

# 8980

Diag. Cht. No. 5101-3.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODÉTIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. DA-40-1-68 Office No. H-8980

### LOCALITY

State California

General locality San Diego

Locality West of Point Loma

1968

CHIEF OF PARTY

K.W. Jeffers

LIBRARY & ARCHIVES

DATE 2-27-70

8980

HYDROGRAPHIC TITLE SHEET

H-8980

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

FIELD NO.

DA-40-1-68

State California

General locality San Diego  
~~Southern California~~

Locality West of Point Loma  
~~San Diego Twenty-Five Miles West of San Diego~~

Scale 1:40,000 Date of survey Feb. 20, - May 7, 1968  
~~Spring 1968~~

Instructions dated January 4, 1968 Project No. OPR-411

Vessel USC&GSS DAVIDSON

Chief of party LCDR K. William Jeffers

Surveyed by Ship's personnel K.W. Jeffers, C.W. Hayes, D. McCall, D.L. Graves,  
K.A. Demoto, B.N. Mandelkern, D.F. Blanchard, D.L. Vannieuwenhoven

Soundings taken by echo sounder, ~~hand lead~~ XXXXXXXX

Graphic record scaled by Ship's personnel

Graphic record checked by Ship's officers

Protracted by DIGITAL PLOTTER Automated plot by PMC

Soundings penciled by DIGITAL PLOTTER

Soundings in fathoms XXX at MLW MLLW ~~XXXXXXXXXXXXXXXXXXXX~~

REMARKS:

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\_\_\_\_\_

2

DESCRIPTIVE REPORT

HYDROGRAPHIC SURVEY

DA-40-1-68

OPR-411

Southern California

USC&GSS DAVIDSON

K. William Jeffers  
LCDR, USESSA  
Commanding Officer

1968

A. PROJECT

This survey was accomplished according to PROJECT INSTRUCTIONS, OPR-411, SOUTHERN CALIFORNIA, dated 4 January 1968 and Change Number 1, AMENDMENT TO INSTRUCTIONS, dated 27 March 1968.

B. AREA SURVEYED

The surveyed area is located approximately 25 miles west of San Diego, California. Its limits are Lat. 32°45.0' N. to the north; Lat. 32°28.0' N. to the south; Long. 117°52.0' W. to the west; and Long. 117°17' W. to the east. The work was accomplished from 20 February 1968 to 7 May 1968 and junctioned only with contemporary survey DA-20-1-68 (H-8979).  
1968

C. SOUNDING VESSEL

All soundings were obtained with the USC&GSS DAVIDSON CSS-31.

D. SOUNDING EQUIPMENT

Soundings were taken in fathoms and recorded with a Raytheon DE-723 Fathometer, Serial No. 926, for sounding less than 100 fathoms. For soundings greater than 100 fathoms an EDO UQN, Model 185, Serial No. 166, in conjunction with a Raytheon Precision Fathometer Recorder was used. Echo sounder corrections were obtained from velocity corrections for temperature and salinity. Nansen casts at the beginning, middle and end of the project provided the temperature and salinity data.  
No. 925 + 976 used also.  
o.k. Dec  
records found

E. SMOOTH SHEET

The Processing Division at the Pacific Marine Center will construct and plot the smooth sheet.

F. CONTROL

This survey represents the first extensive survey by the DAVIDSON using Decca HI-FIX in a Range-Range Mode. The two Shore Stations were established by Third Order Triangulation as:

PEN = Patt. I - Lat. 33° 15' 26.171" N. 806.2 m ✓  
Long. 117° 26' 07.589" W. 196.4 m

TEA = Patt. II - Lat. 32° 32' 47.297" N. 1456.9 m ✓  
Long. 117° 07' 05.129" W. 133.8 m

H-8979 (1968)

The calibrations were obtained from plotting on a 1:20,000 scale boat sheet (DA-20-1-68). Although there is a possibility of errors in the corrections abstracted (reference SPECIAL REPORT on HI-FIX, PROJECT OPR-411) accuracy of the values is considered adequate.

## G. SHORELINE

This Sheet had no Shoreline. ✓

## H. CROSSLINES

Crosslines were run to the extent of about 14% of the regular system of sounding lines. Agreement at crossings was very good. ✓

## I. JUNCTIONS

This sheet junctioned only with sheet H-8979. <sup>1968</sup> There were some discrepancies as large as <sup>seven</sup> feet along the junction. The sounding unit for H-8980 <sup>1968</sup> was fathoms and in the area of junction the graphic record was read to the nearest  $\frac{1}{2}$  fathom. Tide Reducers were ~~not~~ applied to soundings on H-8980. <sup>1968</sup> The sounding unit for DA-20-1-68 (H8979) <sup>1968</sup> was feet and Tide Reducers were applied. The direction of rounding for soundings in fathoms and the use of tide reducers on only one sheet could easily combine to cause a 6 foot discrepancy at junctions. <sup>See Review Para. 4 B</sup> Tide reducers were used on Both sheets.

