

4119

Diag. Cht. No 5500-2 & 5530-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Topographic*
Field No. _____ Office No. *4119*

LOCALITY

State *California*
General locality *San Francisco*
Locality *Fort Pt to*
Hunters Pt.
1925

CHIEF OF PARTY

H. B. Campbell

LIBRARY & ARCHIVES

DATE _____

B-1870-1 (1)++

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Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
State: <u>California</u>	
11-5613	
DESCRIPTIVE REPORT.	
<u>Hydrographic</u> <u>Top.</u>	Sheet No. <u>4113</u>
LOCALITY:	
<u>San Francisco Bay</u>	
<u>Fort Pt. to Hunters Pt.</u>	
1925	
CHIEF OF PARTY:	
<u>H. B. Campbell</u>	

Report to Accompany Sheet Showing Prominent Objects
for Anchorage Chart of San Francisco Harbor.

Instructions dated Jan 6 1925

Instructions for this work were originally sent to Commander H. C. Denson, who turned them over to me as authorized.

A section of Chart No. 5532 showing the area to be covered by the new chart was enclosed with the instructions. It is urged that this area be changed to conform with the area laid out on this sheet. My reasons for this are as follows:

The lights at Ft. Point and Lime Point are among the most conspicuous objects in the Bay, can be seen as far to the Eastward as Goat Island and are absolutely unmistakable. It would give definite limits to the chart, that is, the chart would include the area between Ft. Point and Hunter's Point and after getting one of these points abeam one would have a definite position on a chart that would serve every purpose in San Francisco Harbor. Ships passing quarantine slow down and frequently spend some time in the locality of the Transport docks. The temporary anchorage and general anchorage West of Goat Island are sometimes used, the temporary anchorage in particular, and there should be plenty of objects shown for use in those localities. In addition to this, that part of South San Francisco Bay South of Hunters Point is used extremely little for anchorage, and there are not sufficient prominent objects South of Hunters Point to answer the purpose. In April approximately one hundred vessels of the U. S. Navy visited San Francisco. None of them lay at anchor below Hunters Point.

If the size of the chart can be increased a very little it would be well to do so and include the "White Cupola" on the Eastern edge.

The Campanile of the University of California should be shown on the chart as it is one of the most prominent objects on the North side of the Bay.

The objects recommended are shown on the 1:20,000 sheet with sketches in all cases except where the objects were used in Magnetic Ranges, Special Publication No. 1. Such of these objects as are recommended are plotted and a reference is made to Magnetic Ranges by F. M.

Location

of Objects:

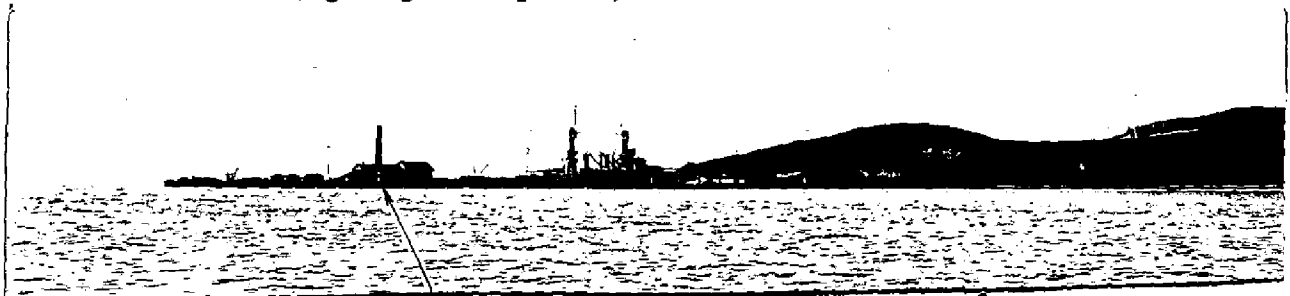
Original instructions did not call for the location of objects recommended.
This work was done in accordance with the

Director's telegram of April 11th, "Locate by theodolite or sextant selected points whenever identification on chart is doubtful."

Very few of the selected points were found to be located.

This work was undertaken at the same time as the Survey of the South Channel. When the weather was unfavorable for sounding, as was usually the case, we worked on the location of these objects. I considered that the method of taking sextant cuts and smooth plotting was all that was required by the instructions, but on account of the differences in the elevations of the objects a 7" theodolite was used to take single direct and reverse cuts from stations previously located by other parties. I intended to protract these cuts and then fill in with other cuts as needed from the "Natoma" with sextants. The work in the South Channel was so long delayed by the weather that we finally obtained three or more theodolite cuts on all important objects. It then appeared that by increasing the office work, making a number of inverse computations, and computing the positions, we would considerably increase the value of the work and eliminate the usual uncertainty found in protracting.

