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U. S. COAST & GEODETIC SURVEY  
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Ed. June, 1928

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY.  
R. S. Patton Director

State: California

DESCRIPTIVE REPORT

Photo *Topographic* | Sheet No. 4695  
*Hydrographic*

LOCALITY

4685 Antioch at Dierssen Landing  
4685a Antioch to False River  
San Joaquin River

California

. 19 32

CHIEF OF PARTY

O. S. Reading

U. S. GOVERNMENT PRINTING OFFICE: 1923

The enclosed Field Inspection Report applies also to:  
4686, 5000, 5001, 5002, 5003, 5004, 5005, 5006, 5007, 5008, 5009, 5010, 5011,  
5012, 5013, 5014, 5015, 5016, 5017, 5018, 5019, 5020, 5026.

T4685

Applied to drawing of chart 5534 2/19/35 H.E.M.

T4685 Applied to drawing of Chart 5527 - Apr. 16, 1935 - J.F.W.

T4685 a applied to drawing of Chart 5527 - May 29, 1935 - J.F.W.

# DESCRIPTIVE REPORT

## AIR PHOTO FIELD INSPECTION

SACRAMENTO - SAN JOAQUIN DELTA

NORTH OF 37° 56'

### AUTHORITY, LIMITS, DATES.

This report covers all territory north of Latitude 37° 56' of which five lens aerial photographs were taken in December 1931 and January 1932, with the exception of sheets T 4688, 4689 and 4690. Descriptive reports covering these sheets were furnished in connection with the revision work on them. These notes are a summary of the more amplified reports which were sent with the photographs, whenever a small section had been completed. The work was done between April 18, 1932 and about April 15, 1933.

### METHODS, CONTROL.

Most of the inspection and control was done from trucks by the Chief of Party and one hand from beginning of work until middle of November 1932. At that time two observer-hands were employed and as soon as they had become familiar and proficient in the work the field work was done by them. The Chief of Party is familiar with practically all of this country, however. The work from the trucks was supplemented by two days work with launch by hand-observer in the Mokelumne River above Terminous, and two days inspection from a launch working in Cache, Lindsey, Prospect, Miner and Steamboat Sloughs, with Chief of Party in charge. The launches were small and from them it was impossible to get a view of the country over the levees. A trip to Rio Vista from Sacramento down the Sacramento River, on one of the river steamers plying between San Francisco and Sacramento on one Sunday in June 1932, gave an excellent opportunity to inspect that river, from the decks of the larger boats. Also advantage was taken of the trip made on one of the larger boats in the San Joaquin River, from Stockton through Three Mile Slough to Rio Vista, when the San Joaquin Channel was inspected by a Board from U. S. Engineers. From these larger steamers the view includes a large area of the Delta, and one realizes the immense size and the fact that it is all practically level. The land marks which have been furnished you on Form 567 are visible for long distances and could be readily used for checking compass deviations as well as for the usual navigation purposes.

All the first and second order triangulation stations located by the party of J. Bowie Jr. in 1931 were spotted on the

photographs, directly or were located by measurements to identifiable detail. In addition, numerous power line poles and towers, were located as intersection stations with third order accuracy. Where possible these stations, were located with a check, and where they were located from only two triangulation stations, they were in many cases, used as a fourth object in a checked three point fix. This furnished a reasonable check of any gross errors. In order to secure control as specified in the INSTRUCTIONS, it was necessary to locate other detail. In most cases this was done by three point fixes using as objects, the intersection stations of either the 1931 or 1932-1933 work, the angles being observed with 7 inch theodolite, method of directions, three positions of the circle. In all of the three-point fixes, a fourth object was sighted on for a check on the work. Some short unchecked traverses were run with the 300 ft. tape, and an 18 mile third order traverse was run along the Western Pacific Railroad, for control of the eastern end of several flights of photographs. The traverse last mentioned, started at Bennett, 1931 and checked in at Benson 1931. Several of the three point fixes were later marked, with the standard triangulation disk, and all computations connected with these stations as well as the intersection stations, were checked by some one other than the original computer. The computations of the unmarked triangulation stations were not checked, except that the side checks obtained, were thought sufficient to pick up any gross errors. All lists of directions were checked before using.

#### FERRIES

There are several public and three private ferries operating by means of a cable stretched from shore to shore, and gasoline motor for pulling the ferry along this cable. The public ferry which operates between Jersey Island, Bradford, Webb, and Frank tracts, is a ferry boat, which runs regularly on an hourly schedule throughout the day time, and does not use a cable but is propelled by semi-diesel engine and screw propeller. Most of the ferries operate during the daylight hours, free of charge, at any time the traffic warrants. Between certain of the night hours the ferry either does not operate or a toll is charged. Two ferries operate on the Sacramento River below the city of Sacramento, namely the Hood Ferry and the Courtland Ferry. During the flood season, two cables are used on each of these ferries. One of these cables is stretched from bank to bank between the ferry slips, and is used for pulling the ferry across the stream. A second cable is fastened well upstream to a deadman, while the other end is made fast to the ferry with a bridle. This cable takes most of the strain that would otherwise be exerted by the current on the cross cable. This upstream cable is buoyed by several small punts, painted white for visibility during the day time, and carrying a white light when operating at night.

