

4689

4689a

U. S. COAST & GEODETIC SURVEY  
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Form 504  
Ed. June, 1923

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: California

DESCRIPTIVE REPORT

Photo

Topographic  
Hydrographic

Sheet No. T-4689

4689

4689a

LOCALITY

San Joaquin Delta

Eldorado Pump

to

Middle River

1933

CHIEF OF PARTY

O. S. Reading

U. S. GOVERNMENT PRINTING OFFICE: 1923

4689a

Applied to drawing of Chart 5527

Jan 10, 1935 - J.T.W.

Descriptive Report to accompany

Air Topographic Sheet T - 4689

(1) General Information:-

(a) This sheet is a compilation of air photographs taken by the U. S. Army Air Corps using five lens camera, type T 3 A No. 28-30-1, carrying six inch F 6.8 lenses. Flight photographs #812 to 833 and photographs #871 to 890 were taken between 9:35 A. M. on December 12, 1931. A type F-1 A plane was used, and an altitude of approximately 5000 feet was maintained.

(b) The area of this sheet is covered by the two strips of photographs mentioned above, extending from longitude  $121^{\circ}23.6'$  to  $121^{\circ}31.6'$ .

(c) Thirty-two square miles of topography comprise the area of this compilation. There are approximately  $14\frac{1}{2}$  miles of rivers and sloughs less than 200 meters wide; and 6- miles of rivers and sloughs in excess of 200 meters wide.

(d) For the most part the area covered by this sheet is under cultivation.

(2) Control:-

(a) ~~All~~ Three point fixes, intersection points, and <sup>1st order triangulation by J Bowie</sup> <sup>3rd order</sup> triangulation stations used in the compilation of this map were the work of L. P. Raynor, and all computations were based on the 1927 N. A. Datum. <sup>1931</sup>

(3) Compilation:-

(a) The radial line plot as applied to five-lens photographs was used throughout the sheet.

(b) All information shown on the sheet is from notes made on the photographs by the field inspection party. Notes were complete in detail.

(c) Information from other sources -- No information from other sources was used.

(4) Comparison with other Surveys:-

(a) No difficulty was encountered in effecting a satisfactory junction with all adjoining sheets.

(b) There were no previous surveys by the U. S. Coast Survey in this area.

(5) Landmarks:-

(a) A list of landmarks was furnished by L. P. Raynor on form 567

and is filed as a Chart Letter.

Respectfully submitted

*J. H. Wulbern*  
*F. G. Erskine*

J. H. Wulbern

by F. G. Erskine, Jr.  
Jr. Cartographic Engineer.

January 15, 1934.

## REVIEW OF PHOTO TOPOGRAPHIC SURVEY NO. 4689

Title (Par. 56) *San Joaquin Delta, Eldorado Pump to Middle River, California*  
 Chief of Party *O. S. Reading* Compiled by *J. H. Brulhem*  
 Project *Sacramento-San Joaquin* Instructions dated —

1. ✓ The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 8; and 16, a, b, c, d, e, g and i.)
2. ✓ The character and scope of the compilation satisfy the instructions and the "Notes on the Compilation of Planimetric Line Maps from Five Lens Aerial Photographs".
3. ✓ The control and adjustment of the radial plot were adequate. (Par. 12, 29.)
4. ~~There is sufficient control on maps from other sources that were transmitted by the field party for their application to the charts. (Par. 28.)~~
5. ✓ High water line on marshy ~~and mangrove~~ coast is clear and adequate for chart compilation. (Par. 16a, 43, 44.)
6. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41.)
7. ✓ Important details shown on previous surveys and on the chart have been compared with this sheet and a statement has been entered in the report regarding the removal from the chart or change in position of important detail such as rocks, lights, beacons, prominent objects, bridges, docks, and structures along the water front. *There is no previous Coast Survey chart.*
8. ✓ The span, <sup>type</sup> ~~draw~~ and clearance of bridges are shown. (Par. 16c.)
9. ✓ The data furnished by the Field Inspection is adequate.