Following is a list of recommended objects, illustrated as thoroughly as possible without excessive cost, giving descriptions, etc:



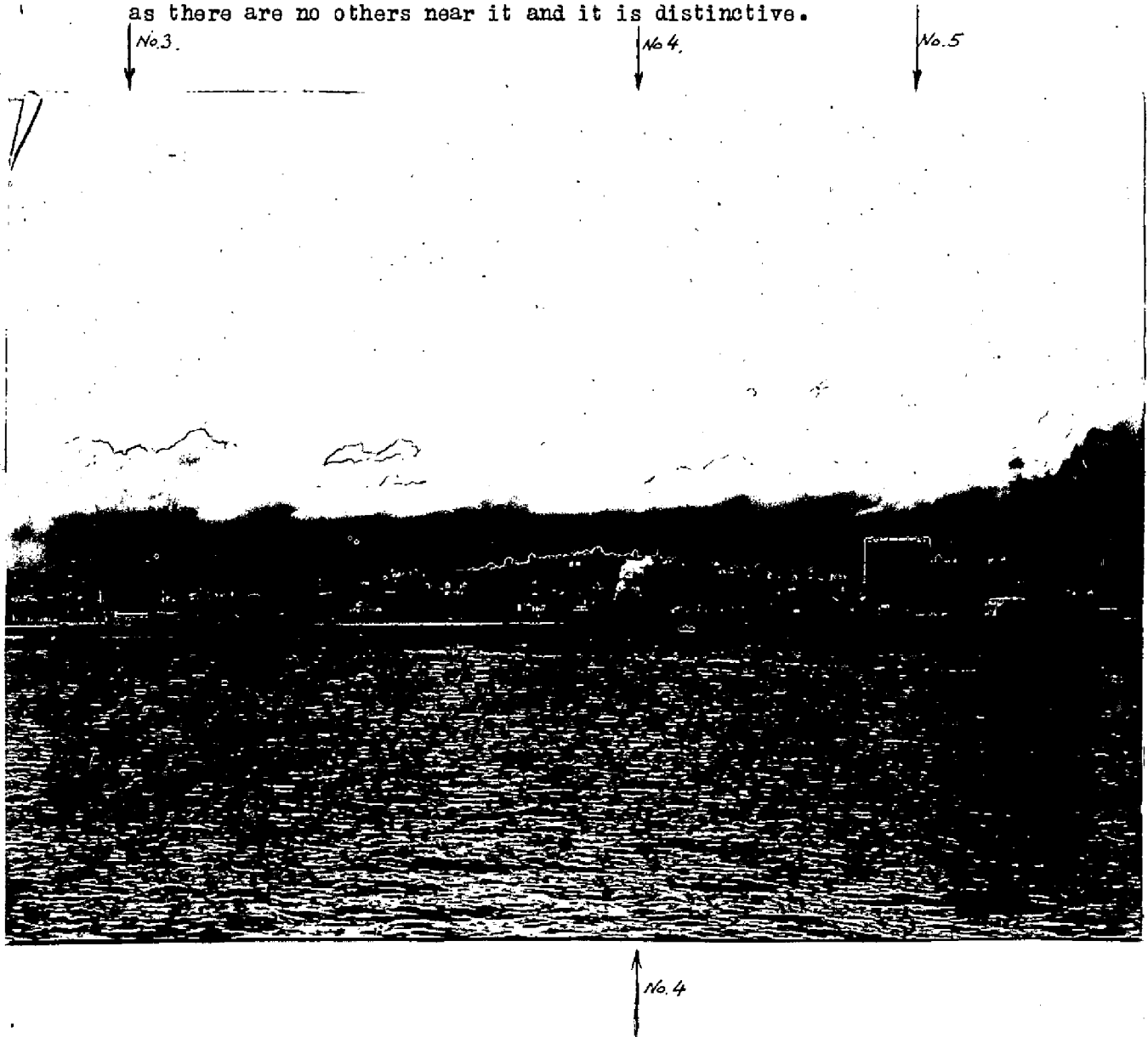
1. Stack at Hunters Point as it appears from direction of Goat Island. This is an unmistakable object which is visible from all anchorage areas East of Goat Island.

2. Tall, slender steel stack; tallow works stack, previously located. Is not very prominent unless looked for, but view of it is not obstructed and there is nothing else like it.

