etc.

Floodage rights

Weir at mouth of Boulder Creek

South Fork

Diversion Dam

Rights to build Conejos Dam

2500' #60 steel flume

2350' 2' x 3' wood flume

2350' 20" steel pipe

Forebays, etc.

Capitan Damsite

Extensive exploratory work, maps, surveys, etc. at cost of  
approximately \$100,000.

Monte Pump Plant

1 - 8" multiple stage centrifugal pump

1 - 200 h.p. motor

Priming pump

400' 12" standard screw pipe

750' 20" riveted steel "

1000' 16" " " "

Pump house

Operator's house

Transmission

Main Flume

5' 10" wide by 20" deep, 162,272' long of which approximately  
26,750' is on trestles.

Transmission (Continued)

2500' #108 steel flume	
Sand Creek Conduit 1080'	
Sand Creek Syphon 42" concrete	1280' long
Square concrete conduit	427' "
Circular " "	207' "
Tunnels " lined	4183' "
Tunnel approaches, concrete	553' "
26" South Fork Syphon, steel	1435' "
24" " " " "	1435' "
30" Chocolate Syphon, steel	2680' "
39" Sweetwater " concrete	1250' "

1080  
427  
207  
553  
-----  
2267

La Mesa Ditch

3.68 miles including Alvarado syphon, 36" wood, length 1237'

Murray supply line

Reinforced concrete pipe 36" 1950' long.

Buildings on Transmission System

Cottage and sheds at South Fork

Store house, garage, etc. at Chocolate

Cottage at Chocolate

Flume foreman's house at Los Coches

Barns, store houses, flume walker's house at Los Coches

Flume walker's house and sheds at El Cajon.

Distribution

Five Grossmont Reservoirs

Grossmont Pumping Plant

50,000 gallon tank at El Hido

Miles Reservoir No. 1

" " No. 2

Distribution (Continued)

Eucalyptus Reservoir

Murray Dam

La Mesa Pump station

Normal Heights shops

La Mesa Heights "

Miscellaneous equipment, telephone system, automobiles, tools,

etc. valued at approximately \$30,000, with materials and

supplies on hand valued at approximately \$30,000.

1800 meters and services ranging from 5/8 x 3/4 to 16".

56.58 miles of pipe as listed in detail on pages 15 and 16.

Lands and Rights of Way

Cuyamaca Reservoir		980 Acres - 978 Acres flooded
Capitan damsite	Approx.	112 " which we control
Fletcher damsite	"	342 " " " "
Mission Gorge damsite	"	317 " " " "
Kelly Ditch		50 "
Diverting Dam (easement)		8 "
El Monte Pumping Plant:		
Valley		7.06 "
Hillside		.79 "
Main Flume rts. of way to Tunnel #6		136.29 "
Main Flume rts. of way Tunnel #6 to Eucalyptus		91.50 "
Murray 36" Supply Line		.47 "
La Mesa Ditch Line		22.25 "
Grossmont Resvrs. 1, 2, 3 and 4		.41 "
Grossmont (formerly Murray Hill)		15.7 "

Lands and Rights of Way (Cont'd)

Murray Eucalyptus Syphon (rt. of way)	1.19 Acres
Eucalyptus Reservoir	4.71 "
Eucalyptus Lands (condemned)	2. "
Murray Reservoir:	
Owned	119.71 . "
Floodage rt.	120. . "
La Mesa Pipe Line	2.05 "
Normal Heights shop	.273 "
Rt. of way across all La Mesa Colony lands	
Conejos Reservoir rights	
All franchises from County, Municipalities, etc.	
Permit issued by Federal and State authorities for canal and power development on Boulder Creek	
Permit granted by Federal authorities to pump from the gravels of the Capitan Indian reservation, granted in 1913.	

## Water appropriations as follows:

6000 miner's inches at Diverting Dam	
4000 " " " South Fork	
2000 " " near head of Boulder Creek	
100000 " " Diverting Dam	
500 " " Capitan	

44225 acre feet at Mission Gorge No. 3.

Certificate of due diligence issued by the State of California  
covering Diverting Dam filings.



PIPE LINES

<u>Kind</u>	<u>Size</u>	<u>Length in Feet</u>
Standard Screw	3/4"	1453
" "	1"	8080
" "	1 1/2"	1315
" "	1 1/2"	6366
" "	2"	82259
" "	2 1/2"	17221
" "	3"	28159
" "	3 1/2"	1145
" "	4"	3737
" "	6"	299
" "	8"	1400
" "	10"	162
" "	12"	820
O. D. Casing	3"	2050
" "	4"	13515
" "	6"	4318
" "	7"	115
" "	8"	3812
" "	10"	1525
" "	11"	339
" "	12"	4779
Cast Iron	2"	4295
" "	3"	9857
" "	4"	4910
" "	6"	7267

## PIPE LINES (Cont'd)

<u>Kind</u>	<u>Size</u>	<u>Length in Feet</u>
Cast Iron	10"	15
" "	12"	1650
" "	16"	3080
Riveted Steel	4"	2555
" "	6"	1827
" "	8"	4820
" "	12"	2282
" "	14"	6427
" "	16"	20365
" "	18"	30
" "	20"	6867
Standard with Cement Jacket	3 $\frac{1}{2}$ "	986
Concrete Riveted Steel	15"	850
" " "	20"	3990
Math. Joint	6"	4651
" "	8"	4683
" "	12"	3238
Concrete	16"	400
"	18"	6350
"	24"	5320
"	36"	1965
Wood Stave	24"	5960
" "	36"	<u>1237</u>

298746 or

56.58 miles.

Not included in the above is 1600 feet of 6" cast iron pipe, 2900 ft. of 12" cast iron and 1800 ft. of 20" cast iron pipe now being delivered, the value of which has been included in the values as given for materials and supplies on hand.

In addition to the above inventory all maps, engineering studies, office records, and statistical data, miscellaneous office furniture, etc. is included.

#### GENERAL CONDITION OF PHYSICAL STRUCTURES.

##### CUYAMACA RESERVOIR

Additional work on the Cuyamaca dam in 1912, 1916, 1918 up to and including 1922 which work included additional embankment, new gate stands, enlargement of spillways, concrete lips in the spillways, etc., have more than offset any accrued depreciation taking place in this structure. A careful survey made of Cuyamaca Reservoir in 1921 during the period of low water indicated that the silting up of the reservoir was proceeding at the negligible rate of about one-tenth of one percent per annum. Buildings and fences have been practically rebuilt within the last three or four years.

##### DIVERTING DAM

This dam was raised in about 1911, new outlet gates installed, keeper's house entirely overhauled in 1922 with the result that the structure is probably in better condition than when it was originally built.