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Use reverse side for extending remarks.

21. This sheet, as well as the negative, has been corrected to include field revision by Lieut L.P. Raynor. The descriptive report of this revision is included in this report.

10. ✓ The descriptive report covers all details listed in the Manual, so far as they apply to this survey. (Par. 64, 65 and 66.)
11. ✓ The descriptive report also contains all additional information required in photo topography as prescribed in the instructions and in the "Notes on the Compilation of Planimetric Line Maps from Five Lens Aerial Photographs".
12. ✓ The descriptions of recoverable stations and references to shore line were accomplished on Form 524, and scaling of positions checked. (Par. 29, 30 and 57.) *This will be done by L.P. Rayner during the hydrographic survey of this area.*
13. ✓ A list of landmarks for charts was <sup>not</sup> furnished on Form 567 and scaling of positions checked. (Par. 16d, e, 60.) *List of landmarks were furnished by the field inspection and all on file as Chart Letter.*
14. ✓ The geographic datum of the sheet is *N.A. 1927* and the reference station is correctly noted. (Par. 34.)
15. ✓ Junctions with contemporary surveys are adequate.
16. ✓ Geographic names are shown on the sheet and are ~~covered by the Descriptive Report.~~ (Par. 64, 66k.) *from field inspection notes and the field revision.*
17. ✓ The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46.)
18. ✓ No additional surveying is recommended.
19. Remarks: *The compiler of this sheet resigned before a report was written. The descriptive report was written from notes he left.*

20. Examined and approved:

*O. Reading*  
Chief of Party

21. Remarks after review in office: *(see page to left.)*

Reviewed in office by: *Frank G. Eiskine*

Examined and approved:

*K.T. Adams*  
Chief, Section of Field Records

*L.O. Solbat*  
Chief, Division of Charts

*J.B. Borden*  
Chief, Section of Field Work

*G. Thude*  
Chief, Division of  
Hydrography and Topography.

DESCRIPTIVE REPORT OF  
FIELD REVISION ON ALUMINUM PLATES

This revision was applied to  
sheet before being registered and  
also has been applied to negatives.

# DESCRIPTIVE REPORT

OF

FIELD REVISION TOPOGRAPHIC SHEET 4689

## AUTHORITY, LIMITS, CONTROL, DATES, METHODS.

This work consists of the field revision of topographic sheet No. 4689, and air photo compilation of the San Joaquin Delta from Eldorado Pump to Middle River. The authority for the work is contained in Director's letter of 2/6/33, Subject: Field Revision, Sheet 4690 and Director's letter of 3/17/33, Subject: Air Photo Field Inspection. Control for the location of topographic details was furnished by two aluminum sheets coated with gum arabic, on which the compilations had in part been printed. The aids to navigation were located either by triangulation or from a traverse as will be later noted. The usual plane table methods were used, traverses being started from triangulation points or three point fixes were obtained using triangulation stations or well determined topographic objects located by the photo plot, with the exception of the location of the tule patches in Whiskey Slough. Here since the topographic detail had not been printed on the aluminum plates, it was carefully transferred from the paper print to the plate in the localities where work was to be done. The table was set up at some point easily identified from the print and oriented on one of the tall wooden power poles and the detail run in. In two places shown in red on the paper print the work was done directly on that print. Work on this sheet was completed May 26, 1933