- ✓ 3. Large gas tank (Army Street). (Located by 3 triangulation cuts.)
- ✓ 4. Water tank Protero Hill. (Located by 3 triangulation cuts.)
- ✓ 5. Red gas tank. (Located by 3 triangulation cuts.)

The above tanks are unmistakable, especially the gas tanks. It is recommended that the position circles for the gas tanks be made to scale, so that tangents may be taken.

The water tank is not liable to be confused as there are no others near it and it is distinctive.



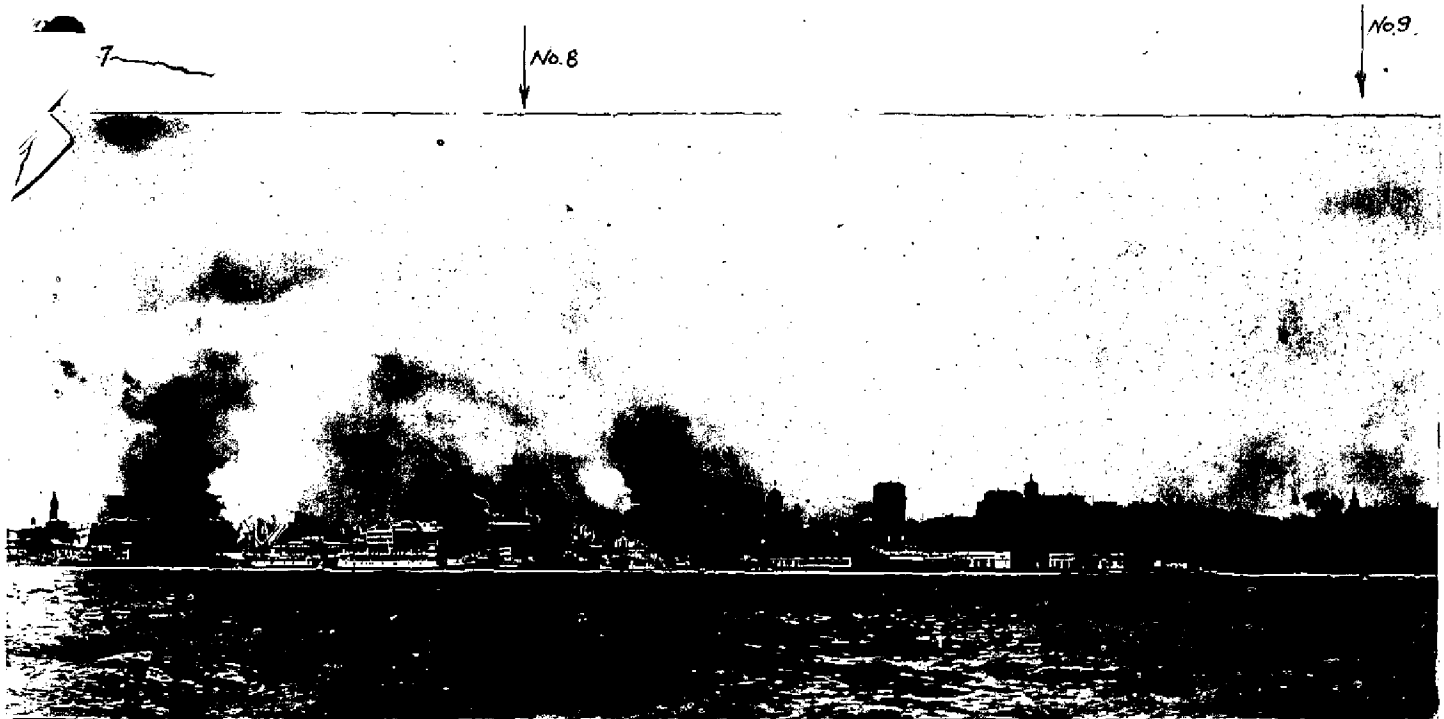
6. Dark incinerator chimney, usually smoking.
(Located by 3 triangulation cuts.), is prominent from directions of Naval and general anchorages.

7. Red clock tower.
(Located by 3 triangulation cuts.) Is a tall tower with no other high buildings near. On account of the clock it is readily and positively identified.



8. Staff, Telephone and Telegraph Building.
(Located by 3 triangulation cuts.) Is the tallest building in that part of the city. It was not entirely completed when the "Natoma" was in San Francisco. No danger of anyone confusing it with other buildings.

9. Ferry tower, (previously located), has gilded ball and dome; also clock, which should be noted.



NO.	TIME.	ANGLES.	OBJECTS OBSERVED.
✓ 1			
✓ 2	9 23		
✓ 3			
✓ 4		74 59	City Hall Mast
		19 45	Ferry Tower
✓ 5		105 27	Mast
		23 08	Ferry Tower Bank

✓2

3 ✓

✓

15

①

②

STATION OCCUPIED.