## J. COMPARISON WITH PRIOR SURVEYS

There were no numbered items within the survey area on the pre-survey review. There were, however, seven dash-circled items, as follows: ✓

From H-6119 (1935) → At Lat.  $32^{\circ}29.6'$  N., Long.  $117^{\circ}37.85'$  W., the least depth of 226 fathoms was found about 400 meters NNW of the above position. A least depth of 224 fathoms was found in Lat.  $32^{\circ}29'38''$ , Long.  $117^{\circ}37'59''$ , 250 meters NW of the above position. ✓

At Lat.  $32^{\circ}38.95'$  N., Long.  $117^{\circ}43.6'$  W., <sup>From H-6119 (1935)</sup> the pre-survey review indicated a least depth of 183 fathoms while the <sup>present</sup> survey found a least depth of 165 fathoms at the same position. Lat.  $32^{\circ}38'57''$ , Long.  $117^{\circ}43'37''$  ✓

At Lat.  $32^{\circ}41.53'$  N., Long.  $117^{\circ}42.51'$  W., <sup>From H-6119 (1935)</sup> the pre-survey review indicated a least depth of 184 fathoms. The DAVIDSON found a depth of 182 fathoms at the position. Lat.  $32^{\circ}41'23.5''$ , Long.  $117^{\circ}42'25''$  ✓

From Sp. 59797 → At Lat.  $32^{\circ}29.95'$  N., Long.  $117^{\circ}19.72'$  W., a least depth of 45 fathoms was indicated by the pre-survey review. This survey indicates a small 50 fathom curve about 200 meters to the east, but no depth less than 50 fathoms. The 45 fathom shoal should be moved to center in this area. (Approx. Lat.  $32^{\circ}29.95'$  N., Long.  $117^{\circ}19.60'$  W.). <sup>See Review Para. 7-D</sup> ✓

At Lat.  $32^{\circ}30.21'$  N., Long.  $117^{\circ}18.15'$  W., <sup>From Sp. 59797</sup> the pre-survey review showed a least depth of 49 fathoms. A shoal area with a least depth of 45 fathoms was found approximately 1500 meters WSW of that position. <sup>See Review Para. 7-C</sup> ✓

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J. COMPARISON WITH PRIOR SURVEYS Continued

At lat. 32°32.87' N., Long. 117°20.95' W., a least depth of 53 fathoms was indicated by the pre-survey review. This survey indicates a least depth of 52' fathoms 1400 meters to the NNW, SSE. *See review Para. 7 B*

At Lat. 32°36.75' N., Long. 117°24.35' W., a depth of 63 fathoms appears on the pre-survey review. The closest least depth of 70 fathoms was found about 600 meters ESE from the above position. This could be developed further. *From Bp. 59797 See review Para. 7 A Present development adequate*

K. COMPARISON WITH THE CHART

Comparison with C&GS Chart #5060, 2ND EDITION, dated 21 FEBRUARY 1966, REVISED 8 MAY 1967 was generally good. A major discrepancy, however, appeared in the Coronado Canyon. This survey indicates one major well defined axis running North East - South West. The Chart shows a second axis running South-East from the major axis.

L. ADEQUACY OF SURVEY

This survey is considered Adequate and Complete within it's surveyed limits. Additional development of some shoal areas could be run but there is no indication that a significant change from what is already run would appear. The Coronado Canyon should be developed southward until agreement with the chart is reached.

M. AIDS TO NAVIGATION

There were no Aids to Navigation.

N. STATISTICS

No. Positions	Miles Sounding Line	Total Area	B. S.
2316	1635.0 Nautical Miles	780 sq. mi.	27

O. MISCELLANEOUS

Some difficulties were encountered in getting good soundings over escarpments. Discussions with Dr. Robert Dill, of the Naval Underwater Warfare Center, personnel from Scripps Institute, and others who have made extensive tests with submersibles in the area, disclosed that some of the "Escarpments" actually have over-hanging walls and the cross sections of the canyons are frequently hour-glass in shape.

P. RECOMMENDATIONS

COOP-PROJECTS with NU/WC or Scripps to study sediment transport and deposition thru canyons into basins could be considered.

Q. REFERENCE TO REPORTS

SPECIAL REPORT ON HI-FIX, PROJECT OPR-411  
Corrections to Echo Sounders

Respectfully submitted,

*Kanezo Domoto*

Kanezo Domoto  
LT, USESSA

LIST OF GEOGRAPHIC NAMES

CORONADO CANYON

CORONADO ESCARPMENT



ABSTRACT OF CORRECTIONS

TO ECHO SOUNDERS

DA-40-1-68

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<u>Correction (Fathoms)</u>	<u>To Depth (Fathoms)</u>
+ 0.2	14.5
0.4	23.5
0.6	33.5
0.8	44.5
1.0	56.0
1.2	68.0
1.4	80.5
1.6	93.0
1.8	105.5
2.0	132.0
2.5	167.0
3.0	238.0
4.0	323.0
5.0	408.0
6.0	489.0
7.0	573.0
8.0	648.0
9.0	725.0
10.0	796.0
11.0	863.0

TIDE NOTE

For

~~HABSD~~

DA-40-1-68

Tide Station San Diego, California

Lat. 32° 43' N.

Long. 117° 10' W.

Plane of Reference

M L L W

Time Meridian of Gage

120° W.