### MAIN FLUME

The original excavation for this structure has, of course, not depreciated at all. The tunnels where necessary have been relined and show no depreciation. Considerable sections of the original flume have been replaced with concrete and steel flume and large sections eliminated by the construction of steel and concrete syphons. Large quantities of new material have been put into the structure from year to year. The trestles remaining in the structure have been largely double bented. In a majority of the flume cross ties have been doubled. The flume was lined with rubberoid roofing for most of its length in 1921. While, of course, there is a material depreciation on this structure as a whole it is in condition to render efficient service for a considerable period of years.

### SOUTH FORK FEEDER

The dam at the head of the South Fork Feeder, a small concrete structure, was erected in 1921 and is, therefore, in excellent condition. The feeder itself consisting of 2500 feet of No. 60 steel flume was erected in 1913 and is in good condition. The 2350 feet of wooden flume was erected in 1916 and is in good condition.

### EL MONTE PUMPING PLANT

This plant was entirely rebuilt and equipped in 1919 and has been operated but a few months since that time and is, therefore, very slightly depreciated. The Murray Hill reservoir together with the concrete pipe line supplying it was built in

1911 and is in first class condition.

#### EUCALYPTUS RESERVOIR

The dam at this site was built about 1894 or 1895 and is not visibly depreciated. The buildings have been so maintained that there is a very slight, if any, depreciation.

#### LA MESA DITCH

This ditch was enlarged about 1914 and is thoroughly overhauled each year with the result that there is no depreciation other than on some 1237 feet of redwood syphon.

#### MURRAY RESERVOIR

This is a concrete structure and was put into service in the spring of 1918. The actual depreciation is, therefore, very slight as the total supply of water, with the exception of some 70 acre feet per annum, is delivered thru a long flume and the silting is negligible.

#### TRANSMISSION AND DISTRIBUTION MAINS

Of the total length of 56.58 miles in use 22 miles or approximately 40% of the total have been put into service within the last four years. This same percentage applies to services and meters. The depreciation on this item as a whole is therefore moderate. While no attempt has been made to make a detailed appraisal of the present value of the previously listed property such an appraisal was made and approved by the State Engineer under date of August 12th, 1919 for the purpose of the sale of the property to an irriga-

tion District. The value for the purpose of possible sale to an irrigation district at that time was found to be \$1,451,850. Not included in this figure was \$137,000 which was found to be the reproduction less depreciation value of certain properties which were not deemed to be necessary or of value to the District. The value of the Capitan lands were not included in that figure for the same reason. While no detailed appraisal has been made of the Cuyamaca properties, the tabulation attached and marked Exhibit A-4 shows the value of the lands belonging to the Company. In arriving at these valuations we have taken into consideration the following facts and in this connection it should be noted that the Railroad Commission of the State of California, in 1913, allowed as a value for the lands at Cuyamaca Reservoir alone a sum approximately \$6000.00 less than the owners paid for the entire property in 1910.

In 1921 the Railroad Commission of the State of California, in arriving at a valuation of the properties of the Sweetwater Water Company, made an exhaustive examination of the historical cost of the various properties involved in which they found that 1561.2 acres owned by this company cost originally \$228,894 or slightly over \$146 per acre. Practically all of these lands were condemned about 1886 or 1887.

In 1916 in the condemnation suit of the City of San Diego vs. Louis J. Wilde, Mayor of San Diego, the jury gave an award of \$18,000 for eight acres of land as a site for a small diverting dam. None of this land was of any value for agricultural purposes. The Judge before whom the

case was tried reduced the judgment to \$9,000 which was paid by the City.

In the report of the State Engineer of California as to valuation of the lands within the reservoir site of Warners' dam, in the proposed sale to the San Luis Rey Irrigation District, under date of November 4, 1918, as prepared by W. L. Huber and approved by the State Engineer, a valuation of \$907,500 or \$150 per acre for 6050 acres was made.

In the valuation of the San Dieguito Mutual Water Company System for the state engineer of California for the Cardiff Irrigation District made by W. L. Huber, March 5, 1920, and approved by the state engineer of California and the state bonding commission, the land owned by the company and within the reservoir, approximately 1100 acres was for sale purposes valued at \$250 an acre.

In the suit of the Cuyamaca Water Company vs. M. C. Healion and the La Mesa Development Company in 1914 in condemning about two acres of land in and around Eucalyptus Reservoir, the judgment rendered granted Mr. Healion \$1376 or \$688 per acre.

In 1917 the Cuyamaca Water Company condemned 15.41 acres for reservoir purposes at Murray Dam. The court awarded \$3724 or a little over \$240 per acre. Court costs and attorney fees are not included in the above amounts.

In addition to the values placed on the above reservoir sites the Cuyamaca Water Company owns the following damsites: Cuyamaca, Fletcher, El Capitan, Murray, and Mission

Gorge, or practically all the desirable damsites on the San Diego River. Obviously these sites are of very great value. In such cases as there may be two or more available sites the value would be determined on the cost per unit of the safe net yield. In the case of Cuyamaca dam there is no other available site. At the Fletcher dam there are two possible sites, both owned by the Cuyamaca Water Company. At El Capitan there are two sites both owned by the Cuyamaca Water Company. At the Murray dam there is no other site. At Mission Gorge there are three possible sites, two of which owing to the enormous evaporation losses and the great area of valuable lands which will be flooded are not feasible. The Cuyamaca Water Company owns the only practical site and a large part of the lands to be flooded.

While no attempt has been made to place a value on these sites undoubtedly the above facts should be taken into consideration, particularly so as the courts have consistently held that a piece of property being condemned for public use should be valued on the basis of the use to which it is to be put regardless of its value for other purposes.



### WATER RIGHTS

In a report to the State Engineer and approved by him Mr. W. L. Huber states as follows regarding water right values:

"Many and conflicting theories have been advanced for determining the value of water rights. The Supreme Court of the United States has decided that a value must be allowed for such rights, but no rule has been defined for determining the value, and in practically every case, as in this one, values have been fixed by more or less arbitrary methods as dictated by judgment after weighing available and relevant evidence.

"The value as fixed by sales of water rights of like character is relevant. Unfortunately evidence of such sales is in this case meager. Mr. Chas. H. Lee, Civil and Hydraulic Engineer, of Los Angeles, has made a careful compilation of water right values as determined by sale prices of stock in mutual water companies of Southern California. As these stocks include an obligation upon the part of the company to deliver water to the owner's lands, Mr. Lee has, from the gross sale value of the stock, compiled what he terms the gross water right value. By deducting from the gross water right value the cost of works necessary to deliver water to the lands, Mr. Lee has deduced a net water right value. He has further divided these rights into three classes: (1) exclusively citrus; (2) citrus and diversified crops; (3) diversified crops, no citrus. In making comparisons it should be noted that the water supply for La Mesa, Lemon Grove and

Spring Valley Irrigation District will eventually be largely devoted to the irrigation of citrus crops and domestic uses, although other crops will also be produced."