REMARKS.

Hunter Point S & E 1 mile

Oakland
Goat I
S.F.

Panoram No. 1.

G I
S F
S F Humbolt

(4)

TUESDAY - APRIL 21, 1925

NO.	TIME.	ANGLES.	OBJECTS OBSERVED.
✓ 1		122° 22'	MAST - GEAR 13. < STEEL STACK - WESTERN TALLOW CO.
		68° 23'	STACK - HUNTERS PT.
		5° 35'	EAST THIN WATER TOWNS TO CENTRE OBJECT.
✓ 2		120° 12'	FERRY TOWER
			Stack western tallow co.
		35° 54'	STACK - HUNTERS PT.
		36° 08'	LEFT TANGENT - GAS TANK TO SLIM STACK (stack western)
		1° 20'	DIAMETER OF GAS TANK
		36° 52'	SLIM STACK TO CENTRE OF GAS TANK.
✓ 3		120° 03'	FERRY TOWER
			Stack Western tallow
		36° 00'	STACK - HUNTERS PT.
		105° 59'	FERRY TOWER TO EAST DOCK TANK.
✓ 4		119° 43'	FERRY TOWER
			Stack Western Tallow
		36° 12'	STACK - HUNTERS PT.
		38° 44'	FERRY TOWER TO LOOP FLIGHTS
✓ 5		114° 19'	ALAMEDA STACK
		22° 44'	WIRELESS TOWER G. 10
		26° 52'	FERRY TOWER SQUARE WHITE CUPOLA TO ALAMEDA STACK
✓ 6		114° 23'	ALAMEDA STACK
			WIRELESS TOWER G. 10
		22° 45'	FERRY TOWER
		31° 25'	SHORT BLACK STACK OF THREE STACKS TO ALAMEDA STEEL PIPE WORKS STACK

114 19
26 52
140 11

114 23
31 25
145 48

5

STATION OCCUPIED.	REMARKS.
	H B Campbell, A S Reading & mother taking simultaneous angles from Natoma ship being stopped as nearly as possible HBC.
Tallona Co).	✓
← (Great Id)	✓
(Alameda Steel Pipe Works. etc.)	

⑥

NO.	TIME.	ANGLES.	OBJECTS OBSERVED.
✓ 17		106° 55'	CONCRETE PILLAR WIRELESS MAST G. 10.
		18° 08'	FERRY TOWER
		111° 48'	SQUARE WHITE CUPOLA TO WIRELESS MAST G. 10.
✓ 18		98° 05'	ALAMEDA STEEL STACK W. MAST - G. 10.
		22° 38'	FERRY TOWER LEFT TANGENT
		77° 29'	GAS TANK TO W. MAST G. 10 LEFT TO RIGHT
		0° 44'	TANGENT OF GAS TANK
✓ 19		98° 51'	ALAMEDA STEEL STACK W. MAST - G. 10.
		22° 35'	FERRY TOWER SQUARE WHITE TOWER
		65° 14'	OAKLAND TO W. MAST G. 10
✓ 10		99° 00'	ALAMEDA STEEL STACK W. MAST - G. 10.
		22° 32'	FERRY TOWER SQUARE WHITE CUPOLA
		120° 56'	TO WIRELESS MAST G. 10
✓ 11		55° 23'	ALCATRAZ LIGHT W. TOWER - G. 10.
		85° 05'	TANK - OAKLAND MOLE LESS 17' TO STACK
		57° 43'	TO WATER TANK
✓ 12		55° 08'	ALCATRAZ LIGHT W. TOWER G. 10.
		83° 36'	TANK - OAKLAND MOLE LESS 17' TO DOUBLE WATER TANK
		76° 20'	TANK TO PEET STACK
✓ 13		54° 49'	ALCATRAZ LIGHT W. TOWER G. 10.
		83° 00'	TANK - OAKLAND MOLE LESS 17' TO "W" STACK
		89° 22'	TANK TOWER OIL CO. TANK

8.