Tide Gage is Standard type installed at the Broadway Pier,  
San Diego, California

ABSTRACT OF CORRECTIONS  
TO HI-FIX  
DA-40-1-68

<u>Date</u>	<u>Day No.</u>	<u>P<sub>1</sub></u>	<u>P<sub>2</sub></u>	<u>Time</u>
20 Feb	51	<del>4.20</del>	<del>4.10</del>	1442-1638
21 Feb	52	0.00	0.00	1036-1649
22 Feb	53	<del>0.20</del>	-0.10	1318-1530
26 Feb	57	-0.20	<del>0.40</del>	1238-1521
27 Feb	58	0.00	-0.25	0901-1631
28 Feb	59	<del>0.20</del>	<del>0.10</del>	0841-1733
6 Mar	66	<del>0.20</del>	-0.20	0910-1002
7 Mar	67	<del>0.25</del>	-0.25	0932-1448
11 Mar	71	<del>0.20</del>	-0.20	1118-1519
12 Mar	72	<del>0.10</del>	-0.30	0942-1609
13 Mar	73	<del>0.00</del>	<del>0.00</del>	0918-1611
14 Mar	74	<del>0.20</del>	<del>0.25</del>	0928-1619
15 Mar	75	-0.20	0.00	0857-1405
25 Mar	85	<del>0.20</del>	<del>0.30</del>	1142-2243
26 Mar	86	<del>1.20</del>	-0.70	0029-0552
26 Mar	86	0.00	<del>0.30</del>	0829-2400
27 Mar	87	0.00	<del>0.30</del>	0000-1137
27 Mar	87	<del>1.00</del>	<del>0.30</del>	1232-1930
27 Mar	87	0.00	<del>0.30</del>	2330-2400
28 Mar	88	0.00	<del>0.30</del>	0000-0212
2 Apr	93	<del>0.10</del>	-0.05	1153-1520
3 Apr	94	<del>0.25</del>	-0.20	1138-1627
4 Apr	95	-0.05	-0.15	1103-1538
18 Apr	109	<del>0.25</del>	0.00	0928-1659
23 Apr	114	<del>0.20</del>	-0.30	1048-1154
23 Apr	114	-0.20	-0.15	1418-1620
24 Apr	115	<del>0.10</del>	<del>0.10</del>	0907-1456
25 Apr	116	<del>0.05</del>	0.00	1122-1538
26 Apr	117	<del>0.10</del>	-0.25	1035-1528
6 May	127	-0.35	-0.25	<del>1032-1420</del>
6 May	127	<del>0.65</del>	-0.25	1450-1618
7 May	128	<del>0.40</del>	-0.20	0951-1222
7 May	128	-1.60	-0.20	1243-1524

See Review Par. 4

APPROVAL SHEET

OPR-411

DA-40-1-68

Southern California

The field work on this survey was accomplished under my supervision. Frequent inspections were made of the boat sheet and other records.

*K. William Jeffers*  
K. William Jeffers  
LCDR, USESSA  
Commanding Officer  
USC&GSS DAVIDSON

ABSTRACT OF TRA CORRECTORS

TIME	CORRECTOR	DAY
000000	00 0016 0000	051 0 000000 000000
125300	00 1006	
131700	00 0016	
155400	00 1005	
160600	00 0016	
161800	00 1005	
164000	00 0016	
000000	00 0016 0000	052 0 000000 000000
103600	00 1004	
111100	00 0016	
141100	00 1005	
151900	00 0016	
160700	00 1005	
161800	00 0016	
162630	00 1006	
165000	00 0016	
000000	00 0016 0000	053 0 000000 000000
131800	00 1006	
134500	00 0016	
150800	00 1005	
153100	00 0016	
000000	00 0016 0000	057 0 000000 000000
123800	00 1004	

TIME	CORRECTOR	DAY					
130300	00	0016					
160300	00	1005					
162200	00	0016					
000000	00	0016	0000	058	0	000000	000000
090100	00	1006					
092200	00	0016					
122700	00	1006					
123110	00	0016					
155100	00	1006					
163110	00	0016					
000000	00	0016	0000	059	0	000000	000000
084100	00	1006					
090510	00	0016					
171100	00	1004					
173310	00	0016					
000000	00	0016	0000	066	0	000000	000000
091000	00	1004					
093810	00	0016					
000000	00	0016	0000	067	0	000000	000000
094000	00	0000					
095210	00	0016					
141200	00	0006					
144810	00	0016					
000000	00	0016	0000	071	0	000000	000000
111800	00	0006					
132310	00	0016					
133200	00	1004					

TIME	CORRECTOR	DAY
151910	00 0016	
000000	00 0016	0000 072 0 000000 000000
094200	00 1004	
103010	00 0016	
104900	00 1004	
125910	00 0016	
132530	00 1004	
160910	00 0016	
000000	00 0016	0000 073 0 000000 000000
091800	00 1004	
100110	00 0016	
140200	00 1005	
161110	00 0016	
000000	00 0016	0000 074 0 000000 000000
092800	00 1006	
100910	00 0016	
142300	00 1005	
161910	00 0016	
000000	00 0016	0000 075 0 000000 000000
085700	00 1004	
093210	00 0016	
093210	00 0016	
133700	00 1004	
140510	00 0016	
000000	00 0016	0000 085 0 000000 000000
114200	00 1001	

