

4671

U. S. COAST & GEODETIC SURVEY
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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

U. S. COAST & GEODETIC SURVEY

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MAR 27 1934

Acc. No.

State: California

DESCRIPTIVE REPORT

Photo
Topographic
Hydrographic

Sheet No. 4671

LOCALITY

Berkeley and Vicinity

California

1933

CHIEF OF PARTY

O. S. Reading

U. S. GOVERNMENT PRINTING OFFICE: 1928

4671

DESCRIPTIVE REPORT TO ACCOMPANY
AIR PHOTO TOPOGRAPHIC SHEET NO. 4671

BERKELEY AND VICINITY, CALIFORNIA.

General Information:

This sheet is a compilation of five lens aerial photographs made up of one flight, (BE-1 to BE-22 incl.), taken with a T-3 camera No. 30-1, by the U. S. Army Air Corps on December 15, 1931, between 2:00 and 2:15 P. M. Direction of the flight was northwest, and a scale factor of 1:02 was used in making the projection for the finished celluloid plot.

High tide in the San Francisco Bay on December 15, 1931, occurred at 4:06 P. M. at West Berkeley.

The area of this sheet covered by one strip of photographs, extending from Oakland on the south to the city of Richmond on the north; embraces most of the city of Berkeley and harbor facilities. It comprises a total of approximately $7\frac{1}{2}$ statute miles of shoreline, and a total of approximately 8 square statute miles of topography.

Control:

The control for this sheet consists chiefly of Coast Survey triangulation ^{executed in} 1881, 1916, & 1925, Berkeley Water Front Company triangulation, 1930*, and the field inspection party's theodolite three point fixes under L. P. Raynor 1931.

This control being well ^{distributed} scattered and accurately spotted by the field inspection party enabled a good and precise plot to be made in the minimum time.

No noticeable error in the control was found by the photo plot, and no serious discrepancy was noted in the position of any of the control stations.

Compilation:

The radial plot method was used, tying in to the plot of sheet T-4672.

Difficulty was experienced however around latitude $37^{\circ}51'$ and longitude $122^{\circ}17'$ in ^{transferring} gathering the detail from photo No. BE-8. So great was the tilt in this photograph that it was not used in the final drawing of the map.

It was found impossible also to show completely the entire pier at latitude $37^{\circ}51'30''$ and longitude $122^{\circ}20'$. The photographs at this particular point do not show the complete pier.

* The Berkeley Water Front Company triangulation has been connected to the Coast Survey triangulation and Geographic positions are on file. Triangulation used on this sheet were the office adjusted 1927 North American Datum positions

Compilation: (Cont'd)

Broadly speaking the completeness of the field inspection notes proved satisfactory and no difficulty in interpreting same was encountered.

However, due to the excessive shadows in some of the photographs it proved extremely difficult even with the stereoscope to spot accurately the street system east of the high hill in the northwest portion of Berkeley. The same difficulty was experienced on the north portion of Point Isabell.

All duck blinds and beacons shown on the finished drawing were accurately intersected in the radial plot.

Due to the extensive electric railroad system covering most of the city of Berkeley, only the main through railroad systems were shown as it was found impossible to clearly show the interurban system in its entirety. At the extreme eastern portion of adjoining sheet T-4670 a discrepancy in the track system was noted which has been corrected on this sheet.

It might also be noted that all buildings on this compilation were not shown. Only those most prominent on the photographs were drawn.

Names and information as to details in the dense shadows were obtained from the field inspection notes, and the Sandborn Maps, and chart 5532

Comparison with other Surveys:

Both north and south junctions agree favorably with adjoining sheets. (4670 and 4672).

However, it was noted in comparing this compilation with T-3653^a (made in 1917) that two noticeable fills have been made since then along the shoreline. Namely at latitude $37^{\circ}50'$ - and longitude $122^{\circ}17'$ -, also at latitude $37^{\circ}52'$ - and longitude $122^{\circ}18'$ -.

The breakwater now appearing at latitude $37^{\circ}54'$ - and longitude $122^{\circ}19'$ - has also been added since 1917.