Mr. Lee introduced a large amount of data in his testimony in the matter of Spring Valley Water Company vs. City and County of San Francisco, heard before the Master in Chancery, H. M. Wright, April 5, 1916, the general conclusion being that gross water right values for citrus culture in California range from \$875 to \$2100 per miner's inch, averaging \$1,417.

For citrus culture combined with diversified crops, values range from \$210 to \$1,000, and average \$620 per miner's inch.

For diversified crops with no citrus, the values range from \$25 to \$610 per miner's inch, and average \$175.

It should be borne in mind that these figures were based on data collected some eight years ago and that the value of water and water rights has increased tremendously in Southern California since that time. It should also be borne in mind that these values were for irrigation water only.

The following are sale values, or values which have been actually awarded in Southern California for domestic use.

\$3,500 per miner's inch fixed by Judge Conrey for Sierra Madre where water was taken from the Baldwin Ranch for the use of the City.

\$2,500 per miner's inch selling price at McClay Rancho in 1902.

\$2,800 per miner's inch selling price from West Los Angeles Water Company.

\$2,000 per miner's inch value fixed by Calif-

ornia Railroad Commission in the matter of the petition of the City of Glendale to have valuations made of certain water systems within the city.

The City of Los Angeles has constructed its aqueduct from Owens Valley and has thus brought in a water supply at an actual cost in excess of \$2,000 per miner's inch."

The above values for domestic water are in the region of Los Angeles, Riverside and San Bernardino Counties. In San Diego County the water supply is even more limited.

The mean annual diversions from all sources by the Guyamaca Water Company and its predecessors for the season of 1899-00 to 1922-23 have been 7557 acre feet or 522 miner's inches continuous flow. The diversions for the season of 1923 were 8179 acre feet or 564.8 miner's inches. Of the actual use during the year of 1923, 22 $\frac{1}{2}$ % or 127.0 miner's inches was for domestic use. This use as shown in Exhibit A-6 is increasing more rapidly than the irrigation use.

The value of our rights to pump at the El Monte are more valuable per unit of water than any of our diversion rights for the reason that this is a large natural storage basin, no evaporation losses to contend with, is available at any time, particularly in time of drought when artificial storage fails and the total cost of the pumping equipment necessary to develop it to maximum capacity does not exceed \$50,000.

In 1923, the Lemon Grove Mutual Water Company in preparing a value of their holdings for the purpose of issuing bonds placed a net value of \$1500 per miner's inch or approximately 50 inches of water to which a use had been established

While there was some domestic use this water was principally for irrigation purposes and was purchased from the Cuyamaca Water Company under an irrigation rate which was presumed to yield the Cuyamaca Water Company a profit over and above the cost of production and transmission to the point of delivery.

While, as previously stated, our total diversions for 1923 were 564.8 continuous miner's inches we own the total flow of the San Diego River which when fully developed will be approximately 1500 miner's inches continuous flow, which amount would probably be increased as water becomes increasingly valuable. However, we believe that \$2500 per miner's inch is a conservative estimate of the value of 127 inches diverted for domestic purposes in 1923 and we also believe that \$1000 per inch for 437.8 miner's inches diverted for irrigation purposes in 1923 is conservative. Our rights to pump from the El Monte gravels which are included in the safe yield of the river are worth at least \$500,000 and could not be acquired at this time for that amount, in addition to which are the rights owned and not yet developed amounting to approximately 1000 miner's inches having a large potential value. As one miner's inch continuous flow amounts to about  $14\frac{1}{2}$  acre feet a year which is sufficient for  $14\frac{1}{2}$  acres per year, based on the duty of water in this section, and as irrigation districts in this vicinity have bonded themselves for as high as \$140.00 per acre for the acquisition of water it will be seen that \$1000.00 per miner's inch is a very conservative valuation, amounting to less than \$70.00 per acre.

Attention should be called to the strategic position of the Cuyamaca Water Company which brings water in at an elevation of about 630 feet enabling it to deliver water into the City system, the Sweetwater system or the San Dieguito system. In the past considerable quantities of water have been delivered from the Cuyamaca system and backed up into the City's storage.

Attention should also be called to the comparatively cheap water which can be developed on the Cuyamaca system. The immediate future development would consist of the construction

of the Fletcher dam . . . . .	\$ 600,000
South Fork . . . . .	150,000
El Monte . . . . .	50,000
Rebuild flume . . . . .	<u>600,000</u>
A total of . . . . .	\$ 1,400,000

This amount added to the historical cost of the property would make a total of \$4,400,000 for a safe yield of 11 million gallons daily or \$400,000 per million gallons. From data collected and prepared by engineers in the employ of the City as to cost and safe yield of the City's system the cost per million gallons daily is \$1,000,000.

VALUES

While as previously stated no detailed appraisal has recently been made of the Company's holdings, the State Engineer's valuation of the physical properties as of January 1st, 1919, was \$1,136,983. By adding to this the following expenditures on physical structures an approximate valuation can be arrived at.

State Engineer's valuation	\$ 1,136,983
Additional cost of Murray Dam	7,856
Expenditures, year 1919, physical structures	42,570
"          "    1920          "          "	15,202
"          "    1921          "          "	67,888
"          "    1922          "          "	31,935
"          "    1923          "          " (estimated)	80,000
Lands & rights of way	601,679
Water rights	1,255,300
Engineering data, etc.	<u>50,000</u>
Total	\$ 3,289,413

This figure does not take into consideration the depreciation accruing during the period.

EXHIBIT A-1TABULATION SHOWING PROGRESSIVE INCREASE IN EARNINGS AND PERCENTAGE OF EARNINGS FROM SALES OF DOMESTIC WATER.

<u>Year</u>	<u>Irrigation</u>	<u>Domestic</u>	<u>City of San Diego</u>	<u>Miscellaneous</u>	<u>Total</u>
1919	45,524.02	24,926.87	33,965.23	2,869.36	107,285.48
1920	43,299.42	27,930.56	-	4,503.85	75,733.83
1921	55,791.75	38,437.01	78,868.53	4,823.94	177,921.23
1922	67,324.51	48,938.06	-	4,068.11	120,330.68
1923	<u>80,846.10</u>	<u>63,506.88</u>	<u>-</u>	<u>5,003.65</u>	<u>149,356.63</u> $\times$
	292,785.80	205,739.38	112,833.76	21,268.91	630,627.85

$\times$  Subject to correction by Railroad Commission's audit.

Percentage of revenues derived from sales of domestic water not including sales to the City of San Diego <sup>which</sup> have been for the period 1914 to 1923 inclusive, \$240,723.63, an average of \$24,072.36 per year.