This information was
No other information

NO.	TIME.	ANGLES.	OBJECTS OBSERVED.
✓ 14		64° 21'	ALCATRAZ LIGHT N. TOWER - G. I.D.
		48° 40'	TANK - OAKLAND MOLE
		52° 34'	53° 49' TO STACK TO WATER TANK
✓ 15		64° 11'	ALCATRAZ LIGHT N. TOWER - G. I.D.
		48° 36'	TANK - OAKLAND MOLE SOUTH OAKLAND MOLE
		70° 23'	71° 03' TO PANTS STACK TO FEET WATER TANK SOUTH OAK. MOLE
✓ 16		64° 03'	ALCATRAZ LIGHT N. TOWER - G. I.D.
		48° 35'	TANK - OAKLAND MOLE
		84° 31'	REVER. OAKWOOD TANK TANK OAK. MOLE TO
✓ 17		58° 14'	ALCATRAZ LIGHT N. TOWER - G. I.D.
		34° 05'	TANK - OAKLAND MOLE
		44° 55'	45° 27' TO STACK TO WATER TANK
✓ 18		58° 04'	ALCATRAZ LIGHT N. TOWER - G. I.D.
		34° 04'	TANK - OAKLAND MOLE
		60° 59'	60° 21' TO FEET WATER TANK TO FEET STACK
✓ 19		58° 00'	ALCATRAZ LIGHT N. TOWER - G. I.D.
		34° 00'	TANK - OAKLAND MOLE
		74° 04'	REVER. OAKWOOD TANK SOUTH OAK. MOLE TO
✓ 20		59° 57'	ALCATRAZ LIGHT N. TOWER - G. I.D.
		34° 02'	TANK - OAKLAND MOLE
		37° 43'	CENTRE STACK OF 3 STACKS TANK OAK. MOLE TO

submitted ^{an} angle book ⑨
was contained therein } S.R.

STATION OCCUPIED.	REMARKS.
✓ 53-34 Tank, Oakland Mole to Water tank 53-49 " " " " Stack	
to left of left object. HBC.	
60-27 Tank, Oakland Mole to Peto water tank 60-59 " " " " Stack	

NO.	TIME.	ANGLES.	OBJECTS OBSERVED.
21		53° 00'	ALCATRAZ LIGHT W. TOWER - G. I. D.
		36° 52'	TANK - OAKLAND MOLE
		25° 31'	WATER TANK OF SH. WARE
			Tank Oak mole
		52° 51'	ALCATRAZ LIGHT
			W. TOWER - G. I. D.
		36° 52'	TANK - OAKLAND MOLE
		39° 50'	WATER TANK TO CONCRETE CHIMNEY.

STATION OCCUPIED.	REMARKS.
	<p>(Shaded what biscuit Co tank previously called square concrete or white tower HPC.</p>

10. Flagstaff Telegraph Hill. (Previously located.) A valuable object because it is easily and surely identified. No sketch made.

11. Elevator shaft, highest house on Russian Hill, showing on extreme right of above picture. (Located by 3 triangulation cuts.) Is prominent and distinctive. The highest point in that locality. There is a similar apartment house on another hill but it is so far away that there is little chance of anyone's confusing the two.

No. 10.

No. 11

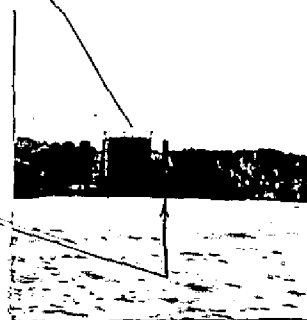


12. Red gas tank. (Located by 3 triangulation cuts.) Very prominent, no danger of confusion.

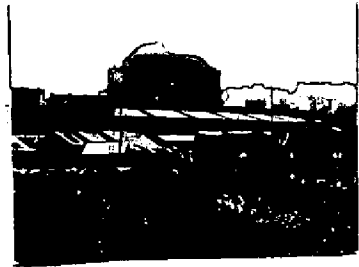
13. White pumping station stack. (Previously located.) Used in Magnetic Ranges by Mr. Morse. An excellent object; is very distinctive.

14. Grey gas tank. (Located by 3 triangulation cuts.) No danger of confusion.

15. Red stack by power plant. (Located by 3 triangulation cuts.) Nos. 14 and 15 are both shown in picture.



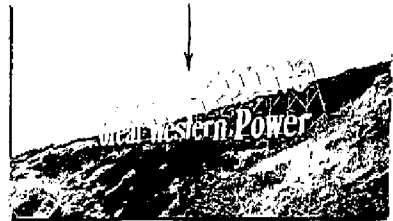
✓16. Center of dome of Fine Arts Building. (Located by 3 triangulation cuts.) Shown in picture; very prominent and cannot be confused.



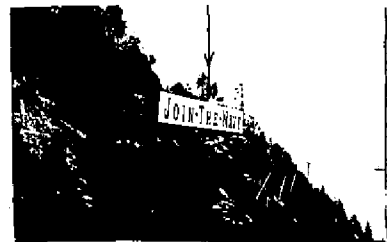
✓17. Radio towers. (Located by 3 triangulation cuts.) Can be faintly seen in picture. Are very prominent; are also visible from South Channel. Should be shown if Army authorities do not object.