While the ferries which use only one cross cable may be passed with safety, when the ferry boat is at either slip, the two ferries mentioned just previously should not be passed unless the ferry boat is on the same side of the stream as the anchor for the upstream cable. This can be noted by observing the location of the string of punts supporting this cable. The only other ferry using a second cable is the one across Seven Mile Slough from Brannan Island to Twitchell Island. This has a short second cable supported by oil drums, made fast to Twitchell Island to the west of the ferry. The drums are not lighted at night. The other ferries operating in this area are noted below. On Lindsey Slough, there is a private ferry operated by the California Packing Corporation from the south side of the slough to the southwest corner of the Hastings Tract. A public Ferry across Cache slough operates to serve the Liberty Farms Unit No. 1, while another public ferry operates across this slough to serve Ryer Island. A public ferry was operating on the north side of Ryer Island across Miner Slough, but at the time the inspection was made January 1933, in that vicinity, a bridge to replace this ferry was under construction and, probably now in operation. A private ferry is operated seasonally across Miner Slough to Prospect Island, for taking out crops. A public ferry across Steamboat Slough at Howard Landing is being operated. Two public ferries are operated from Terminus across the Mokelumne River, one to Bouldin Island and one to Staten Island. A private ferry across Little Connection Slough about a mile north of Venice School on the Empire tract is correctly located on sheet 4688. The ferry which shows on the pictures across Dutch Slough to Jersey Island, has been replaced by trestle and fill. A public ferry is operated across Honker Cut and is properly shown on sheet 4688. Public ferry across Turner Cut to McDonald Tract is correctly located on 4689. A public ferry operates across Middle River to Bacon Island and shows clearly on the photographs just downstream from the Santa Fe Railroad bridge.

#### BRIDGES and OVERHEAD POWER LINES

Data on bridges in this area were taken from War Department Publication "LIST OF BRIDGES OVER NAVIGABLE WATERS OF THE UNITED STATES, edition of 1927, supplemented by corrections made by the U. S. Engineer offices at Sacramento and Stockton, and notes on new bridges erected since the date of publication of the volume. These notes have been mailed you. An overhead power line is stretched between each pair or pairs of transmission poles or towers spotted on the photographs. A separate list giving clearances has been requested by the U. S. Engineer office at Sacramento and will be submitted as soon as complete. Submarine cable crossing was spotted on the photographs, wherever a sign indicated its position. It is probable that there are

many more crossings, data on which would have to be gotten at the U. S. Engineer office, from whom a permit has to be obtained before the cable is laid.

#### TULE AND TULE MARSHES.

The word "Tule" seems to be applied to the fresh water aquatic growths consisting of bulrush and cattail, but more particularly in this locality to a tall aquatic growth much like a rapier, with a cluster of buds on the end during the summer season. The irrigation ditches and canals are lined with the tule and cattail unless periodically cleaned out. Most of the levees in the San Joaquin Delta have a narrow growth of tule at the water's edge. In addition, the tule appears as distinct islands, with usually a very definite edge which should be shown at the MHW line, although it appears that the elevation of the tule marsh varies somewhat from about MHW to slightly above or below this plane. The best example of the tule marsh in its original state is the large marsh just south and east of Quimby Island, where in with the tule are scattered growths of low willow, and other bushes are seen. These bushes are apparently growing on areas at or near MHW and appear to be periodically stunted by flood waters. On T-4685 and T-4686 are some growths of tule so thin that they should be shown as detached grass for the ground is much lower than the dense growth. It is quite possible that these areas of thin tule are marshes in the making and if left undisturbed will raise the level of the ground supporting them to the level of the other marshes. Except for the thin growths of tule, the edge of the marshes is quite definite and should be shown as the high water line for navigational purposes.

#### ISLANDS IN THE SAN JOAQUIN DELTA

Practically all of the islands in the San Joaquin Delta which come in this area were originally tule marshes similar to the one mentioned near Quimby Island. The land has been reclaimed by levees varying in height from five to fifteen feet above mean high water. The ground inside the levees shrinks as it dries under cultivation and its level is further lowered by the practise of burning the ground periodically for the potash furnished by the ashes of the peat. The ground level is from five to ten feet below MLLW, making it possible to siphon the water from the adjacent sloughs for irrigation purposes. Pumps at ends of canals are maintained for taking out surplus irrigation water or that due to winter rains. These pumps can be used as large siphons for irrigating water if it is found necessary. As mentioned above, the peat land is quite easily ignited and burns when started until the water table is reached unless sooner flooded. All of the land in the islands is cultivated or capable of being cultivated, except in the drainage ditches and canals and some ponds, sloughs or lakes. Due to the lack of tenants some of the land may grow up to weeds or grass but it can all be cultivated and usually is.

#### LEVEES SAN JOAQUIN DELTA

The levees in the San Joaquin Delta, being built on a peat foundation, are subject to settlement, and although they have been frequently rebuilt by placing of additional soil, dredging work has still to

be done periodically to bring them to grade and cross-section. Repairs are also made necessary in the lower part of the river because of the erosion caused by waves raised by the wind, particularly along the shore exposed to prevailing winds. The north side of the Webb Tract subject to the same action is protected by tule outside. The levees along the Sacramento River and its tributaries are built on a silt foundation and are not subject to settlement as noted above, but repairs are frequent on account of erosion due to wash from waves caused by steamers or wind or to swift currents in the bends at flood stages of the river. The height of the levees along the Sacramento River is from 25 to 30 feet. The land in back of the levees along this river is such that practically all the water for irrigation has to be gotten by pumping at most seasons of the year. The soil in the Sacramento Delta, although very rich and suitable for farming operations, has much less vegetable matter, is composed mostly of silt soils built up by deposition from the river and apparently will not burn like that of the San Joaquin Delta.