1919	34 %
1920	37 %
1921	38 %
1922	40 %
1923	42 %

The percentage of revenue received from sales of water

## EXHIBIT A-1 (Continued)

for domestic purposes is important for the following reasons: In the case of irrigation water there is a limit to the prices which can be paid. In other words the rate for irrigation water can be made so high that the consumers can not afford to use it, thus decreasing rather than increasing the revenues. This point has not been reached in the case of the Cuyamaca Water Company. Undoubtedly an increase would not materially decrease consumption. As to domestic water, however, the price which can be paid has practically no limit. In the case of the Cuyamaca Water Company the present price for domestic water is 26¢ per hundred cubic feet or a little under 35¢ per one thousand gallons. This price is exceeded by the Coronado Water Company serving an area in the immediate vicinity and is exceeded in many portions of the State of California including the City of San Francisco. In this connection it should be noted that large areas on the Cuyamaca system formerly supplied under the irrigation rate are changing to strictly domestic consumption owing to subdivisions of larger holdings into smaller units.



EXHIBIT A-2TABULATION SHOWING ACTIVE TAPS AS OF JULY  
OF EACH YEAR 1919-23 INCLUSIVE

July 1919	958
" 1920	1,043
" 1921	1,228
" 1922	1,425
" 1923	1,572

Increase for period 66.18%

EXHIBIT A-3TABULATION SHOWING CONSUMERS SERVED BOTH DIRECTLY AND THRU  
DISTRIBUTING COMPANIES

1919	2837
1920	3112
1921	3748
1922	4489
1923	5435 Partly estimated

Population served in 1923, 27,175. Estimated on basis of five persons per tap.

EXHIBIT A-4VALUE OF LANDS

980 acres at Cuyamaca at	\$250.00 =	\$ 245,000.00
112 " " Capitan at	250.00 =	28,000.00
342 " " Fletcher at	250.00 =	85,500.00
317 " " Mission Gorge at	250.00 =	79,250.00
50 " " Kelly Ditch at	250.00 =	12,500.00
8 " " Diverting Dam (Est.)	250.00 =	2,000.00
7.85 " " El Monte	500.00 =	3,925.00
227.79 " " Flume Right of Way	200.00 =	45,558.00
.36 " " Murray Supply line	350.00 =	126.00
22.25 " " La Mesa Ditch R. of W	350.00 =	7,787.50
.41 " " Grossmont Reservoir	1000.00 =	410.00
15.7 " " Grossmont, formerly Murray Hill	350.00 =	5,495.00
1.19 " " Murray Eucalyptus syphon	350.00 =	416.50
239.71 " " Murray	350.00 =	83,898.50
2.05 " " La Mesa pipe line	350.00 =	717.50
.73 " " Normal Heights shop	1500.00 =	<u>1,095.00</u>
		\$ 601,679.00

EXHIBIT A-5TABULATION SHOWING NET EARNINGS EXCLUSIVE OF DEPRECIATION  
FOR YEARS 1921 to 1923 BOTH INCLUSIVE.

1921	85,214.45
1922	45,201.73
1923	78,356.63 $\pi$

$\pi$  Subject to correction by Railroad Commission's Audit.

Water sold to the City of San Diego in 1921 but not in 1922 or 1923. As noted in Exhibit A-1, the sales to the City of San Diego for the period of 1914 to 1923, both inclusive, were \$240,723.63, an average of \$24,072.36 per year.

EXHIBIT A-6TOTAL DIVERSIONS BY OUYAMACA WATER CO.

Season	Ac. Ft.	Season	Ac. Ft.
1899-00	2675	1911-12	5008
1900-01	6590	1912-13	9396
1901-02	5151	1913-14	6181
1902-03	6496	1914-15	13166
1903-04	2308	1915-16	8460
1904-05	7334	1916-17	5624
1905-06	8609	1917-18	8118
1906-07	8109	1918-19	7529
1907-08	10065	1919-20	8826
1908-09	11448	1920-21	6494
1909-10	11409	1921-22	12455
1910-11	9291	1922-23	8179

Mean seasonal diversion = 7557 ac. ft., or 6.75 M.G.D.