TIME	CORRECTOR	DAY					
121410	00	0016					
164300	00	1002					
173040	00	0016					
223600	00	1002					
235910	00	0016					
000000	00	1002	0000	086	0	000000	000000
003910	00	0016					
053700	00	1005					
093040	00	0016					
000000	00	0016	0000	087	0	000000	000000
061900	00	1005					
112140	00	0016					
000000	00	0016	0000	088	0	000000	000000
000000	00	0016	0000	089	0	000000	000000
000000	00	0017	0000	093	0	000000	000000
115300	00	1005					
124530	00	1006					
172010	00	0017					
000000	00	0017	0000	094	0	000000	000000
160730	00	1003					
162710	00	0017					
000000	00	0016	0000	109	0	000000	000000
092800	00	1004					
101840	00	0016					
162400	00	1004					
165910	00	0016					
000000	00	0016	0000	114	0	000000	000000

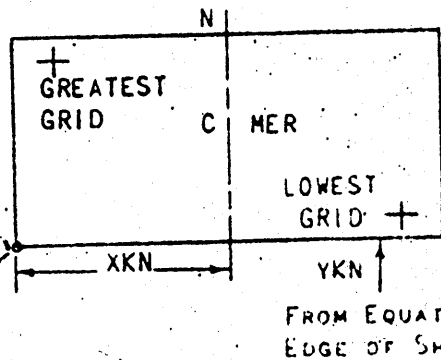
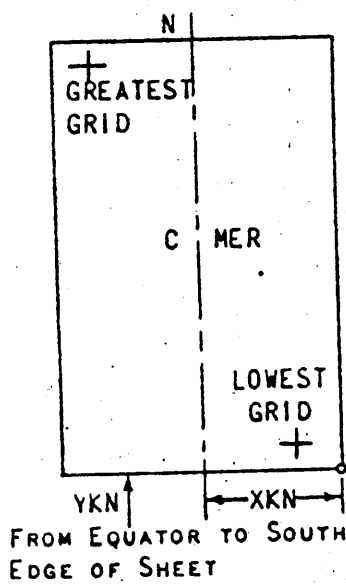


TIME	CORRECTOR	DAY
104800	00 1004	
111340	00 0016	
141800	00 1004	
143340	00 0016	
161340	00 1004	
162010	00 0016	
000000	00 0016	0000 115 0 000000 000000
090200	00 1004	
093910	00 0016	
100000	00 1005	
102010	00 0016	
144630	00 1006	
145610	00 0016	
000000	00 0016	0000 116 0 000000 000000
112200	00 1004	
115510	00 0016	
151000	00 1004	
153810	00 0016	
000000	00 0016	0000 117 0 000000 000000
103500	00 1004	
110710	00 0016	
123700	00 1005	
124910	00 0016	
000000	00 0016	0000 127 0 000000 000000

TIME	CORRECTOR	DAY
000000	00 0016	0000 128 0 000000 000000
091000	00 1005	
110410	00 0016	
131500	00 1005	
135310	00 0016	
143600	00 1005	
144710	00 0016	

**PARAMETERS FOR DIGITAL COMPUTING  
POLYCONIC PROJECTION**

- (1) PROJECT No. OPR (4) REQUESTED BY COMMANDING OFFICER  
 (2) H No. \_\_\_\_\_ (5) SHIP OR OFFICE USF 655 DRIBSEN  
 (3) FIELD No. DA-40-1-62 (6) DATE REQUIRED Soon as possible (real)  
 (7) VISUAL  (8) ELECTRONIC  (FILL OUT FORM #3)  
 (10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1) 29322.3  
 OR WEST EDGE (NYX = 0). 29322.3 METERS  
 (11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE 3586173.45  
 OF SHEET. 3586203.6 METERS  
 (12) CENTRAL MERIDIAN 117° 34' 00" ✓  
 (13) SURVEY SCALE 1: 40000 ✓  
 (14) SIZE OF SHEET (CHECK ONE) 36x54  42x60  OTHER 36x60   
 (15) NYX, ORIENTATION OF SHEET. (CHECK ONE)  
 NYX = 1  NYX = 0



(9) PLOTTER ORIGIN  
(CORNER OF SHEET)

LATITUDE 32° 24' 06"  
LONGITUDE 117° 52' 42"

GRID LIMITS

- (16) GREATEST LATITUDE: 32° 42' 00" PROJECTION LINE  
 (17) LOWEST LATITUDE 32° 26' 00" INTERVAL, PAGE 4  
 (18) DIFFERENCE ° 16' 00" HYDRO MANUAL )  
 (19) 2.00  
 (20) 8 YSN  
 (21) GREATEST LONGITUDE 117° 52' 00"  
 (22) LOWEST LONGITUDE 117° 14' 00"  
 (23) DIFFERENCE ° 38' 00"  
 (24) 2.00"  
 (25) 19 XSN

LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., METERS)

OV  
✓BAM

(31070)  
 DA-40-1-68  
 Date

PAFANFTFR CARD II

Semi major axis of the earth X Constant - Distance from central meridian to origin of plotter SP 5 Y Constant - Distance from equator to origin of plotter SP 241 Central Meridian of Projection Plotter Scale/Survey Scale North/south axis of sheet - to correspond to (Y axis - 1) of plotter Feet/Fathom indicator H Identification No.	6,378,206.4 29322.3 meters 3586,17345 meters 117 94 0000 *16498.6876 1:40000 0 - feet 1 - fathom	<input checked="" type="checkbox"/> RDA <input checked="" type="checkbox"/> YVII <input checked="" type="checkbox"/> YVM <input checked="" type="checkbox"/> CIR <input checked="" type="checkbox"/> SCA <input checked="" type="checkbox"/> NYX <input type="checkbox"/> FOF <input type="checkbox"/> JN <input type="checkbox"/> YR	1 2 3 4 5 6 7 8 9 10 1 3 7 8 2 0 6 4 0 1 2 9 2 2 2 3 3 0 0 5 3 5 8 6 1 7 3 4 0 0 4 2 3 3 4 2 4 3 0 0 5 6 2 3 5 4 5 4 9 0 6 2 4 4 6 7 1 1 1 0 7 6 2 4 1 0 0 0 0 0 8 2 6 4 3 3 4 9 0 0 9 0 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0	53 54 55 56 57 3 1 0 58 59 6 8	089820
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FOF - 1