## GENERAL DESCRIPTION OF TOPOGRAPHY, CULTURE, SHORE LINE.

The cultivated lands shown on this sheet were originally tule swamps, built up by deposits of silt and much decayed vegetation, except for the area in the southeastern part of the sheet, the approximate limits of which are shown by red line on the paper print. This area is higher than the other land and less level. It contains a greater proportion of sand. The land, with the exception noted is below mean lower low water and irrigated by means of syphons which take water from the nearby sloughs. The pumps shown are used to take out the surplus irrigation water or if needed, are used as syphons to bring water to the crops. All of the land except the higher land noted, burns readily when dry and a fire once started continues to burn until the ground water table is reached unless the area is flooded. The levees built to reclaim lands and protect from floods, are from six to twelve feet high. They have to be rebuilt periodically due to the settling of the peat formation on which they are built. Due to the fairly steep

slope of the levees and the small range of tide, the high and low water lines are almost coincident. In front of some of the levees a tule growth one to five meters wide is seen and the outside edge should be shown as high water line for navigation purposes. Except for a few scatter patches of thin tule, where the depth of water is three feet or so, the tule marshes on this sheet have a definite edge, which should be shown as the high water line. The marshes are evidently of varying level, but the tule growth is from four to seven feet above high water at all seasons of the year.

#### ACCURACY OF FIELD INSPECTION, COMPARISON WITH PHOTO PLOT.

Along the San Joaquin river where it was known that changes had taken place since the pictures were taken, the shore line was carefully located with plane table from traverse, until the new shore line joined with the old. Several shots were also taken on the shore line that was known to have been the same as at present. In most all cases the check was remarkably good. Just east of light 28 and east of Black Slough Landing, there seemed to be some error in the photo plot, as indicated on the aluminum plate of this area. The shore line of the rest of the area was carefully inspected from a boat, and the following was noted. Several small patches of tule, most of them probably difficult to identify in the photographs, have been located in black ink on the aluminum plates or in red ink on the paper print of the sheet. Some changes were made in the tule island shore line, near Harris Landing in Whiskey Slough. A small tule patch, in Latham Slough northwest of Camp 22, McDonald Island has been located, as well as a small bushy tip and tule patch in Turner Cut south of Acker Island. The bush should have shown on the photographs and is of considerable use to pilots using Turner Cut in foggy weather, there being considerable traffic through this and Empire Cut. It should have been much more accurate to indicate bushes, marsh and levees of Acker Island, Walters Island, and Morrison Island than the quite accurate sketching that has been done by this party. The limits of marsh and locations of levees at Ship-Yard Island were located with a few stadia shots and are more accurately located. However, this island is to be used for future spoil area, I believe. The three point fix shown on the paper print in the Lower Jones Tract is as noted in a previous letter, in the wrong field. The gable shown near three point fix west of triangulation station Black is a tree. Several hydrographic targets which should have shown on the photographs in Latham Slough were apparently not identified. A three point plane table fix, using the pole near Medford pump and located by photo plot, and the two wood poles south of Christensens Landing located by triangulation, was used to plot the houses at Camp 8 of the Lower Jones Tract. None of the houses appear to have been moved but except for the large barn, the new locations do not check the photo work. As they are behind the levee, the buildings are of no great

importance to navigation. In the matter of locating and mapping buildings, the following idea is offered. Certainly all buildings on the levees except corn cribs about which notes were sent with the photographs, should not be left out if other buildings behind the levees are shown. At Ryans landing, Turner Cut house on levee has been added to the plate, while at Bates landing a large prominent house as well as the small dock and the tank house have been located by a traverse from photo control point near Christensen's landing. These should all have shown on the photographs together with the only house near Christensens landing that was omitted and the outer gable of which had been located from photot control point and its geographic position computed. Data for plotting the new shed near three point fix at 23B McDonald Island was submitted with the photographs and has been added to the plate. The private road shown south of the Santa Fe Railroad between Quito (now Lacto) and Holt does not now exist and should be deleted. Holt, U. S. G. S., a red tank located by the Geological Survey as a triangulation station was spotted on some photographs and direction and stadia distance was taken from our triangulation station Holt. Quite possibly this point as well as the freight station at the town of Holt will be plotted on the sheet below this one.