OCEAN

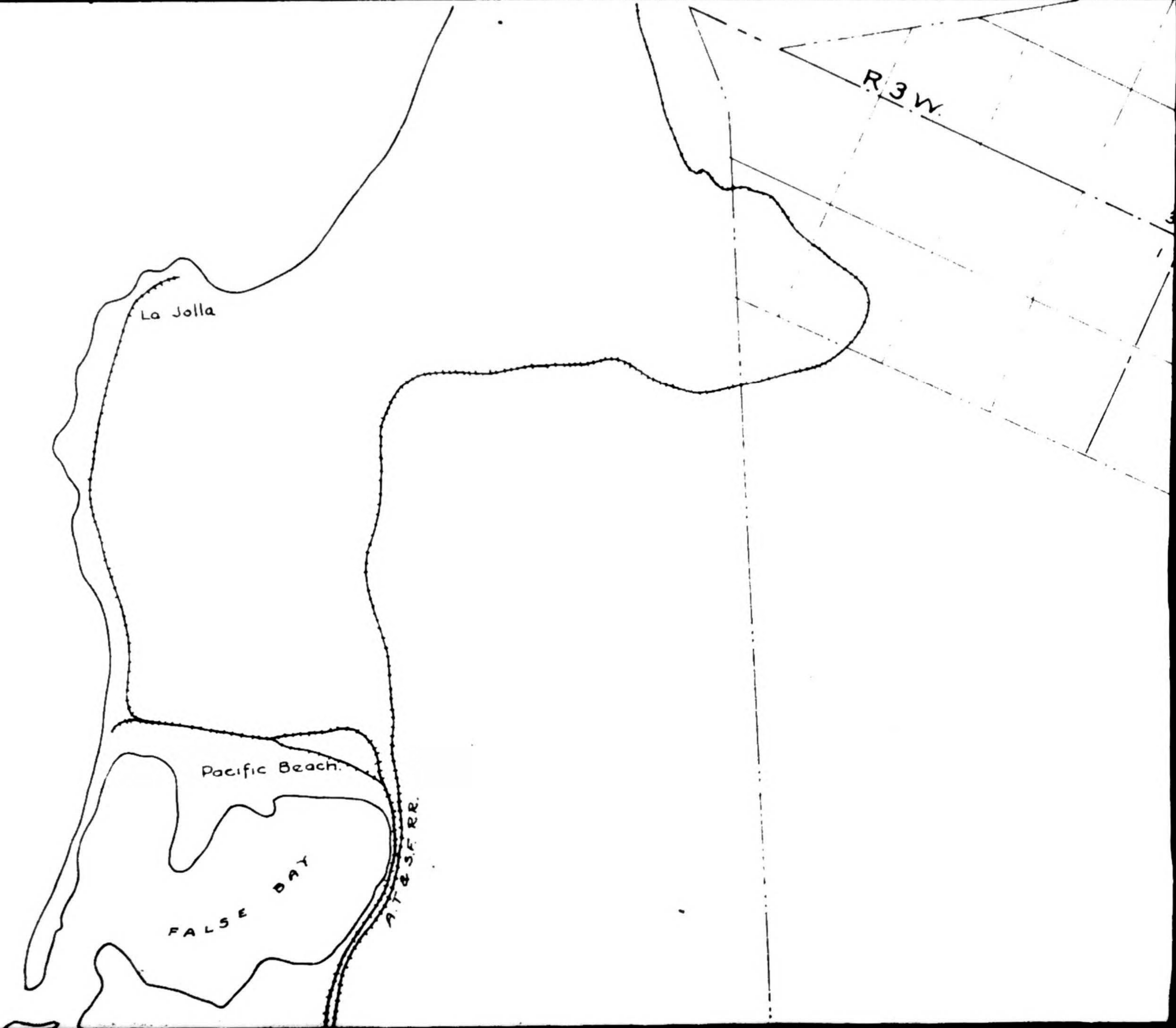
La Jolla

Pacific Beach

FALSE BAY

P.T. & S.F. RR.

R. 3 W.



R1W.

36 31  
6

R2W.

36 31  
6

MERIDIAN

T14S.