PARAMFTFR CARD III

Lowest Lat. Intersection Lowest Long. Intersection Difference between Grid Interval (Long) Interval (Lat)	32 26 0000 117 14 0000 2   	YST XST DXY XSN YSN	1 1 1 2 2 3 4 5 6 7 8 9 10 3 6 13 14 15 16 17 18 19 20 4 2 2 0 4 0 0 0 0 0 7 1 1 1 1 1 1 1 1 1  33 34 0 8	Computed Punched Checkid Date	[Signature]
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FORM # 3

FIG. 7

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

(1) PROJECT NO. 411 (2) H- No. \_\_\_\_\_ (3) FIELD NO. DA-40-1-68(4) TYPE OF CONTROL: \_\_\_\_\_ SHORAN, \_\_\_\_\_ RAYDIST, X HI-FIX, \_\_\_\_\_ RADAR  
FREQUENCY (FOR CONVERSION OF RAYDIST OR HI-FIX LANES TO METERS) ~~1.799.6~~ 1.799.6(5) RANGE ONE (R1) LATITUDE 33 ° 15 ' 26.171"STATION NAME PLN 021LONGITUDE 117 ° 26 ' 07.587"(6) RANGE TWO (R2) LATITUDE 32 ° 32 ' 47.197"STATION NAME TEA 022LONGITUDE 117 ° 07 ' 05.129"(7) AZIMUTH FROM R1 TO R2 339 ° 16 ' 27.61"(8) BASELINE LENGTH IN METERS 84233.039 M.(9) LOCATION OF SURVEY WITH RESPECT TO ELECTRONIC BASELINE: CHECK ONE  
(TO DETERMINE: IMAGINE AN OBSERVER STANDING AT R1 AND LOOKING DIRECTLY  
AT R2 --- IF THE SURVEY AREA IS TO THE OBSERVER'S LEFT THEN A IS  
NEGATIVE; IF THE SURVEY AREA IS TO THE OBSERVER'S RIGHT THEN A IS  
POSITIVE.)\_\_\_\_\_ -A (MINUS) X +A (PLUS)(10) IF SHORAN CORRECTIONS ARE APPLIED BY THE EQUATION,  $K(X) + C = D$ ,  
WHERE X IS SHORAN DISTANCE AND D IS TRUE DISTANCE, ENTER THE CONSTANT  
COEFFICIENTS OF THE EQUATIONS HERE:

K(R1) \_\_\_\_\_, C(R1) \_\_\_\_\_, K(R2) \_\_\_\_\_, C(R2) \_\_\_\_\_

(11) NUMBER OF VELOCITY TABLES TO BE USED:  
\_\_\_\_None, \_\_\_\_One, \_\_\_\_More than one.(12) \_\_\_\_\_ THIS FORM IS SUBMITTED ONLY AS AN AID IN PREPARING A BOAT  
SHEET PROJECTION.

\_\_\_\_\_ THIS FORM APPLIES TO ALL DATA ON THIS SURVEY.

\_\_\_\_\_ THIS FORM APPLIES TO PART OF THE DATA ON THIS SURVEY -

TIME AND DATE LIMITATIONS: FROM \_\_\_\_\_ TO \_\_\_\_\_

POSITION NUMBER LIMITATIONS: FROM \_\_\_\_\_ TO \_\_\_\_\_

THIS IS FORM #3 SHEET # 1 OF 2 SHEETS FOR THIS SURVEY. 21

(13) OTHER REMARKS:

*Note frequency is in kHz and not kc*



APPROVAL SHEET

The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's report.)

Examined and approved

*William M. Martin*  
William M. Martin  
Supervisory Carto. Tech.

Approved and forwarded

*K. William Jeffers*  
K. William Jeffers, CDR, USESSA  
Chief, Processing Division, PMC

2/3/70

GEOGRAPHIC NAMES  
Survey No. H-8980

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
Coronado Canyon												1
Coronado Escarpment												2
Pacific Ocean												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
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												21
												22
												23
												24
												25
												26
												27

PREPARED BY

*Frank W. Pickett*  
CARTOGRAPHIC TECHNICIAN

APPROVED BY

*A. J. Wrought*  
CHIEF GEOGRAPHER



24

TIDE NOTE FOR HYDROGRAPHIC SHEET

April 25, 1969

~~National Ocean Division~~ Pacific Marine Center

Plane of reference approved ~~by~~  
~~XXXXXXXXXXXXXXXXXXXX~~ for

HYDROGRAPHIC SHEET 8980

Locality: California Coast

Chief of Party: K. W. Jeffers, 1968

Plane of reference is mean lower low water

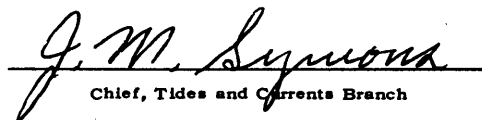
Tide Station Used (Form C&GS-681):

San Diego

Height of Mean High Water above Plane of Reference is as follows:

5.0 feet

Remarks

  
Chief, Tides and Currents Branch

FORM C&GS-946  
(REV. 11-65)  
(PRESC. BY  
HYDROGRAPHIC  
MANUAL 20-2,  
6-94, 7-13)

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY  
NAUTICAL CHART DIVISION

**HYDROGRAPHIC SURVEY STATISTICS**  
**HYDROGRAPHIC SURVEY NO. 8980**

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & Pos. Overlay		/	BOAT SHEETS		/	
DESCRIPTIVE REPORT		/	OVERLAYS		3	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			2			
CAHIERS	/ & Raw Data Printouts					
VOLUMES						
BOXES						
T-SHEET PRINTS (List)						
SPECIAL REPORTS (List)						

**OFFICE PROCESSING ACTIVITIES**

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2316
POSITIONS CHECKED		2257	125	
POSITIONS REVISED		50	103	
DEPTH SOUNDINGS REVISED		189	39	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0	-	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0	-	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		0	-	
JUNCTIONS		28	27	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		69	16	
SPECIAL ADJUSTMENTS		0	38	
ALL OTHER WORK		279	63	
<b>TOTALS</b>		<b>376</b>	<b>144</b>	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>SM Sanders</i>	15 APRIL 1969		30 January, 1970	
REVIEW BY <i>Dennis J. Romesburg</i>	9-7-71		9-30-71	

Inspected by: *Dale E. Westmark* 50 hrs. 4/7/73

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H-8980

Information for Future Pre-Survey Reviews

The bottom in this area appears to be quite stable both in depth and bottom configuration.

Position Index Lat.	Long.	Bottom Change Index	Use.Index	Resurvey Cycle
322	1180	0	0	50 yrs.
323	1180	0	1	50 yrs.
324	1180	0	1	50 yrs.
322	1175	0	0	50 yrs.
323	1175	0	1	50 yrs.
324	1175	0	1	50 yrs.
322	1174	0	0	50 yrs.
323	1174	0	1	50 yrs.
324	1174	0	1	50 yrs.
322	1173	0	0	50 yrs.
323	1173	0	1	50 yrs.
324	1173	0	1	50 yrs.
322	1172	0	0	50 yrs.
323	1172	0	4	50 yrs.
324	1172	0	4	50 yrs.

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8980

FIELD NO. DA-40-1-68

California, San Diego, West of Point Loma

SURVEYED: February 20 through May 7, 1968

SCALE: 1:40,000

PROJECT NO.: OPR-411

SOUNDINGS: DE-723 Depth Recorders,  
EDO Precision Fathometer  
Recorder

CONTROL: HI-Fix (Range-  
Range)

Chief of Party .....	K. W. Jeffers
Surveyed by .....	K. W. Jeffers
.....	C. W. Hayes
.....	D. McCall
.....	D. L. Graves
.....	K. A. Domoto
.....	R. N. Mandelkern
.....	D. F. Blanchard
.....	D. L. Vannieuwenhoven
Protracted by .....	Gerber Digital Plotter
Soundings plotted by .....	Gerber Digital Plotter
Verified and inked by .....	M. G. Sanders
Reviewed by .....	D. J. Romesburg
.....	Date: September 28, 1971
Inspected by .....	D. E. Westbrook

1. Description of the Area

This survey covers a rectangular area of the Pacific Ocean west of Point Loma. Survey limits extend north from lat. 32°26' to lat. 32°42' and west from long. 117°15.5' to long. 117°52'. In this area the bottom characteristics are predominately mud and sand with some clay and shells. Beginning on the eastern limits of the survey and proceeding westward, the bottom slopes somewhat abruptly from depths of 30 fathoms to depths over 100 fathoms at the base of a ridge extending through the survey area in a northwest-southeast

direction. A least depth of 46 fathoms is recorded in this ridge near the southeastern corner of the survey. Coronado Canyon divides the ridge at lat.  $32^{\circ}30.8'$ , long.  $117^{\circ}21.2'$ .

The bottom drops sharply along the western face of the ridge (known as the Coronado Escarpment) from depths less than 100 fathoms to depths over 600 fathoms. From the base of Coronado Escarpment westward, the gradient is relatively uniform until another ridge rises from the bottom in the western portion of the survey area. Three knolls were found along this ridge. The least depth of 166 fathoms was recorded on the highest knoll in lat.  $32^{\circ}38.96'$ , long.  $117^{\circ}43.61'$ .

## 2. Control and Shoreline

The origin of the control is given in the Descriptive Report.

There is no shoreline within the limits of the survey.

## 3. Hydrography

- A. Depths at crossings are in good agreement.
- B. The usual depth curves were adequately delineated. A few dashed and brown curves were added to emphasize important bottom features.
- C. The development of the bottom configuration and investigation for least depths are considered adequate.

## 4. Condition of the Survey

The field verification, survey records, automated plotting, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, as amended by the Instruction Manual - Automated Hydrographic Surveys except as follows:

- A. Several soundings were found to have been plotted 100 fathoms in error although the depths in the records were correct. This was apparently the fault of the Gerber plotter, but the verifier failed to detect the errors.
- B. Calibration corrections for several sounding lines in the junctional area with H-8979 (1968) were questionable. Although the delineation of the standard depth curves were in satisfactory agreement, some soundings differed by 7 feet. As the bottom slopes somewhat abruptly in the junctional area, a small error in positioning could result in the sounding differences. On

Julian Day 73, the calibration corrections, as originally recorded indicated an  $R_1$  correction of minus one (-1) lane and an  $R_2$  correction of minus one and one-half (-1.5) lanes. However, these correctors were rejected on the smooth plot and 0.0 was carried as the  $R_1$  and  $R_2$  correction throughout the day. To remedy the sounding discrepancies the reviewer, in this case, carried the original calibration corrections and dropped the 0.0 corrections.

C. In the junctional area with H-8979 on the east fractions of fathoms were added to present depths during review in accordance with item 6-55 of the Hydrographic Manual.

### 5. Junctions

An adequate junction was effected with H-8979 (1968) on the east, and with H-9111 (1970), and H-9112 (1970) on the west. The junction with unverified survey H-9108 on the north will be discussed in the review of that survey.

No contemporary survey joins the present survey on the south but present survey depths are in harmony with those charted in that area.

### 6. Comparison with Prior Surveys

- A. H-1888 (1888-89) 1:20,000  
H-1889 (1888-89) 1:20,000

These early surveys are little more than reconnaissance within the area covered by the present survey. The present survey is adequate to supersede these prior surveys within the common area.

- B. H-4258 (1922-23) 1:40,000  
 H-4265a (1922-23) 1:120,000  
 H-4266 (1922-23) 1:40,000  
 H-6119 (1935) 1:80,000  
H-6121 (1935) 1:120,000

These prior surveys, taken together, cover the area of the present survey. A comparison of the prior surveys with the present survey indicates few major differences. The bottom appears quite stable. Where the development on H-4258 is sufficiently close for comparison, however, present survey depths are consistently shoaler by 1-2 fathoms. These differences were probably caused by inaccuracies in soundings obtained by sounding tubes and wire on the prior survey.

In isolated instances, substantial differences were noted. These differences can probably be attributed to the outmoded deep water sounding techniques and positioning methods employed on the earlier survey when compared with the present survey. For example, on H-4258 (1922-23), two soundings, a 173 fathom sounding recorded in lat.  $32^{\circ}28.50'$ , long.  $117^{\circ}22.05'$  and a 353 fathom sounding recorded in lat.  $32^{\circ}28.07'$ , long.  $117^{\circ}22.20'$ , fall in present depths of 409 and 480 fathoms respectively. The 173-fm. depth is in error, and the 353-fm. depth is apparently out of position. In fact, the position of the entire line 19-25 K on H-4258 is probably in error, since none of the soundings agree with those of the present survey.

The present survey is adequate to supersede these prior survey within the common area.

7. Comparison with Chart 5060, 4th Ed., June 13, 1970

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by soundings from the boat sheet and verified smooth sheet of the present survey, and by Bp 59797, a bromide copy of the boat sheet on an unregistered survey made in 1960. This special survey, Field No. SU-40-1-60, was primarily a testing operation of ship and/or equipment and failed to comply with National Ocean Survey standards for hydrographic surveys. Therefore it was never smooth plotted or registered.

Several bottom characteristics presently charted originate with an 1884-85 reconnaissance survey of the USS RANGER.

A. The following soundings charted from Bp 59797 are considered highly unreliable, and, since the area is considered adequately covered on the present survey, these soundings should be deleted from the chart:

	<u>SDG.</u>	<u>LAT.</u>	<u>LONG.</u>
1.	45-fm.	$32^{\circ}29.97'$	$117^{\circ}19.73'$
2.	49-fm.	$32^{\circ}30.25'$	$117^{\circ}18.10'$
3.	53-fm.	$32^{\circ}32.90'$	$117^{\circ}21.00'$
4.	63-fm.	$32^{\circ}36.73'$	$117^{\circ}24.40'$

B. Depth curve delineations as presently charted at the mouth of Coronado Canyon do not agree with the present survey. The curves in this area should be revised to portray the bottom as depicted on the present survey.

The present survey is adequate to supersede the charted hydrography within the common area.


8. Compliance with Instructions

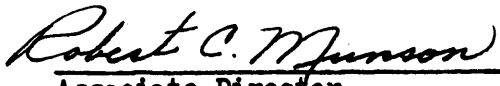
The survey adequately complies with the Project Instructions except for Paragraph 24 which specified line spacing no greater than 250 meters in the development of Coronado Canyon. The line spacing used for the development of Coronado Canyon on the present survey was 400 meters.

9. Additional Field Work

This survey is considered to be a good basic survey and no additional field work is recommended.

Examined and Approved:

  
\_\_\_\_\_  
Chief,  
Marine Chart Division

  
\_\_\_\_\_  
Associate Director,  
Office of Marine Surveys  
and Maps



REGISTRY NO. \_\_\_\_\_

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE \_\_\_\_\_ TIME REQUIRED \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

REGISTRY NO. H-8980

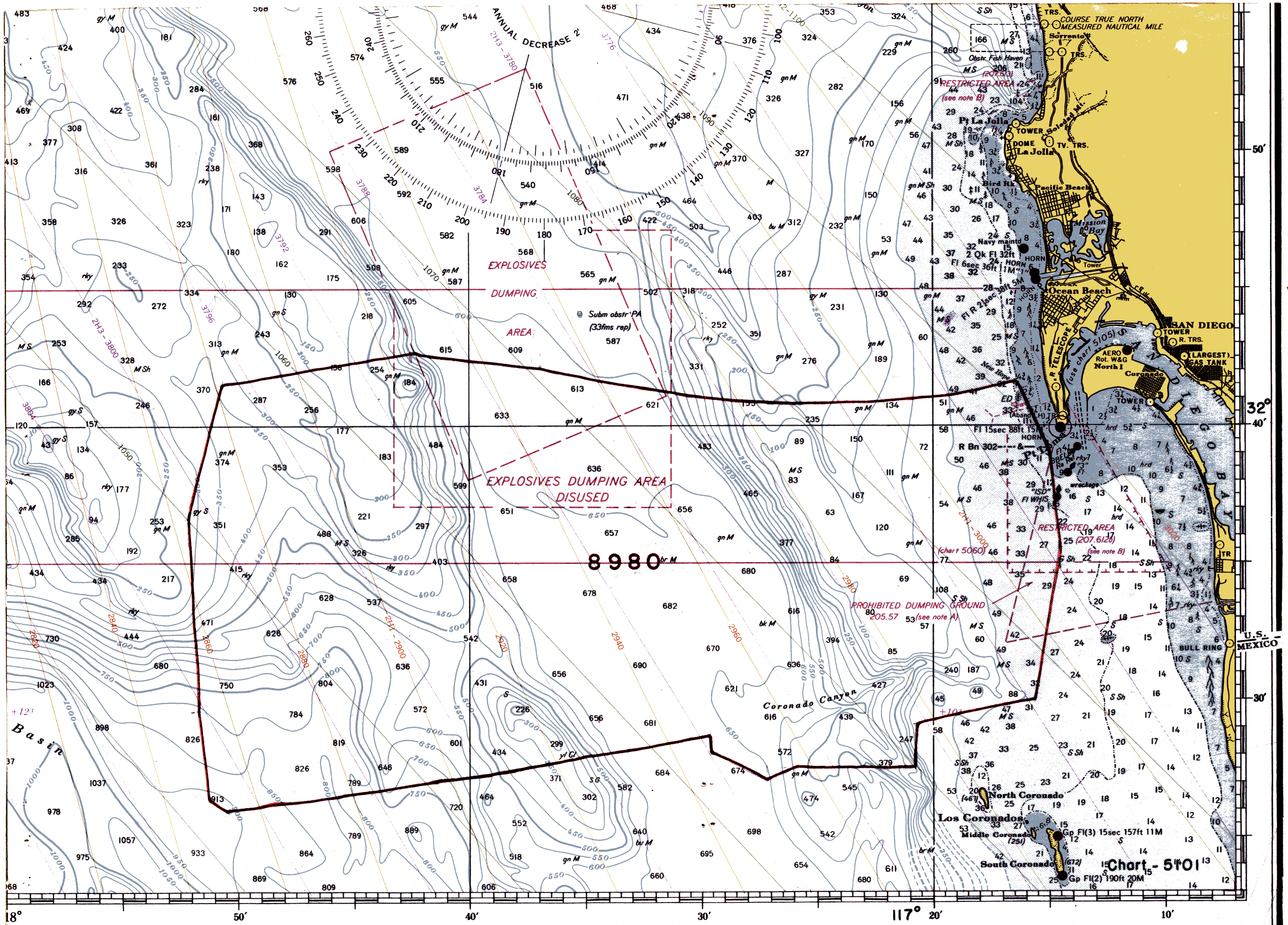
The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE 8-29-75 TIME REQUIRED \_\_\_\_\_ INITIALS WGL

REMARKS:



8980 br M

Chart - 5101

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8980

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

- 1. Letter all information.
- 2. In "Remarks" column cross out words that do not apply.
- 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
9060	4/23/70	Cynthia Peron	<del>Full Part</del> <sup>added</sup> <del>Before</del> After Verification <sup>before</sup> Review Inspection Signed Via Drawing No.
5002	8/17/70	Stuart	<del>Full Part</del> <sup>before</sup> <del>Before</del> After Verification <sup>before</sup> Review Inspection Signed Via Drawing No. Examined for Critical Corrections
5020	10/1/70	J. H. Millar	<del>Full Part</del> <sup>only no revisions at this point</sup> <del>Before</del> After Verification <sup>before</sup> Review Inspection Signed Via Drawing No. 30 - Shoaler Soundings Chted only Thru Cht 5060 DWG #5
5101 18740	10/27/70	G. Moore	<del>Full Part</del> <sup>before</sup> <del>Before</del> After Verification <sup>before</sup> Review Inspection Signed Via Drawing No. Short Sdgs APPL'D THRU CHT 5060 DWG #5
5107 (18772)	11-19-75	Hamilton	Full <del>Part</del> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Reconstruction
5020 (18022)	5-21-79	R. A. Lillis Lillis	Full <del>Part</del> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 40
18020	6-25-79	B Hamilton 1-17-80 ROS	Full <del>Part</del> <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Thr 18022
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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