#### CHANGES.

The dredging of the twenty-six foot channel in the San Joaquin river has been completed and the changes in the shore line that have occurred since the pictures were taken, are indicated by the black lines on the aluminum plate. As indicted on the paper print, the pipe line shown on the tule berm north of U.S.E. Pt. 18 has been removed and should be deleted from the chart. A low dam has been placed on east side of Morrison Island as shown. A new shed near camp 22 McDonald Island has been located.

#### POWER POLES AND OVERHEAD POWER LINES.

The wooden power line pole on the Lower Jones Tract across from the pole near McDonal pump has been located and the overhead power lines indicated. The overhead power lines from Mildred Island to Lower Jones tract are also indicated.

#### ROADS, FERRY.

Except for the county roads that have already been noted on the prints, all roads on the levees are private dirt roads, and those elsewhere are usually farm or crop trails. The McDonald Island landing of the county ferry has been located and the ferry crossing indicated. The ferry is operated by means of a wire cable fastened to both shores. Boats should not pass in from of the ferry when it is under way, and preferably should wait until the ferry is made fast at one of the slips, to be sure that the cable is slack.

#### AIDS TO NAVIGATION, HOW LOCATED.

Lights 25, 26, 28, and 30 were located by triangulation cuts from U.S. E. Pt. 18, and Black without a check. Lights 23 and 24 were located from Pt. 18 with plane table. Lights 27 and 29 were located from a plane table traverse starting at Pt. 18 and closing at Steel pole at Black Slough landing with an error of 1 meter in azimuth and none in distance. Lights 31, 32, 33, 34 were located from a plane table traverse starting from the Steel pole at Black Slough landing. This traverse was not closed but the distances between set ups was measured both forward and backwards and it is believed that the lights have been located with the required accuracy. As a check on their location, the plane table was set up at Elmwood 1931, with orientation on the Steel pole at Black Slough landing, and sights on the lights went through their location on the plate.

#### NAMES.

The name "Roberts Island" originally applied to the area bounded by the San Joaquin River, Old River, Middle River, Trapper Slough, and Whiskey Slough, the latter slough running between the two parts of the McDonald tract, and Trapper Slough and Whiskey Slough were continuous not being dammed off at Holt. When this dam was built ~~Roberts Island~~ the Upperland Lower Jones tracts were some times included though perhaps erroneously, in the Roberts Island, as is shown on the Geological Survey quadrangles. This name is now given exclusively to the land bounded by San Joaquin River, Old River Middle River, Trapper Slough, Whiskey Slough, and Turner Cut, at least locally. Empire Cut rather than Empire Slough is the correct name of this water way, as it is entirely the work of dredging and not a natural channel. Names of all camps of Lower Jones tract have been indicated on the paper print. A blue print showing these numbers as well as the numbers of the camps on the Rindge tract has been sent to your office. Christensen Landing not Christenson Landing seems to be the correct spelling according to the Geological Survey quadrangle of this area. Ryans Landing and Turner Landing near Turner Cut seem to be the accepted names among the pilots operating in this locality. Morrison and Walters Islands, are names taken from the U. S. Engineer prints. Shipyard Island has also been called Vulcan Island on some of their work, but I believe the former is preferable.

These boundaries agree with those on detailed real estate maps of San Joaquin Co. H. M. G.

#### MAGNETIC MERIDIAN.

The magnetic meridian was determined at U.S.E. Pt 18 on May 18, 1933, at 9:20 am, with declinatoire No. 184. Five degrees right and left as well as zero were observed, with results as follows: 15° 20', 18° 35', 23° 36'. The line drawn on the plate is the actual observed meridian with needle at zero.

Respectfully submitted,

*L. P. Raynor*  
L. P. Raynor  
H. & G. Eng'r  
Chief of Party.

Stockton, Calif.  
June 15, 1933

LIST OF PROMINENT OBJECTS.