#### SALINITY

Due to the increased use of the water in the upper reaches of the Sacramento and San Joaquin valleys for irrigation and particularly during recent dry years with scanty rainfall, the tidal flow ~~and possibly also the condition due to the deep channel~~ has brought the saline waters further and further upstream in the dry season of the late summer and fall months. The water, in many places, has been so saline that its use for irrigation has been impossible during these months. This has become a serious problem on the study of which the State and California and the Federal Government have spent considerable sums. During the extremely dry season of 1930-31, the salinity of 100 parts of chlorine to 100,000 parts of water extended as far as Courtland on the Sacramento River, above Stockton on the San Joaquin River, above Williams on the Middle River and above Clifton Court Ferry on the Old River. A salinity not due to tidal action is found just below Stockton, where discharge of saline water from twelve or fifteen natural gas wells has affected the Stockton Channel as far as McDonald Pump in years of low stream flow, according to the report of the State of California on the Variation and Control of Salinity in Sacramento-San Joaquin Delta.

#### DETAILED DESCRIPTION

From Antioch east to nearly one-half mile west of the Antioch Bridge, the south side of the San Joaquin River consists of sand cliffs rising vertically to about 100 feet in height. Several companies operate to take sand from these cliffs. Beyond the cliffs there is a lower and sometimes marshy area, until the Antioch Bridge is reached. East of the Bridge, a large area extending to Dutch Slough which had been previously reclaimed, was flooded in about 1927, due to failure of the levee and only a portion of the levee now remains. There are several openings in the levee that can be used by small boats, and several places for renting boats to fishing parties have sprung up on the shores of the flooded area. There is a shoal bare at low water on which a thin growth of tule has started to the

southeast of the Antioch Bridge span, and on which data were sent with the pictures. Jersey Island levees are subject to wave action caused by strong northwest winds and have to be strengthened by peridical dredging and protected by brush mats on the San Joaquin River side. The entire island is cultivated, of peat formation, and is irrigated by siphons. In the southeast portion, there is at present a tule swamp with a heavy growth of trees. Just west and northwest of this swamp are several small mounds with heavy silt foundation. Landings are made at Jersey Landing No. 2 at the wharf just above the lighted beacon by that name. BRADFORD ISLAND levees are also subject to the effect of wave action and are protected by wooden or brush apron. On the north side of Bradford Island, the narrow tule marsh just outside of the dredged cut protects part of the levees greatly. The island is of peat soil formation with several high sandy spots. WEBB TRACT levees are well protected by the narrow tule berm just outside the cut dredged for building the levees. The soil is peat and is irrigated by siphons. VENICE ISLAND was flooded in the early summer of 1932 but the water was immediately pumped out. The ditches were changed since the pictures were taken but the canals are the same as before. MANDEVILLE ISLAND is of peat soil formation and is irrigated by siphons. SHERMAN ISLAND- The lower end of Sherman Island below Mayberry Slough, although once cultivated, has been flooded since 1925 and has a dense growth of tule and cattails. Part of it is used as spoil area for dredging operations in the Sacramento River. Upper Sherman Island is cultivated, being irrigated by siphons and floodgates in the head of Mayberry Slough where it has been dammed off from the rest of the slough. The portion just east of May has been used as a spoil area, the sand of which is being kept in place by the U. S. Engineers. The shore line immediately adjacent to the San Joaquin River is fronted by a growth of tule from five to ten meters wide. TWITCHELL ISLAND is low, of peat formation and is irrigated by siphons. Tule adjacent to the levee is of varying widths; landings are made along the bank by barges when necessary to pick up or deliver cargo. BOULDIN ISLAND is of peat formation and is irrigated with siphons. The lower end of this island at the junction of the Mokelumne with the San Joaquin has been changed when levees were rebuilt after a break, and Central Landing as shown on some of the older maps is now a berm some distance away from the shore. BRANNAN AND ANDRUS ISLANDS have a larger amount of silt and, although in part irrigated by siphons, have to pump in water, particularly in the upper portions. As one goes up the Sacramento River, the use of siphons becomes less and less and irrigation is practically all by means of pumping. The land becomes more silt formation and less and less of peat formation. MONTEZUMA HILLS, which extend from Collinsville to Rio Vista on the right bank of the Sacramento River, are from 100 to 200 feet in height and are an old, well-eroded terrace. Grain has been grown on these hills for years by dry farming. The fields are sowed to grain every third year, one year lying fallow and run with sheep. The patchwork of white areas of stubble or grain interspersed with the dark plowed ground should make quite a noticeable landmark, particularly for air navigation. Some miles below Rio Vista are what remains of an attempt to establish a brickyard, an attempt that was given up because of the sliding of the hills in back of the plant just about the time the machinery was installed. By some the cause of the slide was said to be the dredging for deepening and the widening of the River below Rio Vista, to aid in flood control, which was then in