Landmarks:

All of the important recoverable landmarks recommended by the field inspection party are clearly shown.

A list of landmarks recommended by the field inspection party is herewith attached to this report.

Recommendation for further Surveys:

It is believed that the compilation does not have a probable error

Recommendation for further Surveys: (Cont'd)

of more than five meters in position of well defined detail of importance for charting.

No further survey is believed necessary at this time, except for such changes as may have occurred in constructing the new trans-bay bridge.

Remarks:

The work of the field inspection party was good.

Respectively submitted

(Sgd.) Donald K. Albertson

Jr. Cartographic Engineer

Donald K. Albertson
January 26, 1934.

Approved and forwarded

O. S. Reading
O. S. Reading,
Chief of Party.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Washington, D. C.

January 25, 1934.

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are ~~prominent~~ ^{recommended by field inspection party and April 14, 1934} can be readily distinguished from seaward from the description given below, and should be charted.

O. S. Reading

Chief of Party.

DESCRIPTION	POSITION						METHOD OF DETERMINATION	CHARTS AFFECTED	
	LATITUDE			LONGITUDE					DATUM
	O	I	D. M. METERS	O	I	D. P. METERS			
4 Tank, Steel Tank & Pipe Co.	37	52	1700	122	18	256	N.A. 1927	Air Photo 5532-5530	
4 a Conc. chimney Berkley Incinerator Stack	37	52	1656	122	18	541	1927	Triangulation 5532	
5 Double Black Tank	37	52	1421	122	18	377	1927	Air Photo 5532	
6 Tank, Manesse Tanning Co.	37	52	1300	122	18	274	1927	Air Photo 5532	
7 Tank, Calif. Ink Co.	37	52	1225	122	18	148	1927	Air Photo 5532	
8 Black Tank El Dorado Oil Co.	37	52	110	122	18	31	1927	Triangulation 5532	
9 Concrete Chimney	37	51	1786	122	18	41	1927	Triangulation 5532	
11 White Tank Calif. Corrugated Colvert Co.	37	51	936	122	17	1031	1927	Air Photo 5532	
12 Conc. Chimney Peet Bros.	37	51	667	122	17	1023	1927	Triangulation 5532	
13 Double Black Tank Peet Bros.	37	51	614	122	17	970	1927	Triangulation 5532	
14 Higher of two wooden tanks on steel structure	37	51	900	122	17	747	1927	Air Photo 5532	
15 Conc. stack Heinz Co.	37	51	414	122	17	430	1927	Air Photo 5532	
16 White Tank Inze Co.	37	51	355	122	17	418	1927	Air Photo 5532	
17 Black Tank-Durkee Co.	37	51	270	122	17	880	1927	Air Photo 5532	
18 Black Tank Western Waxed Paper Co.	37	50	1184	122	17	415	1927	Air Photo 5532	

A list of objects carefully selected because of their value as landmarks as determined from seaward together with individual descriptions, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report.

The selection, determination, and description of these points are an important factor in the value of the chart. Landmarks selected at appropriate intervals can be clearly charted. However, when none is outstanding, a group of two or three objects may by their interrelationship provide positive identification. A group so selected should be indicated.

The description of each object should be short, but such as will clearly identify it; for example, a standpipe, elevated tank, gas tank, church spire, tall stack, red chimney, radio mast, etc. Assign numerals to landmarks to indicate: (1) offshore, (2) inshore, (3) harbor, 1, 2, 3 would be a mark useful on all charts. Generally, flagstuffs and like objects are not sufficiently permanent to chart.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Washington, D. C.

January 25, 1934.

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

recommended by field inspection party andThe following determined objects are ~~prominent~~ can be readily distinguished from seaward from the description given below, and should be charted.

O. S. Reading

Chief of Party.

DESCRIPTION	POSITION						METHOD OF DETERMINATION	CHARTS AFFECTED	
	LATITUDE			LONGITUDE					DATUM
	O	I	D. M. METERS	O	I	D. P. METERS			
19 Tank Underground Cable Co.	37	50	1105	122	17	555	N.A. 1927	Air Photo	5535 ✓ 5532 ✓
20 Tank (Black) Paraffine Co.	37	50	785	122	17	917	1927	Triangu- lation	5535 ✓ 5532 ✓
21 Black Tank Pacific Manifold Co.	37	50	671	122	17	397	1927	Air Photo	5535 ✓ 5532 ✓
22 White Tank Merchant Calculator	37	49	1378	122	17	320	1927	Air Photo	5535 ✓ 5532 ✓
23 White Tank- Sherwin Paint Co.	37	49	1745	122	17	438	1927	Air Photo	5535 ✓ 5532 ✓
White Tank- Sherwin Paint Co.	37	49	1745	122	17	385	1927	Air Photo	5535 ✓ 5532 ✓
24 White Tank, Peck and Hill	37	49	1608	122	17	472	1927	Air Photo	5535 ✓ 5532 ✓
24a Center of Three black stacks, Judson Steel Co.	37	49	1686	122	17	764	1927	Triangu- lation	✓ 5532 ✓
25 Campanile, University of California.	37	52	606	122	15	592	1927	Triangu- lation	Does not appear on T-4671 ✓ 5532
28 Spire Episcopal Church Berkley	37	52	390	122	17	903	1927	Triangu- lation	Delete from chart as of ✓
29 Spire Presbyterian Church	37	52	345	122	17	992	1927	Triangu- lation	no use as landmark ✓
Tower 27 Transit Concrete Co.	37	49	256	122	17	253	"	Air Photo	5532 5535 ✓ (on T-4670-B)
10 Tag	37	51	400 Appr.	122	17	900 Appr.	Delete from	chart	5532 ✓
26 Concrete Chy.	37	49	1215	122	17	380	"	Triangulation 1916	5532-5535 (on T-4670)

A list of objects carefully selected because of their value as landmarks as determined from seaward together with individual descriptions, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report.

The selection, determination, and description of these points are an important factor in the value of the chart. Landmarks selected at appropriate intervals can be clearly charted. However, when none is outstanding, a group of two or three objects may by their interrelationship provide positive identification. A group so selected should be indicated.

The description of each object should be short, but such as will clearly identify it; for example, a standpipe, elevated tank, gas tank, church spire, tall stack, red chimney, radio mast, etc. Assign numerals to landmarks to indicate: (1) off-shore, (2) inshore, (3) harbor, 1, 2, 3 would be a mark useful on all charts. Generally, flagstaves and like objects are not sufficiently permanent to chart.

Notes on visibility of Landmarks

Copy

The only opportunity to note the visibility from the water was from outer end of Berkeley auto pier and while on the Ferry from this pier en route to San Francisco. Notes were made on clear day about 3 p.m., from A --- End of Pier, B- about opposite Goat Island- C about $\frac{1}{2}$ way from Goat Island to San Francisco pier.

All of the landmarks noted showed up well from the end of the Berkeley Pier. Nos. 2-3-5-8-12-13-15-16-20 and of course 25 are noted as showing excellently.

All will undoubtedly show from anywhere inside of this place but the depth of water is such that they would be of use only to small boats.

Rating the Campanile as 0 and tanks just visible as 6 following notes were made at B and C:

No. of landmark	B	C
1 } Shown on T-4672	5	-
2 } Chart Letter # 90 (1933)	1	2
3 }	1	2
5	3	
4a	3	3
8	3	
12	3	6
13	4	6
15	2	4
16	2	4
18	3	
20	3	3
25	0	0
26	3	4
27	3	3
Tank on Oakland Pier	2	2

Latter noted in previous report, and it shows well over most of the bay.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4671

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. 4671

State California

General locality San Francisco Bay

Locality Berkeley

Scale 1:10,000 Date of photographs Dec. 15, 1931
Date of survey Jan. 25, 1934.
Compilation

Vessel Army Air Corps Fia Airplane

~~Reviewed and recommended for approval~~

Chief of party O. S. Reading

Photographs plotted
Surveyed by F. G. Erskine

Inked by D. K. Albertson

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 Nos. BE-1 BE-22.

Reduced to scale and printed by photo lithographic process.

...

Polyconic projection by:- F. G. Erskine - July 13, 1933.

Projection verified by:- H. E. MacEwen - July 13, 1933.

Control plotted by:- F. G. Erskine - July 14, 1933.

Control verified by: H. E. MacEwen - July 14, 1933.

REVIEW OF PHOTO TOPOGRAPHIC SURVEY NO. 4671

Title (Par. 56) *Berkeley and vicinity, California*Chief of Party *O. S. Reading*Compiled by *F. G. Evershine, R. K. Allerton*Project *San Francisco Bay*

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. *All of the creeks shown on the chart do not appear in this sheet. The photographs indicated several creeks that had been filled and consequently were omitted from the compilation.*
8. ~~The span, 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.

13. A copy of a list of landmarks recommended by L. P. Raynor (Field Inspections) is included in this report. Campville, University of California (#25) does not appear on the sheet, it being too far east.

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.) *none submitted*

13. ✓ A list of landmarks for charts was furnished on Form 567 and scaling of positions checked. (Par. 16d, e, 60.)

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.)

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: *This sheet was compiled in the Washington office.*

20. ~~Examined and approved:~~

Chief of Party

21. Remarks after review in office:

Reviewed in office by: *Frank G. Evershine* 8/14/34

Examined and approved:

K. T. Adams
Chief, Section of Field Records

L. O. Robert
Chief, Division of Charts

F. Borden
Chief, Section of Field Work
Stade
Chief, Division of
Hydrography and Topography.

DESCRIPTIVE REPORT T-4671 SUPPLEMENTAL

December 20, 1937.

Blueprint 30716, 1937, and Chart Letter 521, 1937, covering part of the area of T-4671, indicated errors in T-4671 and the photo plot has been checked in this office December 1937.

The original T-4671 was in error from 5 to 20 meters with one section of shoreline at latitude $37^{\circ} 50.5'$, longitude $122^{\circ} 17.6'$ in error by some 30 meters. A number of tanks were in error by 3 to 20 meters and these positions had been plotted on Chart 5535 and 5532.

T-4671 was originally plotted in this office and accepted without adequate review. There was ample ground control. The errors in the plot were due to the inexperience of the compiler.

A complete recompilation would be necessary to correct T-4671 up to the standards of accuracy of a 1:10,000 scale survey.

Since large changes have been made in this area due to the construction of the San Francisco-Oakland Bridge and approaches the recompilation of T-4671 is being delayed until new photographs can be obtained.

T-4671 has been withdrawn from sales and should not be issued to the public until recompiled.

Charts

Pending the recompilation of T-4671 the corrections most important to charts T-5532 and T-5535 have been made and are shown in red on T-4671 supplemental:

1. Prominent objects have been replotted.
2. Shoreline and buildings along the water front have been corrected to eliminate large errors.
3. Streets and railroads have not been changed except for one street and are subject to errors in position of 3 to 15 meters.

4. The Beacons on T-4671 at latitude $37^{\circ} 50.4'$ longitude $122^{\circ} 18'$ can not be checked as they do not appear on the photographs and no information is available as to the source of information by which they were originally plotted on T-4671.

5. T-4671 supplemental has been made from the original photos and shows none of the ^{new} construction in this area. (1931)

6. New details in the area are shown on blueprint 30716, 1937, which is an advance tracing of a plane table survey which is being completed and should be in the office in the near future. *16666 for next page*

7. The corrected positions of tanks (shown in red) on T-4671 supplemental differ slightly from blueprint 30716, 1937. The corrected positions on T-4671 supplemental are accepted as correct since they have been plotted from well controlled photos on a 1:10,000 scale whereas blueprint 30716 is on a 1:20,000 scale and is a tracing rather than the original plane table sheet. *plottable*

See also preceding page opposite *L. C. Lande* *pg 309*

Supplemental T 4671 applied to drawing of Chart 5535 - 6/30/38
" " " " " " 5532 JFW.

Addition to 4671 supplemental 1/20/39

See also next page!

ADDITION TO REPORT T-4671 SUPPLEMENTAL

1. The Bay shore Highway from latitude 37° 53' northward was added to 4671 Supplemental in Blue in December 1938. The Highway was located by planetable on a paper print of T-4671 which is filed in the Air Photo Unit as C. S. 158. The report for the planetable survey is attached herewith.
2. Planetable survey T-6666 (of which blueprint 30716 mentioned on the preceding page is a copy) was received in this office *late in 1937* and has been reviewed and compared with T-4671 Supplemental.

Details on T-6666 supersede those shown on T-4671 Supplemental (see last paragraph preceding page).

By Jones
9/15/39

DESCRIPTIVE REPORT
to accompany location of Bayshore
Highway on Sheet T - 4671.
U.S.C. & G.S.S. GUIDE.
1938.

INSTRUCTIONS: Instructions for this survey were contained in a letter from the Director, dated December 24, 1936, no. 22/MEK, 1995, GU 4. Field work was done in November, 1938. This sheet joins with the topographic sheet of the Berkeley Yacht Harbor.

CONTROL, DATUM AND METHODS USED: Triangulation stations used on this sheet were:

- B(BWFD) 1930.
- PM 18 (BWFD) 1930.
- Eldorado Oil Company water tank, 1916-32.
- Berkeley Incinerator stack, 1916-20.
- I-Point Isabell, (BWFCo) 1930.

All these triangulation stations are on the North American 1927 Adjusted Datum.

This survey was started by occupying station B(BWFD) 1930 with the plane table, whence a direction was laid down to a point on the new highway near the Berkeley Incinerator stack, at the south end of the new road shown on this sheet. This point was then occupied with the plane table, the table oriented on the direction from station B(BWFD) 1930, and a resection cut taken on PM 18 (BWFD), checked with a cut on the Eldorado Oil Company water tank. From here a traverse was run to locate the new highway, resecting wherever possible on triangulation stations. After running about 1-1/2 miles of this traverse to the set-up shown just north of Latitude $37^{\circ} 54'$ near San Jose Ave., an opportunity was had to resect on station I-Point Isabell with a resultant error of about 3 or 4 meters. This is shown on the sheet in pencil.

The transmission line which runs along Burlingame Ave., about Latitude $37^{\circ} 54.5'$, was checked with a rod reading from the set-up shown there and no error was found. At the extreme north end of the sheet, on the west side of the new highway, a set-up is inked with a black square. From this point the intersection of the west side of the new highway with the southwest side of San Pablo Ave., is 328 meters. That portion of San Pablo Ave. inked at the north end of the sheet is simply an extension of the avenue drawn aboard ship and does not represent an actual surveyed area.

DISCREPANCIES AND CHANGES ON SHEET T-4671, EXCEPT FOR A NEW HIGHWAY:

In Latitude $37^{\circ} 53.4'$; Calhoun and Bay View Streets on the west side of the highway no longer exist.

Latitude $37^{\circ} 53.9'$, the stream shown on the west side of the highway has been diverted to flow through the culvert shown.

Latitude $37^{\circ} 54.1'$, Nevada Street is now called San Jose Ave. Evidently an extension of San Jose Ave.

Latitude $37^{\circ} 54.6'$, The transmission line is now shown to be a little distance north of Burlingame Ave. In reality this line is at the north curb of Burlingame Ave., between Columbia Ave., Latitude $37^{\circ} 54.2'$, and this transmission line are 10 evenly spaced blocks.

The name of the new highway is Bayshore Blvd. Therefore that portion of San Joaquin utilized as part of the new highway is now also Bayshore Blvd.

North of Panhandle, Latitude $37^{\circ} 54.7'$, no street intersections are shown.

The breakwater, Lat. $37 - 54.5$ Long. $122 - 19.7$ marked out, no longer exists. This is verified by the aerial photographs taken by the U. S. Army Air Corps and in the possession of the S. F. Office.

Respectfully submitted,

I. E. Rittenburg
I. E. Rittenburg,
Lieutenant,
U.S.C. & G.S.

Sheet inspected and approved.
Approved and forwarded.

E. W. Eickelberg
E. W. Eickelberg,
Chief of Party,
Commanding Ship GUIDE.