West gable, house Christensen Landing	The name Christensen Landing is painted on the gable which was located by theodolite 3 pt fix.
U. S. E. D. Marks	The seven U. S. E. D. stations located by plane table are standard marks of this Corps,
Wooden power line pole	This pole south of the one on McDonald Island near pump and was located by plane table.
Tank house, Bates Landing	This is wooden tank house, now painted red.
Tank, Christensen Landing	A low open tank on levee at this place.
Lights, 23, 24, 25, 26, 27, 28, 29, 30 31, 32, 33, 34	Odd numbers green, even numbers red. Lanters, located.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES

JUL 24 1933

REG. NO.

Acc. No. \_\_\_\_\_

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field Letter \_\_\_\_\_

REGISTER NO. T 4689

State California

General locality San Joaquin Delta

Locality Eldorado Pump to Middle River

Scale 1:10,000 Date of <sup>revision</sup> Survey May, 19 33

Vessel Air Photo Field Inspection

Chief of Party L. P. Raynor

Surveyed by L. P. Raynor

Inked by L. P. Raynor

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour Approximate contour Form line interval \_\_\_\_\_ feet

Instructions dated 2/6/33 and 2/17/33, 19

Remarks: Field revision of photo compilation to show changes  
and locate aids to navigation.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES

JAN 18 1934

REG. NO.

4689

Acc. No.

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form,  
filled in as completely as possible, when the sheet is for-  
warded to the Office.

Field No. ....

REGISTER NO. 4689

State California

General locality San Joaquin Delta

Locality El Dorado Pump to Middle River

Date of photographs - Dec. 12, 1931

Date of compilation - Mar. 1933

Scale 1:10,000

Vessel Army Air Corps FJA airplane

Chief of party Lieutenant O. S. Reading

Photographs plotted by J. H. W.

Inked by J. H. W.

Heights in feet above ..... to ground to tops of trees

Contour, Approximate contour, Form line interval ..... feet

Instructions dated ....., 19.....

Remarks: Compilation of aerial photographs #812 to 833 and 871 to 890

Reduced to scale and printed by photo-lithographic process

Polyconic projection by - J. H. W. Nov. 1, 1932  
Projection verified by - F. G. Erskine Nov. 2, 1932  
Control plotted by - J. H. W. Nov. 3, 1932  
Control verified by - F. G. Erskine Nov. 4, 1932  
Photographs plotted by - J. H. W. Nov., Dec., 1932  
Sheet inked by - J. H. W. Jan., March 1933

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY LIBRARY AND ARCHIVES	REG. NO.
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TOPOGRAPHIC TITLE SHEET

46892

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

~~Field No.~~

REGISTER NO. 4689 A

State California

General locality San Joaquin Delta

Locality Eldorado Pump to Middle River

Scale \_\_\_\_\_ Date of survey Aug 7, 1934

Vessel \_\_\_\_\_

Chief of Party \_\_\_\_\_

Surveyed by \_\_\_\_\_

Inked by \_\_\_\_\_

Heights in feet above \_\_\_\_\_ to ground to tops of trees

Contour, Approximate contour, Form line interval \_\_\_\_\_ feet

Instructions dated \_\_\_\_\_, 19\_\_\_\_

Remarks: Showing corrections and additions to the original  
survey. For additional data see the Descriptive Report

46892

Descriptive Report to Accompany Air Photo Topographic Sheet No. 4689-A.  
(to be included in report of T-4689)  
Eldorado Pump to Middle River, San Joaquin Delta, California.

This sheet contains changes, additions, and corrections, (shown in red) to the original survey of this area.

Sources of Information.

(May 1934) (July 1934)  
Sheets No. 19, No. 23A, and No. 54A, Air Photo Section files; letters No. 7, No. 9, and No. 20 Air Photo Section files; blue prints No. 25706 and No. 25708; plat of McDonald Tract; original celluloid sheets for T-4689, T-4690, and T-5028; photos ss 860 to ss 890 and ss 930 to ss 950, hydrographic survey #6002.