progress. Just northwest of Rio Vista a large area has been filled with spoil from the dredging, as well as an area at the southern tip of Grand Island. The California Packing Corporation has a large area south of Cache Slough extending from Ryer Island Ferry to well above the junction of Cache Slough with Lindsey Slough and all of which is at present cultivated with asparagus. This is irrigated by means of siphons and also by floodgate at or near the lower end. RYER ISLAND, HASTINGS TRACT are irrigated by siphons. PROSPECT ISLAND, Liberty Farms Unit No. 1, as well as what is known as Little Holland and shown on Weather's Map as Holland Bypass Company property are in the Yolo Bypass, and on this account the height of the levees is limited to three or four feet by estimation. They are subject to flood whenever the Bypass is in use to take the overflow from the Sacramento River. All tenant farmers operating there do so with the understanding that the land may be flooded. The YOLO BYPASS from Sacramento Weir to this point is not cultivated and is used only for grazing cattle and sheep. It has thick growths of grass and in spots large growths of tule. In several instances, duck clubs have been established in the Bypass. Running north from the junction of Cache and Shag Sloughs along the west side of the Bypass, a levee has been constructed to the grade of 25 feet, USED. The borrow pit or canal from which this has been built has been dug to a depth of 12 feet according to reports. It is reported that a road is to be constructed on top of this levee when the final settlement has been completed and presumably when financial conditions are improved.

#### SACRAMENTO RIVER WING DAMS, SAND PILES.

Numerous wing dams, being piles with lattice boards and ballasted with rock, have been constructed by the U. S. Engineers for constricting the channel and increasing the flow with the hope that this increased flow would keep the channel or help keep the channel cleared to project depth. These wing dams showed quite clearly on the photographs and the elevation is approximately MHW. Usually the outer pile or piles are higher than the others and serve to indicate the location of the dams when other parts of the structure may be under water due to floods or extremely high tides. On many of the photographs, particularly in the Sacramento River just below Sacramento, piles of sand show up quite clearly. When the field inspection was made, it was noted that most of these piles had disappeared. The sand piles are the result of dredging in any locality where, instead of buying or leasing spoil area, the sand is so placed that the floods of the following year will carry the sand away and deposit it presumably out to sea but at least in some other place further down the river. ELKHORN SLOUGH (or Elk Slough on some maps) was originally a tributary to Sacramento River at Clarksburg and is now connected with the Sacramento River by a 5 foot pipe running through the levee.

#### LANDMARKS

Several copies of form 567 have been sent to you with explanation of landmarks. On small pleasure craft using these waters, one can see very little but the adjacent levee banks, but most of the tall wooden or steel power poles show up at times and should prove of no little value in navigating the sloughs. From the decks of the larger steamers

and presumably from the pilothouse of the tugs and barges, an impressive panorama of the whole Delta can be seen on clear days. The various landmarks could be readily used by these boats for checking up on compass deviation as well as for the ordinary use of navigation.

#### AIDS TO NAVIGATION

The beacons constructed along the San Joaquin River above and including Mandeville Cut have already been located by triangulation or plane-table. They are well constructed four-pile structures, surmounted by platforms in the approximate center of which is the light. The rear ranges are steel structures of considerably greater height than the front ranges and with lights or light on the top of the platform. Both front and rear ranges have black triangle day markers. The lights along the Sacramento River are for the most part lanterns suspended from a single pile or from piles. Practically all of these were either spotted on the pictures, or measurements to detail for locating them were made. In addition, prints furnished by the U. S. Engineers were sent to you on which the lights had been located, together with a print prepared by the U. S. Lighthouse Service in the office of the Superintendent at San Francisco and which showed the approximate location of lights in the Sacramento River with their names.

#### NAMES

Lists of names that could be obtained, particularly of landings, were forwarded to you. It would be my suggestion that for the few exceptions of names well established by usage as noted in my reports and shown on USGS quadrangles, that no names of landings be placed on the maps. On the Sacramento River all landings had a number to which reference was made, and on many of the islands, landings or camps have a quite permanent number assigned to them. However in such cases, particularly where the land is owned by an individual, the name of the camp or landing changes with each change of ownership and the placing of a name just assigned temporarily perhaps, does not seem to serve any useful purpose.

#### AVIATION

The only landing fields shown on the pictures were Sacramento Airport, and the Orange Brothers' Airport about six miles north of Stockton. The description of these fields may be obtained. (I understand from the Bureau of Aeronautics of the Department of Commerce.) The aviation beacons falling within the limits of the flights were all located by the triangulation party. The aviation beacon at the Stockton airport cannot be located without the erection of towers, and it lies outside the area of the pictures. I note however, that it is shown on the Army Airway Strip Map over this area. The steel transmission tower lines should undoubtedly be shown on the maps as an aid to flying and also as a warning not to fly too low over them. The general run of towers is probably about 60 to 75 feet high but at stream crossings, they are from somewhere around 150 to 175 feet in height. The tall tower near the head of Mayberry Slough and Sacramento River must be at least 300 feet high.

*Stockton Cal*  
*November 1 1933*

*Respectfully submitted*  
*Z. D. Ray*  
*Lieut. U.S.A.*

DESCRIPTIVE REPORT TO ACCOMPANY  
Sheet No. T-4685  
San Joaquin River, Antioch to Dierssen Landing.

