DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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 Letter

REGISTER NO. T-5036

State... CALIFORNIA

General locality... SACRAMENTO-SAN JOAQUIN DELTA

Locality... UNION ISLAND

Date of photography, January 3, 1932

Scale... 1:10,000

Date of compilation, November 25, 1933

Vessel... Army Air Corps FI A Airplane

Chief of Party... Lieut. L. P. Raynor

Compiled by

Surveyed by... S. S. Whitehead

Inked by... W. J. Mignola

Heights in feet above to ground to tops of trees

Contour Approximate contour Form line interval feet

Instructions dated August 2, 1933 and September 2, 1933

Remarks: Compiled from photographs Nos. SS 1081 to 1098, inc. and 1133 to 1153, inc.
Reduced to scale and printed by photo-lithographic process
<table>
<thead>
<tr>
<th>DESCRIPTION OF WORK</th>
<th>DONE BY</th>
<th>DATE COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyconic Projection</td>
<td>W.J. Mignola</td>
<td>October 28, 1933</td>
</tr>
<tr>
<td>Projection verified</td>
<td>S.S. Whitehead</td>
<td>October 28, 1933</td>
</tr>
<tr>
<td>Control Plotted</td>
<td>J.B. Walker</td>
<td>October 31, 1933</td>
</tr>
<tr>
<td>Control Verified</td>
<td>K.B. Walker</td>
<td>October 31, 1933</td>
</tr>
<tr>
<td>Compiled in Pencil</td>
<td>S.S. Whitehead</td>
<td>November 28, 1933</td>
</tr>
<tr>
<td>Inked</td>
<td>W.J. Mignola</td>
<td>December 28, 1933</td>
</tr>
<tr>
<td>Hachures and Woodland Symbol</td>
<td>S.S. Whitehead</td>
<td>December 29, 1933</td>
</tr>
<tr>
<td>Proofreading</td>
<td>T.P. Pendleton</td>
<td>February 1, 1934</td>
</tr>
<tr>
<td>Attaching Names Various Members of Party</td>
<td>February 27, 1934</td>
<td></td>
</tr>
<tr>
<td>Descriptive Report</td>
<td>S.E. Lane</td>
<td>February 26, 1934</td>
</tr>
</tbody>
</table>
PROJECT NO. H.T. 153

DESCRIPTIVE REPORT

To Accompany

SHEET NO. T-5036

L. P. Raynor, Lieut., C.& G.S., Chief of Party

See report for Sheet No. T-5027 for information (field report)
applying to the entire project.

GENERAL INFORMATION

Area of sheet, 31.1 square miles
Length of rivers and sloughs, 16.7 miles
The entire area of this sheet is low, varying from a few feet above to a few feet below mean sea level.
The Grant Line and Fabian and Bell Canals are important arteries for navigation and carry large quantities of water.

Tracy Island Road crosses Grant Line and Fabian and Bell Canals on a county bridge. This is a through steel truss, fixed over the Fabian and Bell Canal and with a hand operated swing span over the Grant Line Canal. The only channel is north of the swing pier and is 94 feet wide. The clearance above mean high water will be secured by the hydrographic party.
TRANSMISSION LINE CROSSINGS OVER NAVIGABLE WATERS

<table>
<thead>
<tr>
<th>ACROSS</th>
<th>LOCATION</th>
<th>CLEARANCE ABOVE HW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant Line Canal</td>
<td>Grant Line Pole</td>
<td>166 feet</td>
</tr>
<tr>
<td>Old River</td>
<td>At Paradise Cut</td>
<td>110 feet</td>
</tr>
</tbody>
</table>

(2 lines)

SUBMARINE CABLE CROSSINGS

All underwater crossings noted by the field inspection party or photo compilation party are shown

PHOTOGRAPHS

The photographs falling on this sheet are: Nos. 1081 to 1098 inc. and 1133 to 1153, inc.

These photographs were taken January 3, 1932 between 1:30 and 2:30 p.m.

CONTROL

Grant and Bell were triangulated by J. Bowie in 1931. Others were triangulated by L. F. Raynor in 1932 and 1933, except those marked "T.P.P.". These last are theodolite three point fixes, are not marked and are not recoverable, except Grant Line Pole. They are shown on the sheet by small circles. All values have been adjusted to 1927 N.A. Datum.

The locations shown in the following table are the values used in compiling the sheet.
NOTE: The following recoverable objects were located by the airphoto plot and are shown as topographic stations on this sheet. These are in addition to the objects listed on the opposite page.

<table>
<thead>
<tr>
<th>Station</th>
<th>Approx. Lat</th>
<th>Approx. Long.</th>
<th>Height</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Towers</td>
<td>37° 48.5'</td>
<td>121° 24.5'</td>
<td></td>
<td>Not described</td>
</tr>
<tr>
<td>Water Tank</td>
<td>37° 50.5'</td>
<td>121° 30.7'</td>
<td></td>
<td>Described on Form 524</td>
</tr>
</tbody>
</table>
### TABLE OF CONTROL

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ GRANT, 1931</td>
<td>37 - 49 - 13.327</td>
<td>121 - 26 - 53.147</td>
</tr>
<tr>
<td>Δ Bell, 1931</td>
<td>37 - 49 - 13.628</td>
<td>121 - 29 - 53.179</td>
</tr>
<tr>
<td>Δ Fabian, 1933</td>
<td>37 - 48 - 29.94</td>
<td>121 - 30 - 47.32</td>
</tr>
<tr>
<td>Δ Estate, 1933</td>
<td>37 - 51 - 55.47</td>
<td>121 - 28 - 09.94</td>
</tr>
<tr>
<td>Δ Union, 1933</td>
<td>37 - 52 - 06.37</td>
<td>121 - 25 - 05.67</td>
</tr>
<tr>
<td>Δ Undine; 1933</td>
<td>37 - 50 - 07.20</td>
<td>121 - 24 - 56.47</td>
</tr>
<tr>
<td>0 1083 B 3rd Fix - Not Recoverable</td>
<td>37 - 50 - 31.89</td>
<td>121 - 30 - 37.66</td>
</tr>
<tr>
<td>0 No. Grant Line Pole (T.P.P.)</td>
<td>37 - 49 - 14.69</td>
<td>121 - 25 - 49.71</td>
</tr>
<tr>
<td>0 1089 B (T.P.P.) 3rd Fix Not Recoverable</td>
<td>37 - 50 - 32.53</td>
<td>121 - 27 - 55.69</td>
</tr>
<tr>
<td>0 1048 B (T.P.P.) &quot; &quot; &quot;</td>
<td>37 - 52 - 07.76</td>
<td>121 - 24 - 00.69</td>
</tr>
<tr>
<td>0 1141 B (T.P.P.) &quot; &quot; &quot;</td>
<td>37 - 48 - 22.57</td>
<td>121 - 26 - 54.92</td>
</tr>
</tbody>
</table>

Note: The above positions are from the field computations on 1927 N.A. Datum and will differ slightly from the finally adjusted positions.

### COMPILATION

Compilation was by the radial line method. The map was completed in pencil before being inked.

Some difficulty was experienced in placing a projection on this sheet due to lack of flatness of the celluroid sheet. While a satisfactory projection was obtained at the time, the sheet has since changed shape and no longer joins the south sheet, T-5039, or on the north with Sheet No. T-5028.

The change is irregular, and the joining of map details was accomplished by fitting a single minute of longitude at a time. To check future changes in overall dimensions, the distance between neat lines at latitude 37 - 48 - 20 was
measured January 29, 1934 and found to be 113.68 centimeters, while the true value is 113.75 centimeters.

NAMES

The name Old River is applied without dispute to that section of the river west of longitude 121° 26', and should properly be applied also to that part of the river east of this meridian. The correctness of this designation is verified by local usage and by use on maps entitled "The San Joaquin River Survey of 1931" prepared by the U.S. Engineers in collaboration with the Department of Engineering, State of California, and the California Debris Commission.

The U.S. Geological Survey, Union Island California Quadrangle, uses the name "Salmon Slough," for this section of the river, but no confirmation of any kind could be obtained for the application of this name to the particular section of Old River on which it appears.

The name "Salmon Slough" cannot be definitely attached to any stream, but probably is most correctly applied to the maze of channels connecting Grant Line Canal with Old River near meridian 121° 25'. Although the existence of the name is generally admitted, its indefinite location has led to its omission from the sheet.

LANDMARKS AND RECOVERABLE OBJECTS.

For list of landmarks and recoverable objects, see general section of descriptive report for sheet T-5027 - (duplicate list of landmarks for this area is attached at back of desc. report T-5027).
to:   Bacon
from: Strong

Names all with exception of Salmon Slough to be added to braided waterways
at eastern end of Nadian Bell Canal as indicated in our memo and discussion.

Await further investigation of the names Old River, Middle River & Salmon Slough.
The placing of Salmon Slough will depend upon the decision in regard to these names.
<table>
<thead>
<tr>
<th>Status</th>
<th>Name on Survey</th>
<th>Name on Chart or other Maps or Reports</th>
<th>New Names in local use</th>
<th>Names assigned by Field</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Old River (USGS)</td>
<td>Desc. Report T5036</td>
<td>Conflicting evidence; USGS calls this Tollgate Rapids, inhumated</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grant Line Canal</td>
<td>USGS Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fabian and Bell Canal</td>
<td>USGS Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Union Island</td>
<td>USGS Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tracy Island Road</td>
<td>Desc. Report T5036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clifton Court Road</td>
<td>Desc. Report T5036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Undine Road, AR</td>
<td>Probably AR; see Undine School on USGS, Union &amp; Road</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fabian Tract</td>
<td>Source of name desired AR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For authorities consulted see OR of T-5027.

Survey No. T5036
Chart No. 6020

Date: Oct 31, 1934

Names underlined in red approved Oct 31, 1934

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

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

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

Comparison made with U.S.G.S., Union J + Anthony Quad.
RECOMMENDATIONS

This sheet is believed to have a probable error of less than five meters in all places.
Title (Par. 56)

Chief of Party L. P. Raynor

Compiled by

Project 153 H.& T.

Instructions dated

1. The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 8; and 16, a, b, o, d, e, g and i.)

   Yes

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".

   Yes

3. The control and adjustment of the radial plot were adequate.
   (Par. 12, 29.)

   Yes

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.) Maps from other sources were not used.

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.) These features, except low water line, do not occur on this sheet. For general statement regarding water lines see descriptive report Sheet No. T-5027

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. No previous surveys for navigational use have been made.

8. The span, draw and clearance of bridges are shown. (Par. 16b.) These details appear in descriptive report.

9. The data furnished by the Field Inspection is adequate.

   Yes.

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.
16. The descriptive report covers all details listed in the Manual, so far as they apply to this survey. (Par. 64, 65 and 66.) Yes

17. 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". Yes

18. The descriptions of recoverable topographic stations were accomplished on Form 524, and scaling of positions checked. (Par. 29, 30 and 57.) Yes

19. A list of landmarks for charts was furnished on Form 567 and scaling of positions checked. (Par. 16d, e, 60.) Yes. This is a duplicate of list supplied by L. P. Raynor with omitted positions scaled, and several additional marks. List is not filled as a chart letter.

20. The geographic datum of the sheet is H.A. 1927, and the reference station is correctly noted. (Par. 34.) Yes

21. Junctions with contemporary surveys are adequate. Yes

22. Geographic names are shown on the sheet and are covered by the Descriptive Report. (Par. 64, 66k.) Yes

23. The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46.) Yes, except that black celluloid ink was used throughout. (Celluloid ink is used on all air photo compilations. Drafting is good on this sheet).

24. No additional surveying is recommended. Yes

19. Remarks:

20. Examined and approved: L. P. Raynor

Chief of Party

T. P. Posten

Chief Photo Compiler

21. Remarks after review in office: Refer to the report on this project attached to des. report for T5027 for description of the country.

Reviewed in office by: B. J. Jones

Examined and approved: K. T. Adams

Chief, Section of Field Records

T. O. Reuter

Chief, Division of Charts

T. B. Borden

Chief, Section of Field Work

E. M. Stude

Chief, Division of Hydrography and Topography.