Compilation.

In the southeast corner of the sheet the azimuth of the A.T. & S.F. R. R. was in error. With additional control (falling on T-4690) and the correct azimuth of the railroad, a replot was made from the photographs changing the detail in this area. These changes gave a good junction with T-5028.

Air Photo files sheet No. 19, McDonald Tract plat and B.P. No. 25706 supplied additional names.

H-6002 furnished several additional tule islands and a few other corrections of minor importance.

Air Photo files sheet No. 23A and letter No. 7 consisted of a plane table revision of Latham Slough. The shoreline of McDonald Tract in one place and that of Mildred Island in three places was found in error. These errors were all less than ten meters. The tule islands at the south end of Latham Slough were shifted south by a slight amount. The north shoreline of the large island opposite Camp 21½ was some 30 meters too far north. The plane table revision states that the H.W.L. on the original compilation was the outer edge of numerous weeds, the weeds appearing the same as tule on the photographs. A few additional islands were picked up by this revision. Recoverable stations used in this revision are shown on the sheet.

Air Photo files sheet #54 and letter #20 consisted of a plane table revision of the San Joaquin River due to changes made by dredger operations. These corrections were applied by *D. H. Benson* and checked by *L. Vaucher*.

Several signals for H-6002 at the upper end of Latham Slough were located by plane table on this aluminum sheet (23-A). See page 2, paragraph A2, descriptive report H-6002.

Blue print No. 25708 (Captain Weathers Map) gives the name "McDonald Tract" instead of "McDonald Island".

Respectfully submitted,

*Frank G. Erskine*  
Frank G. Erskine.

October 1, 1934

NAMES; There are no charts covering the area of this project except chart 5534 at the junction of the Sacramento and San Joaquin Rivers. The following maps filed as Blueprints were furnished by the field party with corrections made from field examination to show the names in local use and have been used in making the corrections to compilations on this project:

Capt. Weathers Map (1931)--BP.- 25708

U.S.G.S. Quadrangles BPs. --25702 to 25707

(See also chart letter No. 698 (1932)

Name lists are now being prepared under Mr. Bacon's Direction and will be attached at the back of the descriptive reports when completed. Any changes in names indicated by the name lists will be applied to the compilations at the next printing.

November 26, 1934

*Grant G. Baskin*

## GEOGRAPHIC NAMES

Survey No. T-4689H-6002Date. Dec. 6, 1934

HMS

Names approved Dec. 6, 1934.*H. Bacon*

Chart No. \_\_\_\_\_

Diagram No. \_\_\_\_\_

\*, - Approved by the Division of Geographic Names, Department of Interior.

⊙, Not Approved by the Division of Geographic Names, Department of Interior.

R, Referred to the Division of Geographic Names, Department of Interior.

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	<u>Roberts Island</u>	Maps agree			
	<u>Mildred Island</u>	"			
	<u>McDonald Tract</u> should be <u>Henning Tract</u> <i>Show as indicated</i>	Maps consulted agree on this point. <u>McDonald Tract</u> is east and north of <u>Whiskey Slough</u> , and should be lettered there. HMS			
	<u>Lower Jones Tract</u>	Maps agree			
	<u>Upper Jones Tract</u>	"			
	<u>Middle River</u>	"			
	<u>Empire Cut</u>	" Note statement in DR.		Not Slough	
	<u>Whiskey Slough</u>	"			
	<u>Turner Cut</u>	"			
	<u>San Joaquin River</u>	"			
	<u>Midway Slough</u>	"			
	<u>Fourteenmile Slough</u>	"			
	<u>Latham Slough</u>	"			
	<u>Acker Island</u>	"			
	<u>Walters Island</u>	"			
	<u>Morrison Island</u>	"			
	<u>Vulcan Island</u> should be <u>Shipyard Island</u> see DR for T-4689. HMS				
	<u>Walters Point</u>	Maps agree			
	<u>Turner Landing</u>	"			
	<u>Wellington Landing</u>	"			
	<u>Blackslough Landing</u>	"			
	<u>Hart's Landing</u> should be <u>Harts Landing</u> "				
		See page 2 for same sheet			



80-SLS

November 27, 1934.

To: Capt. K. T. Adams,  
Chief, Section of Field Records.

From: Helen M. Strong.

Subject: Spelling on Survey Sheets for San Joaquin Delta.

The following authorities are being used to verify spelling on above:

MAPS

From Coast and Geodetic Survey Library:

U.S.G.S. Quadrangles.  
Topographical and Irrigation Map of the San Joaquin Valley,  
California State Engineering Department, 1886.  
Topographical Map of Central California together with a part  
of Nevada, State Geological Survey of California, 1873.  
Topographical and Irrigation Map of the Great Central Valley  
of California, State Engineering Department, 1897.  
Delta of the Sacramento and San Joaquin Rivers, California,  
Weathers, 1928, Corrected to Oct. 1, 1931, C. & G. S.  
Blue Print No. 25708.

From Library of Congress:

San Joaquin Delta, 1914, Henderson & Billwiller.  
San Joaquin Valley, 1917, U. S. Engineering Dept., 11 Sheets  
and Index.  
Sacramento Valley, 1933, Standard Oil Company of California.  
Central Sacramento Valley, 1928, E. A. Abell.  
Sacramento Valley, 1914, Punnett Bros.  
Sacramento and San Joaquin Valleys, 1921, Weathers.  
Sacramento and San Joaquin Rivers Delta, 1928, Weathers.  
Sacramento and San Joaquin Rivers, 1921, Punnett & Perez.  
Sacramento and San Joaquin Rivers, 1898, Punnett Bros.  
South San Joaquin Irrigation District (West Half), 1921, Jeffries.  
Delta Farms, 1913, Brown & Co.  
Irrigation Map of Central California, 1922, Dept. of Agriculture,  
Bureau of Public Roads, Irrigation Investigations.  
Contra Costa County, 1914, Arnold and Glass.

Alameda County, 1915, Fraters.  
San Joaquin County, 1931, California State A.A.A.  
San Joaquin County, 1922, A. M. Barton, C.E.  
San Joaquin County, 1916, Budd & Widdows.  
San Joaquin County, 1895, Compton.  
Complete Map of California, 1 inch to 1 mile, Rand, McNally & Co.

BULLETINS

San Joaquin River to Herndon, 1917, U. S. Engineers, H. D. No. 832, 65th Congress, 1st Session (maps).  
California Public Works Bulletin 25, State Water Plan, 1930.  
Sacramento-San Joaquin Flood Control, 1916-1930.  
(A collection of House and other documents, Washington.)  
California State-Wide Plan, 1930-1932.  
California Public Works Bulletin No. 29, San Joaquin River Basin, 1931.  
California Public Works Bulletin No. 26, Sacramento River Basin, 1931.  
California Public Works Bulletin No. 27, Variation and Control of Salinity in the Sacramento-San Joaquin Delta and Upper San Francisco Bay, 1931.

*Helen M. Strong.*  
Helen M. Strong.

References also consulted for names on sheets for the San Joaquin-Sacramento Delta. These are all in the files of the Coast and Geodetic Survey:

Blueprints nos. 25702, 25703, 25704, 25705, 25706, 25707 which are U.S.G.S. quadrangles on which new names have been inked by the C. & G.S. field party; these quads are Collinsville, Jersey, Bouldin, Headreach, Holt, Stockton.

Blueprint no. 25708, the Weathers Map of the San Joaquin Sacramento Delta, ed. of 1928, rev. 1931.

C. & G.S. Letter 698-1932, listing names on various quadrangles above noted.

*Helen M. Strong.*  
Helen M. Strong.