This sheet was compiled by the radial line method from fine lens aerial photographs taken by the Army Air Corps with a type T-3-A camera. The photographs used for this compilation were Nos. 632-650, extending from about latitude  $38^{\circ} 01' 30''$ , longitude  $121^{\circ} 40' 30''$  to latitude  $38^{\circ} 01' 30''$ , longitude  $121^{\circ} 48' 15''$ , and to the northern extremities of the sheet.

Flight 755-772 extended from about latitude  $38^{\circ} 02' 00''$ , longitude  $121^{\circ} 40' 30''$  to latitude  $38^{\circ} 02' 00''$ , longitude  $121^{\circ} 48' 15''$ , and to the southern extremities of the sheet. Flight 1328-1338 extended from about latitude  $38^{\circ} 02' 00''$ , longitude  $121^{\circ} 43' 00''$  to latitude  $38^{\circ} 02' 00''$ , longitude  $121^{\circ} 48' 15''$ , and to the southern extremities of the sheet. Flight 632-650 was photographed at 1:15 P.M. December 12, 1931; flight 755-772 at 9:30 A.M. December 12, 1931, and flight 1328-1338 at 2:30 P.M. January 10, 1932.

Datum

The compilation was made on 1927 N. A. Datum.

Junction with Other Surveys

The sheet joins air photo sheet No. 4686 on the northeast.

Control

Control for this survey was furnished by previously established triangulation and by the following supplemental stations established in 1932: T.T. West ~~88~~<sup>13</sup> 1932, T.T. South of West ~~30~~<sup>13</sup> 1932, Light Blind Point 1932, were located by intersection, are recoverable and are shown on this sheet by a triangle. Tank 1932, W. Gable House 1932, two W. Gable Sheds 1932 are three point fixes and are shown by small black circles.

Topography

Buildings are shown in solid black or hatching where the size warrants it.

Streams

Irrigation ditches are shown by solid fine lines as they are fairly permanent. Canals and sloughs are shown to scale.

What is generally known as tule in this region is a tall aquatic growth shaped much like a rapier, with a cluster of buds on the end. The ditches and canals are usually thick with tule and cat-tail. The tule appears also as separate tule islands or as a growth just alongside the levee.

On this sheet, particularly on Sherman Island, the high water line was spotted inside the tule line and is shown with a heavy line while the edge of tule is shown by a very light line. In other places the tule is very thin and at these no boundary line is shown.

#### Names

The names on this sheet were taken from Chart Letter No. 698 (1932) written by Lieutenant Raynor, chief of the field inspection party.

#### Compilation

The compilation was made on a scale of 1:9804, which was the average scale of the photographs of flights 650-632 and 755-772 as determined by a preliminary spotting plot. As flight 1328-1338 covers the same territory as flight 755-772, but was off scale, it was used in locating objects but not in tracing, except the shoreline from Antioch eastward to the end of the bluffs. These bluffs threw a heavy shadow on the shoreline on flight 755-772.

The geographic position of W. Gable Shed 1932 on Jersey Island was found in error about 35 meters by the radial line method and the radial plot position was used. After the sheet was inked in, a corrected position was sent in by Lieutenant Raynor and found to be about 5 m. N.E. of the point used. The shoreline and detail in the immediate neighborhood were changed to coincide with the corrected position.

A lighted beacon was spotted by Lieutenant Raynor in the N.W. corner of the sheet on the north side of the Sacramento River. The name was not known at the time and the position is shown by a small circle, name to be added when information arrived. The position is probably correct within 5 meters. This error may be exceeded as this beacon is in the outer portion of the photographs and at the end of the sheet.

All hydrographic and topographic signals were located by radial line cuts. They are shown by small open circles, except "Twin Silos" close to an old levee north of Antioch which are shown by two small solid black circles.

The field inspection was not available for photographs 755-759 at the time of this compilation.

#### Comparison with Other Surveys

The sheet agrees fairly closely with sheet 1830 at its junction at Antioch. The differences are due to small changes in the shoreline and various building operations.

#### Landmarks for Charts

A list of landmarks for the chart of the San Joaquin River was furnished by Lieutenant Raynor and is filed as Chart Letter No. 643 (1932).

There is appended a list of the objects recommended by him for hydro-graphic use and located by the photo plot. The list of geographic positions of the objects he located by theodolite three-point fixes and intersections for the control of the photographs are also attached to this report.

Areas Requiring Further Examination

The area north of Mayberry Slough on Sherman Island was being filled by dredging at the time of field inspection. The field inspection party expects to resurvey this area when work is completed.

The following is a list of permanent objects located by radial plot on this sheet:

Name	Lat.	D.M. meters	Long.	D.P. meters	Remarks
Tank and windmill	38°01'	1416.0 1433.9	121°42'	901.3 562.0	
" " "	38°01'	1031.2 818.7	121°42'	831.4 650.0	
Tree stump	38°01'	1275.4 574.5	121°42'	263.1 1200.2	
W. Gable House	38°01'	858.8 991.1	121°43'	1390.4 73.0	
W. Gable House	38°01'	909.7 940.2	121°43'	752.4 711.0	
Lone dead tree	38°01'	1557.2 292.7	121°44'	1002.4 460.8	
Pile	38°01'	172.5 1677.4	121°44'	894.2 569.4	Pile end of syphon.
Bridge Tower S.	38°01'	655.2 1194.7	121°44'	31.0 1432.5	
" " N.	38°01'	562.3 1287.6	121°44'	31.0 1432.4	
Tank	38°01'	384.4 1465.5	121°45'	1343.7 119.8	
Tank and Windmill	38°01'	362.5 1487.4	121°45'	813.2 650.3	
High line wood pole	38°01'	65.8 1784.1	121°46'	1051.5 412.1	

Name	Lat.	D.M. meters	Long.	D.P. meters	Remarks
High line wood pole	38°01'	186.7 1663.2	121°46'	962.9 500.7	
Transmission Tower	38°01'	463.6 1386.3	121°46'	275.3 1188.2	
E. silo of twin silos	38°01'	750.9 1099.0	121°47'	990.9 472.5	
Syphon	38°02'	1312.1 537.8	121°41'	16.8 1446.3	
N. Gable House	38°02'	1798.7 51.2	121°42'	971.9 491.3	
S. E. Gable House	38°02'	133.7 1716.2	121°42'	1011.9 451.0	
Tank and windmill	38°02'	1694.1 155.8	121°44'	1426.5 36.7	
" " "	38°02'	1081.6 768.3	121°44'	209.9 1253.2	
" " "	38°02'	1196.0 653.9	121°44'	69.1 1394.0	
" " "	38°02'	1111.3 738.6	121°45'	906.1 557.0	
Transmission Tower	38°02'	747.2 1102.7	121°45'	478.3 984.7	
" "	38°02'	980.3 869.6	121°45'	339.0 1124.0	
Syphon	38°02'	642.8 1207.1	121°45'	194.8 1268.2	
"	38°02'	223.5 1626.4	121°47'	1199.8 263.1	
Pile	38°03'	1291.2 558.7	121°49'	1160.9 301.9	
Transmission Tower	38°02'	1521.0 328.9	121°46'	283.3 1179.8	
" "	38°02'	1209.9 640.0	121°46'	290.0 1173.1	

Name	T	Lat.	D.M. meters	Long.	D.P. meters	Remarks
Pile		38°03'	1295.9 554.0	121°48'	1344.9 117.9	
Lighted beacon		38°03'	410.1 1439.8	121°47'	78.0 1384.7	Not named on chart. Black circle (awaiting information)
Pile		38°03'	896.3 953.6	121°47'	737.0 725.7	
S. Gable Shed		38°03'	1701.6 148.3	121°46'	73.8 1389.1	
T. T.		38°03'	1659.7 190.2	121°46'	340.1 1122.8	
T. T.		38°03'	1351.3 498.6	121°46'	357.1 1105.7	
Tank		38°03'	808.5 1041.4	121°42'	1007.1 455.6	
Tank and windmill		38°03'	1070.0 779.9	121°41'	798.1 666.7	

*William N. Martin*

*Approved  
O. Reading  
Lieut. C. F. G. S.*

## REVIEW OF TOPOGRAPHIC SURVEY No. 4685

Title (Par. 56) *Antioch to Niessan Ldg., San Joaquin River, California*Chief of Party *O. S. Rading* *Photos plotted*  
Surveyed by *W. N. Martin* Inked by *W. N. Martin*  
*Army Air Corp. Airplane F-1A* *Date of Plot Dec. 12, 1931, Jan 10, 1932*  
~~Ship~~ Instructions dated — *Date of Compilation Oct 18, 1937*  
~~Surveyed in~~

1. ✓ The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 7, 8, 9, 13, 16.)
2. ✓ The character and scope of the survey satisfy the instructions.
3. ✓ The control and ~~closures of traverses~~ *adjustments of radial plot* were adequate. (Par. 12, 29.)
4. ~~The amount of vertical control that the Manual specifies for contours-formlines- was accomplished. (Par. 18, 19, 20, 21, 22, 23.)~~
5. ~~The delineation of contours-formlines- is satisfactory. (Par. 40, 50.)~~
6. ~~There is sufficient control on maps from other sources that were transmitted by the field party to enable their application to the charts. (Par. 28.)~~
7. ✓ High water line on marshy and mangrove ~~coast~~ *shore* is clear and adequate for chart compilation. (Par. 16a, 43, 44.)
8. ✓ The representation of low water lines, ~~reefs, coral reefs and rocks,~~ *full patches* and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41.)
9. ✓ ~~Rocks and other important details shown on previous surveys and on the chart were verified. (Par. 25, 26, 27.)~~ *Comparisons were made between this chart and T-1830 and T-4076, the differences being small changes in shore line and new building construction. Comparisons with Chart 5534 showed the same Sherman Island, however, on the chart is not ground & in this chart it is flooded. This fact was verified from all inspection of the photographs.*
10. The span, draw and clearance of bridges are shown. (Par. 16c.)
11. ~~Locations and elevations of summits are given. (Par. 19, 51.)~~
12. ~~The tree line was shown on mountains. (Par. 16g.)~~

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.