✓18. Center "C" in "Cable Crossing" sign on Goat Island. (Located by 3 triangulation cuts.) This sign is evidently of a permanent nature and is a valuable land mark as it is illuminated at night and is so located that it can be used by vessels entering. The above view was taken from too low an elevation and does not show the sign to be as prominent as it really is.



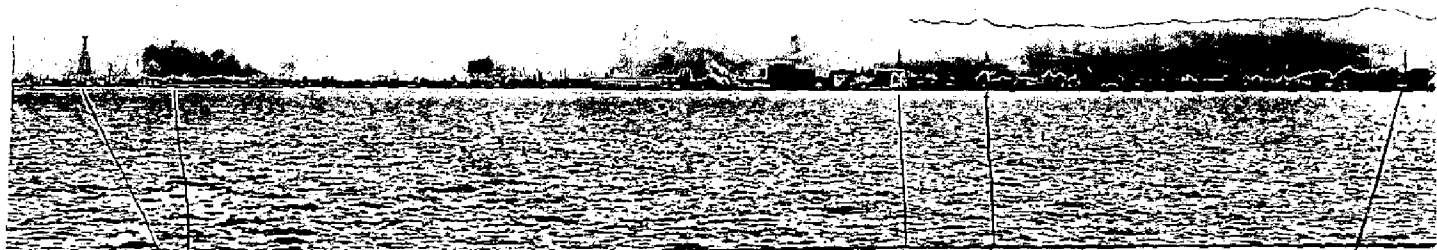
19. "H" in "Join The Navy" sign on Goat Island. (Located by 3 triangulation cuts.) This sign is prominent from the Naval Anchorage, but as a prominent object its importance is of the second order.



✓20. * Wireless mast, Goat Island. (Previously located.) An excellent prominent object. No sketch needed. See Page No. 10 regarding position of this wireless mast.

✓21. White Square Cupola on large building. (Located by 2 triangulation cuts and a sextant angle which checks the computed position. This is the most eastern of the prominent objects located on the North Shore. It is conspicuous for several miles if weather is clear. There is very little in this part of the Bay and less still to the east that is prominent enough to be of value.

* Not wireless mast. See letter 458 (ret)
JTB.



No 23

22.

High white chimney with smaller one nearby. (Previously located.) Is a very good object in a locality where good, distinctive objects are few. Both chimneys are visible in above picture.

No 25

No 24.

23.

Power transmission towers. (Previously located.) Used in Magnetic Ranges by Mr. Morse. Excellent objects in every way. Both shown in above picture.

24.

Oakland Tribune Building. (Located by 3 triangulation cuts.) Shown in above picture.

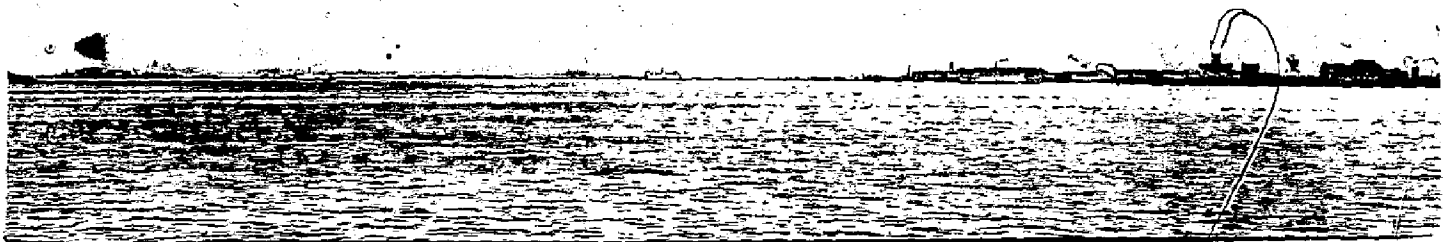
25.

Oakland City Hall. (Previously located.) Used in Magnetic Ranges. Shown in above picture.

Note: The gas tanks in center of above picture are prominent but there are several of them and too much danger of confusion. Their use on the chart is not recommended.

26.

Concrete colored building. (Located by triangulation cuts and a sextant cut which checks computed position.) This is probably the Shredded Wheat Biscuit plant. It is prominent from Southwest and Northwest with good light conditions.



27.

NW "A" and SE "A" in Albers. (Located by 3 triangulation cuts.) This is probably the most prominent object on the North Shore of the Bay. The building and the sign together are unmistakable. The sign is illuminated at night.