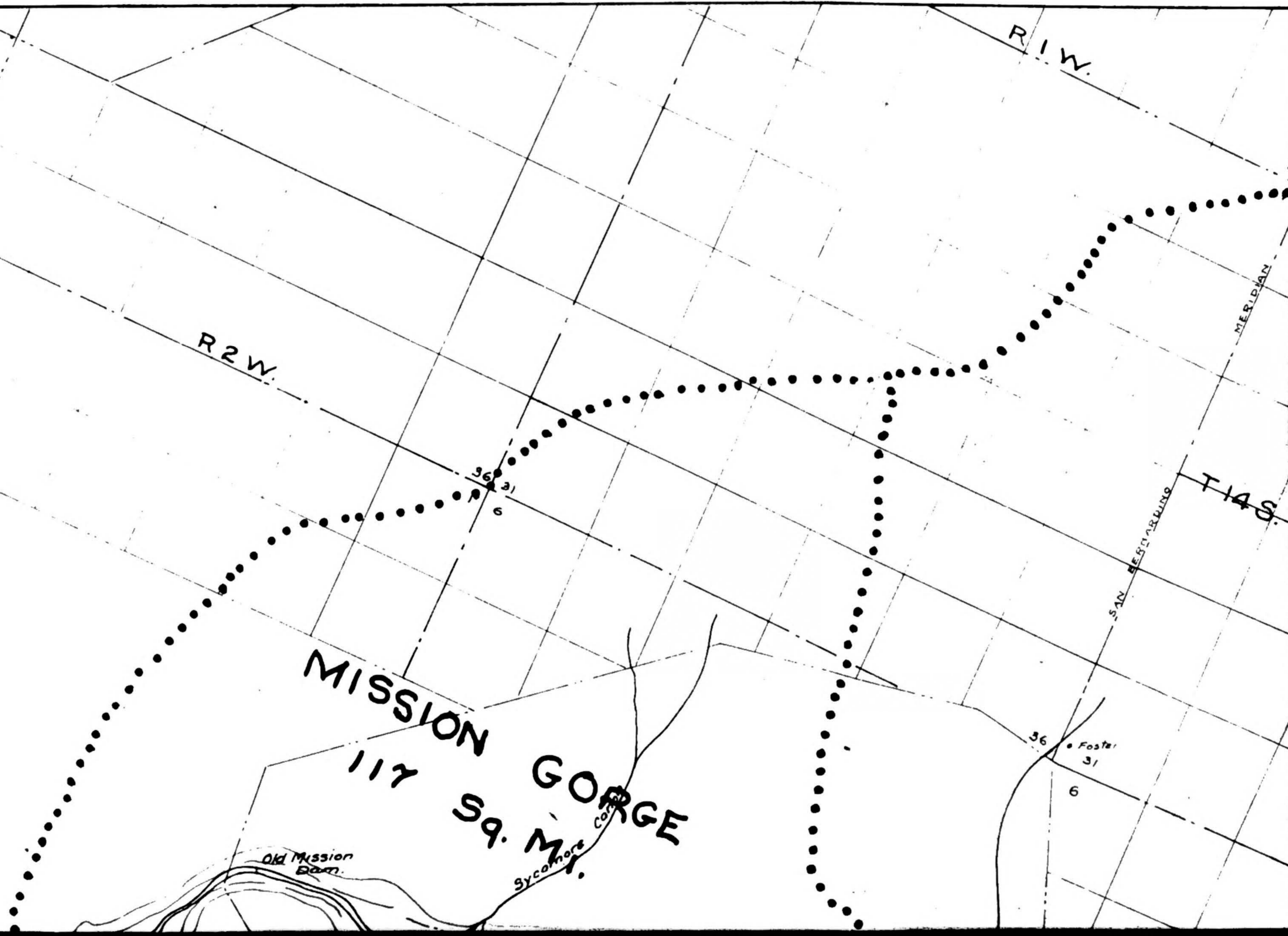
SAN BERNARDINO

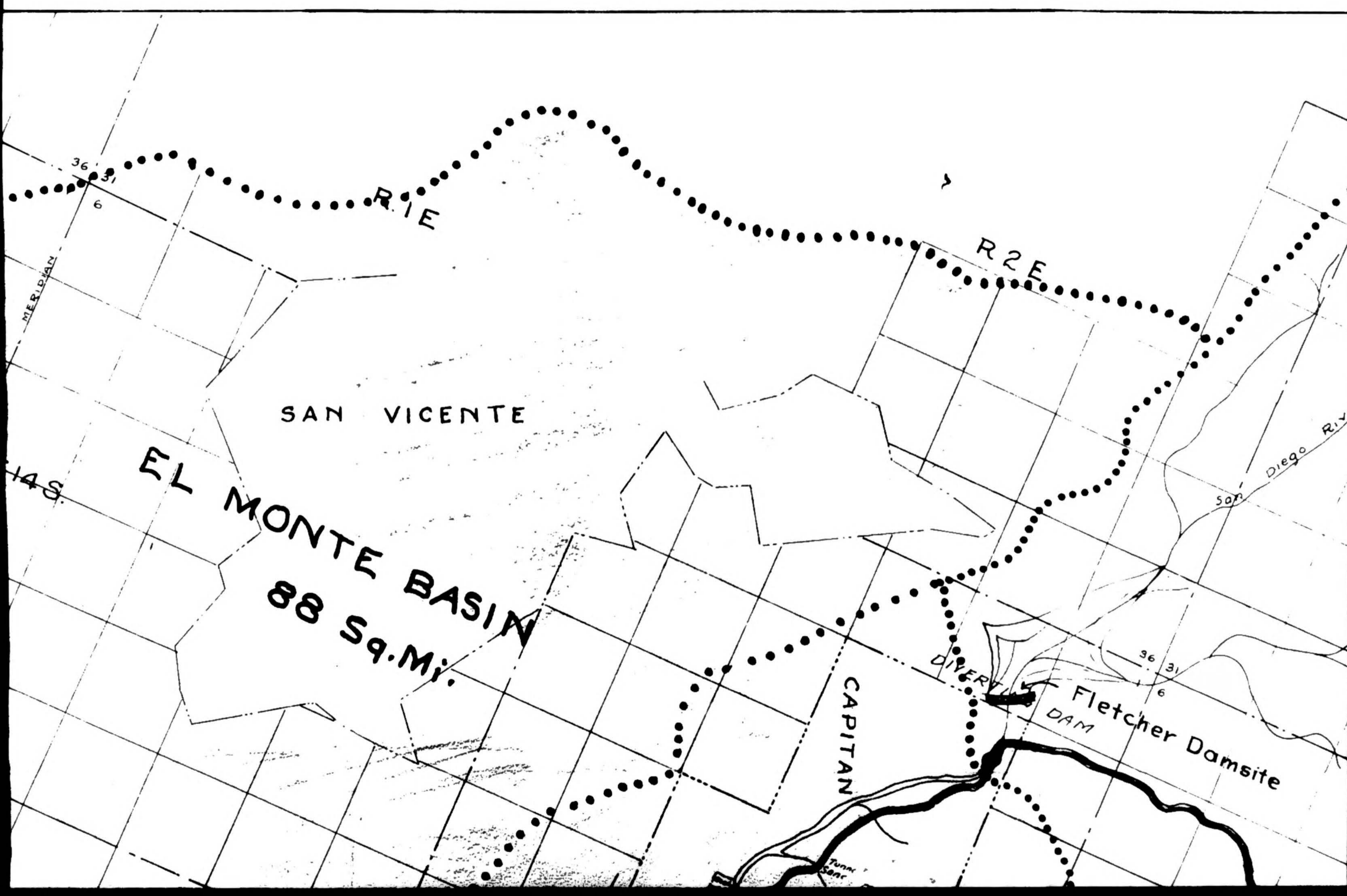
MISSION GORGE  
117 SQ. M.

Old Mission Dam.

Sycamore Creek

36 31  
6  
Foster





MERIDIAN

36  
31  
6

R1E

R2E

SAN VICENTE

EL MONTE BASIN  
88 SQ. MI.

14 S.

Diego Riv

CAPITAN

DIVERT

Fletcher Damsite  
DAM

36  
31  
6

Tunn  
Serr



SANTA YSABEL

T. 12 S.

R 3 E.

R 4 E.

DIVERTING  
91 SQ. MI. DAM

T. 13 S.

River

Cedar Creek

Inaja I.R.

Comit I.R.

36 31

36 31

6

PACIFIC

FALSE

Mission Gorge Damsite No.3.

DIEGO

old Town

SAN

Grantville

PUEBLO LANDS OF SAN DIEGO

MISSION PARTITION

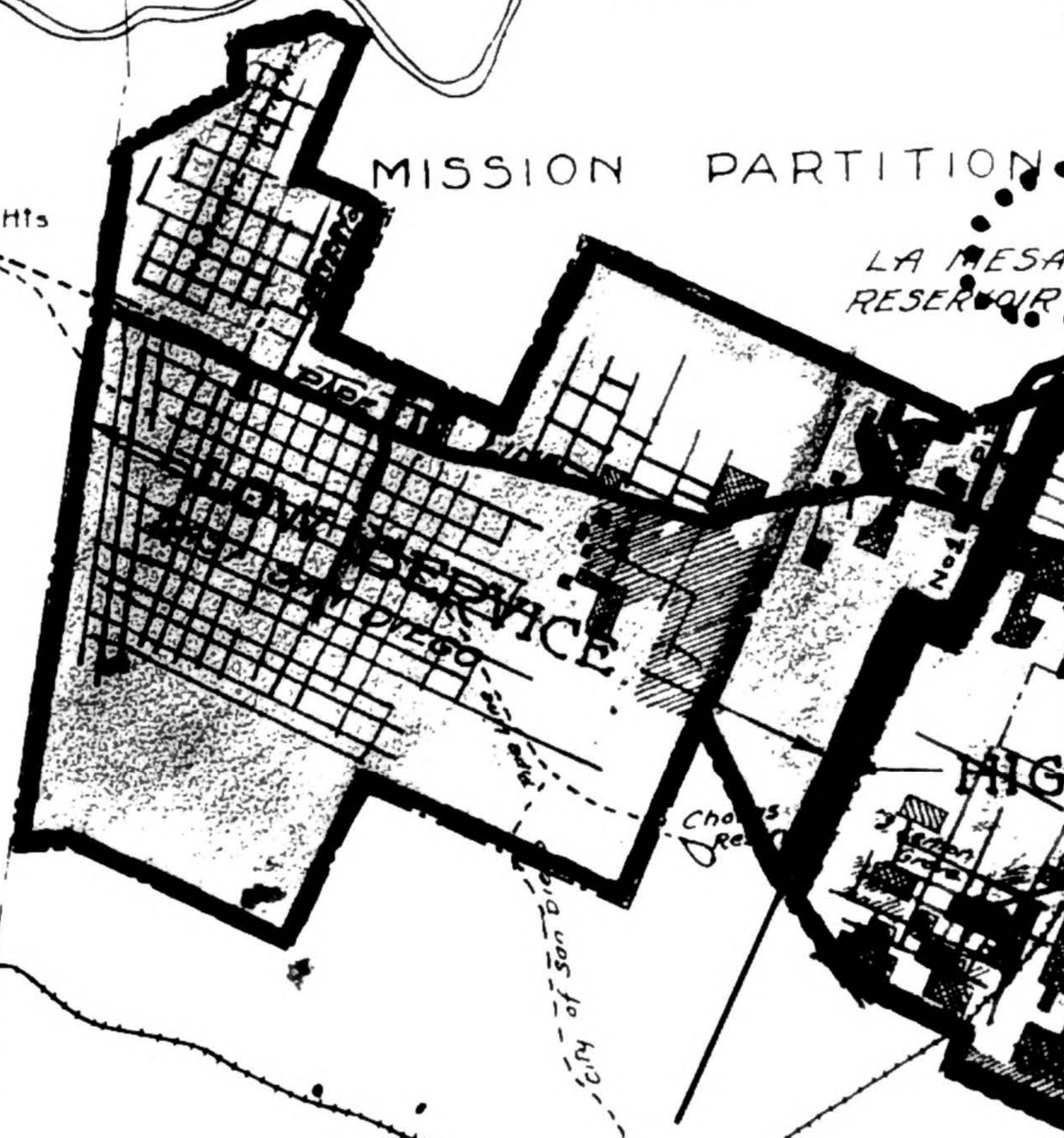
BAY OF SAN DIEGO

UNIVERSITY HHS  
RES'R. 10

LA MESA  
RESERVOIR

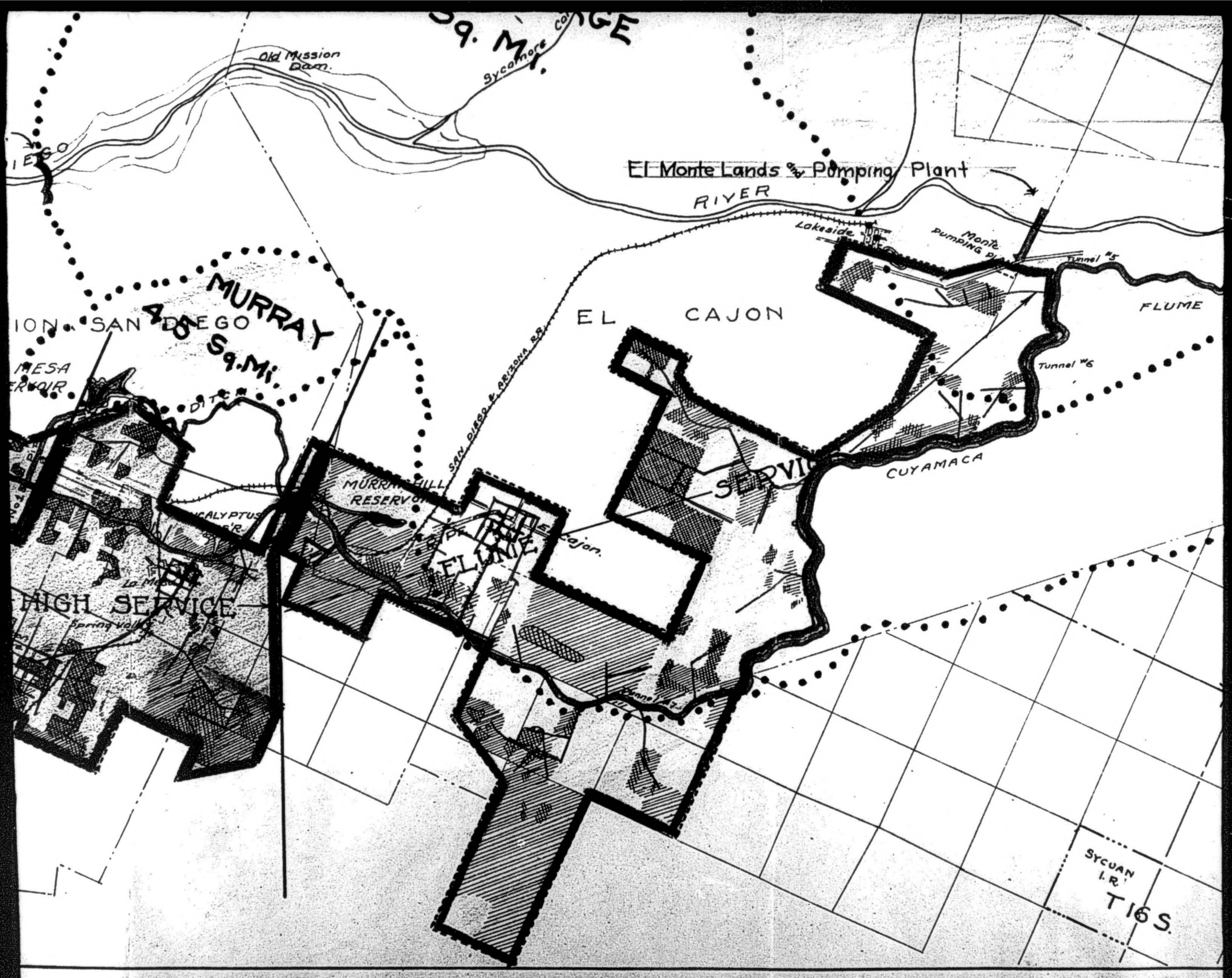
US Military Reservation

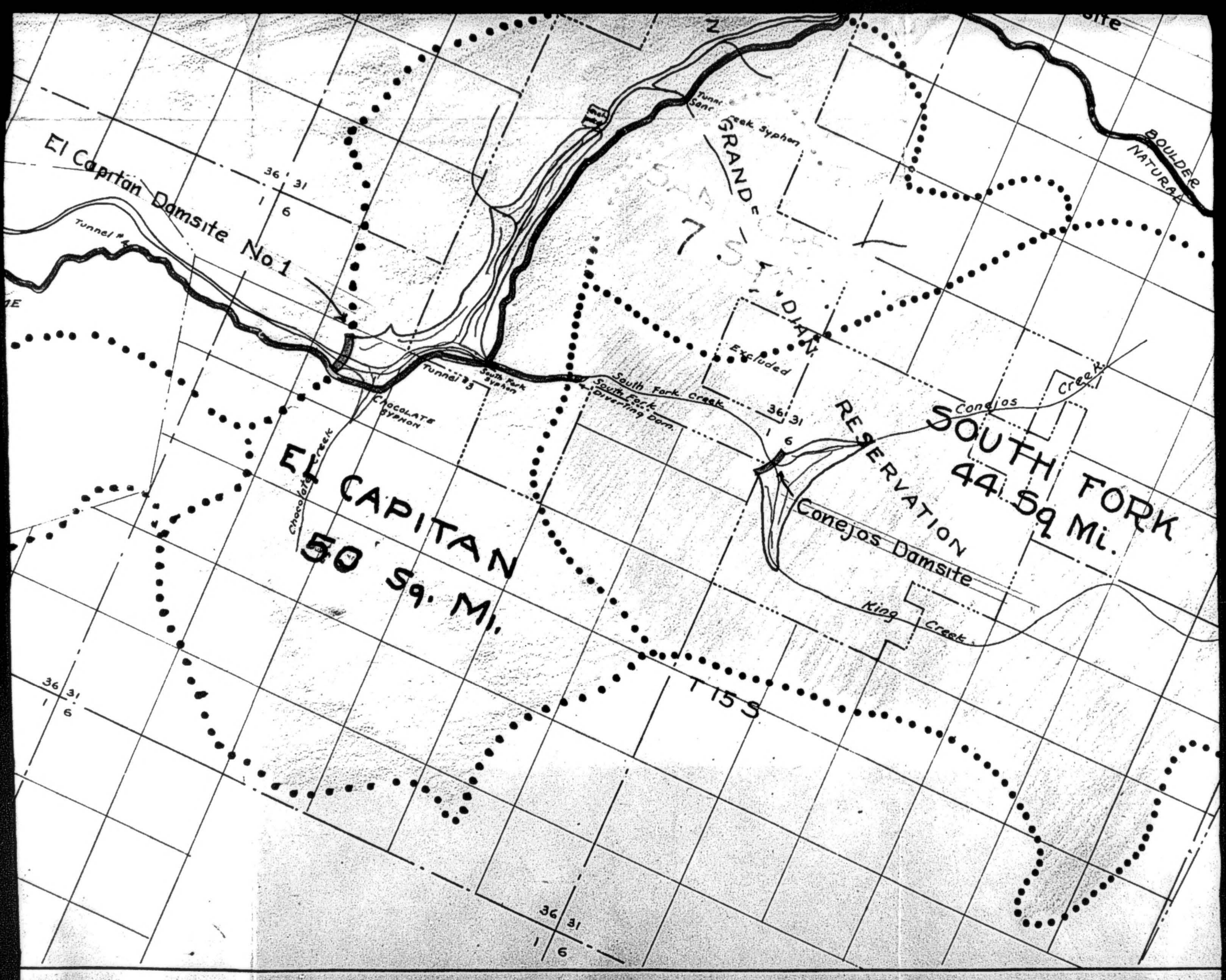
SAN DIEGO



Chas. D. Res.

FIG





El Capitan Damsite No. 1

EL CAPITAN  
50 SQ. MI.

GRANDE  
7 S. DIAN

SOUTH FORK  
44 SQ. MI.

RESERVATION  
Conejos Damsite

BOULDER  
NATURAL

Tunnel # 4

Tunnel # 3

Tunnel Sane  
Creek siphon

CHOCOLATE  
SYPHON

South Fork  
Diverling Dam

King  
Creek

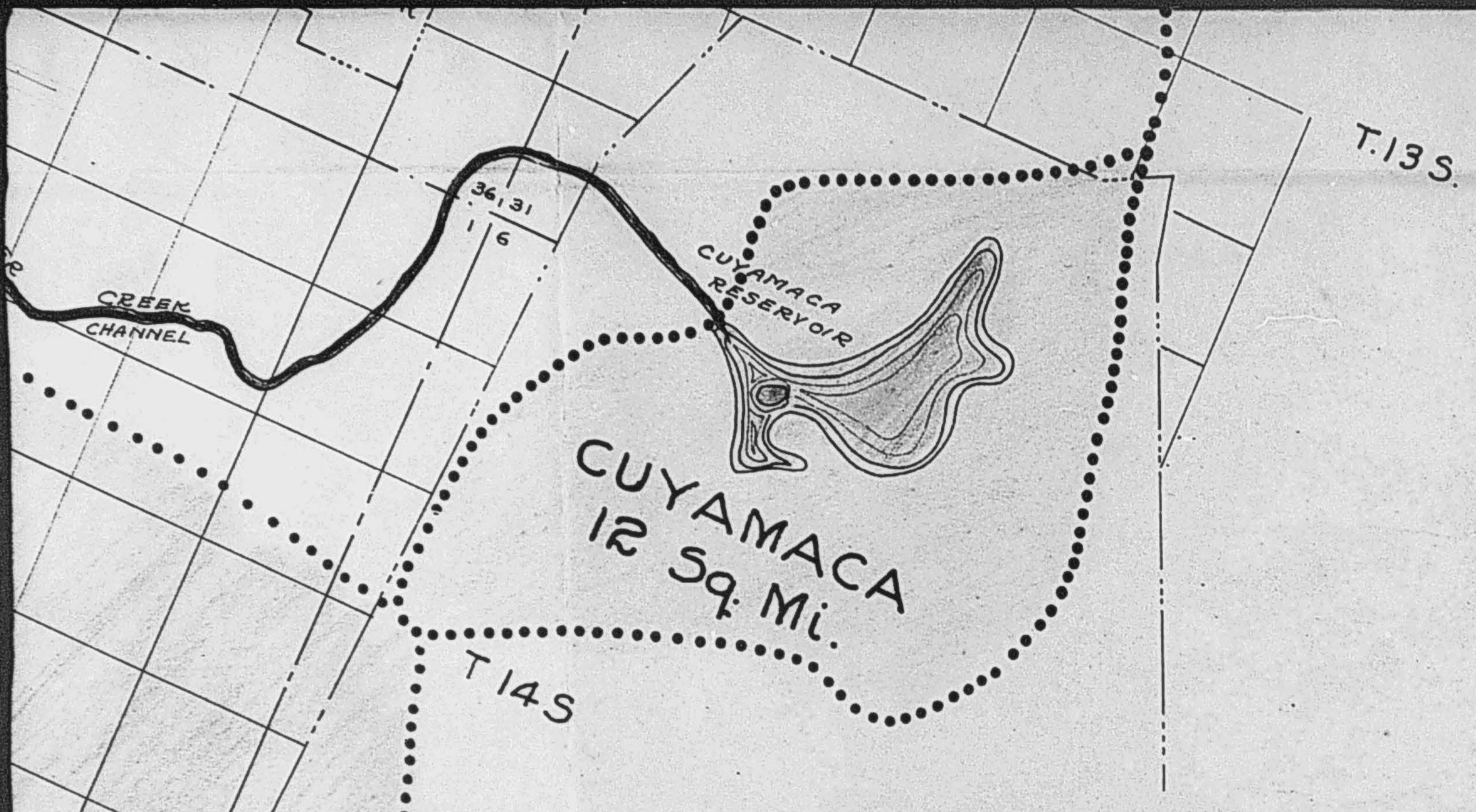
36 31  
1 6

36 31  
1 6

36 31  
1 6

36 31  
1 6

T 15 S



# CUYAMACA WATER SYSTEM. SHOWING SERVICE AREAS.

## LEGEND

LOW SERVICE	Shown thus	
HIGH SERVICE	Shown thus	
FLUME SERVICE	Shown thus	
Main Cuyamaca Distribution Lines		
Privately owned		

Drawn by G.E.H. Oct 1919.  
Drawing No 2706 File No 4-C

**Ed Fletcher Papers**

**1870-1955**

**MSS.81**

**Box: 58 Folder: 13**

**Business Records - Water Companies - Cuyamaca Water Company - State Railroad Commission - Cuyamaca's Exhibits: City of San Diego vs. Cuyamaca before Commission; includes blueline drawing of service**



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