Description of Bismarck objects for this sheet will  
be submitted on Form 524 by L.P. Raynor during  
the hydrographic survey of this area. 12/1/33

Note: In the review of this sheet, minor errors  
were discovered. These errors were corrected and  
the corrected sheet substituted for the old copy, Nov. 2, 1933.  
The old copy was destroyed. F.G.E.

- 13. ✓ The descriptive report covers all details listed in the Manual, in so far as they apply to this survey. (Par. 64, 65, 66, 67.)
- 14. ✓ The descriptive report also contains additional information required in aero-topography relative to type of photographs, method of compilation and type of ground control.
- 15. ✓ ~~The descriptions of recoverable stations and references to shore line were accomplished on Form 524. (Par. 29, 30, 57, 67 except scaling of Ems and DPs, 68.)~~ *A list of prominent objects recommended by the field inspection and located by the radial plot are attached to this report.*
- 16. ✓ A list of landmarks for charts was furnished on Form 567 <sup>by the field</sup> and plotting checked. (Par. 16d, e, 60.) *inspection and is filed as Chart letter #643(1932)*
- 17. ✓ The magnetic meridian was <sup>not</sup> shown and ~~declination~~ was checked. (Par. 17, 52.)
- 18. ✓ The geographic datum of the sheet is *N.A. 1927* and the reference station is correctly noted. (Par. 34.)
- 19. ✓ Junctions with contemporary surveys are adequate.
- 20. ✓ Geographic names are shown on the sheet and are covered by the Descriptive report. (Par. 64, 66k.)
- 21. ✓ The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 50.)
- 22. ✓ No additional surveying is recommended, *except as noted on page 3 of report.*
- 23. ✓ The Chief of Party inspected and approved the sheet and the descriptive report. ~~after review by~~
- 24. Remarks: *Statistics for sheets were requested after this sheet was completed, they are as follows: Sq. miles area - 21; miles of shoreline (more than 200 meters to opposite shore) 39; miles of rivers & sloughs (less than 200 meters wide), 4.*  
Reviewed in office by *Frank G. Eskine*

Examined and approved:

*K.T. Adams*  
Chief, Section of Field Records  
*L.O. Lobat*  
Chief, Division of Charts

*F.B. Borden*  
Chief, Section of Field Work  
*G. Wade*  
Chief, Division of Hyd. and Top.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES

DEC 12 1932

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

REG. NO. 4685

AIR PHOTO TOPOGRAPHIC TITLE SHEET

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. 4685

State California

General locality San Joaquin River Delta

Locality Antioch to Dierssen Landing

Photographs

Scale 1:10,000 Date of Survey Dec 12, 1931 192  
Plane Jan 10, 1932

Vessel Army Air Corps F-1A

Chief of Party J. S. Reading

Compiled ~~surveyed~~ by W. N. Martin

Inked by W. N. Martin

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

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

Instructions dated \_\_\_\_\_, 192

Remarks: This sheet is a compilation by the "Radial Line

Method of photographs Nos SS 754 to 773 and 631 to 651.

Reduced to scale and printed by <sup>GPO</sup> photo-lithographic process  
by the Printing Section.

*Projection by W. N. Martin Aug 18, 1932*  
*Projection verified by J. H. Wulbern Aug 18, 1932*  
*Control plotted by W. N. M. Aug 19, 1932*  
*Control verified by J. H. W. Aug 19, 1932*  
*Photographs plotted by W. N. M. Sept. 13, 1932*  
*Sheet inked by W. N. M. Oct., 18, 1932*

Survey No. T-4685H-6014Date April 16, 1935  
HMS

## GEOGRAPHIC NAMES

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

Diagram No. 5534Names approved April 16, 1935. *Harlow Bacon*

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

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

Under investigation. Q

Status	Name on Survey	Name on <del>maps</del> maps **	New Names in local use	Names assigned by Field	Location
*	* <u>Sacramento River</u> ✓	U.S. Geographic Board, 6th Report			
	<u>Mayberry Cut</u> ✓	OK			
	<u>Antioch</u> ✓	U.S. Official Postal Guide, July, 1934.			
	<u>Sherman Island</u> ✓	Same			
	<u>Mayberry Slough</u> ✓	*** Same			
	<u>West Island</u> ✓	*** Same			
*	* <u>San Joaquin River</u> ✓	U.S. Geographic Board, 6th Report			
	<u>Donlon Island</u> ✓	*** Same			
	<u>McCormick Landing</u> ✓	*** Same			
	<u>Dutch Slough</u> ✓	*** Same			
	<u>Jersey Headquarters Landing</u> ✓	OK			
	<u>Schad Landing No. 1</u> ✓	also No. 2			
	<u>False River</u> ✓	*** Same			
	<u>Donlon Island Landing</u> ✓	*** Same			
	<u>West Island Landing</u> ✓	*** Same			
	<u>Camp "C" Landing</u> ✓	*** Same			
	<u>Curtis Landing</u> ✓	*** Same			
	<u>Baldocchi Landing</u> ✓	*** Same			
	<u>Amelia Landing</u> ✓	*** Same			
	<u>Jersey Point</u> ✓	*** Same			
	<u>Dierssen Landing</u> ✓	*** Same			
	*** Blueprints #25702 & 25703				
	** For other references consulted see references at end of this DR.				



IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

November 27, 1934.

AND REFER TO NO. 80-SLS

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, 1887.  
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, 1922, 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. 332, 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.

Also Blueprints 25702, 25703, 25704, 25705, 25706, 25707 which are U.S.G.S. quadrangles Collinsville, Jersey, Bouldin, Headreach, Holt, and Stockton, on which new names have been inked; C. & G.S. Letter 698-1932; and map of the San Joaquin and Sacramento Rivers Delta by Weathers, ed. 1928, rev. 1931, which is blueprint no. 25708.

*Helen M. Strong*

Jan. 26, 1935.  
U.S. Postal Guide, July, 1934.  
Map of the County of Sacramento, California, Drury Butler, County Surveyor, 1923.  
Official Map of the County of Solano, California, E.N. Eager, Ex-County Surveyor, approved by the Board of Commissioners, 1925.  
Official Map of Yolo County, California from official records by A. G. Proctor, County Surveyor, 1915.

*Helen M. Strong.*

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

AIR PHOTO COMPILATION CORRECTION

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. T4685A

REGISTER NO.

State California

General locality San Joaquin River

Locality Antioch to False River

Scale 1:10,000 Date of survey July, 1934

Vessel

Chief of Party E. G. Erskine

Surveyed by

Inked by

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

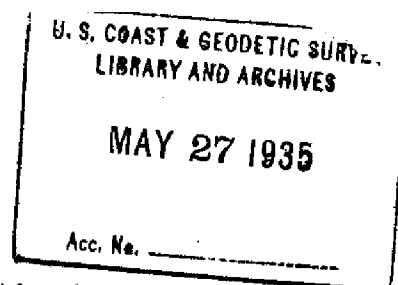
Contour, Approximate contour, Form line interval.....feet

Instructions dated....., 192

Remarks:



Descriptive Report to Accompany  
Air Photo Topographic Sheet No. 4685 A  
(to be included in report of T-4685)



Antioch to False River, San Joaquin River, California

This sheet contains corrections (shown in red) to the original survey of this area, T-4685.

Sources of Information:

Hydrographic survey No. 6014; plane table revision sheets Nos. 50a, 51a, and 56a, Air Photo Section files; letters Nos. 18 and 22, Air Photo Section files; descriptions of recoverable stations on form 524; blue prints Nos. 25703, 25708, and 26299; photos 756B and 763A; chart letters 738 (1933), 630 (1934) and 631 (1934).

Compilation:

Revision sheets 50a, 51a, and part of 56a were applied by *D. H. Benson* and checked by *M. W. Fulton*. Revision sheet No. 56a applies to T-5020 but the correction at Antioch also applies to this sheet. There was apparently some error in triangulation station Antioch. A geographic position was found for Antioch 1932 but none was found for Antioch 1931. The 1931 station was removed and the 1932 station shown on the A sheet. This station is  $\pm$  75 meters west and  $\pm$  10 meters north of the 1931 station shown on T-4685. The station was evidently not used in the plot of T-4685 as the correction at Antioch tied in well with all detail.

Overhead cable clearances were applied from chart letter 738 (1933) which gives the permit grant height. H-6014 gave observed clearances which were greater in each case than the heights stated in this chart letter. The permit grant heights were used in each

case except for the cable over Mayberry Slough just north of West Island, ( $38^{\circ} 02'$ ,  $121^{\circ} 46\frac{1}{4}'$ ). In this case the wooden poles have been replaced with steel towers and the clearance given in H-6014 was used. A few of the transmission towers have been deleted and the position of a few others corrected by the hydrographic survey.

A tule patch is shown in the San Joaquin River in Lat.  $38-01\frac{1}{2}$ , Long.  $121-44$ . Blue print No. 25708 (Capt. Weathers' Map) shows this as an island by the name "Mud Island". The photographs give very little evidence of it and blue print No. 25299, a 1933 Engineers survey, records it as a shoal spot. It was not changed on the A sheet.

There is a disagreement in the spelling of "Schad Landing". There are two of these landings on the north side of the San Joaquin River. The Geological Survey quadrangle Jersey has the name "Schad" opposite the mouth of False River at what is now Dierssen Landing. Blue print No. 25703 which is Jersey quadrangle with names supplied in the field spells the two landings "Shad". The triangulation station at  $38-02\frac{1}{2}$ ,  $121-43$  spells it "Schadd". Blue print No. 25708, Capt. Weathers' Map and the apparent authority for names in the Sacramento-San Joaquin Delta, spells it "Schad". This latter name is used on the A sheet.

In the southeast corner of the sheet Dutch Slough was not run to a junction with T-5014 by about  $\pm$  150 meters. This section was shown on the original celluloid but was covered up by the title. It was applied to the A sheet and checked by photograph 756 B.

This sheet joins T-5020 at 121° 48'. About 500 meters of detail west of this meridian is shown on T-4685. Detail beyond 100 meters west of 121° 48' was deleted from T-4685 A.

The title of this sheet was changed from "Antioch to Dierssen Landing" to "Antioch to False River".

Respectfully submitted,

*Frank G. Erskine*

Frank G. Erskine.

October 10, 1934.

*Approv. C. K. Green.*

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)-- EP.-25703

U.S.G.S. quadrangles-- EPs.-25702 to 25707

(see also chart letter No. 598 (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 20, 1934.

*Frank P. Eschline*

*Approved C. K. Green*