The preceding picture gives an idea of how indefinite the gables on the ferry buildings are. The picture is taken from closeup, -closer than ships would anchor. At the distance of the anchorage they are of but little value.

28 & 29. Black water tank and black stack near red brick building. (Located by 3 triangulation cuts.) This group is easily identified. The scattered tanks and stacks along this shore of the Bay are of little value as the most of them can not be shown in enough detail so that one could tell them apart.

30 & 31. Higher stack, Peet Bros., and double water tank, Peet Bros. (Located by triangulation cuts.) One also previously located. This is another group which can be identified without trouble.



32. Campanile, University of California. (Previously located.) Shown in Magnetic Ranges by Mr. Morse. The chart should include this building which is visible all over in clear weather.

33. Lime Point Light. This view of Lime Point Light was taken from the direction of the Transport Docks. A cut can be made from this picture or no sketch need be used for the point could be completely described by a note.



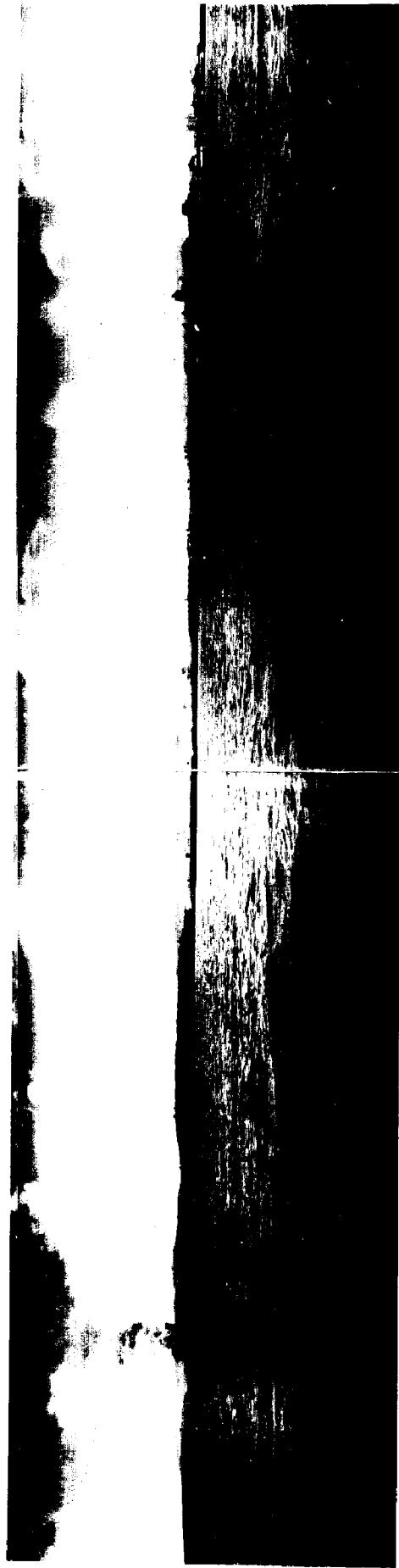
34. Fort Point Light. Used in Magnetic Ranges by Mr. Morse.

35. Power house, Sausalito. (Previously located.) If the chart is laid out so as to include this power house, it should be shown for it is illuminated at night and would be of a limited value.

Lime Point Light showing white buildings and white painted rock

36. High Point, Angel Island. It is suggested that the high point of this Island be shown. There are few objects on this Island that are distinctive and none were sketched or located.

37. Twin Peaks. It is suggested that Twin Peaks be shown by circles. Their value would be chiefly as range marks, but they would be valuable for that purpose.



The above view shows probably better than average conditions on the water front. It was taken from the General anchorage off Mission Rock, looking toward the incinerator stack which is seen smoking in the center of the view.

On the left is the red gas tank. There are many other small water tanks and stacks in that locality but the gas works nearby make so much smoke that these smaller tanks and stacks are often obscured. They are so many also as to be confusing and difficult to identify. The picture is hardly clear enough to show the tank on Protero Hill but it would be clearly visible to the naked eye under these conditions. It would be hard to identify more than three or four of the large buildings but the Telephone and Telegraph Building and the Ferry Tower can easily be seen to be the most prominent. Twin Peaks can be seen in the distance.

Naval Signal Station on Pier 26.

While the Fleet was in San Francisco Harbor in April, a signal station on top of the warehouse on Pier 26 was used. There is a small house with a signal yard on top of the warehouse. The mast supporting the yard arm was located by theodolite cuts, and it is considered of special importance that the location of this be shown as probably most Naval vessels will be acquainted with it. It occupies an important position at a turn in the water front. I do not believe it is used by the Navy except when a large number of Naval vessels are in port.

Location of Radio Mast, Goat Island.

There is some question as to the location of the Radio Mast at Goat Island. All signals used in the wire drag work, including this mast, were checked by sextant angles from the "Natoma" at anchor near the spot dragged for in the Naval Anchorage; no jump was found in using the Radio Mast. Later on, sextant positions from the "Natoma" in the locality one to two miles North of the Key Route Basin off the Berkeley Shore, using this mast as a center object and taking angles with three observers to check up objects in Berkeley, indicated that the mast might have been moved a few meters. This was not discovered until after we left San Francisco and had computed positions. Mr. Reading's observations at Avisadero show the mast to be out but Mr. Witherbee's observations at Bay check the position we have of the mast. Mr. Witherbee checked Mr. Reading's observations on the mast from Avisadero but did not record it. In any case, sextant angles taken using the mast indicated it to be close enough for anchorage positions.

Names and Numbers on Chart:

I believe the notes shown by the sketches of the different objects to be suitable and to be such as would most aid in their identification.

One of the most important things to be shown on the chart is the pier numbers. These numbers are painted on the ends of the warehouses and can be seen from out in the Bay. It is of considerable importance that the master of a vessel at anchor who receives orders to proceed to a certain dock be able to identify that dock on the chart.

It is believed that certain names should be shown on the chart, such as China Basin and Islais Creek and for the benefit of yachtmen as there are a number of yacht clubs there, the Aquatic Park.

Objects Shown on Present Edition of Chart No. 5532:

No effort was made to use objects already located. The most prominent objects were selected and located as previously noted if they could not be positively identified with objects already shown on the chart. In some cases these objects were re-located, usually where there was a question about the identity of the object shown.

The statue 1/2 mile west of the Transport Docks has been removed.

Small tanks or stacks in the locality of Protero Point are of little or no value on account of there being so many of them and because of the smoke.

South of Hunters Point in the locality of Bayshort are a number of tanks and stacks but they are very confusing and nothing distinctive was seen from a position about one mile S S E of Hunters Point.

I was unable to identify the concrete pillar in Alameda at any distance.

At Emoryville and West Berkeley and in between are a large number of stacks and tanks. The water off this shore is shoal and a vessel is obliged to keep at such a distance as to render the identification of the various ones very difficult if not impossible. A few in this locality have been shown and it is believed that they are as many as are needed or could be used with any degree of certainty.

Showing the Campanaile on the chart does away with the need for many objects in that locality.

Respectfully Submitted
A. R. Campbell,
Hydrographic Engineer

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

October 9, 1925.

SECTION OF FIELD RECORDS

Report on Topographic Sheet No. 4119

San Francisco Bay, California

Surveyed in 1925

Instructions not accessible.

Chief of Party, H. B. Campbell.

Surveyed and inked by H. B. C.

1. The records conform to the requirements of the General Instructions.
2. This work was done for the purpose of locating and describing prominent objects for charting purposes, and therefore does not conform to the General Instructions for topographic surveying.
3. The usual field plotting was done by the field party. It is excellent except for the apparent failure to check the plotting of the triangulation points.
4. No additional work appears to be necessary.
5. The character and scope of the field work are excellent.
6. Reviewed by E. P. Ellis, October, 1925.

*The plotting of all points has been checked in this
Section. L. D. Pollard, Chief Field Records.*

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

~~TOPOGRAPHIC~~
~~HYDROGRAPHIC~~ **TITLE SHEET**
for sheet showing selected objects with
sketches and notes, for anchorage chart of
San Francisco Bay.

^{Top}
The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4119

State California.

General locality San Francisco Bay.

Locality Fort Point to Hunters Point.

Chief of party H.B.Campbell.

Surveyed by H.B.Campbell.

Date of survey April 1925.

Scale 1-20 000

Soundings in -----

Plane of reference -----

Stations plotted by Carl Aslakson, Aid.
Protracted by ----- Soundings in pencil by -----

Sketches and Notes by H.B.Campbell.
Inked by ----- Verified by -----

Records accompanying sheet (check those forwarded):

Des. report, 1 Tide books, ----- Marigrams, 1 Boat sheets,
2 Horizontal angles, Vols. (Theodolite cuts) . 1 Cahier, computation,
----- Sounding books, ----- Wire-drag books, ----- Photographs.
3 Sheets Geographic positions.

Data from other sources affecting sheet Previous triangulation in San Francisco Bay.

Remarks: